SCIENTIFIC SUMMIT 2023

PROGRAM GUIDE

ADMINISTERED BY
AACR American Association for Cancer Research
SCIENTIFIC PARTNER OF STAND UP TO CANCER

For further infomation, please visit us at:

www.StandUpToCancer.org

@SU2C
@SU2Cscience

@SU2C

@SU2C

This is where the end of cancer begins.
When together,
We become a force unmistakable.
A movement undeniable.
A light that cannot dim.
When we take
Our wild impossible dreams
And make them possible
Make them true
We rise up as one
When we stand up
When we Stand Up To Cancer

January 2023

Dear Members of the Stand Up To Cancer Family:

We are pleased to welcome you to the Stand Up To Cancer Scientific Summit 2023 and delighted to come together once again in person after a two-year hiatus. Now more than ever, we appreciate how important and special this meeting is to our vision of accelerating groundbreaking cancer research that can help people with cancer as quickly as possible. It is the only time each year when the entire SU2C scientific community gathers to collaborate by sharing what we've learned about the wide variety of cancers and new treatments that are being studied.

Since our virtual gathering last year, Stand Up has continued to expand its scientific portfolio. During this Summit, you will hear from new teams focused on expanding participation in early-stage cancer clinical trials, lung cancer screening and treatment in underserved groups, and research projects on breast cancer, colorectal cancer, Ewing sarcoma, hypermutant-glioblastoma in children and young adults, KRAS mutant cancers, and non-small cell lung cancer, among others.

This also marks Stand Up To Cancer's 15th anniversary, and there are so many to recognize for their long-standing commitment and contributions to our ever-growing portfolio of innovative cancer research projects.

First, we want to thank our Scientific Advisory Committee lead by Dr. Phil Sharp, Nobel laureate, and our vice chairs, Nobel laureate Elizabeth Backburn, Raymond DuBois, Lee Helman, Arnie Levine, William Nelson and Edith Perez. Their guidance has been key to the rigorous oversight that is a hallmark for Stand Up's research review process.

Second, we want to thank our scientific partner, the American Association of Cancer Research, who has been with Stand Up since the beginning, providing professional guidance for administering our grants and support for our summits and symposia.

We are also deeply grateful to our donors, who form the bedrock of our efforts. Their continued trust and support in this scientific community make our work possible.

Finally, we want to thank the entire Stand Up community for your continued commitment to this important collaborative research model, and for working together toward a time when all cancer patients become long-term survivors.

CEO
Stand Up To Cancer

Dr. Russell Chew

Council of Founders and Advisors (CFA)
Stand Up To Cancer

Sherry Lansing
Lisa Paulsen
Katie Couric
Rusty Robertson
Kathleen Lobb
Sue Schwartz
Pam Williams
Ellen Ziffren

STAND UP TO CANCER®

www.standup2cancer.org

Stand Up To Cancer is a division of the Entertainment Industry Foundation, a 501(c)(3) charitable organization

AACR American Association for Cancer Research®
FINDING CURES TOGETHER®

615 Chestnut Street | 17th Floor
Philadelphia, PA 19106-4404
215-440-9300 | 215-440-9313 Fax
www.AACR.org | @AACR | facebook.com/AACR.org

Dear Colleagues and Friends:

As chief executive officer of the American Association for Cancer Research, the Scientific Partner for Stand Up To Cancer, I am delighted to welcome you to the 2023 SU2C Scientific Summit -- the first summit to be held in person since 2020.

While we have had virtual summits and many meetings via Zoom and telephone, we all missed the valuable networking and face-to-face interactions that occur at in-person meetings. So, it is a pleasure once again to bring our community together and enjoy the synergies that occur when brilliant and dedicated people get together to work passionately for a common cause – the conquest of cancer.

At the AACR Annual Meeting 2022 in New Orleans, we were pleased to host a reception to honor the new president and CEO of Stand Up To Cancer, Dr. Russell Chew, and the Founders and Advisors Committee. We are always thrilled to celebrate the important work of SU2C and to thank the members of the entire SU2C scientific community for their tireless efforts at the bench and the bedside.

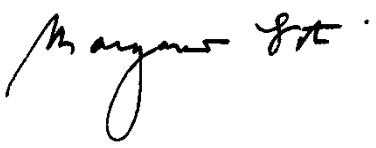
In addition, the AACR celebrated the 115th anniversary of its founding with a major event in Washington, DC, on September 15. It was our pleasure to present Dr. Chew and the Founders and Advisors Committee with an Outstanding Achievement Award for Service to Cancer Science and Medicine. This special award recognized SU2C's enormous efforts to support groundbreaking cancer research.

We look forward to continuing to work with Dr. Chew, the Founders and Advisors, and with the stellar Scientific Advisory Committee and its visionary leader, Nobel laureate Dr. Phil Sharp, and the vice chairs, Nobel laureate Liz Blackburn, Ray DuBois, Lee Helman, Arnie Levine, Bill Nelson, and Edith Perez.

The AACR has been proud over the past 15 years to support the work of SU2C to initiate and administer grant programs that are of tremendous value to the scientific community. These precious funds give hope to the patients with cancer whom we all serve.

Our collaborative efforts along with SU2C and the cancer research community continue to bring us closer to our shared goal of preventing and curing all cancers.

Sincerely,



Margaret Foti, PhD, MD (hc)
Chief Executive Officer, AACR

TABLE OF CONTENTS

TABLE OF CONTENTS

14 **ADVISORY COMMITTEES**

19 **ABOUT SU2C**

21 **DREAM TEAMS**

22 **SU2C COLORECTAL CANCER HEALTH EQUITY DREAM TEAM**
Community Collaboration to Advance Racial/Ethnic Equity in CRC Screening
Team Leader: Jennifer Haas, MD, MSc, Massachusetts General Hospital

24 **SU2C HEALTH EQUITY BREAKTHROUGH TEAM**
DISRUPT: Diversity and IncluSion in Research Underpinning Prevention and Therapy Trials
Team Leader: Nina A. Bickell, MD, MPH, Icahn School of Medicine at Mount Sinai

26 **SU2C CANADA–LUSTGARTEN FOUNDATION–PANCREATIC CANCER CANADA PASS CONVERGENCE DREAM TEAM**
PASS-01- Pancreatic Adenocarcinoma Signature Stratification for Treatment-01
Team Co-leader: Jennifer Knox, MD, University Health Network
Team Co-leader: Elizabeth Jaffee, MD, Johns Hopkins University

28 **SU2C CANADA METASTATIC BREAST CANCER DREAM TEAM**
Targeting mRNA Translation to Effectively Treat Metastatic Breast Cancer
Team Leader: Nahum Sonenberg, PhD, McGill University

30 **SU2C MEG VOSBURG T-CELL LYMPHOMA DREAM TEAM**
Tailoring CAR-based Immunotherapy Strategies to T-Cell Lymphoma
Team Leader: Helen E. Heslop, MD, Baylor College of Medicine

32 **SU2C MULTIPLE MYELOMA DREAM TEAM**
Screening and Interception of Precursor Myeloma
Team Leader: Irene M. Ghobrial, MD, Dana-Farber Cancer Institute

34 **SU2C–LUNGEVITY FOUNDATION–AMERICAN LUNG ASSOCIATION LUNG CANCER INTERCEPTION DREAM TEAM**
Intercept Lung Cancer Through Immune, Imaging, and Molecular Evaluation (InTIME)
Team Leader: Avrum E. Spira, MD, Boston University

36 **SU2C–LUSTGARTEN FOUNDATION PANCREATIC CANCER INTERCEPTION DREAM TEAM**
Intercepting Pancreatic Cancer in High-Risk Cohorts
Team Leader: Anirban Maitra, MBBS, The University of Texas MD Anderson Cancer Center

38 **ST. BALDRICK'S FOUNDATION–SU2C PEDIATRIC CANCER DREAM TEAM**
Immunogenomics to Create New Therapies for High-Risk Childhood Cancers
Team Leader: John M. Maris, MD, Children's Hospital of Philadelphia

41 **SU2C COLORECTAL CANCER DREAM TEAM**
Targeting Genomic, Metabolic, and Immunological Vulnerabilities of Colorectal Cancer
Team Leader: Luis A. Diaz Jr., MD, Memorial Sloan Kettering Cancer Center

43 **SU2C CANADA–CANADIAN CANCER SOCIETY BREAST CANCER DREAM TEAM**
Translational Development of Novel Drugs Targeting Tumor Vulnerabilities
Team Leader: Tak W. Mak, PhD, Campbell Family Institute for Breast Cancer Research at Princess Margaret Cancer Centre

TABLE OF CONTENTS

45 **SU2C–CANCER RESEARCH UK–LUSTGARTEN FOUNDATION PANCREATIC CANCER DREAM TEAM**
Reprogramming of Transcriptional Circuitry to Control Pancreatic Cancer
Team Leader: Daniel D. Von Hoff, MD, Translational Genomics Research Institute (TGEN)

47 **SU2C CANADA CANCER STEM CELL DREAM TEAM**
Targeting Brain Tumor Stem Cell Epigenetic and Molecular Networks
Team Leader: Peter B. Dirks, MD, PhD, The Hospital for Sick Children

49 **SU2C–AMERICAN CANCER SOCIETY LUNG CANCER DREAM TEAM**
Targeting KRAS-Mutant Lung Cancers
Team Co-leader: Jedd D. Wolchok, MD, PhD, Memorial Sloan Kettering Cancer Center
Team Co-leader: Pasi A. Jänne, MD, PhD, Dana-Farber Cancer Institute
Team Co-leader: Justin F. Gainor, MD, Massachusetts General Hospital Cancer Center

52 **SU2C–OVARIAN CANCER RESEARCH ALLIANCE–NATIONAL OVARIAN CANCER COALITION OVARIAN CANCER DREAM TEAM**
DNA Repair Therapies for Ovarian Cancer
Team Leader: Alan D. D'Andrea, MD, Dana-Farber Cancer Institute

54 **SU2C–DUTCH CANCER SOCIETY COLORECTAL CANCER EARLY DETECTION DREAM TEAM**
Molecular Early Detection of Colorectal Cancer (MEDOCC)
Team Leader: Gerrit A. Meijer, MD, PhD, Netherlands Cancer Institute

56 **VAN ANDEL INSTITUTE–SU2C CANCER EPIGENETICS DREAM TEAM**
Bringing Epigenetic Therapy to the Forefront of Cancer Management, II
Team Leader: Peter A. Jones, PhD, DSc (hon), Van Andel Institute

59 **SU2C–LUSTGARTEN FOUNDATION PANCREATIC CANCER DREAM TEAM**
Transforming Pancreatic Cancer to Treatable Disease
Team Leader: Elizabeth M. Jaffee, MD, Johns Hopkins University

61 **SU2C–DUTCH CANCER SOCIETY TUMOR ORGANOIDS DREAM TEAM**
A New Preclinical Model for Drug Sensitivity Analysis
Team Leader: Hans C. Clevers, MD, PhD, Hubrecht Institute

63 **SU2C–ST. BALDRICK'S FOUNDATION PEDIATRIC CANCER DREAM TEAM**
Immunogenomics to Create New Therapies for High-Risk Childhood Cancers
Team Leader: John M. Maris, MD, Children's Hospital of Philadelphia

67 **SU2C–CANCER RESEARCH INSTITUTE CANCER IMMUNOLOGY DREAM TEAM**
Immunologic Checkpoint Blockade and Adoptive Cell Transfer in Cancer Therapy
Team Leader: James P. Allison, PhD, The University of Texas MD Anderson Cancer Center

70 **SU2C–PROSTATE CANCER FOUNDATION PROSTATE CANCER DREAM TEAM**
Targeting Adaptive Pathways in Metastatic Castration-Resistant Prostate Cancer
Team Leader: Eric J. Small, MD, University of California, San Francisco

73 **SU2C–PROSTATE CANCER FOUNDATION PROSTATE CANCER DREAM TEAM**
Precision Therapy of Advanced Prostate Cancer
Team Leader: Arul M. Chinnaiyan, MD, PhD, University of Michigan

75 **SU2C–MELANOMA RESEARCH ALLIANCE MELANOMA DREAM TEAM**
Personalized Medicine for Patients With BRAF Wild-Type (BRAFwt) Cancer
Team Leader: Jeffrey M. Trent, PhD, Translational Genomics Research Institute

TABLE OF CONTENTS

77 **SU2C PANCREATIC DREAM TEAM**
Cutting Off the Fuel Supply: A New Approach to the Treatment of Pancreatic Cancer
Team Leader: Craig B. Thompson, MD, (2009–2011), University of Pennsylvania

79 **SU2C EPIGENETICS DREAM TEAM**
Bringing Epigenetic Therapy to the Forefront of Cancer Management
Team Leader: Stephen B. Baylin, MD, Johns Hopkins University

81 **SU2C CIRCULATING TUMOR CELL (CTC) DREAM TEAM**
Bioengineering and Clinical Applications of Circulating Tumor Cell Chip
Team Leader: Daniel A. Haber, MD, PhD, Massachusetts General Hospital

83 **SU2C PI3K DREAM TEAM**
Targeting the PI3K Pathway in Women's Cancers
Team Leader: Lewis C. Cantley, PhD, Beth Israel Deaconess Medical Center

86 **SU2C BREAST CANCER DREAM TEAM**
An Integrated Approach to Targeting Breast Cancer Molecular Subtypes and Their Resistance Phenotypes
Team Leader: Dennis J. Slamon, MD, PhD, University of California, Los Angeles

88 **RESEARCH TEAMS**

89 **SU2C DIVERSITY IN EARLY DEVELOPMENT CLINICAL TRIALS RESEARCH GRANTS PROGRAM**
Increasing Diversity in Cancer Clinical Trials

89 **UNIVERSITY OF CHICAGO**
Project: Enhancing Diversity in Early Phase Clinical Trials in an Urban Underserved Community
Team Leader: Walter Stadler, MD

90 **UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER**
Project: Transferring Care to Enhance Access to Early-phase Cancer Clinical Trials
Team Leader: David Gerber, MD

90 **UNIVERSITY OF SOUTHERN CALIFORNIA**
Project: Eliminating Enrollment Barriers to Early Phase Trials in a Diverse Population in Los Angeles County
Team Leader: Anthony El-Khoueiry, MD

91 **THE RESEARCH INSTITUTE OF FOX CHASE CANCER CENTER**
Project: Accelerating and Diversifying Access to Clinical Trials
Team Leader: Martin Edelman, MD

92 **SU2C LUNG CANCER HEALTH EQUITY RESEARCH TEAM**
Southeastern Consortium for Lung Cancer Health Equity
Team Leader: Robert A. Winn, MD, Virginia Commonwealth University

94 **STAND UP TO CANCER–FANCONI ANEMIA RESEARCH FUND–FARRAH FAWCETT FOUNDATION HEAD AND NECK CANCER RESEARCH TEAM**
Precision Therapy for Fanconi Anemia and HPV-Related Head and Neck Cancers
Team Leader: Agata Smogorzewska, MD, PhD, The Rockefeller University

96 **SU2C-CRUK PEDIATRIC CANCER NEW DISCOVERIES CHALLENGE RESEARCH TEAM**
Combinatorial Targeting of Oncogene-Driven Childhood Cancer
Team Leader: John Anderson, MBBS, MRCP, PhD, University College London Great Ormond Street Institute of Child Health

TABLE OF CONTENTS

98 **SU2C-CRUK PEDIATRIC CANCER NEW DISCOVERIES CHALLENGE RESEARCH TEAM**
Targeting R-loop Stability in Ewing Sarcoma
Team Leader: Alexander Bishop, DPhil, UT Health San Antonio

99 **SU2C-CRUK PEDIATRIC CANCER NEW DISCOVERIES CHALLENGE RESEARCH TEAM**
BRAINatomy: A Validated Anatomical Atlas of Childhood Neuroradiation Damage
Team Leader: Martin G. McCabe, MB/BChir, PhD, University of Manchester

101 **SU2C GASTRIC CANCER INTERCEPTION RESEARCH TEAM**
Early Detection and Interception of Diffuse and Intestinal Gastric Cancer
Team Leader: Andrew T. Chan, MD, MPH, Massachusetts General Hospital

103 **PANCREATIC CANCER COLLECTIVE RESEARCH TEAMS—COMPUTATIONAL APPROACHES TO IDENTIFYING HIGH-RISK PANCREATIC CANCER POPULATIONS**
Identification of Genomic and Immune Factors in High-Risk Populations for Pancreatic Cancer
Team Leader: Raul Rabadan, PhD, Columbia University

105 **PANCREATIC CANCER COLLECTIVE RESEARCH TEAMS—COMPUTATIONAL APPROACHES TO IDENTIFYING HIGH-RISK PANCREATIC CANCER POPULATIONS**
Identifying Individuals at High Risk of Pancreatic Cancer Through Machine Learning Analysis of Clinical Records and Images
Team Leader: Chris Sander, PhD, Dana-Farber Cancer Institute

107 **PANCREATIC CANCER COLLECTIVE RESEARCH TEAM—NEW THERAPIES CHALLENGE**
Targeting SHP2 in Pancreatic Cancer
Team Leader: René Bernards, PhD, Netherlands Cancer Institute

109 **PANCREATIC CANCER COLLECTIVE RESEARCH TEAM—NEW THERAPIES CHALLENGE**
Exploiting DNA Repair Gene Mutations in Pancreatic Cancer
Team Leader: Alan D. D'Andrea, MD, Dana-Farber Cancer Institute

111 **PANCREATIC CANCER COLLECTIVE RESEARCH TEAM–NEW THERAPIES CHALLENGE**
Adoptive Transfer of TGF-ß-Resistant TIL to Defeat Immunosuppressive PDAC
Team Leader: Patrick Hwu, MD, The University of Texas MD Anderson Cancer Center

112 **PANCREATIC CANCER COLLECTIVE RESEARCH TEAM–NEW THERAPIES CHALLENGE**
Combined Targeting of MEK1/2 and Autophagy for Pancreatic Cancer Therapy
Team Leader: Martin McMahon, PhD, University of Utah

114 **PANCREATIC CANCER COLLECTIVE RESEARCH TEAM–NEW THERAPIES CHALLENGE**
Targeting Stem Cell Signals in Pancreatic Cancer
Team Leader: Tannishtha Reya, PhD, University of California, San Diego

115 **PANCREATIC CANCER COLLECTIVE RESEARCH TEAM—NEW THERAPIES CHALLENGE**
Molecularly Targeted Radionuclide Therapy via the Integrin avß6
Team Leader: Julie L. Sutcliffe, PhD, University of California, Davis

117 **PANCREATIC CANCER COLLECTIVE RESEARCH TEAM—NEW THERAPIES CHALLENGE**
Immunotherapy Targeting Mutant KRAS
Team Leader: Robert H. Vonderheide, MD, DPhil, University of Pennsylvania

119 **SU2C–LUSTGARTEN FOUNDATION PANCREATIC CANCER INTERCEPTION RESEARCH TEAM**
Developing Novel Approaches to Detect and Treat Early Pancreatic Cancer
Team Leader: David P. Ryan, MD, Massachusetts General Hospital

TABLE OF CONTENTS

121 **SU2C–LUNGEVITY FOUNDATION–AMERICAN LUNG ASSOCIATION LUNG CANCER INTERCEPTION RESEARCH TEAM**
Blood-Based Early Interception of Lung Cancer
Team Leader: Lecia V. Sequist, MD, Massachusetts General Hospital

122 **SU2C–LUSTGARTEN FOUNDATION TRANSLATIONAL RESEARCH TEAM**
Chimeric Antigen Receptor T-cell (CAR T) Therapy for Pancreatic Cancer
Team Leader: Carl H. June, MD, University of Pennsylvania

124 **LAURA ZISKIN TRANSLATIONAL AWARD RESEARCH TEAM**
Phosphatidylinositol 3-kinase δ Inhibition to Treat Patients With Relapsed or Refractory Follicular Lymphoma
Team Leader: Siddhartha Mukherjee, MD, Columbia University

125 **SU2C–FARRAH FAWCETT FOUNDATION HPV RESEARCH TEAM**
Therapeutic CD8 Vaccines Against Conserved E7 HPV Epitopes Identified by MS
Team Leader: Ellis L. Reinherz, MD, Dana-Farber Cancer Institute

127 **SU2C-TRANSLATIONAL GENOMICS RESEARCH INSTITUTE GRANT**
Next-Generation Sequencing of Small Cell Lung Cancer to identify Actionable Targets for Treatment
Team Leader: Jeffrey Trent, PhD, Translational Genomics Research Institute (TGEN)

128 **SU2C–DUTCH CANCER SOCIETY TRANSLATIONAL RESEARCH TEAM**
Prospective Use of DNA-Guided Personalized Cancer Treatment
Team Leader: Emile E. Voest, MD, PhD, Netherlands Cancer Institute

130 **SU2C CONVERGENCE™ RESEARCH TEAMS**

131 **SU2C CONVERGENCE™ 3.1416 RESEARCH TEAM**
Molecular and Biophysical Definition of Tumor–Host Interactions and Impact on Tumorigenesis and Therapeutic Response
Team Leader: Ileana Cristea, PhD, Princeton University

133 **SU2C CONVERGENCE™ 3.1416 RESEARCH TEAM**
Integrating Gnotobiotic, Organoid, and Metabolomic Pipelines to Probe the Cancer–Microbiome Connection
Team Leader: Kenya Honda, MD, PhD, Keio University

135 **SU2C CONVERGENCE™ 3.1416 RESEARCH TEAM**
Integrating Microbiome and Organoid Analyses of Patient Cohorts for Immuno-oncology Therapeutic Development
Team Leader: Calvin Kuo, MD, PhD, Stanford University

138 **SU2C CONVERGENCE™ 3.1416 RESEARCH TEAM**
Multi-omic Analysis of Immune System and Microbiota Influence on Temporal and Spatial Evolution of Tumor Microenvironments
Team Leader: Dan Littman, MD, PhD, New York University Grossman School of Medicine

140 **SU2C CONVERGENCE™ 3.1416 RESEARCH TEAM**
Intra-team Collaboration: The Multi-organ Organoid Chemostat Group
Team Leader: Calvin Kuo, MD, PhD, Stanford University

TABLE OF CONTENTS

142 **SU2C CONVERGENCE™ RESEARCH TEAM**
Correlating Immunological Health to Cancer Susceptibility
Team Leader: Mark M. Davis, PhD, Stanford University

143 **SU2C CONVERGENCE™ RESEARCH TEAM**
Single-Cell Functional Multi-omics to Characterize and Monitor CAR T Therapy
Team Leader: Rong Fan, PhD, Yale University

145 **SU2C CONVERGENCE™ RESEARCH TEAM**
Machine Learning for Cancer Immunotherapy
Team Co-leader: Ernest Fraenkel, PhD, Massachusetts Institute of Technology
Team Co-leader: Regina Barzilay, PhD, Massachusetts Institute of Technology

146 **SU2C–LUSTGARTEN FOUNDATION CONVERGENCE™ RESEARCH TEAM**
Computational Deconstruction of Neoantigen-TCR Degeneracy for Cancer Immunotherapy
Team Co-leader: Benjamin Greenbaum, PhD, Memorial Sloan Kettering Cancer Center
Team Co-leader: Vinod Balachandran, MD, Memorial Sloan Kettering Cancer Center

148 **SU2C CONVERGENCE™ RESEARCH TEAM**
Integrating Experimental and Computational Pipelines to Develop Biomarkers of Tumor Cell Resistance to NK Cells
Team Leader: Constantine S. Mitsiades, MD, PhD, Dana-Farber Cancer Institute

150 **SU2C CONVERGENCE™ RESEARCH TEAM**
Responders and Non-Responders to Endometrial Cancers With Mismatch Repair
Team Leader: Alessandro D. Santin, MD, Yale University

152 **SU2C CONVERGENCE™ RESEARCH TEAM**
Connecting Immune Health and Tumor Biology in Gynecologic Cancers
Team Leader: E. John Wherry, PhD, University of Pennsylvania

154 **SU2C–BREAST CANCER RESEARCH FOUNDATION CONVERGENCE™ RESEARCH TEAM**
Ecology of the Tumor Microenvironment in Breast Cancer
Team Leader: Peter P. Lee, MD, City of Hope

155 **SU2C–NATIONAL SCIENCE FOUNDATION CONVERGENCE™ RESEARCH TEAM**
Rational Design of Anticancer Drug Combinations with Dynamic Multi-Dimensional Input
Team Leader: Anthony G. Letai, MD, PhD, Dana-Farber Cancer Institute

157 **SU2C–NATIONAL SCIENCE FOUNDATION CONVERGENCE™ RESEARCH TEAM**
Genetic, Epigenetic, and Immunological Underpinnings of Cancer Evolution Through Treatment
Team Leader: Ross Levine, MD, Memorial Sloan Kettering Cancer Center

159 **SU2C–NATIONAL SCIENCE FOUNDATION–LUSTGARTEN FOUNDATION CONVERGENCE™ RESEARCH TEAM**
Liberating T-Cell Mediated Immunity to Pancreatic Cancer
Team Co-leader: Peter O'Dwyer, MD, University of Pennsylvania
Team Co-leader: Jeffrey Drebin, MD, Memorial Sloan Kettering Cancer Center
Team Co-leader: Jedd Wolchok, MD, PhD, Memorial Sloan Kettering Cancer Center

TABLE OF CONTENTS

161 **SU2C CATALYST® RESEARCH TEAMS**

162 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM JAZZ PHARMACEUTICALS**
The LiFFT Study (Lurbinectedin in FET-Fusion Tumors)
Team Leader: Patrick Grohar, MD, PhD, Children's Hospital of Philadelphia

164 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM JAZZ PHARMACEUTICALS CT6334**
Identification of Combination Therapeutics Using JZP-815 for the Treatment of NSCLC
Team Leader: Fred R. Hirsch, MD, PhD, Icahn School of Medicine at Mount Sinai

165 **LUNG CANCER HEALTH EQUITY SU2C CATALYST® RESEARCH TEAM CT6332**
Technology-Enabled Immunotherapy Monitoring in NYC Minority NSCLC Patients
Team Leader: Vamsidhar Velcheti, MD, New York University Grossman School of Medicine

166 **SU2C CATALYST® RESEARCH TEAM GRANT PROGRAM WITH SUPPORT FROM MIRATI THERAPEUTICS**
Targeting Adaptive and Acquired Resistance to Direct KRAS Inhibition
Team Leader: Ryan B. Corcoran, MD, PhD, Massachusetts General Hospital

167 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM GENENTECH CT6181**
Atezolizumab, Androgen Receptor (AR) targeted therapy, and SBRT in Hormone Sensitive Prostate Cancer
Team Leader: Sean M. McBride, MD, Memorial Sloan Kettering Cancer Center

169 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM GENENTECH CT6174**
Combination Sacituzumab and Atezolizumab to Prevent Recurrence in Triple Negative Breast Cancer (TNBC)
Team Leader: Elizabeth A. Mittendorf, MD, PhD, Dana-Farber Cancer Institute

171 **PEDIATRIC SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM BRISTOL MYERS SQUIB**
Clinical Translation of Novel Immune-Based Combination Therapies for Pediatric Hypermutant Cancers
Team Leader: Uri Tabori, MD, The Hospital for Sick Children

173 **PEDIATRIC SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM BRISTOL MYERS SQUIBB**
Immunomodulation to Treat Poor-Prognosis Pediatric Brain Tumors
Team Leader: Maryam Fouladi, MD, Nationwide Children's Hospital

174 **PEDIATRIC SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM BRISTOL MYERS SQUIBB**
Targeting Epigenetic Dysregulation in Pediatric Cancer
Team Leader: Kimberly Stegmaier, MD, Dana-Farber Cancer Institute

176 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM GENENTECH**
Neoadjuvant Therapy for Patients With High-Risk Stage III Melanoma
Team Leader: Matthew S. Block, MD, PhD, Mayo Clinic

178 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM GENENTEC**
Immunotherapy Combination Strategies in ER-Positive Metastatic Breast Cancer
Team Leader: Ingrid A. Mayer, MD, Vanderbilt University

TABLE OF CONTENTS

180 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM GENENTECH**
Overcoming Urothelial Cancer Atezolizumab Resistance by Epigenetic Therapy
Team Leader: Peter A. Jones, PhD, DSc, (hon), Van Andel Institute

182 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM BRISTOL MYERS SQUIBB**
Tumor Infiltrating Lymphocyte Adoptive T-Cell Therapy for Non-small Cell Lung Cancer (NSCLC)
Team Co-leader: Eric B. Haura, MD, H. Lee Moffitt Cancer Center & Research Institute
Team Co-leader: Scott J. Antonia, MD, PhD, Duke University

184 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM BRISTOL MYERS SQUIBB**
Immunotherapy to Prevent Progression in Multiple Myeloma
Team Leader and Clinical Lead: Irene M. Ghobrial, MD, Dana-Farber Cancer Institute

186 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM MERCK**
Pembrolizumab and Radiation Therapy
to Improve Outcome in High-Risk Sarcoma
Team Leader and Clinical Lead: David G. Kirsch, MD, PhD, Duke University Medical School

188 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM BRISTOL MYERS SQUIBB**
Reversing Primary Anti-PD-1 Resistance with Ipilimumab and Nivolumab
Team Leader: Antoni Ribas, MD, PhD, University of California, Los Angeles

190 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM MERCK**
Targeting VDR to Make Pancreatic Cancer Competent for Immunotherapy
Team Leader and Clinical Lead: Daniel D. Von Hoff, MD, Translational Genomics Research Institute

192 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM MERCK**
Combined Epigenetic Therapy and Pembrolizumab for Advanced Non-small Cell Lung Cancer (NSCLC)
Team Leader: Stephen B. Baylin, MD, Johns Hopkins University

194 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM BRISTOL MYERS SQUIBB**
Combined Approaches by Immune Checkpoint Inhibition for Hypermutant Cancers
Team Leader: Uri Y. Tabori, MD, The Hospital for Sick Children

196 **SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM MERCK**
DNA Repair Therapies for Ovarian Cancer
Team Leader: Alan D. D'Andrea, MD, Dana-Farber Cancer Institute

198 **INNOVATIVE RESEARCH GRANTS**
199 **CLASS OF 2017**
200 **CLASS OF 2016**
201 **CLASS OF 2011**
202 **CLASS OF 2009**

TABLE OF CONTENTS

203 THE PHILLIP A. SHARP INNOVATION IN COLLABORATION AWARDS
204 CLASS OF 2020
204 CLASS OF 2019
204 CLASS OF 2018
205 CLASS OF 2017
205 CLASS OF 2016
205 CLASS OF 2015
205 CLASS OF 2014

206 ADDITIONAL AWARDS AND PRIZES

210 REVIEWERS

216 INFOGRAPHICS INDEX

222 INDEX BY TYPES OF CANCER

224 INDEX BY PERSON

230 THANK YOU

ADVISORY COMMITTEES

SU2C Scientific Advisory Committee

Phillip A. Sharp, PhD
Chairperson
Institute Professor
Koch Institute for Integrative Cancer Research
Massachusetts Institute of Technology

Elizabeth H. Blackburn, PhD
Vice Chairperson
Professor Emerita
The University of California, San Francisco

Raymond N. DuBois, MD, PhD
Vice Chairperson
Director, Hollings Cancer Center
Dean, College of Medicine
Medical University of South Carolina

Lee J. Helman, MD
Vice Chairperson
Director, Osteosarcoma Institute Adjunct Clinical Professor of Pediatrics Cancer and Blood Disease Institute CHLA, Keck School of Medicine of University of Southern California

Arnold J. Levine, PhD
Vice Chairperson
Professor Emeritus
Institute for Advanced Study and
Cancer Institute of New Jersey

William G. Nelson, MD, PhD
Vice Chairperson
Director, Sidney Kimmel Comprehensive Cancer Center
Johns Hopkins University

Edith A. Perez, MD
Vice Chairperson
Chief Medical Officer, Bolt Biotherapeutics
Professor of Medicine, Mayo Clinic

Julian Adams, PhD
Chief Executive Officer
Gamida-Cell

Carlos L. Arteaga, MD
Lisa K. Simmons Distinguished Chair in Comprehensive Oncology
UT Southwestern Harold C. Simmons Cancer Center

Alan Bernstein, PhD
President and CEO
Canadian Institute for Advanced Research

John D. Carpten, PhD
Director of the Institute for Translational Genomics
Keck School of Medicine of University of Southern California

Judy E. Garber, MD, MPH
Chief, Division for Cancer Genetics and Prevention
Dana-Farber Cancer Institute

Richard B. Gaynor, MD
President, Research and Development
BioNTech US Inc.

Laurie H. Glimcher, MD
President and CEO
Dana-Farber Cancer Institute

Nancy F. Goodman, JD
Executive Director and Founder
Kids v Cancer

James L. Gulley, MD, PhD
Center for Cancer Research
National Cancer Institute

William N. Hait, MD, PhD
Global Head of External Innovation
Janssen, Pharmaceutical Companies of Johnson & Johnson

Waun Ki Hong, MD (In Memorium)
The University of Texas MD Anderson Cancer Center

SU2C Scientific Advisory Committee (Cont'd.)

William G. Kaelin, Jr., MD
Sidney Farber Professor of Medicine,
Harvard Medical School
Dana-Farber Cancer Institute

Michael B. Kastan, MD, PhD
Director
Duke Cancer Institute

Guillermina (Gigi) Lozano, PhD
Chairman and Professor
The University of Texas MD Anderson
Cancer Center

Tak W. Mak, PhD
Chief Scientific Officer
Campbell Family Institute

Andre Nussenzweig, PhD
Chief, Laboratory of Genome Integrity
NIH Distinguished Investigator
Center for Cancer Research National
Cancer Institute

Roderic I. Pettigrew, MD, PhD
Chief Executive Officer,
Engineering Health (EnHealth)
Executive Dean
Texas A&M University

Cecil B. Pickett, PhD
President, R&D (Retired)
Biogen Inc.

Arlene H. Sharpe, MD, PhD
George Fabyan Professor
of Comparative Pathology
Co-Director, Harvard Institute of
Translational Immunology
Co-Director, Evergrande Center for
Immunologic Diseases Harvard Medical School

Laura K. Shawver, PhD
President and CEO
Silverback Therapeutics

David A. Tuveson, MD, PhD
Professor and Director
Cold Spring Harbor Laboratory Cancer Center

SU2C Canada Scientific Advisory Committee

Alan Bernstein, PhD
Co-chairperson
President and CEO
Canadian Institute for Advanced Research

Phillip A. Sharp, PhD
Chairperson
Institute Professor
Koch Institute for Integrative Cancer Research
Massachusetts Institute of Technology

Carlos L. Arteaga, MD
Lisa K. Simmons Distinguished Chair in
Comprehensive Oncology
UT Southwestern Harold C. Simmons
Cancer Center

Jenny C. Chang, MD
Emily Herrmann Chair in Cancer Research
and Director
Methodist Cancer Center at Houston
Methodist Hospital

Carol L. Prives, PhD
Da Costa Professor
Columbia University

Patrick J. Sullivan, LLB
Advocate President
Team Finn Foundation

SU2C Catalyst® Executive Committee

Phillip A. Sharp, PhD
Chairperson
Institute Professor
Koch Institute for Integrative Cancer Research
Massachusetts Institute of Technology

Lee J. Helman, MD
Director, Osteosarcoma Institute Adjunct Clinical Professor of Pediatrics Cancer and Blood Disease Institute CHLA, Keck School of Medicine of University of Southern California

Arnold J. Levine, PhD
Professor Emeritus
Institute for Advanced Study and Cancer Institute of New Jersey

William G. Nelson, MD, PhD
Vice Chairperson
Director, Sidney Kimmel Comprehensive Cancer Center
Johns Hopkins University

Cecil B. Pickett, PhD
President, R&D (Retired)
Biogen Inc.

Lillian L. Siu, MD
Professor, Staff Medical Oncologist and Director of Phase I Program
Princess Margaret Cancer Centre

Pediatric SU2C Catalyst® Executive Committee

Phillip A. Sharp, PhD
Chairperson
Institute Professor
Koch Institute for Integrative Cancer Research
Massachusetts Institute of Technology

Alan D. D'Andrea, MD
Director, Susan F. Smith Center for Women's Cancers
Dana-Farber Cancer Institute

Lisa R. Diller, MD
Chief Medical Officer, Dana-Farber/Boston Children's Cancer and Blood Disorders Center
Dana-Farber Cancer Institute

Raymond N. DuBois, MD, PhD
Director, Hollings Cancer Center
Dean, College of Medicine
Medical University of South Carolina

Arnold J. Levine, PhD
Professor Emeritus
Institute for Advanced Study and Cancer Institute of New Jersey

SU2C Health Equity Committee

Edith A. Perez, MD
Chairperson
Chief Medical Officer, Bolt Biotherapeutics
Professor of Medicine, Mayo Clinic

Cheryl A. Boyce (In Memoriam)
Retired Executive Director
Ohio Commission on Minority Health

John D. Carpten, PhD
Director of the Institute for Translational Genomics
Keck School of Medicine of University
of Southern California

Andrew T. Chan, MD, MPH
Professor of Medicine
Harvard Medical School

Shawna Hudson, PhD
Professor and Research Division Chief,
Department of Family Medicine
and Community Health
Rutgers Robert Wood Johnson Medical School

Chanita Hughes-Halbert, PhD
Vice Chair for Research and Professor,
Department of Population and
Public Health Sciences
Associate Director for Cancer Equity
Norris Comprehensive Cancer Center
University of Southern California

Elizabeth M. Jaffee, MD
Deputy Director
The Sidney Kimmel Comprehensive Cancer Center
Johns Hopkins University

Guillermina (Gigi) Lozano, PhD
Chairman and Professor
The University of Texas MD Anderson
Cancer Center

John Whyte, MD, MPH
Chief Medical Officer
WebMD

Raymond M. Williams, JD
Senior Counsel
DLA Piper

David R. Wilson, PhD
Director of the Tribal Health Research Office
National Institutes of Health

Karen M. Winkfield, MD, PhD
Executive Director
Meharry-Vanderbilt Alliance

Robert A. Winn, MD
Director
Massey Cancer Center
Virginia Commonwealth University

ABOUT SU2C

Stand Up To Cancer: A Groundbreaking Movement Transforming Cancer Research

Founded in 2008 by women leaders in the entertainment and media industries, Stand Up To Cancer is a groundbreaking movement that accelerates cancer research and gets new therapies to patients quickly to save lives now.

Since our founding, Stand Up To Cancer has supported more than 225 science projects with more than $746 million pledged for these efforts. We have funded almost 135 team science projects, as well as 60 individuals through our Innovative Research Grants for early-career researchers and other grants. And more than 270 clinical trials enrolling more than 22,500 patients have been launched. To date, SU2C research has contributed to nine FDA approvals of cancer therapies.

SU2C's research projects bring together top investigators from different institutions to accelerate the discovery and delivery of new therapies, and they have evolved to include an array of industry collaborations, as well. Focusing on accelerating the development of new therapies, new methods of cancer interception, and new approaches to making these treatments and screening available to all, we have created grant mechanisms that fund meaningful team-based research projects. Collectively, they offer opportunities for cancer science and cancer treatment questions to be answered using a variety of techniques.

- Our flagship Dream Team grants fund multidisciplinary, multi-institutional, collaborative teams to take innovative ideas from concept to patient.
- Research Teams bring together scientists from different institutions answering important questions about cancer research and treatment.
- SU2C Convergence™ Grants unite physical and computational scientists with oncologists to ask fundamental questions about cancer biology, producing insights that can be rapidly applied for patient benefits.
- SU2C Catalyst® teams use funding, compounds, and other materials from the pharmaceutical and biotechnology industries to rapidly assess new treatment combinations.
- Innovative Research Grants support cutting-edge cancer research that might not receive funding through traditional channels.
- And the Phillip A. Sharp Innovation in Collaboration Award, the Ziskin Prize, the Jim Toth Sr. Breakthrough Lung Cancer Research Award, the Peggy Prescott Early Career Award, and the Golden Arrow Award provide support for smaller projects to rapidly explore the newest and most exciting ideas emerging from the cancer research community.

To further support development of cancer treatments that are effective across all communities, the SU2C Health Equity Committee continues to help us find ways to lower the barriers of access to new treatments for all cancer patients.

With mounting evidence for the need to develop precision medical treatments and interventions to serve diverse patient populations, we are supporting the inclusion of historically under-represented racial and ethnic minority populations in clinical trials that we fund. SU2C staff continue to produce educational materials for the public to drive awareness of clinical trials and participation, as well.

DREAM TEAMS

Community Collaboration to Advance Racial/Ethnic Equity in CRC Screening

GRANT TERM: September 2021– August 2024

KEY PERSONNEL:

Team Leader:
Jennifer Haas, MD, MSc, Massachusetts General Hospital

Team Co-leader:
Anton Bilchik, MD, PhD, MBA, Providence Saint John's Cancer Institute
Saint John's Cancer Institute

Team Co-leader:
Folasade P. May, MD, PhD, University of California, Los Angeles

A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Principals:

- Sapna Syngal, MD, MPH, Dana-Farber Cancer Institute
- Staci J. Wendt, PhD, Providence Research Network
- Bill Wright, PhD, Providence Research Network

Project Managers:

- Suzanne Brodney, PhD, Massachusetts General Hospital, Sbrodney@mgh.harvard.edu
- Gina Johnson, Great Plains Tribal Leaders Health Board
- Jennifer Rountree, PhD, Providence Research Network
- Jessica Tuan, MPH, University of California, Los Angeles

Advocates:

- Marsha Baker, Fight CRC
- Anjee Davis, Fight CRC
- Cathy Jeffries
- Kimberly Schoolcraft, Fight CRC
- Helena L Williams , RN, BSN, Board Chair, Gailen and Cathy Reevers Center for Community Empowerment

SU2C COLORECTAL CANCER HEALTH EQUITY DREAM TEAM DT6214

Purpose:

This project is identifying communities near anchor medical institutions that serve minority and medically underserved communities to pinpoint unique local needs and turn at-risk communities into Stand Up To Cancer Zones® with high rates of colorectal cancer screening. The Team will provide free colorectal cancer testing in the zones and develop better approaches to colorectal cancer interception.

Specific Aims:

AIM 1. Develop and conduct a two-arm, multilevel, multicomponent, pragmatic trial randomized at the level of the community health center to compare two population outreach approaches, Cologuard or fecal immunochemical test (FIT), to increase CRC screening.

AIM 2. Conduct patient follow-up after an abnormal Cologuard or FIT screening test result.

AIM 3. Mentor a new generation of underrepresented in medicine and underrepresented in public health researchers focused on CRC prevention and control.

AIM 4: Design and deploy a community-based campaign to increase CRC screening rates in a demographically diverse impact zone within Los Angeles County.

Key Progress:

The Team has successfully engaged clinical sites, which have been assigned treatment status. Researchers have completed qualitative interviews in Boston, Los Angeles and South Dakota sites and are analyzing data; the trial is anticipated to launch early 2023. The Team has engaged community leaders and members to establish Community Health Action Teams (CHATs) in the two impact zones. CHATs have designed CRC outreach materials and developed community-based outreach events. The Team has deployed a community-informed survey to a random sample of residents in the two impact zones and two comparison zones to establish baseline community screening rates, knowledge about CRC, and barriers to screening.

FUNDERS:

EXACT SCIENCES

Providence

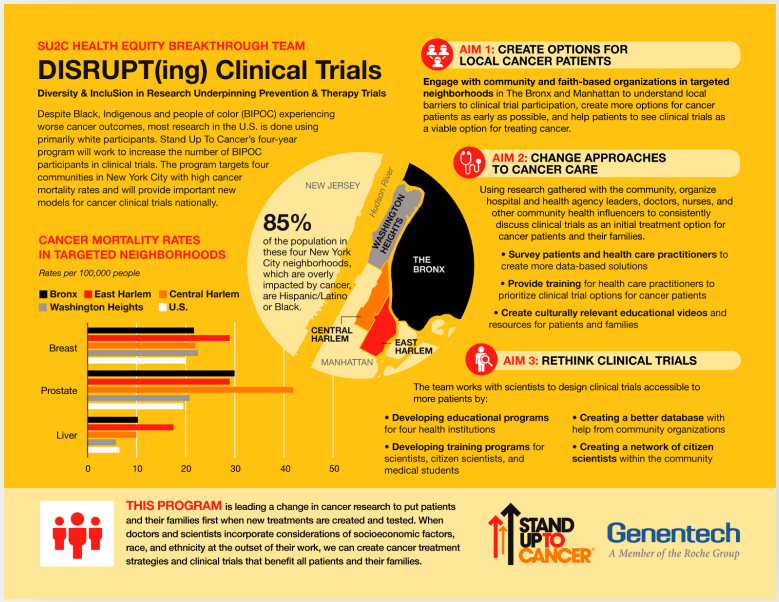
DISRUPT: Diversity and IncluSion in Research Underpinning Prevention and Therapy Trials

GRANT TERM: May 2021 – April 2025

KEY PERSONNEL:

Team Leader:
Nina A. Bickell, MD, MPH,
Icahn School of Medicine
at Mount Sinai

Team Co-leader:
Karen Hubbard, PhD,
The City College
of New York



A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Principals:

- Bruce Rapkin, PhD,
  Albert Einstein College
  of Medicine
- Mary Beth Terry, PhD,
  Columbia University

Project Managers:

- Nicholas Bove, Albert Einstein
  College of Medicine,
  nicholas.bove@
  einsteinmed.edu
- Kimberly Burke,
  Columbia University,
  krb2160@cumc.columbia.edu
- Kelly Smith Elgart,
  The City College of New York,
  kelgart@ccny.cuny.edu
- Radhi M. Yagnik, MS,
  Icahn School of Medicine
  at Mount Sinai,
  Radhi.Yagnik@mountsinai.org

Advocates:

- Rev. Zorina Costello,
  DMin, MDiv, MS,
  Center for Spirituality
  and Health, Icahn
  School of Medicine
  at Mount Sinai
- Ivis Sampayo, SHARE
  Cancer Support
- Desiree Walker

SU2C HEALTH EQUITY BREAKTHROUGH TEAM BT6209

Purpose:

The Breakthrough Team is working to combat low BIPOC participation in clinical trials in the US caused by the healthcare system, availability of clinical trials, and patients' other illnesses, among many other reasons. Multidisciplinary teams from four New York City institutions are working together to improve diversity and inclusion in clinical trials through disruptive approaches at the community, provider, system and patient levels, and basic and translational scientist levels.

Specific Aims:

AIM 1. Address community norms regarding participation in cancer research.

AIM 2. Disrupt current practice by making cancer clinical trials an easy and accessible choice for every patient.

AIM 3. Disrupt norms in clinical trial design and methods by supporting basic science discovery that will increase its relevance to questions essential to reducing cancer health inequities.

Key Progress:

The Team is establishing inter-institutional collaborations to develop: an amalgamated and iterative model incorporating community perspectives and approaches into messaging about clinical trials and medical research, a robust website for outreach and public information about clinical trials, a generalizable IT approach to identify patients at times when trials are most relevant and find trials that may be most relevant for patients; a pilot award program integrating community scientists into the research question development. The team has also launched a community scientist institute to train individuals from the community to participate in research and are in discussions to pilot a health equity course for basic scientists. They announced two pilot awards and have secured IRB approvals from all participating institutions.

FUNDERS:

Genentech
A Member of the Roche Group

SU2C CANADA-LUSTGARTEN FOUNDATION-PANCREATIC CANCER CANADA PASS CONVERGENCE DREAM TEAM CV6179, CV6185

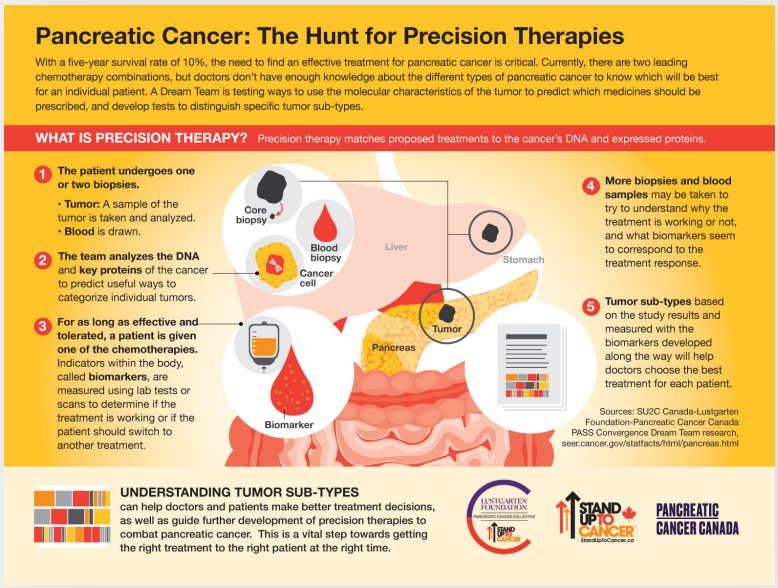
PASS-01- Pancreatic Adenocarcinoma Signature Stratification for Treatment-01

GRANT TERM: August 2020 – February 2024

KEY PERSONNEL:

Team Co-leader:
Jennifer Knox, MD,
University Health Network

Team Co-leader:
Elizabeth Jaffee, MD,
Johns Hopkins University



A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Principals:

- Andrew Aquirre, MD, PhD, Dana-Farber Cancer Institute
- Steven Gallinger, MD, Ontario Institute for Cancer Research
- Daniel King, MD, Northwell Health Center for Advanced Medicine
- Daniel Laheru, MD, Johns Hopkins University
- Eileen O'Reilly, MD, Memorial Sloan Kettering Cancer Center
- Kimberley Perez, MD, Dana-Farber Cancer Institute
- Michael Pishvaian, MD, PhD, Johns Hopkins University
- Daniel Renouf, MD, MPH British Columbia Cancer Agency
- Kenneth Yu, MD, Memorial Sloan Kettering Cancer Center

Collaborator:

- David Tuveson, MD, PhD, Cold Spring Harbor Laboratory

Project Manager:

- Anna Dodd, University Health Network, Anna.Dodd@uhn.ca

SU2C CANADA–LUSTGARTEN FOUNDATION–PANCREATIC CANCER CANADA PASS CONVERGENCE DREAM TEAM CV6179, CV6185

Purpose:

The PASS-01 team is working to identify patient-specific biomarkers predictive of greater benefit with modified FOLFIRINOX (mFFX) versus gemcitabine/nab-paclitaxel (GA), the two first-line combination chemotherapy regimens given to patients with advanced pancreatic cancer a good performance status. This is followed by second-line therapy that is potentially directed to match the molecular profile if targetable vulnerabilities are identified.

Specific Aims:

AIM 1. Determine the PFS benefit of modified FOLFIRINOX (mFFX) compared with gemcitabine/nab-paclitaxel (GA) as first-line treatment in metastatic pancreatic ductal adenocarcinoma (PDAC) in a randomized phase II trial.
AIM 2. Explore biomarker correlation to treatment response and patient outcomes.
AIM 3. Evaluate concordance between patient response and outcomes with model (PDO) profiles, signatures, and pharmacotyping.
AIM 4. Compile a detailed genomic annotation of advanced PDAC patients on first-line chemotherapy.

Key Progress:

For the clinical trial, all PASS-01 subsites have been activated; over 110 patients have been screened, and more than half the 150-patient sample has been enrolled. This is a complex study requiring significant and timely coordination between centers to perform analyses on patient samples within the planned time frames. To maximize learnings, all patient results are presented and discussed at molecular rounds. This provides clinicians with a consensus opinion as to how best to move forward with precision treatment when possible. For these patients, as targetable vulnerabilities are identified, treatment is followed by second-line therapy that is potentially directed to match the molecular profile and/or drug sensitivity shown in the PDO models.

Clinical Trial:

A Randomized Multicentre Phase II Trial to Evaluate the Two Standard Chemotherapy Regimens, Modified FOLFIRINOX (mFFX) and Gemcitabine/Nab-Paclitaxel (GA), in Patients With Untreated Metastatic Pancreatic Ductal Adenocarcinoma; NCT04469556; Recruiting

FUNDERS:
LUSTGARTEN FOUNDATION PANCREATIC CANCER COLLECTIVE STAND UP TO CANCER
STAND UP TO CANCER®
PANCREATIC CANCER CANADA

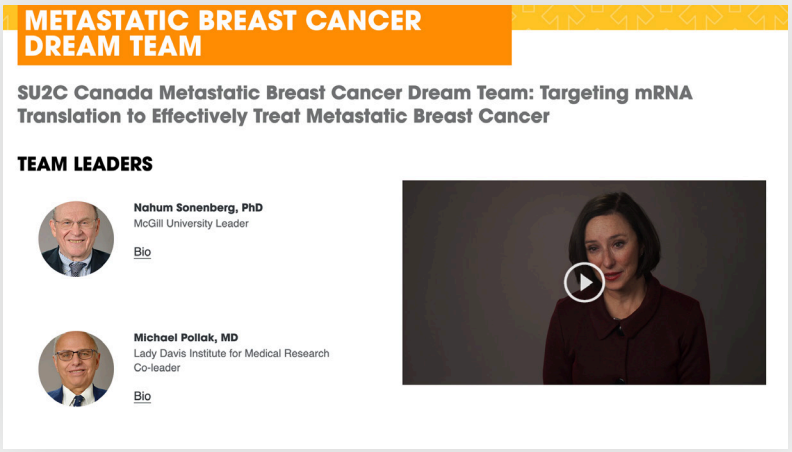
Targeting mRNA Translation to Effectively Treat Metastatic Breast Cancer

GRANT TERM: July 2019 – September 2022, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Nahum Sonenberg, PhD, McGill University

Team Co-leader:
Michael N. Pollak, MD, Lady Davis Institute for Medical Research



Learn more about this team at the SU2C website.

Principals:

- Lynne-Marie Postovit, PhD, Queens University
- Poul H. B. Sorenson, MD, PhD, BC Cancer Research Institute

Project Manager:

- Harvey W. Smith, PhD, McGill University, harvey.smith2@mcgill.ca

Advocates:

- Candace Cook
- Lynn Gentile, Lynn and Joe Gentile Hope Fund

Purpose:

The SU2C Canada Metastatic Breast Cancer Dream Team focused on a novel drug candidate that blocks abnormal translation: the dual MNK1/2 inhibitor eFT508 (tomivosertib). A Phase IB trial of eFT508 in eligible patients with metastatic breast cancer (any subtype) not responsive to standard-of-care therapies was completed.

Specific Aims:

AIM 1. Run clinical trial of the MNK inhibitor EFT508 in patients with metastatic breast cancer.

AIM 2. Conduct pharmacodynamic studies of the MNK inhibitor EFT508 in patients with metastatic breast cancer.

SU2C CANADA METASTATIC BREAST CANCER DREAM TEAM DT5745

Key Progress:

The Team established the safety and tolerability of the tomivosertib/paclitaxel combination, in the first clinical trial that tested the combination of a MNK inhibitor with a cytotoxic agent. Preliminary correlative analyses showed that cytotoxic immune cells were recruited to metastatic tumors in tomivosertib-treated patients.

Clinical Trial:

Trial to Assess the Safety, Pharmacodynamic Effects, Pharmacokinetics, and Efficacy of the MNK Inhibitor Tomivosertib (eFT508) in Combination With Paclitaxel, Following a Run-In Period of Tomivosertib Monotherapy, in Patients With Advanced Breast Cancer; NCT04261218; Completed

FUNDERS:

STAND UP TO CANCER®

Canadian Cancer Society

CIHR IRSC Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

Tailoring CAR-based Immunotherapy Strategies to T-Cell Lymphoma

GRANT TERM: March 2019 – August 2023, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Helen E. Heslop, MD, Baylor College of Medicine

Team Co-leader:
Gianpietro Dotti, MD, University of North Carolina at Chapel Hill

Learn more about this team at the SU2C website.

Principals:

- Bayard L. Powell, MD, Wake Forest University Health Sciences
- Katy Rezvani, MD, PhD, The University of Texas MD Anderson Cancer Center

Project Manager:

- Reynaldo Herrera, Baylor College of Medicine, Reynaldo.Herrera@bcm.edu

Advocates:

- Gustavo Ayala, University of Texas Health Science Center at Houston
- Bambi Grilley, Baylor College of Medicine
- Ruth Sorelle, Baylor College of Medicine
- Patty Spears, University of North Carolina at Chapel Hill

Purpose:

The T-Cell Lymphoma Dream Team is testing the safety and potency of different types of CAR-engineered immune cells directed to different target molecules on the lymphoma cells. In addition to CAR-engineered immune cell-based therapies, they are also working to determine whether such therapy can be made available as a banked "off-the-shelf" product.

Specific Aims:

AIM 1. Conduct a series of phase I clinical trials of CAR-ACT targeting different T-cell antigens in patients with resistant TCLs.

AIM 2. Identify factors that shape responses to CAR-ACT and thus inform the next generation of immune cell engineering.

AIM 3. Test additional modifications of CAR-ACT to improve their function against resistant TCLs.

SU2C MEG VOSBURG T-CELL LYMPHOMA DREAM TEAM DT6164

Key Progress:

The Team continues to enroll patients in their clinical trial testing the sequential administration of CART cells targeted to a protein called CD30. This sequential administration is being explored to prolong the therapeutic benefit of CAR T-cells. They developed an alternative clinically applicable method to manufacture functional CD7 CAR Tcells which can resist CAR-directed fratricide,. After confirming that the CD7 CAR T cells manufactured using this method can expand, persist and lead to tumor responses without evidence of fratricide, the Team has moved forward with this approach in a clinical trial called CRIMSON-NE. In addition, the team has developed a novel strategy to genetically modify cord blood (CB)-derived natural killer (NK) cells to express a CAR. In light of promising laboratory results, they are designing a phase I trial to study the safety and efficacy of these CAR-NK cells.

Clinical Trials:

Phase I Study of Relapsed CD30 Expressing Lymphoma Treated With CD30 CAR T Cells (RELY-30); NCT02917083; Recruiting

Phase I Study of the Administration of T Lymphocytes Co-expressing the CD30 Chimeric Antigen Receptor (CAR) and CCR4 for Relapsed/Refractory CD30+ Hodgkin Lymphoma and CD30+ Non-Hodgkin Lymphoma; NCT03602157; Recruiting

Phase II Study of the Administration of T Lymphocytes Expressing the CD30 Chimeric Antigen Receptor (CAR) for Relapsed/Refractory CD30+ Peripheral T-Cell Lymphoma; NCT04083495; Recruiting

Phase I Study Evaluating the Safety and Activity of Allogeneic Chimeric Antigen Receptor Epstein-Barr Virus-Specific T Lymphocytes (CD30.CAR-EBVSTs) in Patients With Relapsed or Refractory CD30-Positive Lymphomas; NCT04288726; Recruiting

Cell Therapy for High Risk T-cell Malignancies Using CD7-Specific CAR Expressed on Non-Edited T Cells (CRIMSON-NE);NCT03690011; Recruiting

FUNDERS:

STAND UP TO CANCER

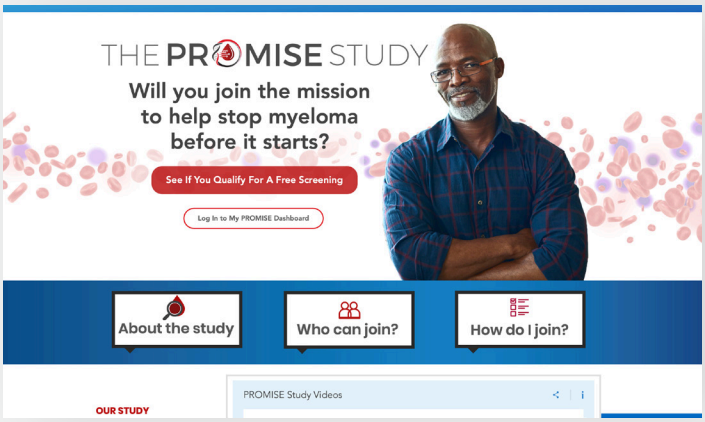
Screening and Interception of Precursor Myeloma

GRANT TERM: September 2018 – August 2022, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Irene M. Ghobrial, MD,
Dana-Farber Cancer Institute

Team Co-leader:
Ivan M. Borrello, MD,
Johns Hopkins University
School of Medicine



Learn more about this team at the SU2C website.

Principals:

- Gad A. Getz, PhD,
  Broad Institute
- Jeremiah A. Johnson, PhD,
  Massachusetts Institute of Technology
- Prashant Kapoor, MBBS,
  Mayo Clinic
- Timothy R. Rebbeck, PhD,
  Harvard T. H. Chan School of Public Health

Advocates:

- Jenny M. Ahlstrom, Crowd Care Foundation
- Cheryl A. Boyce (deceased)
- Marie Cherisol
- Rebecca A. Nutley
- Kelly Smith
- Yaphet Smith

Project Manager:

- Julia Colchie,
  Dana-Farber Cancer Institute,
  julia_colchie@dfci.harvard.edu

SU2C MULTIPLE MYELOMA DREAM TEAM DT6046

Purpose:

The SU2C Multiple Myeloma Dream Team's overarching hypothesis is that early detection of precursor myeloma conditions (MGUS/SM) in a high-risk population, along with a good understanding of the molecular and immune factors that lead to disease progression, will lead to effective strategies that intercept disease progression and improve survival.

Specific Aims:

AIM 1. Establish a screen-detected prospective cohort study of monoclonal gammopathy of undetermined significance (MGUS)/smoldering multiple myeloma (SMM) patients at risk for multiple myeloma (MM) (Predicting Progression of Developing Myeloma in a High-Risk Screened Population, PROMISE).

AIM 2. Dissect genomic characteristics of clonal evolution from MGUS/SMM to MM and germline variants of high-risk individuals at risk of developing MGUS/SMM.

AIM 3. Evaluate the role of race, obesity, and health-related comorbidities on progression from pre-MM states to MM.

AIM 4. Define the permissive tumor microenvironment in MGUS/SMM.

AIM 5. Develop novel imaging and therapeutic approaches to detect and intercept disease progression at the precursor stages of the disease.

Key Accomplishments:

The Team's PROMISE Study is the largest US screening study, screening individuals over age 30 who are at higher risk for myeloma and its precursors, such as individuals of African descent and individuals who have a first degree relative with a blood cancer. The Team observed a prevalence of 36% monoclonal gammopathies in the high-risk population screened age 50 and older and identified a new category of monoclonal gammopathy termed monoclonal gammopathy of indeterminant potential, or MGIP, in 29% of high-risk individuals age 50 and older. The Team used single-cell RNA sequencing, whole-genome sequencing, ATAC sequencing, plasma proteomic profiling, and MALDI-TOF mass spectrometry to analyze the molecular underpinnings of disease in tumor and immune cells. They differentiated malignant from normal plasma cells, uncovered novel associations between tumor immunophenotype and cytogenetics, developed a framework to prioritize novel targets for therapeutics development, described differences between marrow-resident and circulating plasma cells, and discovered abnormal proliferation in the marrow- resident normal plasma cells of patients.

Clinical Trial:

Predicting Progression of Developing Myeloma in a High-Risk Screened Population (PROMISE); NCT03689595; Recruiting

FUNDERS:

STAND UP TO CANCER

Optum

SU2C-LUNGEVITY FOUNDATION-AMERICAN LUNG ASSOCIATION LUNG CANCER INTERCEPTION DREAM TEAM DT6045

Intercept Lung Cancer Through Immune, Imaging, and Molecular Evaluation (InTIME)

GRANT TERM: March 2018 – February 2023, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Avrum E. Spira, MD,
Boston University

Team Co-leader:
Steven M. Dubinett, MD,
University of California,
Los Angeles

DREAM TEAMS

Research > Research Portfolio > Dream Teams > Lung Cancer Interception/INTIME Dream Team

SU2C-LUNGEVITY FOUNDATION-AMERICAN LUNG ASSOCIATION LUNG CANCER INTERCEPTION DREAM TEAM: INTERCEPT LUNG CANCER THROUGH IMMUNE, IMAGING, AND MOLECULAR EVALUATION (INTIME)

Grant Term: March 2018-February 2022

With innovative technologies and unique patient populations, the SU2C–LUNGevity Foundation–American Lung Association (ALA) Lung Cancer Interception Dream Team seeks to understand how early lung cancer develops and is testing methods to block this development using several complementary approaches. The insights gained from this team's work will enable the medical and research communities to make major strides in the effort to thwart lung

Learn more about this team at the SU2C website.

Principals:

- Charles Swanton, MD, PhD, Francis Crick Institute
- Carina Mari Aparici, MD, Stanford University
- Julie R. Brahmer, MD, Johns Hopkins University
- Matthew L. Meyerson, MD, PhD, Dana-Farber Cancer Institute

Project Manager:

- Erin E. Kane, PhD, Boston University, erinkane@bu.edu

Advocates:

- Marcia Horn, JD, International Cancer Advocacy Network
- Kim Norris, Lung Cancer Foundation of America

Purpose:

The Lung Cancer Interception Dream Team is applying novel molecular, imaging, and immunological approaches prospectively collected biospecimens to understand the biology of lung cancer precursor lesions, early-stage tumors, and the associated airway field to develop non-invasive biomarkers that predict progression, recurrence or response to therapy. The hypothesis is that premalignant lesions bear specific genomic and transcriptomic aberrations, and a subset of these lesions escape immune surveillance and progress to invasive cancer.

SU2C-LUNGEVITY FOUNDATION-AMERICAN LUNG ASSOCIATION LUNG CANCER INTERCEPTION DREAM TEAM DT6045

Specific Aims:

AIM 1. Establish a Pre-Cancer Genome Atlas (PCGA) to identify genomic, transcriptomic, and immune determinants of lung squamous and adenomatous premalignancy.

AIM 2. Identify molecular and imaging markers that distinguish malignant from benign indeterminate pulmonary nodules and circulating DNA markers that predict tumor recurrence.

AIM 3A. Develop molecular biomarkers to enable precision interception approaches in ongoing clinical trials of lung cancer interception.

AIM 3B. Discover baseline biomarkers predictive of therapeutic response to neoadjuvant therapy with immune checkpoint inhibitors and temporal markers of therapeutic efficacy.

AIM 3C. Assess therapeutic efficacy of adjuvant chemotherapy and immunotherapy among patients with subclinical evidence of lung cancer recurrence using ctDNA.

Key Progress:

The Team assembled unique cohorts of premalignant lung squamous and adenocarcinoma lesions. Analyses of these samples indicated that the immune microenvironment is an important determinant of premalignant progression for both lung squamous and adenocarcinoma. As part of the Team's effort to develop diagnostic tools to detect lung cancer early, they have been analyzing nasal swabs. Preliminary results showed that nasal gene expression was similar in lung cancer patients regardless of whether they smoked or not. The Team developed an assay for detecting circulating DNA called the Archer Diagnostics MRD assay. This assay has been used in two international Phase III trials (MERMAID-01 and MERMAID-02) where the presence of ctDNA was used to determine whether the patient will be given additional treatment (combination chemotherapy and immunotherapy, immunotherapy or chemotherapy alone).

Clinical Trials:

Neoadjuvant Nivolumab, or Nivolumab in Combination with Ipilimumab, in Resectable Non-small Cell Lung Cancer; NCT02259621; Recruiting

18F-FSPG PET/CT and Integrated Biomarkers for Early Lung Cancer Detection in Patients With Indeterminate Pulmonary Nodules; NCT03824535; Recruiting

Phase III, Randomized, Multicenter, Double-Blind, Placebo-Controlled Study to Determine the Efficacy of Adjuvant Durvalumab in Combination With Platinum-Based Chemotherapy in Completely Resected Stage 2-3 NSCLC (MERMAID-1); NCT04385368; Active, not recruiting

FUNDERS:

American Lung Association.

LUNGEVITY
Find it. Treat it. Live.

SU2C–LUSTGARTEN FOUNDATION PANCREATIC CANCER INTERCEPTION DREAM TEAM DT6047

Intercepting Pancreatic Cancer in High-Risk Cohorts

GRANT TERM: February 2018 – July 2023, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Anirban Maitra, MBBS, The University of Texas MD Anderson Cancer Center

Team Co-leader:
Michael G. Goggins, MD, Johns Hopkins University

Team Co-leader:
Scott M. Lippman, MD, University of California, San Diego

Learn more about this team at the SU2C website.

Principals:

- Tyler Jacks, PhD, Massachusetts Institute of Technology
- Gloria M. Petersen, PhD, Mayo Clinic
- Sapna Syngal, MD, Dana-Farber Cancer Institute

Project Manager:

- Pamela Constantinou Papadopoulos, PhD, The University of Texas MD Anderson Cancer Center, pcpapadopoulos@mdanderson.org

Advocates:

- Barbara J. Kenner, PhD, Kenner Family Research Fund
- Scott Nelson

Purpose:

The SU2C–Lustgarten Foundation Pancreatic Cancer Interception Dream Team's goal is to intercept pancreatic cancer in high-risk patients through careful early detection and targeted immune prevention. Working first with relatives of people with pancreatic cancer, this team seeks to create a test to screen people at risk for pancreatic cancer to potentially detect cancer earlier and offer the most effective treatment options.

SU2C-LUSTGARTEN FOUNDATION PANCREATIC CANCER INTERCEPTION DREAM TEAM DT6047

Specific Aims:

AIM 1. Enhance access to germline testing and screening protocols for cancer interception in high-risk cohorts and combine this with novel imaging algorithms to diagnose early PDAC lesions that are currently undetectable.

AIM 2. Intercept pancreatic cancer in high-risk cohorts using targeted immune prevention.

AIM 3. Develop a blood test for identifying individuals at risk for PDAC who would be candidates for early detection using imaging.

Key Progress:

The Team embarked on the GENetic Education Risk Assessment and Testing (GENERATE) study, a study that was designed to enhance access to germline testing and screening in high-risk cohorts. Close to 90% of the 601 participants who were assigned to one of two study arms opted to undergo genetic screening. In addition, the Team is testing the potential of a peptide vaccine in individuals who have a higher risk of developing pancreatic cancer. Preliminary results confirmed that the immune system of these vaccinated individuals was activated against KRAS mutations. The Team continues to develop a blood-based test that can be used to predict whether an individual will develop pancreatic cancer. The sensitivity of the test is improving as more biomarkers are analyzed.

Clinical Trials:

Pooled Mutant KRAS-Targeted Long Peptide Vaccine Combined with Nivolumab and Ipilimumab for Patients with Resected MMR-p Colorectal and Pancreatic Cancer; NCT04117087; Recruiting

Mutant KRAS-Targeted Long Peptide Vaccine for Patients at High Risk of Developing Pancreatic Cancer; NCT05013216; Recruiting

GENetic Education Risk Assessment and TEsting Study (GENERATE); NCT03762590; Active, not recruiting

FUNDERS:

LUSTGARTEN FOUNDATION PANCREATIC CANCER COLLECTIVE
STAND UP TO CANCER

Optum

Immunogenomics to Create New Therapies for High-Risk Childhood Cancers

GRANT TERM: December 2017 – May 2022, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
John M. Maris, MD, Children's Hospital of Philadelphia

Team Co-leader:
Crystal L. Mackall, MD, Stanford University

DREAM TEAMS

Research > Research Portfolio > Dream Teams > Intractable Pediatric Cancers Dream Team

ST. BALDRICK'S FOUNDATION–SU2C PEDIATRIC CANCER DREAM TEAM: IMMUNOGENOMICS TO CREATE NEW THERAPIES FOR HIGH-RISK CHILDHOOD CANCERS

Grant Term: December 2017 - November 2021

The St. Baldrick's Foundation–SU2C Pediatric Cancer Dream Team is a collaboration among pediatric cancer researchers in the largely disparate disciplines of cancer genomics and immunotherapeutics. The team focuses on developing new, targeted immunotherapeutics—ways to engage the body's own immune system in the fight against childhood cancers that are the most difficult to cure. This team's work builds on research done by the first

Learn more about this team at the SU2C website.

Principals:

- Nabil M. Ahmed, MD, Baylor College of Medicine
- Lia Gore, MD, University of Colorado
- Rimas Orentas, PhD, Seattle Children's Hospital
- Paul M. Sondel, MD, PhD, University of Wisconsin, Madison
- Poul H. B. Sorenson, MD, PhD, BC Cancer Research Institute
- Michael D. Taylor, MD, PhD, The Hospital for Sick Children

Investigators:

- Kenneth B. DeSantes, MD, University of Wisconsin, Madison
- Dimiter Dimitrov, PhD, University of Pittsburgh
- Terry J. Fry, MD, University of Colorado
- Stephan Grupp, MD, PhD, Children's Hospital of Philadelphia
- Rosandra N. Kaplan, MD, National Cancer Institute
- Michelle Monje, MD, Stanford University
- Daniel Morgenstern, MA, MBBChir, PhD, The Hospital for Sick Children
- Julie R. Park, MD, Seattle Children's Hospital
- D. William Parsons, MD, PhD, Texas Children's Hospital
- Kirk R. Schultz, MD, BC Cancer Research Institute
- Nirali N. Shah, MD, MHSc, National Cancer Institute

Project Manager:

- Jennifer L. Baldi, Children's Hospital of Philadelphia, baldij@email.chop.edu

KEY PERSONNEL CONT'D:

Advocates:

- Kelly Cotter, University of Wisconsin
- Kelly Forebough, Seattle Children's Hospital
- Bambi J. Grilley, Baylor College of Medicine
- Gavin Lindberg, Children's Hospital of Philadelphia
- Melanie Frost Moll, Baylor College of Medicine
- Antonia Palmer, The Hospital for Sick Children
- Kevin Reidy, University of Colorado
- Carlos Sandi, Stanford University and the National Cancer Institute
- Lori Schultz, University of Wisconsin
- Patrick J. Sullivan, LLB, BC Cancer Research Institute

Purpose:

The St. Baldrick's Foundation–SU2C Pediatric Cancer Dream Team brings together pediatric cancer researchers in cancer genomics and immunotherapeutics. The overall focus is to identify lineage restricted cell surface molecules not present on normal tissues which may be targeted with synthetic immunotherapeutics. The objective of this multi-institutional team from ten institutions is to develop and conduct paradigm changing early phase clinical trials of immunotherapies.

Specific Aims:

AIM 1. Discover and validate cell surface proteins as immunotherapeutic targets for high-risk pediatric cancers.

AIM 2. Perform preclinical optimization of candidate immunotherapeutics and IND-enabling studies to support the development of clinical trials for pediatric cancers with few therapeutic options.

AIM 3. Conduct pivotal pediatric cancer immunotherapy trials.

Key Progress:

The Team set out to develop and conduct early phase clinical trials of immunotherapies directed toward prioritized targets emerging from the first phase of their Dream Team project. In addition to continued support from St. Baldrick's and matching funds from their home institutions, the Team has leveraged two recent NCI initiatives emerging from the Biden Moonshot Initiative to accelerate efforts by creating two research networks: 1) Pediatric Cancer Immunotherapy Discovery and Development network (PI-DDN) and 2) the Pediatric Cancer Immunotherapy Trials Network (PedCITN). The Team has 45 early phase clinical trials in its Dream Team portfolio and has enrolled 1,371 children. They continue to design novel CAR T cells for a number of pediatric cancers plus a variety of tumor cell targets. The Team is generating and evaluating antibody-drug conjugates and antibody-radioconjugates with multiple payloads.

Clinical Trials:

Phase I Study of HER2-Specific CAR T Cell Locoregional Immunotherapy for HER2-Positive Recurrent/Refractory Pediatric Central Nervous System Tumors; NCT03500991; Recruiting

Phase I Dose-Escalation Study of CD19/CD22 Chimeric Antigen Receptor T Cells in Children and Young Adults With Recurrent or Refractory CD19/CD22-Expressing B-Cell Malignancies; NCT03448393; Recruiting

ST. BALDRICK'S FOUNDATION–SU2C PEDIATRIC CANCER DREAM TEAM DT6065

Clinical Trials Cont'd:

Pediatric and Young Adult Leukemia Adoptive Therapy (PLAT)-06: Phase I/II Study of CD19-Specific CAR T Cells With a Fully Human Binding Domain for CD19+ Leukemia or Lymphoma; NCT03684889; Active, not recruiting

Phase 1 Study of EGFR806-Specific CAR T Cell Locoregional Immunotherapy for EGFR-Positive Recurrent or Refractory Pediatric Central Nervous System Tumors; NCT03638167; Recruiting

Phase I Study of EGFR806 CAR T Cell Immunotherapy for Recurrent/Refractory Solid Tumors in Children and Young Adults; NCT03618381; Recruiting

Phase II Study of Humanized CD19-Directed Chimeric Antigen Receptor–Modified T Cells (huCART19) for Very High Risk Subsets of B-Cell Acute Lymphoblastic Leukemia (B-ALL); NCT03792633; Recruiting

Treatment of CMV Infections With Viral-Specific T Cells Against CMV in Pediatric and Adult Immunocompromised Patients or Recipients of Allogeneic Stem Cell Transplantation; NCT03798301; Recruiting

Phase I Dose-Escalation Study Evaluating Safety and Tolerability of Viral-Specific T Cells Against CMV in Adult Solid Organ Transplant Recipients; NCT03950414; Recruiting

GD2-CAR PERSIST: Production and Engineering of GD2-Targeted, Receptor-Modified T Cells (GD2CART) for Sarcoma and Neuroblastoma to Increase Systemic Tumor Exposure; NCT04539366; Recruiting

An Open-Label Dose-Escalation, Efficacy, and Safety Study of CLR 131 in Children, Adolescents, and Young Adults With Select Solid Tumors, Lymphoma, and Malignant Brain Tumors; NCT03478462; Recruiting

Phase I Study of B7-H3-Specific CAR T Cell Locoregional Immunotherapy for Diffuse Intrinsic Pontine Glioma/Diffuse Midline Glioma and Recurrent or Refractory Pediatric Central Nervous System Tumors; NCT04185038; Recruiting

Phase I/II Study of Anti-CD33 Chimeric Antigen Receptor–Expressing T Cells (CD33CART) in Children and Young Adults With Relapsed/Refractory Acute Myeloid Leukemia; NCT03971799; Recruiting

Phase I Study of B7H3 CAR T Cell Immunotherapy for Recurrent/Refractory Solid Tumors in Children and Young Adults; NCT04483778; Recruiting

Phase Ib Clinical Trial of Autologous CD22 Chimeric Antigen Receptor (CAR) T Cells in Children and Young Adults With Recurrent or Refractory B-Cell Malignancies; NCT04088864; Suspended

Phase I Clinical Trial of Autologous GD2 Chimeric Antigen Receptor (CAR) T Cells (GD2CART) for Diffuse Intrinsic Pontine Gliomas (DIPG) and Spinal Diffuse Midline Gliomas (DMG); NCT04196413; Recruiting

Phase I Trial of Autologous HER2-Specific CAR T Cells in Pediatric Patients With Refractory or Recurrent Ependymoma; NCT04903080; Recruiting

FUNDERS:

St. Baldrick's FOUNDATION
Conquer Childhood Cancers

Optum

Targeting Genomic, Metabolic, and Immunological Vulnerabilities of Colorectal Cancer

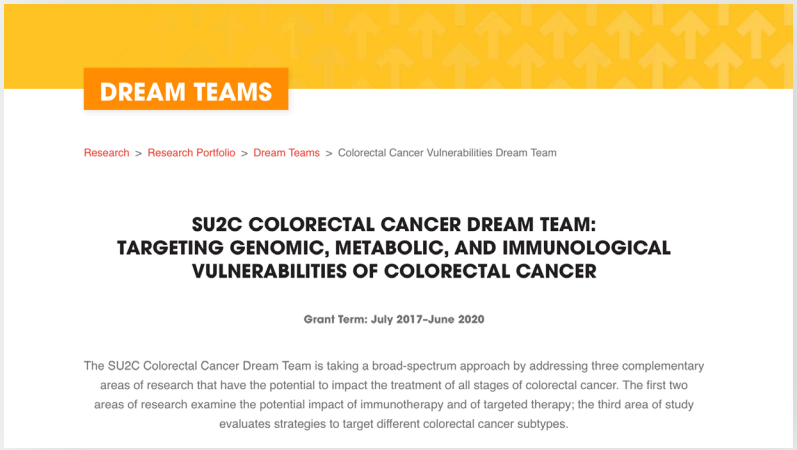
GRANT TERM: July 2017 – June 2023, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Luis A. Diaz Jr., MD,
Memorial Sloan Kettering Cancer Center

Team Co-leader:
Lewis C. Cantley, PhD,
Weill Cornell Medical College

Team Co-leader:
Zhenghe J. Wang, PhD,
Case Western Reserve University



Learn more about this team at the SU2C website.

Principals:

- Nilofer S. Azad, MD,
  Johns Hopkins University
- Ryan B. Corcoran, MD, PhD,
  Massachusetts General Hospital

Project Manager:

- Mitesh Patel,
  Memorial Sloan Kettering Cancer Center
  patelm2@mskcc.org

Advocates:

- Erika Brown, Paltown Development Foundation
- Anjee Q. Davis, Fight Colorectal Cancer
- Joanna R. Fuchs, MD, Dana-Farber/ Harvard SPORE
- Manju George, Paltown Development Foundation
- Ivelisse Page, Believe Big
- Martha Raymond, Michael's Mission
- Nancy Roach, Fight Colorectal Cancer
- Steven Schwarze, Paltown Development Foundation

Purpose:

The SU2C Colorectal Cancer Treatment Dream Team is working to integrate molecular science, cancer genomics, and metabolomics with targeted and immune approaches for more effective treatments, investigating new approaches to treatments for colorectal cancer, and investigating "precision prevention" strategies for colorectal cancer, thereby preventing cancer recurrence after initial treatments.

SU2C COLORECTAL CANCER DREAM TEAM DT6044

Specific Aims:

AIM 1. Harness the immune system to treat colorectal cancer.

AIM 2. High impacted targeted pathway blockade in colorectal cancer.

AIM 3. Develop high-dose vitamin C as a therapy for KRAS/BRAF mutant colorectal cancer.

AIM 4. Target the glutamine dependence of PIK3CA mutant CRC in combination therapy with novel glutaminase inhibitor CB-839 plus capecitabine.

AIM 5. "Precision prevention" for colorectal cancer.

Key Progress:

The team tested an approach to promote an increase in tumor mutation burden and augment anti-tumor immune responses that could be intensified by administration of immune checkpoint inhibitors. The Team has also launched a prospective study of the clinical utility of minimal residual disease (MRD) detection using circulating tumor DNA (ctDNA) assays for stage 3colorectal cancer. The Team is also running a single-arm, Phase 2 study to evaluate the effect of 6 months of neoadjuvant dostarlimab-gxly treatment in patients with dMMR/MSI-H locally advanced rectal cancer. At the 2022 ASCO Annual Meeting and in the NEJM, the Team reported clinical complete responses in all of the first 14 patients. During its tenure, the Team has accrued 619 subjects to therapeutic trials, authored more than 230 manuscripts, and secured one patent. This team's work contributed 2020 FDA approval of pembrolizumab (Merck) for microsatellite instability-high or mismatch repair deficient metastatic colorectal cancer.

Clinical Trials:

Phase II Study of MK-3475 in Patients With Microsatellite Unstable (MSI) Tumors; NCT01876511; Completed

Phase III Study of Pembrolizumab (MK-3475) Versus Chemotherapy in Microsatellite Instability-High (MSI-H) or Mismatch Repair Deficient (dMMR) Stage 4 Colorectal Carcinoma (KEYNOTE-177); NCT02563002; Active, not recruiting

Phase I/II Study of CB-839 and Capecitabinein Patients With Advanced Solid Tumors and Fluoropyrimidine Resistant PIK3CA Mutant Colorectal Cancer; NCT02861300; Active, not recruiting

Nivolumab and Ipilimumab and Radiation Therapy in Microsatellite Stable (MSS) and Microsatellite Instability (MSI) High Colorectal and Pancreatic Cancer; NCT03104439; Recruiting

Phase II Study of High-Dose Vitamin C Intravenous Infusion in Patients With Resectable or Metastatic Solid Tumor Malignancies; NCT03146962; Recruiting

Phase II Study of Dabrafenib and Trametinib in Combination With PDR001 in Patients With BRAFV600E Metastatic Colorectal Cancer; NCT03668431; Recruiting

Phase Ib/II Open-Label Dose Escalation Study of Entinostat in Combination With Pembrolizumab in Patients With Non-small Cell Lung Cancer, With Expansion Cohorts in Patients With Non-small Cell Lung Cancer, Melanoma, and Mismatch Repair–Proficient Colorectal Cancer; NCT02437136; Withdrawn

Phase I/II Study of PI3Kinase Inhibition (Copanlisib) and Anti-PD-1 Antibody Nivolumab in Relapsed/ Refractory Solid Tumors With Expansions in Mismatch Repair–Proficient (MSS) Colorectal Cancer; NCT03711058; Recruiting

Early Identification and Treatment of Occult Metastatic Disease in Stage 3 Colon Cancer; NCT03803553; Recruiting

Phase II Study of Induction PD-1 Blockade in Subjects With Locally Advanced Mismatch Repair–Deficient Solid Tumors; NCT04165772; Recruiting

Phase II Study of Temozolomide, Cisplatin, and Nivolumab in MMR-Proficient Colorectal Cancer; NCT04457284; Recruiting

FUNDERS:

STAND UP TO CANCER

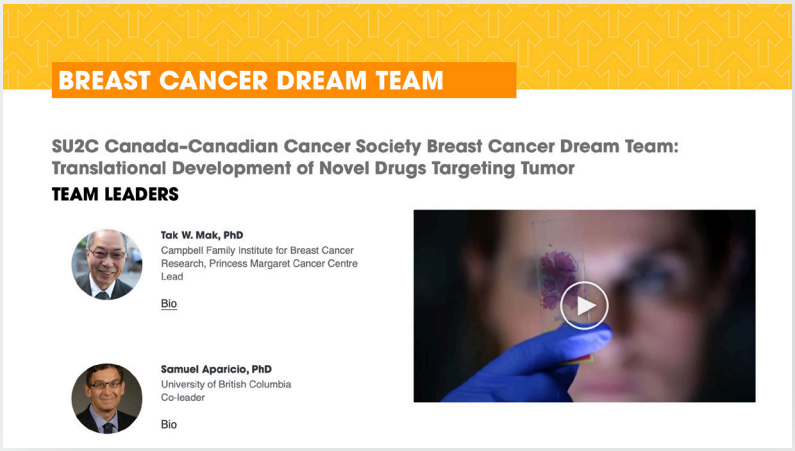
Translational Development of Novel Drugs Targeting Tumor Vulnerabilities

GRANT TERM: January 2016 – June 2022, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Tak W. Mak, PhD,
Campbell Family Institute for Breast Cancer Research at Princess Margaret Cancer Centre

Team Co-leader:
Samuel Aparicio, BM, BCh, PhD,
University of British Columbia



Learn more about this team at the SU2C website.

Principals:

- Karen A. Gelmon, MD,
  British Columbia Cancer Agency
- Morag Park, PhD,
  Goodman Cancer Research Centre and McGill University
- Kathleen I. Pritchard, MD,
  University of Toronto, Sunnybrook Health Sciences Centre of Toronto

Project Manager:

- Thorsten Berger, PhD,
  University Health Network
  Thorsten.Berger@uhnresearch.ca

Advocates:

- Wendie den Brok, MD, BC Cancer Agency Research Centre
- Randy Mellon, Think Pink Direct
- Zuri Scrivens, The Beautiful Gift

Purpose:

The goal of the SU2C Canada–Canadian Cancer Society Breast Cancer Dream Team was to develop new treatments for triple-negative/basal-like breast cancer (TNBC) and other aggressive breast cancers which currently need more efficacious targeted therapies. The Team developed three biomarker-driven drugs: CFI-400945 (PLK4 inhibitor), CFI-402257 (TTK inhibitor), and CX5461 (G-quadruplex binder).

SU2C CANADA–CANADIAN CANCER SOCIETY BREAST CANCER DREAM TEAM DT6144

Specific Aims:

AIM 1. Pursue basic and translational development of CFI-400945, CX5461, and CFI-402257.

AIM 2. Conduct proof-of-concept clinical trials of CFI-400945, CX5461, and CFI-402257.

Key Accomplishments:

Discoveries made in the laboratory component of the project identified new opportunities to expand the use of CFI-400945 and CFI-402257 into the large group of patients with metastatic breast cancer resistant to current standard first line treatment (CDK4/6 inhibitors). The Team have completed accrual to their clinical trials that were carried out in collaboration with the Canadian Cancer Trials Group. They identified safe and tolerable recommended Phase 2 doses of each agent, as well as combinations of CFI-400945 and durvalumab, and CFI-402257 and paclitaxel. Promising clinical activity, including durable responses were observed with all agents in patients with metastatic breast cancer. These results have supported the further development of these agents in ongoing and planned biomarker-directed trials.

Clinical Trials:

Phase I Study of CX5461; NCT02719977; Completed

Open-Label Dose-Escalation, Safety, and Pharmacokinetic Study of CFI-400945 Fumarate Administered Orally to Patients With Advanced Cancer; NCT01954316; Completed

Open-Label Dose-Escalation, Safety, and Pharmacokinetic Study of CFI-402257 Administered Orally to Patients With Advanced Solid Tumors; NCT02792465; Active, not recruiting

Phase Ib and Open-Label Phase II Study of CFI-402257 in Combination With Weekly Paclitaxel in Patients With Advanced/Metastatic HER2-Negative Breast Cancer; NCT03568422; Completed

Phase II Study of CFI-400945 in Patients With Advanced/Metastatic Breast Cancer; NCT03624543; Active, not recruiting

Phase II Study of CFI-400945 and Durvalumab in Patients With Advanced/Metastatic Triple-Negative Breast Cancer (TNBC); NCT04176848; Completed

FUNDERS:

STAND UP TO CANCER

Canadian Cancer Society

CIHR IRSC Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

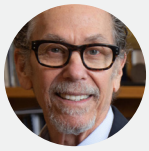
Reprogramming of Transcriptional Circuitry to Control Pancreatic Cancer

GRANT TERM: January 2016 – June 2020, administered by the American Association for Cancer Research

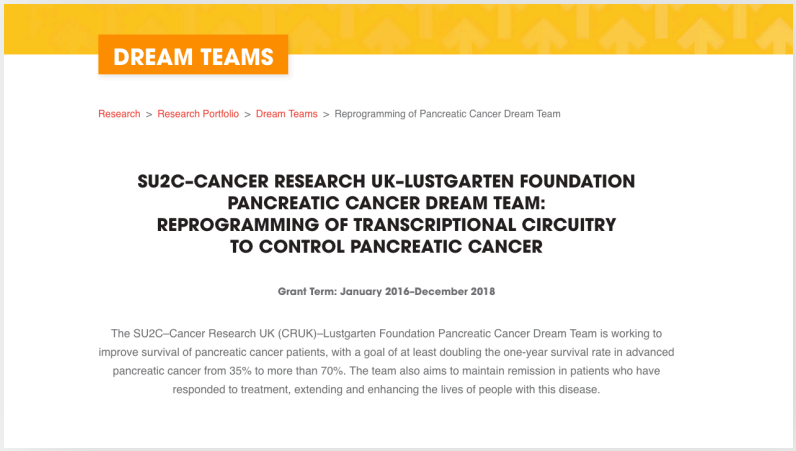
KEY PERSONNEL:

Team Leader:
Daniel D. Von Hoff, MD, Translational Genomics Research Institute (TGEN)

Team Co-leader:
Gerard I. Evan, PhD, University of Cambridge



Team Co-leader:
Ronald M. Evans, PhD, Salk Research Institute for Biological Studies


DREAM TEAMS

Research > Research Portfolio > Dream Teams > Reprogramming of Pancreatic Cancer Dream Team

SU2C–CANCER RESEARCH UK–LUSTGARTEN FOUNDATION
PANCREATIC CANCER DREAM TEAM:
REPROGRAMMING OF TRANSCRIPTIONAL CIRCUITRY
TO CONTROL PANCREATIC CANCER

Grant Term: January 2016–December 2018

The SU2C–Cancer Research UK (CRUK)–Lustgarten Foundation Pancreatic Cancer Dream Team is working to improve survival of pancreatic cancer patients, with a goal of at least doubling the one-year survival rate in advanced pancreatic cancer from 35% to more than 70%. The team also aims to maintain remission in patients who have responded to treatment, extending and enhancing the lives of people with this disease.

Learn more about this team at the SU2C website.

Principals:

- David J. Propper, MBChB, MD, PhD, Barts Cancer Institute and London NHS Trust
- Joshua D. Rabinowitz, MD, PhD, Princeton University

Project Managers:

- Jatan Clark, TGEN
- Stacie Smith, TGEN

Advocates:

- Suzanne Berenger, Bain & Company, Inc.
- Devah Pager, PhD, Harvard University (deceased)
- Jill E. Pechacek, MD (deceased)
- Howard Young, General Wholesale Beer Company

Purpose:

The Dream Team's goal was to significantly improve pancreatic cancer patient survival by targeting super-enhancer (SE) regulated regenerative programs in the pancreas, including cellular communication between the epithelial compartment (including cancer stem cells), stromal compartment, and immune compartment.

SU2C-CANCER RESEARCH UK-LUSTGARTEN FOUNDATION PANCREATIC CANCER DREAM TEAM DT6014

Specific Aims:

AIM 1. Define super-enhancer networks in the cellular milieu of pancreatic cancer.

AIM 2. Determine the mechanisms that mediate crosstalk between super-enhancer networks both within cells and between them, including metabolic dependencies.

AIM 3. Determine the utility of super-enhancer disruption in treating pancreatic cancer. (Work on this Aim is continuing as an SU2C subproject.)

Key Accomplishments:

The Team showed how super-enhancer networks control tumor behavior and the behavior of individual cell types within the tumor microenvironment. These findings support the team's model of pancreatic cancer as a normal regenerative program that has been "hacked" into, suggesting the possibility of reversing the program. Therapeutic targets identified include LIF (stromal compartment), MICAL2 (tumor compartment), ROR gamma, and Musashi (stem cell compartment)). Building on these findings, the investigators developed therapeutic strategies. Studies on metabolism have begun to reveal pancreatic cancer sensitivity to metabolic perturbations ("electron overloading," ketogenic diet). A continuing clinical trial led by Dr. Wolpin is evaluating the therapeutic potential of targeting the Vitamin D receptor with paricalcitol.

Clinical Trials:

Phase II Pilot Trial of Nivolumab + Albumin-Bound Paclitaxel +Paricalcitol + Cisplatin + Gemcitabine (NAPPCG) in Patients With Previously Untreated Metastatic Pancreatic Ductal Adenocarcinoma; NCT02754726; Active, not recruiting

Phase II Study of Cabiralizumab (BMS-986227, FPA008) Administered in Combination With Nivolumab (BMS-936558) With and Without Chemotherapy in Patients With Advanced Pancreatic Cancer; NCT03336216; Active, not recruiting

Phase Ib/II Trial of High-Dose Ascorbic Acid (AA) + Nanoparticle Paclitaxel Protein Band + Cisplatin + Gemcitabine (AA NABPLAGEM) in Patients Who Have Received No Prior Therapy for Their Metastatic Pancreatic Cancer; NCT03410030; Completed

Phase II Pilot Trial of Paclitaxel Protein Bound Plus Cisplatin Plus Gemcitabine and the Addition of Paricalcitol Upon Disease Progression in Patients With Previously Untreated Metastatic Pancreatic Ductal Adenocarcinoma (NABPLAGEMD); NCT03415854; Active, not recruiting

Vitamin D Receptor Agonist Paricalcitol Plus Gemcitabine and Nab-Paclitaxel in Patients With Metastatic Pancreatic Cancer; NCT03520790; Active, not recruiting

Phase Ib/II Randomized Clinical Trial of Chemotherapy With Nab-Paclitaxel/Gemcitabine/Cisplatin +/- the AXL Inhibitor Bemcentinib for Patients With Metastatic Pancreatic Cancer; NCT03649321; Active, not recruiting

Phase I Multicenter, Open-Label, Dose-Escalation and Dose-Expansion Study to Evaluate the Safety, Pharmacokinetics, Pharmacodynamics, Immunogenicity, and Antitumor Activity of MSC-1 in Patients With Advanced Solid Tumors; NCT03490669; Terminated (safety and PK/PD data from dose escalation support further development; dose expansion canceled)

MinPAC: Phase II, International, Open-Label Trial of Minnelide™ in Patients With Refractory Pancreatic Cancer; NCT03117920; Completed

FUNDERS:

CANCER RESEARCH UK

LUSTGARTEN FOUNDATION
PANCREATIC CANCER RESEARCH

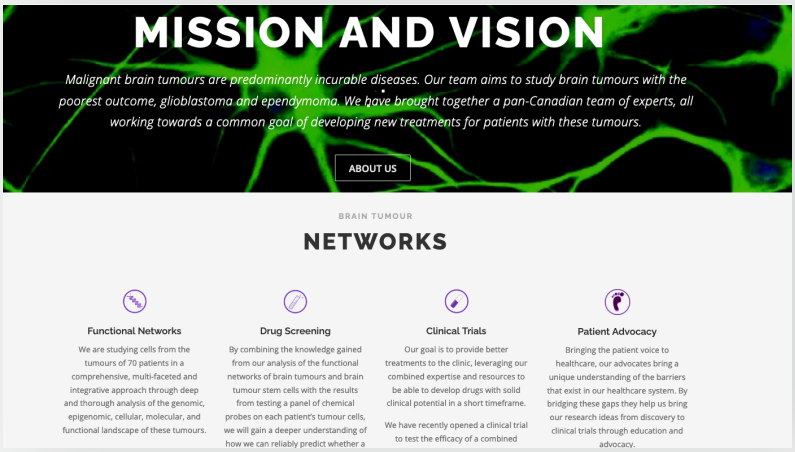
Targeting Brain Tumor Stem Cell Epigenetic and Molecular Networks

GRANT TERM: October 2015 – March 2021, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Peter B. Dirks, MD, PhD,
The Hospital for
Sick Children

Team Co-leader:
Samuel Weiss, PhD,
University of Calgary



Learn more about this team at the SU2C website.

Principals:

- Cheryl H. Arrowsmith, PhD, University of Toronto
- Gary D. Bader, PhD, University of Toronto
- Nada Jabado, MD, PhD, McGill University
- Mathieu Lupien, PhD, University Health Network
- Marco A. Marra, PhD,
  University of British Columbia
- Michael W. Salter, MD, PhD,
  The Hospital for Sick Children
- Michael D. Taylor, MD, PhD,
  The Hospital for Sick Children
- Michael Tyers, PhD,
  Université de Montreal

Project Manager:

- Tracey Richards,
  The Hospital for Sick Children
  tracey.richards@sickkids.ca

Advocates:

- Wendy M. Durigon,
  Jessica's Footprint Foundation
- Patrick J. Sullivan, LLB,
  Team Finn Foundation

Purpose:

The Team sought to understand the basic biology of brain tumor stem cells and expose their vulnerabilities, with the ultimate goal of developing new therapies.

SU2C CANADA CANCER STEM CELL DREAM TEAM DT6145

Specific Aims:

AIM 1. Conduct a comprehensive investigation of genomic, epigenomic, and metabolomic profiles of BTSCs to define networks of self-renewal, therapeutic resistance, and targetable vulnerabilities.

AIM 2. Identify targets whose pharmacological inhibition is efficacious on BTSCs from GBM and PFA ependymoma.

AIM 3. Preclinically test five targets to accelerate translation to the clinic.

Key Accomplishments:

The Team completed sequencing and functional characterization of 89 adult glioblastomas (GBM), 4 pediatric GBM, 16 pediatric ependymomas, and 6 control neural stem cell cultures. In adult GBM, the investigators converged on two tumor subgroups defined by developmental and inflammatory signals. They also found two promising clinically-actionable targets – one epigenetic (PRMT5) and the other metabolic (GLS) – both targets of promising drug candidates. The Team also characterized the posterior fossa A and supratentorial subtypes of pediatric ependymoma using brain tumor stem cells grown from patient tumor samples and screened them in various ways to identify therapeutic vulnerabilities. In pediatric GBM, they characterized Histone 3 mutant tumors, specially focusing their efforts to target H3K27 mutant tumors with an ALK inhibitor, which showed promise for clinical translation. The Team has been conducting a phase I/Ib trial of combined 5'azacitidine and carboplatin for recurrent/refractory brain tumors.

Clinical Trial:

Phase I/Ib Trial of Combined 5-Azacitidine and Carboplatin for Recurrent/Refractory Pediatric Brain and Solid Tumors; NCT03206021; Active, not recruiting

FUNDERS:

STAND UP TO CANCER StandUpToCancer.ca
GenomeCanada
CIHR IRSC Canadian Institutes of Health Research / Instituts de recherche en santé du Canada
OICR Ontario Institute for Cancer Research
Cancer Stem Cell Consortium (CSCC)

Targeting KRAS-Mutant Lung Cancers

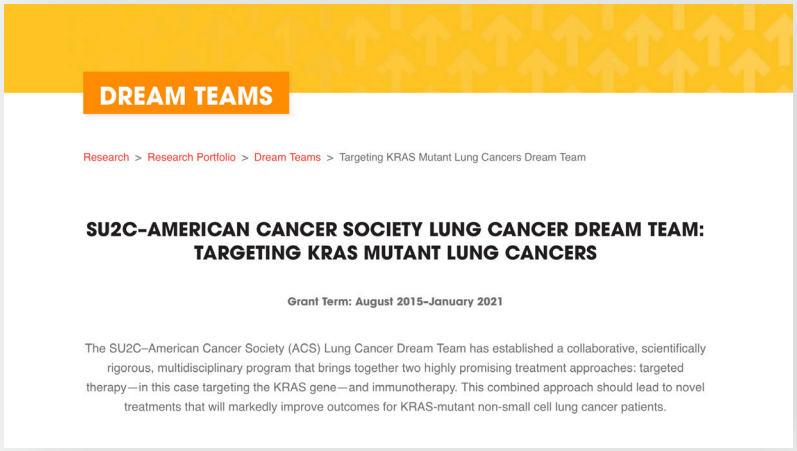
GRANT TERM: August 2015 – January 2021, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Co-leader:
Jedd D. Wolchok, MD, PhD, Memorial Sloan Kettering Cancer Center

Team Co-leader:
Pasi A. Jänne, MD, PhD, Dana-Farber Cancer Institute

Team Co-leader:
Justin F. Gainor, MD, Massachusetts General Hospital Cancer Center



Learn more about this team at the SU2C website.

Principals:

- David R. Gandara, MD, University of California, Davis
- Gad A. Getz, PhD, Broad Institute
- Roy S. Herbst, MD, PhD, Yale University
- John V. Heymach, MD, PhD, The University of Texas MD Anderson Cancer Center
- Frank McCormick, PhD, University of California, San Francisco
- Drew M. Pardoll, MD, PhD, Johns Hopkins University
- Charles M. Rudin, MD, PhD, Memorial Sloan Kettering Cancer Center

Project Managers:

- Lalitha Ramanathapuram, PhD, Memorial Sloan Kettering Cancer Center
- Cam Anh Tran, Dana-Farber Cancer Institute

Advocates:

- Andrea E. Ferris, LUNGevity Foundation
- Jeffrey L. Wigbels, Cypress Group at Morgan Stanley

SU2C-AMERICAN CANCER SOCIETY LUNG CANCER DREAM TEAM DT5977

Purpose:

The Targeting KRAS-Mutant Lung Cancers Team established a collaborative, rigorous, multidisciplinary program that brings together two highly promising treatment approaches: targeted therapy – in this case targeting the KRAS gene – and immunotherapy. This combined approach should lead to novel treatments that will markedly improve outcomes for KRAS-mutant non-small lung cancer patients.

Specific Aims:

AIM 1. Target KRAS and downstream pathways.

AIM 2. Target the immune system for treatment of KRAS-mutant lung cancers. (Work on this Aim is continuing as an SU2C subproject.)

AIM 3. Integrate targeted therapies with immunotherapies for KRAS-mutant lung cancers.

Key Accomplishments:

The Team amassed a large data set of NSCLC tumors derived from patient treated with checkpoint inhibitors which served as a rich resource, especially for the identification of predictive and prognostic markers of checkpoint inhibitor response. This is an important resource to aid in the design of future studies. The Team demonstrated that NSCLC patients with KRAS mutant cancers with concomitant LKB1/STK11 mutations derived little benefit from immune checkpoint inhibitors when used as single agentsand that there was no benefit from the addition of immune checkpoint inhibitors to chemotherapy. This was in contrast to patients with KRAS or KRAS/TP53 mutant cancers. Mechanistic insights into the role of the LKB1/STK11 mutations demonstrated immune defects dependent on dysregulation of metabolic and STING pathways. This work contributed to important in the understanding of the role of KRAS G12C inhibitors in the treatment of these patients relative to the role of checkpoint blockade.

The Team has significantly contributed to the development of KRAS G12C inhibitors and investigations of resistance mechanisms to KRAS G12C inhibitors. This Team continued its work with support from The Mark Foundation for Cancer Research.

Clinical Trials:

Identifying Genetic Predictors of Durable Clinical Benefit to Pembrolizumab in Advanced Non-small Cell Lung Cancer Alone and in Combination With Chemotherapy; NCT02710396; Active, not recruiting

Phase Ib Trial of Pembrolizumab (MK-3475) and Trametinib Focused on Advanced KRAS-Mutant Non-small Cell Lung Cancer; NCT03299088; Active, not recruiting

BATTLE-2 Program: Biomarker-Integrated Targeted Therapy Study in Previously Treated Patients With Advanced Non-small Cell Lung Cancer; NCT03225664; Active, not recruiting

Phase I Trial of RO5126766 (CH5126766) in Patients With Advanced KRAS-Mutant Lung Adenocarcinomas; NCT03681483; Active, not recruiting

Phase I Trial of Trametinib and Ponatinib in Patients With KRAS-Mutant Advanced Non-small Cell Lung Cancer; NCT03704688; Completed

SU2C-AMERICAN CANCER SOCIETY LUNG CANCER DREAM TEAM DT5977

Clinical Trials (Cont'd):

Open-Label, Two-Part, Phase Ib/II Study to Investigate the Safety, Pharmacokinetics, Pharmacodynamics, and Clinical Activity of the MEK Inhibitor Trametinib and the BCL-2-Family Inhibitor Navitoclax (ABT-263) in Combination in Subjects With KRAS or NRAS Mutation-Positive Advanced Solid Tumors; NCT02079740; Recruiting

Neoadjuvant Nivolumab, or Nivolumab in Combination With Ipilimumab, in Resectable Non-small Cell Lung Cancer. NCT02259621; Recruiting

Phase I/II Trial Immunotherapy With Durvalumab and Tremelimumab With Continuous or Intermittent MEK Inhibitor Selumetinib in NSCLC; NCT03581487; Recruiting

Phase I/II Open-Label Study Evaluating the Safety, Tolerability, Pharmacokinetics, Pharmacodynamics, and Efficacy of AMG 510 Monotherapy in Subjects With Advanced Solid Tumors With KRAS p.G12C Mutation and AMG 510 Combination Therapy in Subjects With Advanced NSCLC With KRAS p.G12C Mutation (CodeBreaK 100); NCT03600883; Recruiting

Phase I/II Multiple Expansion Cohort Trial of MRTX849 in Patients With Advanced Solid Tumors With KRAS G12C Mutation; NCT03785249; Recruiting

Phase I Open-Label, Multi-Centre Study to Assess the Safety, Tolerability, and Preliminary Anti-tumour Activity of Ascending Doses of Selumetinib (AZD6244 Hyd-sulfate) in Combination With MEDI4736 and Selumetinib in Combination With MEDI4736 and Tremelimumab in Patients With Advanced Solid Tumours; NCT02586987; Completed

FUNDERS:

American Cancer Society®

Bristol Myers Squibb™

SU2C–OVARIAN CANCER RESEARCH ALLIANCE–NATIONAL OVARIAN CANCER COALITION OVARIAN CANCER DREAM TEAM DT5978

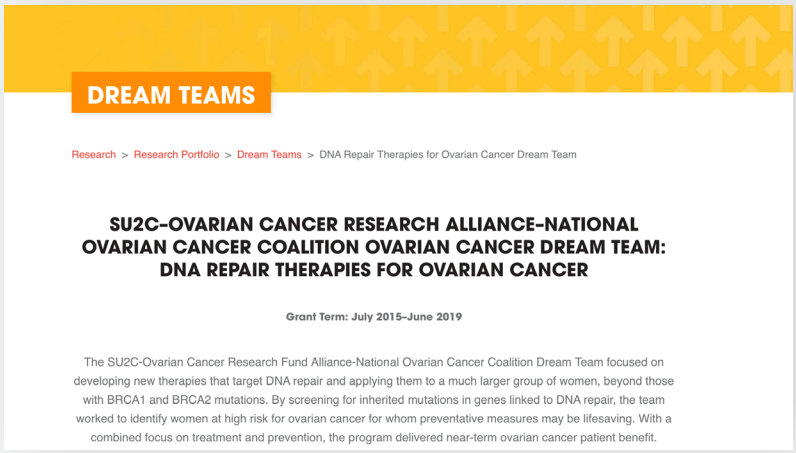
DNA Repair Therapies for Ovarian Cancer

GRANT TERM: July 2015 – June 2019, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Alan D. D'Andrea, MD, Dana-Farber Cancer Institute

Team Co-leader:
Elizabeth M. Swisher, MD, University of Washington


DREAM TEAMS

Research > Research Portfolio > Dream Teams > DNA Repair Therapies for Ovarian Cancer Dream Team

SU2C-OVARIAN CANCER RESEARCH ALLIANCE-NATIONAL OVARIAN CANCER COALITION OVARIAN CANCER DREAM TEAM: DNA REPAIR THERAPIES FOR OVARIAN CANCER

Grant Term: July 2015–June 2019

The SU2C-Ovarian Cancer Research Fund Alliance-National Ovarian Cancer Coalition Dream Team focused on developing new therapies that target DNA repair and applying them to a much larger group of women, beyond those with BRCA1 and BRCA2 mutations. By screening for inherited mutations in genes linked to DNA repair, the team worked to identify women at high risk for ovarian cancer for whom preventative measures may be lifesaving. With a combined focus on treatment and prevention, the program delivered near-term ovarian cancer patient benefit.

Learn more about this team at the SU2C website.

Principals:

- Gini F. Fleming, MD, University of Chicago
- Maria Jasin, PhD, Memorial Sloan Kettering Cancer Center
- Scott H. Kaufmann, MD, PhD, Mayo Clinic, Rochester
- Karen H. Lu, MD, The University of Texas MD Anderson Cancer Center

Project Managers:

- Alexandra Feinstein, Dana-Farber Cancer Institute
- Donald R. Watson, Dana-Farber Cancer Institute

Advocates:

- Jamie Crase, University of Washington
- Sue Friedman, FORCE
- Kathleen A. Gavin, Minnesota Ovarian Cancer Alliance
- Deborah Polinsky, SHARE

Purpose:

The SU2C–Ovarian Cancer Research Alliance–National Ovarian Cancer Coalition Ovarian Cancer Dream Team was assembled to develop new therapies targeting DNA repair pathways and expand on recent clinical advances to a larger group of ovarian cancer patients, including those without mutations in BRCA1 or BRCA2. The Team also worked to develop novel cancer prevention strategies through the development of ovarian cancer genetic testing and surgical prevention models.

SU2C–OVARIAN CANCER RESEARCH ALLIANCE–NATIONAL OVARIAN CANCER COALITION OVARIAN CANCER DREAM TEAM DT5978

Specific Aims:

AIM 1. Characterize mechanisms of sensitivity and resistance to PARPi that can identify individual ovarian cancers that are hypersensitive to PARPi monotherapy.

AIM 2. Evaluate novel drug combinations that extend the use of PARPi to HR-proficient ovarian cancers.

AIM 3. Develop ovarian cancer genetic testing and surgical prevention models, which could increase access to ovarian cancer genetic testing and ovarian cancer prevention.

Key Accomplishments:

The Team identified new biomarkers of sensitivity and resistance to PARP inhibitors, including PTIP, EZH2 MUS81, and REV7. The Team's TOPACIO study, which tested the combination of the PARP inhibitor Niraparib and the anti-PD1 antibody Pembrolizumab, showed an improved objective response in ovarian cancer patients with advanced platinum-resistant tumors. Analysis of patient samples revealed novel biomarkers that were predictive of patient responses. Findings from the team have also contributed to the 2016 FDA approval of rucaparib, the second PARP inhibitor approved by the FDA, for treatment of BRCA1/2 mutated ovarian cancer. The Team's MAGENTA trial, which enrolled 3822 patients, demonstrated the benefits of genetic counseling for individuals who have been found to have a pathogenic mutation.

Clinical Trials:

Phase 1 Trial of ABT-888 and SCH727965 in Patients With Advanced Solid Tumors; NCT01434316; Recruiting

Stand Up To Cancer: MAGENTA (Making Genetic Testing Accessible); NCT02993068; Recruiting

WISP (Women Choosing Surgical Prevention); NCT02760849; Active, not recruiting

Phase I Study of the Oral PI3kinase Inhibitor BKM120 or BYL719 and the Oral PARP Inhibitor Olaparib in Patients With Recurrent Triple-Negative Breast Cancer or High Grade Serous Ovarian Cancer; NCT01623349; Completed

Phase I/II Clinical Study of Niraparib in Combination With Pembrolizumab (MK-3475) in Patients With Advanced or Metastatic Triple-Negative Breast Cancer and in Patients With Recurrent Ovarian Cancer; NCT02657889; Completed

A Phase II, Open-Label Study of Rucaparib in Patients With Platinum-Sensitive, Relapsed, High-Grade Epithelial Ovarian, Fallopian Tube, or Primary Peritoneal Cancer (ARIEL2); NCT01891344; Completed

FUNDERS:

OCRA ovarian cancer research alliance

NOCC NATIONAL OVARIAN CANCER COALITION

SU2C-DUTCH CANCER SOCIETY COLORECTAL CANCER EARLY DETECTION DREAM TEAM DT5916

Molecular Early Detection of Colorectal Cancer (MEDOCC)

GRANT TERM: April 2015 – September 2022, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Gerrit A. Meijer, MD, PhD,
Netherlands Cancer Institute

Team Co-leader:
Victor E. Velculescu, MD, PhD,
Johns Hopkins University

Learn more about this team at the SU2C website.

Principals:

- Veerle Coupé, PhD, VU University Medical Center
- Evelien Dekker, MD, PhD, University of Amsterdam
- Manon van Engeland, PhD, Maastricht University Medical Center
- James G. Herman, MD, University of Pittsburgh
- Miriam Koopman, MD, PhD, University Medical Center Utrecht
- Ernst J. Kuipers, MD, PhD, Erasmus University Medical Center

Project Manager:

- Meike de Wit, PhD, Netherlands Cancer Institute, m.d.wit@nki.nl

Advocates:

- Joop Kroes, Foundation for Patients With Cancer of the Digestive Tract (Stichting Voor Patiënten met Kanker aan het Spijsverteringskanaal, SPKS) (deceased)
- Marcia Horn, JD, International Cancer Advocacy Network
- Huig Schipper (inactive)

Purpose:

The SU2C–Dutch Cancer Society Colorectal Cancer Early Detection Dream Team aims to bring highly sensitive molecular tests from the lab bench to the bed side. The Molecular Early Detection Of Colorectal Cancer (MEDOCC) project has two aims. The first aim is to improve molecular stool-based tests by using the best combination of protein biomarkers. The second aim is to develop a molecular blood test for circulating cancerassociated DNA that identifies early-stage colorectal cancer patients whose survival may be improved by chemotherapy after surgery.

SU2C-DUTCH CANCER SOCIETY COLORECTAL CANCER EARLY DETECTION DREAM TEAM DT5916

Specific Aims:

AIM 1. Develop and clinically validate a cost-effective molecular screening test for CRC that outperforms the current state-of-the-art FIT.

AIM 2. Develop and clinically validate a better test for residual disease detection and monitoring in stage II and III colorectal cancer patients.

Key Accomplishments:

The currently used stool test, fecal immunochemical test (FIT), that is used in nationwide screening programs, has been proven to be successful in helping identify patients with CRC. Unfortunately, the test is not sensitive enough to identify individuals with precancerous lesions. The Team developed an improved and potentially cost-effective stool test (called mtFIT) that is more sensitive than the traditional test, without increasing the probability of false positives. In addition, the Team developed and optimized approaches for detection of circulating tumor DNA (ctDNA) in patients with early stage cancers. They have shown that a tumor-guided approach for detection of ctDNA may be useful for clinical identification of minimal residual disease in stage II and III colorectal cancer patients.

Clinical Trials:

Clinical Validation of a Multi-target Faecal Immunochemical Test (mtFIT) Versus a Faecal Immunochemical Test (FIT) for Detecting Advanced Neoplasia in Population Screening for CRC: a Prospective Cohort Study With Paired Design; NCT05314309; Enrolling by invitation complete.

Prospective Data Collection Initiative on Colorectal Cancer—A Prospective Observational Cohort Study; sub-study of NCT02070146; Recruiting.

FUNDERS:

DUTCH CANCER SOCIETY

Bringing Epigenetic Therapy to the Forefront of Cancer Management, II

GRANT TERM: October 2014 – December 2022

KEY PERSONNEL:

Team Leader:
Peter A. Jones, PhD, DSc (hon), Van Andel Institute

Team Co-leader:
Stephen B. Baylin, MD, Johns Hopkins University

Learn more about this team at the SU2C website.

Principals:

- Anthony B. El-Khoueiry, MD, University of Southern California
- Kirsten Grønbæk, MD, DMSc, Rigshospitalet and Biotech Research and Innovation Centre (BRIC)
- Jean-Pierre J. Issa, MD, Coriell Institute for Medical Research
- Kenneth P. Nephew, PhD, Indiana University School of Medicine
- Feyruz V. Rassool, PhD, University of Maryland School of Medicine
- Charles M. Rudin, MD, PhD, Memorial Sloan Kettering Cancer Center
- Benjamin A. Youngblood, PhD, St. Jude Children's Research Hospital

Project Managers:

- Ryan Burgos, Van Andel Institute, ryan.burgos@vai.org
- Revathi Penumatsa, Van Andel Institute, Revathi.Penumatsa@vai.org

Advocates:

- Beth Flory
- Rick Bangs

VAN ANDEL INSTITUTE–SU2C CANCER EPIGENETICS DREAM TEAM DT5957

Purpose:

Building on the successes of the original 2009 SU2C Epigenetics Dream Team, the VAI–SU2C Cancer Epigenetics Dream Team II continues to utilize basic, pre-clinical science from Team members to translate key findings to derive epigenetic therapies in combination with other treatments for multiple types of cancer. The resulting clinical trials are in three categories: immune sensitization, chemo sensitization, and novel target strategies.

Specific Aims:

AIM 1. Conduct a phase I study of guadecitabine combined with irinotecan followed by a randomized phase II study of SGI-110 combined with irinotecan versus regorafenib or TAS-102 in previously treated metastatic colorectal cancer patients.

AIM 2. Conduct a phase I/II study of combination therapy with the DNA methyltransferase inhibitor (DNMTi) SGIE110 and the poly ADP ribose polymerase (PARP) inhibitor BMN673 (talazoparib) for acute myeloid leukemia (AML) in adult patients unfit for cytotoxic chemotherapy or with relapsed/refractory disease.

AIM 3. Conduct a phase I/II multicenter study combining guadecitabine, a DNA methyltransferase inhibitor, with Atezolizumab, an immune checkpoint inhibitor, in patients with intermediate or high-risk myelodysplastic syndrome or chronic myelomonocytic leukemia.

AIM 4. Conduct a randomized phase II study of epigenetic priming with azacitidine and entinostat or oral azacitidine alone prior to nivolumab in subjects with recurrent metastatic non-small cell lung cancer.

AIM 5. Conduct a study of epigenetics, vitamin C, and abnormal hematopoiesis—restoring physiological vitamin C levels to the normal range: influence on epigenetic regulation in normal and malignant hematopoiesis.

AIM 6. Conduct a phase Ib clinical trial to assess the safety and tolerability followed by a phase II trial to evaluate efficacy of guadecitabine and durvalumab in patients with hepatocellular carcinoma (HCC), cholangiocarcinoma (CLG), and pancreatic cancer.

AIM 7. Conduct a phase I dose-escalation study of E7727, an oral cytidine deaminase inhibitor (CDAi), with oral decitabine in subjects with solid tumors.

AIM 8. Conduct a phase I/II study of DS-3201b, an EZH1/2 inhibitor, in combination with irinotecan in patients with recurrent small cell lung cancer.

Key Accomplishments:

The Team has conducted 14 clinical trials and treated more than 650 patients. The basic science and clinical trial work of the Team has allowed them to receive a discipline-based NCI SPORE focused on new approaches to epigenetic therapies. The Team has shown that DNMTis induce PD1 expression and combination therapy with Atezolizumab in MDS patients resistant to DNMTis resulted in and increase in expected median overall survival from 5 to 15 months. The Team also found that combining a DNMTi with a PARPi induces an inflammasome response with a resultant HRD effect and then completed a trial in relapsed/refractory AML. They have also shown that treatment with epigenetic drugs should occur earlier in disease progression given the lag time for efficacy, and that DNMTis will not work alone and need combinations with existing and new drugs. Pursuant to all the trial results, the team is finding that if strategies for earlier treatment with epigenetic drugs can be derived, the achieved patient benefits could be even more pronounced, including meeting unmet needs in multiple of the diseases studied.

VAN ANDEL INSTITUTE–SU2C CANCER EPIGENETICS DREAM TEAM DT5957

Clinical Trials:

Phase II Study of Epigenetic Therapy With Azacitidine and Entinostat With Concurrent Nivolumab Versus Nivolumab Alone in Subjects With Recurrent Metastatic Non-Small Cell Lung Cancer; NCT01928576; Active, not recruiting

Epigenetics, Vitamin C, and Abnormal Hematopoiesis—Role of Vitamin C in Epigenetic Regulation in Hematopoiesis Sub-study on CCUS, Low-Risk MDS, and CMML-0/1; NCT03682029; Active, not recruiting

Multicenter Phase I/II Study of Combination Therapy w/DNA Methyltransferase Inhibitor Decitabine and Poly ADP Ribose Polymerase Inhibitor Talazoparib for Untreated AML in Adults Unfit for Cytotoxic Chemotherapy or R/R AML; NCT02878785; Completed

Phase I/II Multicenter Study Combining Guadecitabine, a DNA Methyltransferase Inhibitor, With Atezolizumab, an Immune Checkpoint Inhibitor, in Patients With Intermediate or High-Risk Myelodysplastic Syndrome or Chronic Myelomonocytic Leukemia; NCT02935361; Completed

Phase Ib Study of Guadecitabine (SGI-110) and Durvalumab (MEDI 4736) in Patients With Advanced Hepatocellular Carcinoma, Pancreatic Adenocarcinoma, and Cholangiocarcinoma/Gallbladder Cancer; NCT03257761; Active, not recruiting

Phase I Dose-Escalation Study of E7727, an Oral Cytidine Deaminase Inhibitor (CDAi), With Oral Decitabine in Subjects With Solid Tumors; NCT03875287; Recruiting

Phase I/II Study of DS-3201b, an EZH1/2 Inhibitor, in Combination With Irinotecan in Patients With Recurrent Small Cell Lung Cancer; NCT03879798; Active, not recruiting

Phase I Study of SGI-110 Combined With Irinotecan Followed by a Randomized Phase II Study of SGI-110 Combined With Irinotecan Versus Regorafenib or TAS-102 in Previously Treated Metastatic Colorectal Cancer Patients; NCT01896856; Completed

Restoring Physiological Vitamin C Levels to the Normal Range: Influence on Epigenetic Regulation in Normal and Malignant Hematopoiesis; NCT02877277; Completed

Combining Active and Passive DNA Hypomethylation: A Randomized, Placebo-Controlled Phase II Study of the Efficacy and Safety of Oral Vitamin C in Combination With Azacitidine in Patients With Higher-Risk MDS, CMML-2, or Low Blast Count AML; NCT03999723; Recruiting

Phase I Study of ASTX727 Plus Talazoparib in Patients With Triple-Negative or Hormone-Resistant/Human Epidermal Growth Factor Receptor 2 (HER2)-Negative Metastatic Breast Cancer; NCT04134884; Recruiting

A Multicenter, Single-Arm, Pilot Study of The Efficacy and Safety of Metformin in Clonal Cytopenia of Undetermined Significance and Lower-Risk Myelodysplastic Syndrome; NCT04741945; Recruiting

FUNDERS:

VAN ANDEL INSTITUTE®

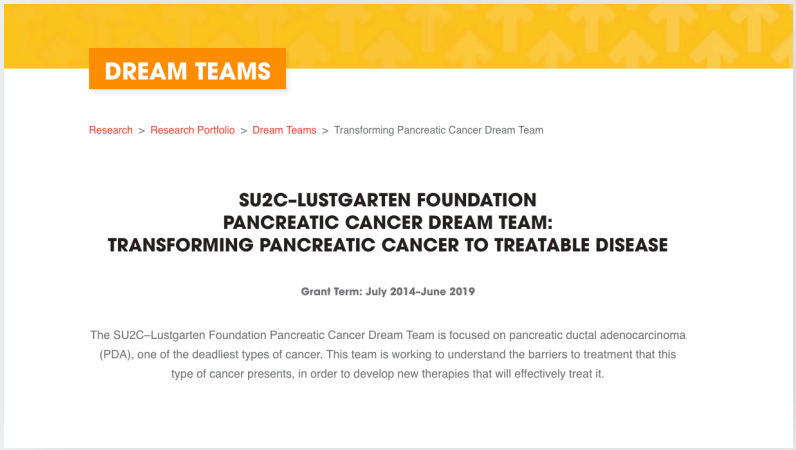
Transforming Pancreatic Cancer to Treatable Disease

GRANT TERM: July 2014 – June 2023, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Elizabeth M. Jaffee, MD,
Johns Hopkins University

Team Co-leader:
Robert H. Vonderheide, MD, DPhil, Abramson Cancer Center University of Pennsylvania


DREAM TEAMS

Research > Research Portfolio > Dream Teams > Transforming Pancreatic Cancer Dream Team

SU2C–LUSTGARTEN FOUNDATION
PANCREATIC CANCER DREAM TEAM:
TRANSFORMING PANCREATIC CANCER TO TREATABLE DISEASE

Grant Term: July 2014–June 2019

The SU2C–Lustgarten Foundation Pancreatic Cancer Dream Team is focused on pancreatic ductal adenocarcinoma (PDA), one of the deadliest types of cancer. This team is working to understand the barriers to treatment that this type of cancer presents, in order to develop new therapies that will effectively treat it.

Learn more about this team at the SU2C website.

Principals:

- Philip Greenberg, MD, Fred Hutchinson Cancer Research Center
- Robert D. Schreiber, PhD, Washington University in St. Louis

Project Manager:

- Stephanie Porter, Johns Hopkins University, sporter@jhmi.edu

Advocates:

- Betty Booher, Oregon Health & Science University
- Stuart Rickerson, University of California, San Francisco

Purpose:

The goal of the SU2C–Lustgarten Foundation Pancreatic Cancer Dream Team is to demonstrate that the immune suppressive tumor environment (TME) in pancreatic cancer (PDA) can be converted into an immuno-stimulatory environment resulting in improved treatment response and prognosis.

SU2C-LUSTGARTEN FOUNDATION PANCREATIC CANCER DREAM TEAM DT5915

Specific Aims:

AIM 1. Conduct a multicenter phase 2 study designed to test the safety and clinical activity of a PD-1 inhibitor (cemiplimab) with a CXCR4 inhibitor (plerixafor).

AIM 2. Conduct a trial to treat patients with their own T cells engineered to recognize mesothelin, a clinical target expressed specifically by pancreatic cancer cells.

AIM 3. Conduct a trial to explore whether vaccinating PDA patients with neoantigens derived from their own tumors can reactivate preexisting neoantigen specific T cells, induce T cell responses to additional vaccine induced tumor neoantigens, and induce a measurable clinical response.

Key Progress:

The Team completed their phase 2 clinical trial of combining plerixafor and cemiplimab in patients with metastatic PDA. Although only limited clinical activity has been observed, their correlative studies are anticipated to provide insights into the mechanisms behind the observed resistance to plerixafor/cemiplimab. The Team has reached their target of treating 10 patients with their neoantigen epitope vaccine. Laboratory studies confirmed that the immune system responded to at least some of the protein fragments that were used in the personalized vaccines. The Team is continuing to enroll in their clinical trial where they are testing adoptive cell therapy in pancreatic cancer. No adverse events have been observed.

Clinical Trials:

Phase II Study of Plerixafor and Cemiplimab in Metastatic Pancreatic Cancer; NCT04177810; Recruiting

Phase I Study of Autologous Transgenic T Cells Expressing High Affinity Mesothelin-Specific T-Cell Receptor (TCR) (FH-TCR T_{MSLN}) in Patients With Metastatic Pancreatic Ductal Adenocarcinoma; NCT04809766; Recruiting

Phase I Clinical Trial to Evaluate the Safety and Immunogenicity of a Neoantigen Peptide Vaccine Strategy in Pancreatic Cancer Patients Following Surgical Resection and Adjuvant Chemotherapy; NCT03956056; Active, not recruiting

Study to Assess the Safety of Continuous IV Administration of the CXCR4 Antagonist Plerixafor (Mozobil) and Assess Its Impact on the Immune Microenvironment in Patients With Advanced Pancreatic, High-Grade Serous Ovarian, and Colorectal Adenocarcinomas; NCT02179970; Completed

First-in-Human Phase I Dose-Escalation Trial of Hu5F9-G4 in Patients With Advanced Solid Malignancies; NCT02216409; Completed

Randomized Phase II Study of the Safety, Efficacy, and Immune Response of GVAX Pancreas Vaccine (With Cyclophosphamide) and CRS-207 With or Without Nivolumab in Patients With Previously Treated Metastatic Pancreatic Adenocarcinoma; NCT02243371; Completed

Study of the Safety, Immunopharmacodynamics and Anti-tumor Activity of Ibrutinib Combined With Gemcitabine and Nab-Paclitaxel in Patients With Metastatic Pancreatic Adenocarcinoma; NCT02562898; Completed

Phase I Study of Neo-adjuvant RO7009789 Alone or Neo-adjuvant RO7009789 Plus Nab-Paclitaxel and Gemcitabine Followed by Adjuvant RO7009789 Plus Nab-Paclitaxel and Gemcitabine for Patients With Newly Diagnosed Resectable Pancreatic Carcinoma; NCT02588443; Completed

FUNDERS:

LUSTGARTEN FOUNDATION
PANCREATIC CANCER RESEARCH

A New Preclinical Model for Drug Sensitivity Analysis

GRANT TERM: April 2014 – April 2019, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Hans C. Clevers, MD, PhD,
Hubrecht Institute

Team Co-leader:
Johannes L. Bos, PhD,
University Medical Center Utrecht

DREAM TEAMS

Research > Research Portfolio > Dream Teams > Tumor Organoids Preclinical Models Dream Team

SU2C-DUTCH CANCER SOCIETY
TUMOR ORGANOIDS DREAM TEAM:
A NEW PRECLINICAL MODEL FOR DRUG SENSITIVITY ANALYSIS

Grant Term: April 2014–April 2019

The SU2C-Dutch Cancer Society Tumor Organoids Dream Team developed a groundbreaking technology that allows tumor samples isolated from patients to be maintained and grown in the laboratory setting. These growing tumors, which are called "tumor organoids," provide an unprecedented opportunity to combine DNA sequence analyses with functional studies of tumors from individual patients. Most importantly, these tumor organoids will allow studies of sensitivity and resistance to a large number of anticancer drugs in the lab.

Learn more about this team at the SU2C website.

Principals:

- Sir Michael R. Stratton, PhD, Wellcome Trust Sanger Institute
- Lodewyk Wessels, PhD, Netherlands Cancer Institute

Project Manager:

- Johan H. van Es, PhD, Hubrecht Institute

Advocates:

- Pauline Evers, Leven Met Kanker
- Jeannette Janzen, Leven Met Kanker
- Margreet Jonker, Leven Met Kanker
- Catherine Transler, Leven Met Kanker

Purpose:

The SU2C-Dutch Cancer Society Tumor Organoids Dream Team established and analyzed a large collection of long-term cultures of tumours (tumor organoids) in an effort to capture the genetic spectrum of tumours. This strategy allows the stratification of tumours based on their genomic footprint and drug sensitivity and facilitates correlations between drug sensitivity and this footprint. The ultimate goal of this Team has been to design novel, more sophisticated clinical trials that test treatment regimens tailored to a patient's tumor.

SU2C-DUTCH CANCER SOCIETY TUMOR ORGANOIDS DREAM TEAM DT5906

Specific Aims:

AIM 1. Build and validate a large "living" biobank for colon, pancreatic, and breast cancer using organoid technology, thus capturing the genetic variability of these three tumor types.

AIM 2. Correlate drug sensitivity with genotype and gene expression *in vitro* to identify putative biomarkers of drug sensitivity.

AIM 3. Validate the dual "genetic/organoid" approach as a predictor of drug response for individual cancer patients.

AIM 4. Identify molecular mechanisms of drug sensitivity and resistance.

Key Accomplishments:

The Team developed a groundbreaking technology that allows tumor samples isolated from patients to be maintained and grown in the laboratory setting. These tumor organoids provide an unprecedented opportunity to combine DNA sequence analyses with functional studies of tumors from individual patients. Importantly, tumor organoids have allowed studies of sensitivity and resistance to a large number of anticancer drugs in the lab. The Team has developed organoids from multiple cancer types, including colorectal, pancreas, liver, esophageal, and breast. In addition to the abovementioned studies, the Team has used CRISPR with organoids to pinpoint genetic mutations responsible for a given patient's cancer.

FUNDERS:

DUTCH CANCER SOCIETY

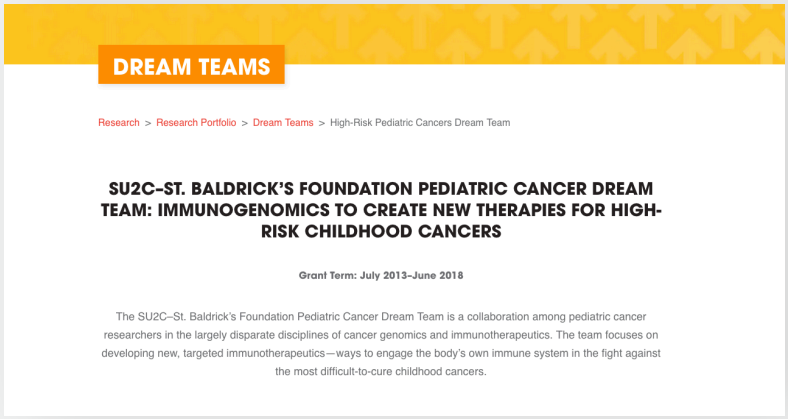
Immunogenomics to Create New Therapies for High-Risk Childhood Cancers

GRANT TERM: July 2013 – June 2018, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
John M. Maris, MD,
Children's Hospital
of Philadelphia

Team Co-leader:
Crystal L. Mackall, MD,
Stanford University



Learn more about this team at the SU2C website.

Principals:

- Nabil M. Ahmed, MD
  Baylor College of Medicine
- Michael C. Jensen, MD,
  Seattle Children's Research Institute
- Paul M. Sondel, MD, PhD,
  University of Wisconsin, Madison
- Poul H. B. Sorenson, MD, PhD,
  BC Cancer Research Institute
- Michael D. Taylor, MD, PhD,
  The Hospital for Sick Children

Project Manager:

- Jennifer L. Baldi, Children's Hospital
  of Philadelphia

Advocates:

- Beth Anne Baber, PhD,
  Nicholas Connor Institute
- Kelly Cotter
- Jay Scott, Alex's Lemonade
  Stand Foundation
- Liz Scott, Alex's Lemonade
  Stand Foundation
- Patrick J. Sullivan, LLB, Team Finn Foundation
- Lisa Tichenor, QuadW Foundation
- Mac Tichenor, QuadW Foundation

SU2C–ST. BALDRICK'S FOUNDATION PEDIATRIC CANCER DREAM TEAM DT5908

Purpose:

The SU2C–St. Baldrick's Foundation Pediatric Cancer Dream Team brought together the fields of cancer genomics and immuno-oncology to rethink curative therapies for malignancies afflicting children. The Team focused on developing innovative new immunotherapies, discovering basic mechanisms of effectiveness (or lack thereof) in both antibody and cellular engineering, and devising novel methods to monitor clinical effectiveness and toxicity. The Team's work continues through a renewal project awarded in 2017.

Specific Aims:

AIM 1. Discover and validate cell surface targets for immunotherapy of high-risk pediatric cancers.

AIM 2. Generate and develop therapeutic proteins targeting prioritized cell surface molecules.

AIM 3. Conduct pivotal multi-institution pediatric cancer immunotherapy trials.

Key Accomplishments:

Team investigators developed antibodies, antibody-drug conjugates and chimeric antigen receptor-arm T cells to attack new targets for immunotherapy, discovering basic mechanisms of effectiveness (or lack thereof), made significant progress in both antibody and cellular engineering, and developed novel methods to monitor clinical effectiveness and toxicity. They demonstrated the potency of immunotherapy against childhood acute lymphoblastic leukemia (ALL), as well as defined mechanisms for how these cancers cells can adapt and avoid the modified immune cells designed to target ALL. They also made progress against childhood solid cancers, with emerging therapeutics against diseases such as neuroblastoma, glioblastoma, medulloblastoma, osteosarcoma, Ewing sarcoma, and rhabdomyosarcoma. The Team's work contributed to two 2017 FDA approvals for refractory leukemia, a first-of-its-kind CD19 CAR T therapy trains patient's immune cells to eliminate cancer in children and young adults with ALL and treatment for cytokine release syndrome, a potential life-threatening complication of CAR T therapies.

Clinical Trials:

Pediatric and Young Adult Leukemia Adoptive Therapy (PLAT)-02: A Phase I/II Feasibility and Safety Study of CD19-CAR T-cell Immunotherapy for CD19+ Leukemia; NCT02028455; Active, not recruiting

Phase 1 Feasibility and Safety Study of Cellular Immunotherapy for Recurrent/Refractory Neuroblastoma Using Autologous T-cells Lentivirally Transduced to Express CD171-specific Chimeric Antigen Receptors; NCT02311621; Active, not recruiting

Phase I Dose Escalation Study of Anti-CD22 Chimeric Receptor T Cells in Pediatric and Young Adults With Recurrent or Refractory CD22-expressing B-cell Malignancies; NCT02315612; Recruiting

Phase I Study of Intracranial Injection of T Cells Expressing HER2-specific Chimeric Antigen Receptors (CAR) in Subjects With HER2-Positive Tumors of the Central Nervous System (iCAR); NCT02442297; Recruiting

TCR alpha/beta+ and CD19+ Depleted KIR/KIR Ligand-Mismatched Haploidentical Hematopoietic Stem Cell Transplant and Zolendronate for Pediatric Relapsed/Refractory Hematologic Malignancies and High-Risk Solid Tumors; NCT02508038; Recruiting

Clinical Trials (Cont'd):

Pilot Study of Autologous Anti-CD22 Chimeric Antigen Receptor Redirected T Cells in Pediatric Patients With Chemotherapy-Resistant or Refractory Acute Lymphoblastic Leukemia; NCT02650414; Recruiting

A Phase I Study of 131-1 mIBG Followed by Nivolumab and Dinutuximab Beta in Children With Relapsed/Refractory Neuroblastoma; NCT02914405; Recruiting

Pediatric and Young Adult Leukemia Adoptive Therapy (PLAT)-03: A Pilot Feasibility and Safety Study of CD19t T-Antigen Presenting Cells (T-APCs) Following CAR T Cell Immunotherapy for CD19+ Leukemia; NCT03186118; Active, not recruiting

Treatment of Relapsed or Refractory Neuroblastoma With Ex Vivo Expanded and Activated Haploidentical NK Cells and Hu14.18-IL2; NCT03209869; Recruiting

Treatment of Relapsed or Refractory Neuroblastoma and Osteosarcoma With Ex-Vivo Expanded and Activated Haploidentical NK Cells and Hu14.18-IL2; NCT03241940; Withdrawn

Pediatric and Young Adult Leukemia Adoptive Therapy (PLAT)-05: Phase I Feasibility and Safety Study of Dual Specificity CD19 and CD22 CAR T Cell Immunotherapy for CD19+CD22+ Leukemia and Lymphoma; NCT03330691; Recruiting

Pediatric Leukemia Adoptive Therapy (PLAT)-01: Phase I Feasibility and Safety Study of Cellular Immunotherapy for Relapsed Pediatric CD19+ Acute Lymphoblastic Leukemia Using Autologous T Cells Lentivirally Transduced to Express a CD19-Specific Chimeric Antigen Receptor; NCT01683279; Active, not recruiting

Phase II, Single-Arm, Multicenter Trial to Determine the Efficacy and Safety of CTL019 in Pediatric Patients With Relapsed and Refractory B-Cell Acute Lymphoblastic Leukemia; NCT02435849; Active, not recruiting

Two-Cohort Pilot Study of the Tocilizumab Optimization Timing for CART19 Associated Cytokine Release Syndrome (CRS) Management in Pediatric Patients With CD19 Expressing Relapsed/Refractory B-cell Acute Lymphoblastic Leukemia (ALL); NCT02906371; Completed.

Administration of HER2 Chimeric Antigen Receptor Expressing T Cells for Subjects With Advanced Sarcoma (HEROS); NCT00902044; Active, not recruiting

Pediatric and Young Adult Leukemia Adoptive Therapy (PLAT)-04: Phase I Feasibility and Safety Study of CD22-CAR T Cell Immunotherapy for CD22+ Leukemia and Lymphoma; NCT03244306; Active, not recruiting

Pilot Study of Nonviral, RNA-Redirected Autologous T Cells Engineered to Contain Anti-CD19 Linked to TCR and 4-1BB Signaling Domains in Patients With Refractory or Relapsed Hodgkin Lymphoma; NCT02624258; Terminated

Administration of HER2 Chimeric Receptor and TGF Beta Dominant Negative Receptor (DNR) Expressing EBV Specific Lymphocytes for Subjects With Advanced HER2-Positive Malignancy (HERCREEM); NCT00889954; Completed

SU2C–ST. BALDRICK'S FOUNDATION PEDIATRIC CANCER DREAM TEAM DT5908

Clinical Trials (Cont'd):

Administration of HER2 Chimeric Antigen Receptor Expressing CMV-Specific Cytotoxic T Cells in Patients With Glioblastoma Multiforme (HERT-GBM); NCT01109095; Completed

Phase I Study of T Cells Expressing an Anti-CD19 Chimeric Receptor in Children and Young Adults With B-cell Malignancies; NCT01593696; Completed

CHP959–Phase I/IIa Study of Redirected Autologous T Cells Engineered to Contain Anti-CD19 Attached to TCR Zeta and 4-1BB Signaling Domains in Patients With Chemotherapy-Resistant or Refractory CD19+ Leukemia and Lymphoma; NCT01626495; Completed

Phase I Trial of T Cells Expressing an Anti-GD2 Chimeric Antigen Receptor in Children and Young Adults With GD2+ Solid Tumors; NCT02107963; Completed

Phase II, Single-Arm, Multicenter Trial to Determine the Efficacy and Safety of CTL019 in Pediatric Patients With Relapsed and Refractory B-Cell Acute Lymphoblastic Leukemia; NCT02228096; Completed

Phase I, Open-Label, Dose-Escalation Study of MGA271 in Pediatric Patients With B7-H3-Expressing Relapsed or Refractory Solid Tumors; NCT02982941; Completed

Pilot Study of Redirected Autologous T Cells Engineered to Contain Humanized Anti-CD19 Attached to TCR and 4-1BB Signaling Domains in Patients With Relapsed or Refractory CD19+ Leukemia and Lymphoma Previously Treated With Cell Therapy; NCT02374333; Completed

FUNDERS:

St. Baldrick's FOUNDATION
Conquer Childhood Cancers

Optum

Immunologic Checkpoint Blockade and Adoptive Cell Transfer in Cancer Therapy

GRANT TERM: March 2013 – February 2018, administered by the American Association for Cancer Research

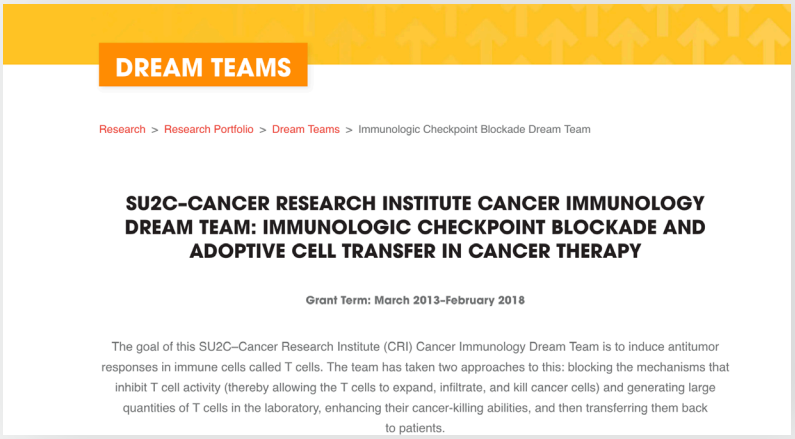
KEY PERSONNEL:

Team Leader:
James P. Allison, PhD,
The University of Texas MD Anderson Cancer Center

Team Co-leader:
Drew M. Pardoll, MD, PhD,
Johns Hopkins University

Team Co-leader:
Antoni Ribas, MD, PhD,
University of California, Los Angeles

Team Co-leader:
Cassian Yee, MD,
The University of Texas MD Anderson Cancer Center



Learn more about this team at the SU2C website.

Principals:

- Glenn E. Dranoff, MD,
  Dana-Farber Cancer Institute
- Philip D. Greenberg, MD,
  Fred Hutchinson Cancer Research Center
- James R. Heath, PhD,
  California Institute of Technology
- F. Stephen Hodi, MD,
  Dana-Farber Cancer Institute
- Michel Sadelain, MD, PhD,
  Memorial Sloan Kettering Cancer Center
- Ton N. Schumacher, PhD,
  Netherlands Cancer Institute
- Jedd D. Wolchok, MD, PhD,
  Memorial Sloan Kettering Cancer Center

Project Manager:

- James J. Mancuso,
  The University of Texas MD Anderson Cancer Center

Advocates:

- Robert E. Behrens, REB Investments, Inc.
- Debra Black, Melanoma Research Alliance
- Roy Doumani, JD, University of California, Los Angeles (deceased)
- Valerie Guild, AIM at Melanoma
- Jonathan W. Simons, MD,
  Prostate Cancer Foundation
- Mary Elizabeth Williams, Salon.com

SU2C–CANCER RESEARCH INSTITUTE CANCER IMMUNOLOGY DREAM TEAM DT5907

Purpose:

The members of the. SU2C–Cancer Research Institute Cancer Immunology Dream Team led the pre-clinical and clinical development of antibodies that block two immune inhibitory (checkpoint) pathways, the cornerstones of molecularly based immunotherapy, and identified additional inhibitory checkpoints and co-stimulatory molecules which are "druggable" targets.

Specific Aims:

AIM 1. Interrogate immune responses within the tumor microenvironment before and after treatment with immune checkpoint blockade.

AIM 2. Interrogate the targets of T and B cell responses after checkpoint blockade.

AIM 3. Provide therapeutic benefit to patients with advanced tumors by improving the quality of cancer-specific T lymphocytes generated for adoptive cell transfer (ACT) therapy.

AIM 4. Develop novel combinatorial therapies based on immune checkpoint blockade.

Key Accomplishments:

Work by members of this Dream Team contributed to several approvals of the PD-1 checkpoint inhibitors pembrolizumab and nivolumab for patients with different cancers starting on 2014. The Team made the landmark demonstration of the benefits of administering immunotherapy prior to surgical treatment of non-small cell lung cancer. The report was published in the New England Journal of Medicine. The Team conducted a clinical trial to assess combined CTLA-4 and PD-1/PD-L1 blockade in patients with advanced melanoma.

Clinical Trials:

Neoadjuvant Nivolumab, or Nivolumab in Combination With Ipilimumab, in Resectable Non-small Cell Lung Cancer; NCT02259621; Recruiting

Phase I Clinical Trial of Malignant Pleural Disease Treated With Autologous T Cells Genetically Engineered to Target the Cancer-Cell Surface Antigen Mesothelin; NCT02414269; Active, not recruiting

Phase Ib Study of Cellular Adoptive Immunotherapy Using Autologous Cd8+ Antigen-Specific T Cells and Anti-CTLA4 For Patients With Metastatic Uveal Melanoma; NCT03068624; Recruiting

Adoptive Transfer of NY-ESO-1 TCR Engineered Peripheral Blood Mononuclear Cells (PBMC) After a Nonmyeloablative Conditioning Regimen, With Administration of NY-ESO-1157-165 Pulsed Dendritic Cells and Interleukin-2, in Patients With Advanced Malignancies; NCT01697527; Active, not recruiting

Phase I/II, Open-Label Study of Nivolumab Monotherapy or Nivolumab Combined With Ipilimumab in Subjects With Advanced or Metastatic Solid Tumors; NCT01928394; Active, not recruiting

Phase II Study of Cellular Adoptive Immunotherapy Using Autologous CD8+ Antigen-Specific T Cells and Anti-CTLA4 for Patients With Metastatic Melanoma; NCT02027935; Active, not recruiting

Pilot Randomized Tissue-Based Study Evaluating Anti-PD1 Antibody or Anti-PD1 +Bevacizumab or Anti-PD1 + Anti-CTLA-4 in Patients With Metastatic Renal Cell Carcinoma Who Are Eligible for Cytoreductive Nephrectomy, Metastasectomy, or Post-treatment Biopsy; NCT02210117; Active, not recruiting

Clinical Trials (Cont'd):

Phase I/II Study in WT1-Expressing Non-small Cell Lung Cancer and Mesothelioma, Comparing Cellular Adoptive Immunotherapy With Polyclonal Autologous Central Memory to Naive CD8+ T Cells That Have Been Transduced to Express a WT1-Specific T-cell Receptor; NCT02408016; Active, not recruiting

Pilot Study of Feasibility and Safety of Personalized Autologous CD8+ T-cell Therapy Plus Anti-PD-1 Antibody in Advanced Solid Malignancies; NCT02757391; Terminated

Phase II, Single-Arm Clinical Trial of Nivolumab (BMS-936558) in Subjects With Metastatic or Unresectable Urothelial Cancer Who Have Progressed or Recurred Following Treatment With a Platinum Agent; NCT02387996; Completed

Phase Ib Safety and Dose-Assessment Study of Neoadjuvant Ipilimumab Monotherapy in Patients With Urothelial Carcinoma Undergoing Surgical Resection; NCT00362713; Completed

Neoadjuvant Phase IIa Study of Ipilimumab (Formerly known as MDX-010 (BMS-734016)) Plus Hormone Ablation in Men With Prostate Cancer Followed by Radical Prostatectomy; NCT01194271; Completed

Phase II Study of Ipilimumab Plus Androgen Deprivation Therapy in Castrate-Sensitive Prostate Carcinoma; NCT01377389; Completed

Exploratory Study of the Biologic Effects of Nivolumab and Ipilimumab Monotherapy and Nivolumab in Combination With Ipilimumab Treatment in Subjects With Advanced Melanoma (Unresectable or Metastatic); NCT01621490; Completed

Feasibility Study to Determine T-Cell Responses to Neoantigens Following Treatment With Ipilimumab in Men With Metastatic Castration-Resistant Prostate Carcinoma; NCT02113657; Completed

NY-ESO-1 TCR Engineered Adoptive Cell Transfer Therapy With Nivolumab PD-1 Blockade; NCT02775292; Completed

FUNDERS:

CANCER RESEARCH INSTITUTE®
The Leader in Immunotherapy

Melanoma Research Alliance

Targeting Adaptive Pathways in Metastatic Castration-Resistant Prostate Cancer

GRANT TERM: January 2013 – December 2016, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Eric J. Small, MD,
University of California,
San Francisco

Team Co-leader:
Owen N. Witte, MD,
University of California,
Los Angeles

Learn more about this team at the SU2C website.

Principals:

- Tomasz M. Beer, MD,
  Oregon Health & Science University
- Christopher P. Evans, MD,
  University of California, Davis,
  Comprehensive Cancer Center
- Martin E. Gleave, MD,
  University of British Columbia
- Joshua M. Stuart, PhD,
  University of California, Santa Cruz

Project Manager:

- Kelly McNeill,
  University of California, San Francisco

Advocates:

- Roy Doumani, JD, University of California,
  Los Angeles (deceased)
- Arthur H. Kern, University of California,
  San Francisco (deceased)

Purpose:

The SU2C–Prostate Cancer Foundation Prostate Cancer Dream Team was formed to explore the molecular basis of adaptive mechanisms of treatment resistance exhibited by men with castration-resistant prostate cancer (CRPC).

Specific Aims:

AIM 1. Identify adaptive pathways to abiraterone and enzalutamide active in resistant mCRPC tumors.

AIM 2. Validate that identified adaptive pathways cause resistance.

AIM 3. Demonstrate the efficacy of co-targeting adaptive pathways.

Key Accomplishments:

The Team studied metastatic biopsies to understand why patients become resistant to hormone therapy. The active signaling pathway that they identified in enzalutamide-resistant patients can potentially be blocked by drugs. They found that the MEK/ERK pathway, which is being targeted already in other cancers with new drugs, is also a linchpin in metastatic prostate cancer. They conducted a clinical trial on a MEK pathway inhibitor in mCRPC patients. The Team has developed blood tests that can be used to monitor the response of patients to treatment. These methods can keep patients from having to have tumor biopsies. They also found certain genetic characteristics in patients with treatment-emergent small-cell neuroendocrine prostate cancer (t-SCNC) (a highly aggressive subtype), that can potentially be targeted with drugs.

Clinical Trials:

Radiologically Guided Biopsies of Metastatic Castration-Resistant Prostate Cancer (mCRPC) to Identify Adaptive Mechanisms of Resistance; NCT02432001; Active, not recruiting

Phase Ib/II Study of the Oral CDK4/6 Inhibitor LEE011 in Combination With Docetaxel Plus Prednisone in Metastatic Castration-Resistant Prostate Cancer; NCT02494921; Active, not recruiting

Phase I/II Trial of Concurrent Chemohormonal Therapy Using Enzalutamide (MDV-3100) and Cabazitaxel in Patients With Metastatic Castration-Resistant Prostate Cancer; NCT02522715; Active, not recruiting

Single-Arm, Open-Label, Two-Stage Phase II Study of the MEK 1/2 Inhibitor Trametinib in Men With Progressive Metastatic Castrate-Resistant Prostate Cancer; NCT02881242; Active, not recruiting

Phase II Study Combining Ipilimumab With Abiraterone Acetate Plus Prednisone in Chemotherapy and Immunotherapy-Naive Patients With Progressive Metastatic Castration-Resistant Prostate Cancer; NCT01688492; Active, not recruiting

Multicenter, Randomized, Double-Blind, Placebo-Controlled, Phase III Study of ARN-509 in Men With Non-Metastatic (M0) Castration-Resistant Prostate Cancer; NCT019462904; Active, not recruiting

Molecular Mechanisms Underlying Tumor Progression Despite Enzalutamide Treatment; NCT02099864; Active, not recruiting

Phase III Trial of Enzalutamide (NSC # 766085) Versus Enzalutamide, Abiraterone, and Prednisone for Castration-Resistant Metastatic Prostate Cancer; NCT01949337; Active, not recruiting

Phase II Randomized, Multicenter Study of Cabazitaxel Versus Abiraterone or Enzalutamide in Poor Prognostic-Metastatic Castration-Resistant Prostate Cancer; NCT02254785; Active, not recruiting

Addition of Pembrolizumab Upon Progression on Enzalutamide in Men With mCRPC; NCT02312557; Active, not recruiting

Phase II Study of MAOA Inhibitor Plus Docetaxel in Patients Receiving and Progressing on Docetaxel Therapy; NCT01253642; Terminated (low enrollment)

Phase II Single-Agent Study of Selinexor (KPT-330) in Patients With Metastatic Castration-Resistant Prostate Cancer (mCRPC) and Prior Therapy With Abiraterone and/or Enzalutamide; NCT02215161; Terminated (risk-to-benefit ratio was not acceptable)

An Open-Label Study of Rovalpituzumab Tesirine in Subjects With Delta-Like Protein 3-Expressing Advanced Solid Tumors; NCT02709889; Terminated (strategic considerations)

Clinical Trials (Cont'd):

PREVAIL: A Multinational Phase III, Randomized, Double-Blind, Placebo-Controlled Efficacy and Safety Study of Oral MDV3100 in Chemotherapy-Naive Patients With Progressive Metastatic Prostate Cancer Who Have Failed Androgen Deprivation Therapy; NCT01212991; Completed

Phase I Trial of ADIPEG 20 Plus Docetaxel in Advanced Solid Tumors With Emphasis on Castration-Resistant Prostate Cancer (CRPC) and Advanced Non-small Cell Lung Cancer (NSCLC); NCT01497925; Completed

Randomized Phase III Study Comparing Cabazitaxel/Prednisone in Combination With Custirsen (OGX-011) to Cabazitaxel/Prednisone for Second-Line Chemotherapy in Men With Metastatic Castrate-Resistant Prostate Cancer; NCT01578655; Completed

Phase II Study of Increased-Dose Abiraterone Acetate in Patients With Castration-Resistant Prostate Cancer (CRPC); NCT01637402; Completed

Randomized Phase II Trial of Immediate Versus Delayed Anti-CTLA4 Blockade Following Sipuleucel-T Treatment for Prostate Cancer Immunotherapy; NCT01804465; Completed

Randomized, Double-Blind, Multicenter, Parallel-Group, Phase III Study to Evaluate Efficacy and Safety of DCVAC/Pca Versus Placebo in Men With Metastatic Castration-Resistant Prostate Cancer Eligible for First-Line Chemotherapy; NCT02111577; Completed

Randomized Phase II Study of Sequencing Abiraterone Acetate and Enzalutamide in Metastatic Castration-Resistant Prostate Cancer; NCT02125357; Completed

Identifying Mechanisms of Resistance to Enzalutamide (MDV3100) Treatment in Men With Castration-Resistant Prostate Cancer; NCT02228265; Completed

Phase I Study of Cabazitaxel, Mitoxantrone, and Prednisone (CAMP) for Patients With Metastatic Castration-Resistant Prostate Cancer and No Prior Chemotherapy; NCT01594918; Completed

STRIVE: A Multicenter Phase II, Randomized, Double-Blind Efficacy and Safety Study of Enzalutamide Versus Bicalutamide in Men With Prostate Cancer Who Have Failed Primary Androgen Therapy; NCT01664923; Completed

Phase II Study of Recombinant Glycosolated Human IL7 (CYT107) After Completion of Standard FDA-Approved Therapy With Sipuleucel-T (Provenge®) for Patients With Asymptomatic or Minimally Symptomatic Metastatic Castration-Resistant Prostate Cancer; NCT01881867; Completed

Three-Arm, Randomized, Open-Label, Phase II Study of Radium-223 Dichloride 50 kBq/kg (55 kBq/kg After Implementation of NIST Update) Versus 80 kBq/kg (88 kBq/kg After Implementation of NISTUpdate), and Versus 50 kBq/kg (55 kBq/kg After Implementation of NIST Update) in an Extended Dosing Schedule in Subjects With Castration-Resistant Prostate Cancer Metastatic to the Bone; NCT02023697; Completed

Phase I Safety and Tolerability Study of ZEN003694 in Patients With Metastatic Castration-Resistant Prostate Cancer; NCT02705469; Completed

FUNDERS:

Prostate Cancer Foundation
Curing Together.

Precision Therapy of Advanced Prostate Cancer

GRANT TERM: August 2012 – July 2016, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Arul M. Chinnaiyan, MD, PhD,
University of Michigan

Team Co-leader:
Charles L. Sawyers, MD,
Memorial Sloan Kettering Cancer Center

DREAM TEAMS

Research > Research Portfolio > Dream Teams > Prostate Cancer Precision Therapy Dream Team

SU2C–PROSTATE CANCER FOUNDATION PROSTATE DREAM TEAM: PRECISION THERAPY OF ADVANCED PROSTATE CANCER

Grant Term: August 2012–July 2016

Prostate cancer is the most commonly diagnosed cancer among men in North America. The SU2C–Prostate Cancer Foundation (PCF) Prostate Dream Team hypothesized that treatment for one type of the disease, metastatic castration-resistant prostate cancer, became ineffective when certain cellular pathways are activated. The team worked to find ways to shut down these pathways and preserve the effectiveness of the treatment, thus improving

Learn more about this team at the SU2C website.

Principals:

- Johann S. de Bono, MBChB, MD, Institute of Cancer Research, Royal Marsden NHS Foundation Trust
- Levi A. Garraway, MD, PhD, Broad Institute
- Philip W. Kantoff, MD, Dana-Farber Cancer Institute
- Peter S. Nelson, MD, University of Washington, Fred Hutchinson Cancer Research Center
- Mark A. Rubin, MD, Weill Cornell Medical College of Cornell University

Advocates:

- Woods Brown, University of Michigan
- Thomas A. Farrington, Prostate Health Education Network
- W. Grant Gregory, Memorial Sloan Kettering Cancer Center
- James Kiefert, EdD, Us TOO International, Inc.
- Stanley Klein, Boston Prostate Cancer Support Group
- Ian S. Liston (deceased)
- Douglas Pergament (deceased)

Project Manager:

- Karen Giles, University of Michigan

Purpose:

The SU2C–Prostate Cancer Foundation Prostate Cancer Dream Team's goal was to apply genome analysis technologies/techniques to biopsy tissues collected from a large cohort study of men with castration-resistant prostate cancer (CRPC).

Specific Aims:

AIM 1. Establish a multi-institutional infrastructure incorporating five leading prostate cancer clinical sites and two sequencing and computational analysis sites, linked with appropriate sample and data coordination.

SU2C-PROSTATE CANCER FOUNDATION PROSTATE CANCER DREAM TEAM DT5903

Specific Aims (Cont'd):

AIM 2. Establish a prospective cohort of 500 patients (the "CRPC 500") utilizing the multi-institutional infrastructure to support the clinical use of integrative prostate cancer sequencing, analysis, and clinical trial decision making.
AIM 3. Conduct parallel, preclinical in vivo functional studies of resistance biomarkers and of SU2C/PCF-sponsored combination therapies.

AIM 4. Identify molecular determinants of abiraterone sensitivity and acquired resistance in patients.

AIM 5. Conduct clinical trials of novel combinations targeting AR and/or the PTEN pathway based on existing preclinical data and an understanding of resistance mechanisms.

AIM 6. Identify molecular determinants of sensitivity and acquired resistance to PARP inhibitors in patients.

Key Accomplishments:

The team's work resulted in the largest collection of genomic data on clinical mCRPC patients to date. The Team determined the molecular landscape of metastatic CRPC and defined a "long tail" of alterations in clinically relevant genes that may inform treatment strategies. Further, the Team's standardized analytical pipeline serves as a vital infrastructure for cross-institutional genomics studies of therapeutic resistance. The Team also found that men with somatic loss of DNA repair genes have enhanced responses to PARPi and determined that 12% of men with mCRPC have germline aberrations in DNA repair genes. This research contributed to the 2020 FDA approval of Olaparib for homologous recombination repair gene-mutated metastatic castration-resistant prostate cancer.

Clinical Trials:

Phase II Trial of Olaparib in Patients With Advanced Castration-Resistant Prostate Cancer (TOPARP); NCT01682772; Not recruiting

Phase II Clinical Trial of Abiraterone Acetate Without Exogenous Glucocorticoids in Men With Castration-Resistant Prostate Cancer With Correlative Assessment of Hormone Intermediates; NCT02025010; Active, not recruiting

Randomized Phase II Study of Enzalutamide (MDV3100) in Combination With AZD5363 in Patients With Metastatic Castration-Resistant Prostate Cancer (RE-AKT); NCT02525068; Unknown

Open-Label Pharmacodynamic Study of Abiraterone Acetate in the Treatment of Metastatic, Castration-Resistant Prostate Cancer; NCT01503229; Completed

Randomized Gene Fusion Stratified Phase II Trial of Abiraterone With or Without ABT-888 for Patients With Metastatic Castration-Resistant Prostate Cancer; NCT01576172; Completed

ARMOR 2: A 2-Part, Phase II Trial of Galeterone in the Treatment of Castration-Resistant Prostate Cancer; NCT01709734; Completed

Phase Ib Study of ARN509 Plus Everolimus in Men With Progressive Metastatic Castration-Resistant Prostate Cancer After Treatment With Abiraterone Acetate; NCT02106507; Completed

Phase II Trial of Enzalutamide for Castrate-Resistant Prostate Cancer (CRPC) With Correlative Assessment of Androgen Receptor (AR) Signaling and Whole-Exome and Transcriptome Sequencing; NCT01942837; Completed

Phase I Study of Crizotinib in Combination With Enzalutamide in Metastatic Castration-Resistant Prostate Cancer Before or After Progression on Docetaxel; NCT02207504; Completed

FUNDERS:

Prostate Cancer Foundation
Curing Together.

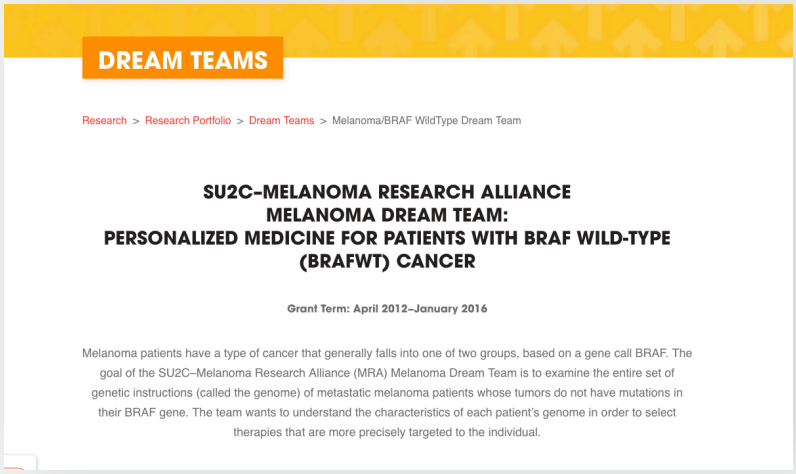
Personalized Medicine for Patients With BRAF Wild-Type (BRAFwt) Cancer

GRANT TERM: April 2012 – June 2017, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Jeffrey M. Trent, PhD,
Translational Genomics Research Institute

Team Co-leader:
Patricia M. LoRusso, DO,
Yale Cancer Center



Learn more about this team at the SU2C website.

Principals:

- Joshua LaBaer, MD, PhD, Biodesign Institute at Arizona State University
- Svetomir N. Markovic, MD, PhD, Mayo Clinic
- Brian J. Nickoloff, MD, PhD, Michigan State University
- Emanuel F. Petricoin, PhD, George Mason University
- Neal Rosen, MD, PhD, Memorial Sloan Kettering Cancer Center
- Nicholas J. Schork, PhD, J. Craig Venter Institute
- Aleksandar D. Sekulic, MD, PhD, Mayo Clinic
- Jeffrey A. Sosman, MD, Mayo Clinic
- Kristiina Vuori, MD, PhD, Sanford Burnham Prebys Medical Discovery Institute

Project Manager:

- Cassandra L. Lucas, PhD, Translational Genomics Research Institute

Advocates:

- Tracy L. Bame, Freeport-McMoRan Copper & Gold Foundation
- Mark Gorman, JD, National Coalition for Cancer Survivorship
- Derrick M. Hall, Arizona Diamondbacks
- Cornelius A. McGillicuddy III, Liberty Partners Group
- Jane Perlmutter, PhD, Gemini Group

SU2C-MELANOMA RESEARCH ALLIANCE MELANOMA DREAM TEAM DT5913

Purpose:

The goal of this Team was to examine the genome of metastatic melanoma patients whose tumors do not bear a BRAF mutation to identify specific genetic alterations that would help match patients with an appropriate targeted therapy. The Team tested whether this personalized medicine approach would lead to more appropriate treatments and spare patients from unnecessary treatments, which are often highly toxic with uncertain benefit.

Specific Aims:

AIM 1. Conduct a randomized pilot study to assess the feasibility and safety of characterizing BRAFwt MM tumors to design a molecularly informed therapeutic regimen.

AIM 2. Iteratively refine and standardize a set of statistical and informatics methodologies for matching treatments to the patient's tumor, based on its molecular profile.

AIM 3. Evaluate whether molecularly informed personalized therapy selection, based on a tumor's molecular profile (potentially enhanced by the refined methodology for predicting drug response developed in Aim 2), will improve outcomes relative to standard of care therapy in BRAFwt MM.

Key Accomplishments:

The Team developed and optimized a methodology for molecular characterization of BRAF wildtype melanomas. This optimization decreased the time for the clinical and molecular profiling from biopsy to tumor board from five weeks to 22 days. The Team successfully conducted a pilot study, followed by a larger-scale clinical trial to assess the feasibility of tumor molecular characterization to guide the selection of appropriate treatments.

Clinical Trial:

Stand Up To Cancer Consortium Genomics-Enabled Medicine for Melanoma (G.E.M.M.): Using Molecularly Guided Therapy for Patients With BRAF Wild-Type (BRAFwt) Metastatic Melanoma; NCT02094872; Completed

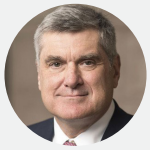
FUNDERS:

Melanoma Research Alliance

Cutting Off the Fuel Supply: A New Approach to the Treatment of Pancreatic Cancer

GRANT TERM: December 2009 – October 2017, administered by the American Association for Cancer Research

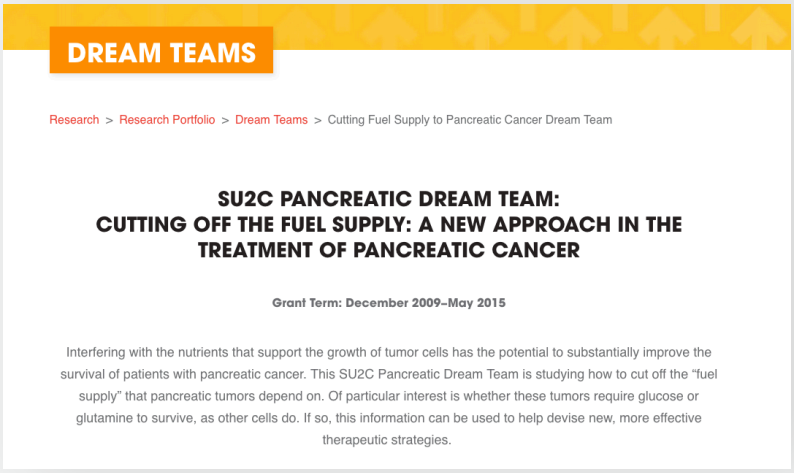
KEY PERSONNEL:



Team Leader:
Craig B. Thompson, MD, (2009–2011), University of Pennsylvania

Team Leader:
Jeffrey A. Drebin, MD, PhD (2011–2015) University of Pennsylvania

Team Co-leader:
Daniel D. Von Hoff, MD, Translational Genomics Research Institute


DREAM TEAMS

Research > Research Portfolio > Dream Teams > Cutting Fuel Supply to Pancreatic Cancer Dream Team

SU2C PANCREATIC DREAM TEAM:
CUTTING OFF THE FUEL SUPPLY: A NEW APPROACH IN THE TREATMENT OF PANCREATIC CANCER

Grant Term: December 2009–May 2015

Interfering with the nutrients that support the growth of tumor cells has the potential to substantially improve the survival of patients with pancreatic cancer. This SU2C Pancreatic Dream Team is studying how to cut off the "fuel supply" that pancreatic tumors depend on. Of particular interest is whether these tumors require glucose or glutamine to survive, as other cells do. If so, this information can be used to help devise new, more effective therapeutic strategies.

Learn more about this team at the SU2C website.

Principals:

- Chi Van Dang, MD, PhD, University of Pennsylvania
- Joshua D. Rabinowitz, MD, PhD, Princeton University
- Geoffrey M. Wahl, PhD, Salk Institute for Biological Studies

Advocates:

- Julie M. Fleshman, JD, Pancreatic Action Network
- Barton A. Kamen, Leukemia and Lymphoma Society (deceased)
- Kerri Kaplan, Lustgarten Foundation
- Randall M. Katz, Milestone Entertainment
- Howard Young

Purpose:

The Pancreatic Dream Team aimed to develop new clinical tests to determine how pancreatic cancer cells fuel their growth and survival to allow tailored clinical therapies challenging the tumor cell's fuel supply. Clinical trials were initiated of drugs to inhibit pancreatic cancer cells from effectively using either stromal cell-derived cytokines or glucose and/or glutamine to maintain their survival.

SU2C PANCREATIC DREAM TEAM DT5921

Specific Aims:

AIM 1. Imaging glucose and/or glutamine uptake in pancreatic tumors.

AIM 2. Investigating clinical therapies to impair tumor metabolism and stromal support.

Key Accomplishments:

The Team has transformed how pancreatic cancer patients could be treated by developing a new way to take an image of the tumor inside a patient's body, showing the efficacy of a new drug regimen that is now being used as the standard of care, demonstrating how circulating DNA in the blood can be used to detect cancer recurrence, and developing a new cancer-killing strategy using a vitamin-D like compound. The results of the Team's Phase III trial testing Gemcitabine +/- Albumin-bound paclitaxel provided key evidence leading to the FDA approval of the combination of nab-paclitaxel with gemcitabine for the treatment of advanced pancreatic cancer -- changing the standard of care.

Clinical Trials:

Phase I Study: PET Imaging of Cancer Patients Using (18F) 4-L-Fluoroglutamine (2S,4R); NCT01697930; Recruiting

Randomized Phase III Study of Weekly ABI-007 Plus Gemcitabine Versus Gemcitabine Alone in Patients With Metastatic Adenocarcinoma of the Pancreas; NCT00844649; Completed

Stand Up To Cancer Consortium: Phase II Study of Therapy Selected by Molecular/Metabolic Profiling in Patients With Previously Treated Metastatic Pancreatic Cancer; NCT01196247; Completed

Phase I/II Pharmacodynamics Study of Hydroxychloroquine in Combination With Gemcitabine/Abraxane to Inhibit Autophagy in Pancreatic Cancer; NCT01506973; Completed

Randomized Pilot/Pharmacodynamic/Genomic Study of Neoadjuvant Paricalcitol to Target the Microenvironment in Resectable Pancreatic Cancer; NCT02030860; Completed

Exploratory Study of Metformin With or Without Rapamycin as Maintenance Therapy After Induction Chemotherapy in Subjects With Metastatic Pancreatic Adenocarcinoma Cancer; NCT02048384; Completed

FUNDERS:

STAND UP TO CANCER®

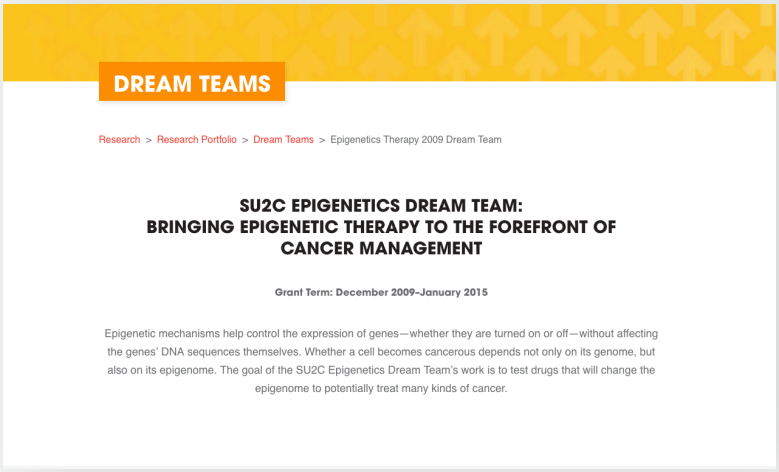
Bringing Epigenetic Therapy to the Forefront of Cancer Management

GRANT TERM: December 2009 – January 2015, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Stephen B. Baylin, MD,
Johns Hopkins University

Team Co-leader:
Peter A. Jones, PhD, DSc (hc),
Van Andel Institute



Learn more about this team at the SU2C website.

Principals:

- Steven A. Belinsky, PhD,
  Lovelace Respiratory Research Institute
- Nancy E. Davidson, MD,
  Fred Hutchinson Cancer Research Center
- Jean-Pierre J. Issa, MD,
  Coriell Institute for Medical Research

Advocates:

- Diana T. Chingos, National Cancer Institute
- Lillie D. Shockney, Johns Hopkins University

Purpose:

The Epigenetics Dream Team tested the hypothesis that drugs targeting DNA demethylation and histone deactylation can potently change the management of advanced NSCLC.

Specific Aims:

AIM 1. Develop molecular markers that predict and monitor the efficacy of cancer epigenetic therapies.

AIM 2. Perform clinical trials to bring epigenetic therapy to the forefront of cancer management.

SU2C EPIGENETICS DREAM TEAM DT5917

Specific Aims (Cont'd):

AIM 3. Determine whether a key mechanism for efficacy of epigenetic therapy is targeting and exhaustion of self-renewing cancer cells.

AIM 4. Develop a clinical trial with a new drug designed to circumvent the instability of 5-AC and DAC.

AIM 5. Determine targets in addition to promoter DNA hypermethylation that may be utilized in new cancer epigenetic therapy approaches.

Key Accomplishments:

The Epigenetics Dream Team explored the therapeutic potential of different epigenetic drugs; namely, 5-azacitidine (5-AC), decitabine (DAC), entinostat, and a novel DNA demethylating agent SGI-110 (guadecitabine), in clinical trials for non-small cell lung cancer, colorectal cancer, AML, breast cancer and MDS/AML. They observed objective, durable responses in patients with solid tumors treated with low-dose azacitidine and entinostat in their phase I/II clinical trial. Correlative analyses of lung cancer clinical trial samples, along with results from preclinical studies, indicated that epigenetic therapy may prime tumors for responsiveness to immune checkpoint blockade.

Clinical Trials:

Phase II Study of Epigenetic Therapy With Azacitidine and Entinostat With Concurrent Nivolumab in Subjects With Metastatic Non-Small Cell Lung Cancer; NCT01928576; Recruiting

Phase I/II Study of Entinostat in Combination With 5-Azacitidine in Patients With Recurrent Advanced Non-small Cell Lung Cancer; NCT00387465; Completed

Phase II Study of Azacitidine and Entinostat in Patients With Metastatic Colorectal Cancer; NCT01105377; Completed

Phase 1-2, Dose Escalation, Multicenter Study of Two Subcutaneous Regimens of SGI-110, a DNA Hypomethylating Agent, in Subjects With Intermediate or High-Risk Myelodysplastic Syndromes (MDS) or Acute Myelogenous Leukemia (AML); NCT01261312; Completed

Phase II Study of Azacitidine and Entinostat (SNDX-275) in Patients With Advanced Breast Cancer; NCT01349959; Completed

Randomized Phase II Trial of Adjuvant Combined Epigenetic Therapy With 5-Azacitidine and Entinostat in Resected Stage 1 Non-small Cell Lung Cancer Versus Standard Care; NCT01207726; Terminated

Randomized Phase II Trial of Cytotoxic Chemotherapy With or Without Epigenetic Priming in Patients With Advanced Non-small Cell Lung Cancer; NCT01935947; Terminated

FUNDERS:

STAND UP TO CANCER®

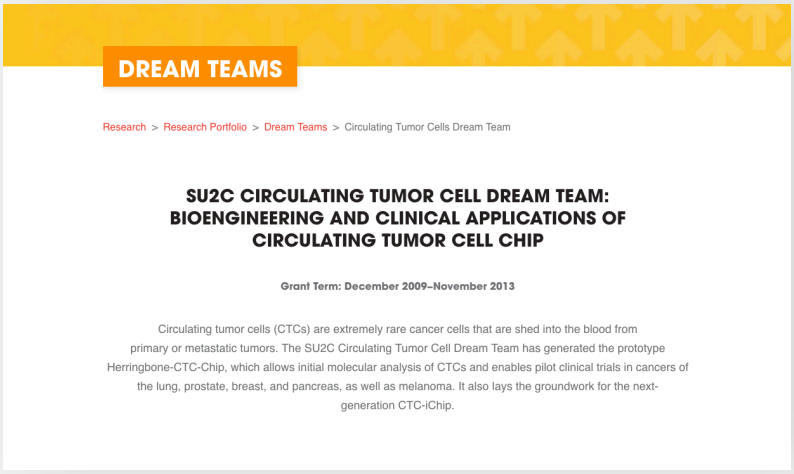
Bioengineering and Clinical Applications of Circulating Tumor Cell Chip

GRANT TERM: December 2009 – November 2013, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Daniel A. Haber, MD, PhD, Massachusetts General Hospital

Team Co-leader:
Mehmet Toner, PhD, Massachusetts General Hospital



Learn more about this team at the SU2C website.

Principals:

- Sangeeta N. Bhatia, MD, PhD, Massachusetts Institute of Technology
- John V. Heymach, MD, PhD, The University of Texas MD Anderson Cancer Center
- Bruce E. Johnson, MD, Dana-Farber Cancer Institute
- Mark G. Kris, MD, Memorial Sloan Kettering Cancer Center

Advocates:

- Rebecca Douglass, Douglass Family Foundation
- Jeane Ungerleider, Boston IVF

Purpose:

The SU2C Circulating Tumor Cell Dream Team generated the prototype Herringbone-CTC-Chip, which allows initial molecular analysis of Circulating Tumor Cells (CTCs) and enables pilot clinical trials in cancers of the lung, prostate, breast, and pancreas, as well as melanoma. It also laid the groundwork for the next-generation CTC-iChip.

SU2C CIRCULATING TUMOR CELL (CTC) DREAM TEAM DT5919

Specific Aims:

AIM 1A. Examine bioengineering optimization and nanosensing for increased sensitivity.

AIM 1B. Perform molecular characterization of CTCs.

AIM 2. Investigate clinical applications of the CTC-chip.

Key Accomplishments:

The Team created a silicon chip that captures CTCs in a blood sample, allowing them to be analyzed, and laid the groundwork for a more sensitive, next-generation chip. The Team continued to develop techniques for studying CTCs and growing them in the laboratory. With these new methods, a doctor can learn about a patient's tumor by studying CTCs in a simple blood sample, rather than having to order a biopsy.

Clinical Trials:

Circulating Tumor Cell Analysis in Patients With Localized Prostate Cancer Undergoing Prostatectomy; NCT01961713; Recruiting

Phase II Study of Lapatinib in Combination With Trastuzumab in Patients With HER2-Positive, Metastatic Breast Cancer; NCT00470704; Active, not recruiting

First-Line Erlotinib Therapy and the Subsequent Development of Mechanisms of Secondary Resistance in Patients With Non-small Cell Lung Cancer and Known Sensitizing EGFR Mutations; NCT00997334; Completed

Detecting EGFR T790M Mutations From Circulating Tumor Cells; NCT01734915; Completed

Phase II Single-Arm, Open-Label Study to Evaluate the Efficacy and Safety of Trastuzumab and Vinorelbine in Advanced Breast Cancer Patients With Human Epidermal Growth Factor-2 (HER2) Negative Primary Tumors and HER2-Positive Circulating Tumor Cells; NCT01185509; Terminated

FUNDERS:

STAND UP TO CANCER®

Targeting the PI3K Pathway in Women's Cancers

GRANT TERM: November 2009 – October 2013, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Lewis C. Cantley, PhD,
Beth Israel Deaconess Medical Center

Team Co-leader:
Gordon B. Mills, MD, PhD,
The University of Texas MD Anderson Cancer Center

Team Co-leader:
(2009–2012): Charles L. Sawyers, MD,
Memorial Sloan Kettering Cancer Center

Learn more about this team at the SU2C website.

Principals:

- Carlos L. Arteaga, MD, Vanderbilt-Ingram Cancer Center
- José Baselga, MD, PhD, Vall d'Hebron Institute of Oncology (deceased)
- Ramon E. Parsons, MD, PhD, Herbert Irving Comprehensive Cancer Center
- Thomas M. Roberts, PhD, Dana-Farber Cancer Institute
- David B. Solit, MD, Memorial Sloan Kettering Cancer Center

Advocates:

- Piru Cantarell, Vall d'Hebron Institute of Oncology
- Ruth Fax, Dana-Farber Cancer Institute
- Elizabeth Frank, Dana-Farber Cancer Institute
- Judi Hirschfield-Bartek, Beth Israel Deaconess Medical Center
- Patricia Lee, Vanderbilt University
- Don Listwin, Canary Foundation
- Jane Perlmutter, Gemini Group
- Sara Weiss, Dana-Farber Cancer Institute

Project Manager:

- Donald R. Watson, Dana-Farber Cancer Institute

SU2C PI3K DREAM TEAM DT5918

Purpose:

The goal of the PI3K Dream Team was to discover approaches that predict which patients will respond positively to PI3K pathway inhibitors. This project's aims allowed clinicians to use biomarkers and imaging techniques to predict which patients would benefit from specific PI3K pathway inhibitors, leading to the development of therapeutic combinations that would hit multiple targets in the complex pathways that contribute to cancer cell growth.

Specific Aims:

AIM 1. Develop molecular markers and/or imaging modalities that predict the subset of cancers that are likely to respond to PI3K pathway inhibitors.

AIM 2. Design and conduct single-agent, molecular marker–driven adaptive trial(s).

AIM 3. Develop rational therapeutic combinations of PI3K pathway–targeted drugs.

AIM 4. Design and conduct two multi-arm, molecular marker–driven adaptive trials using a rational combination of a PI3K pathway inhibitor with another targeted therapy.

Key Accomplishments:

The PI3K Dream Team developed a set of biomarkers, PI3K pathway inhibitors, and AKT inhibitors which were studied in 15 clinical trials. Promising early results from PI3K pathway or AKT inhibitor combinations in breast, ovarian, and endometrial cancers led to follow-on studies supported by pharmaceutical companies. Studies of olaparib drug combinations in BRCA1 ovarian and triple negative breast cancers informed the later work of the SU2C–Ovarian Cancer Research Alliance–National Ovarian Cancer Coalition Ovarian Cancer Dream Team. Results of one clinical trial developed by the team contributed to the FDA approval of alpelisib combined with fulvestrant for advanced or metastatic HR+/HER2-, PIK3CA – mutated breast cancer in postmenopausal women and in men. The SU2C PI3K Dream team has continued the team science concepts and collaborative model developed during the SU2C support with continued collaborations on preclinical studies and clinical trials. The trials initiated as the result of the SU2C support of the PI3K Dream team have demonstrated marked benefit for patients and have driven the development of multiple ongoing clinical trials.

Clinical Trials:

Phase Ib Trial of BYL719 (an a-Specific PI3K Inhibitor) in Combination With Endocrine Therapy in Post-menopausal Patients With Hormone Receptor–Positive Metastatic Breast Cancer; NCT01791478; Active, not recruiting

Three-Arm, Randomized, Phase II Study of Paclitaxel/Carboplatin/Bevacizumab (NSC #704865), Paclitaxel/Carboplatin/Temsirolimus (NSC #683864), and Ixabepilone (NSC #710428)/Carboplatin/Bevacizumab as Initial Therapy for Measurable Stage 3 or 4a, Stage 4b, or Recurrent Endometrial Cancer; NCT00977574; Active, not recruiting

Randomized Phase I Study With a Safety Lead-In to Assess the Antitumor Efficacy of the MEK Inhibitor Trametinib Alone or in Combination With GSK2141795, an AKT Inhibitor, in Patients With Recurrent or Persistent Endometrial Cancer; NCT01935973; Completed

Phase Ib Trial of BKM120 (a PI3K Inhibitor) or BEZ235 (a PI3K/mTOR Inhibitor) in Combination With Endocrine Therapy in Post-menopausal Patients With Hormone Receptor–Positive Metastatic Breast Cancer; NCT01248494; Completed

SU2C PI3K DREAM TEAM DT5918

Clinical Trials (Cont'd):

Phase Ib Dose-Escalation and Biomarker Study of MK-2206 in Combination With Standard Doses of Weekly Paclitaxel in Patients With Locally Advanced or Metastatic Solid Tumors With an Expansion in Advanced Breast Cancer; NCT01263145; Completed

Phase II Trial of AKT Inhibitor MK2206 in Patients With Advanced Breast Cancer Who Have Tumors With a PIK3CA Mutation, or an AKT Mutation, and/or PTEN Loss/PTEN Mutation; NCT01277757; Completed

Phase II Study of MK-2206 in the Treatment of Recurrent High-Grade Serous Platinum-Resistant Ovarian, Fallopian Tube, or Primary Peritoneal Cancer; NCT01283035; Completed

Phase II Trial of BKM120 (a PI3K Inhibitor) in Patients With Triple-Negative Metastatic Breast Cancer; NCT01629615; Completed

Phase I Study of the Oral PI3kinase Inhibitor BKM120 or BYL719 and the Oral PARP Inhibitor Olaparib in Patients With Recurrent Triple-Negative Breast Cancer or High-Grade Serous Ovarian Cancer; NCT01623349; Completed

Phase II, Two-Stage, Two-Arm PIK3CA Mutation Stratified Trial of MK-2206 in Recurrent or Advanced Endometrial Cancer; NCT01312753; Completed

Phase II Evaluation of AZD6244 (NSC#748727) in the Treatment of Recurrent or Persistent Endometrial Carcinoma; NCT01011933; Completed

Phase I/II Study of XL147 (SAR245408) Administered in Combination With Trastuzumab or Paclitaxel and Trastuzumab in Subjects With Metastatic Breast Cancer Who Have Progressed on a Previous Trastuzumab-Based Regimen; NCT01042925; Completed

Phase I/II Dose-Escalation Study of XL147 (SAR245408) or XL765 (SAR245409) in Combination With Letrozole in Subjects With Hormone Receptor–Positive and HER2-Negative Breast Cancer Refractory to a Nonsteroidal Aromatase Inhibitor; NCT01082068; Completed

Multicenter, Single-Arm, Open-Label, Phase II Study of GDC-0980 for the Treatment of Recurrent or Persistent Endometrial Carcinoma; NCT01455493; Completed

Phase II, Randomized, Double-Blind, Placebo-Controlled Study of Letrozole With or Without BYL719 or Buparlisib for the Neoadjuvant Treatment of Postmenopausal Women With Hormone Receptor–Positive, HER2-Negative Breast Cancer; NCT01923168; Completed

A Phase Ib Study of the Oral PARP Inhibitor Olaparib With the Oral mTORC1/2 Inhibitor AZD2014 or the Oral AKT Inhibitor AZD5363 for Recurrent Endometrial, Triple Negative Breast, and Ovarian, Primary Peritoneal, or Fallopian Tube Cancer; NCT02208375; Active, not recruiting

FUNDERS:

STAND UP TO CANCER®

SU2C BREAST CANCER DREAM TEAM DT5920

An Integrated Approach to Targeting Breast Cancer Molecular Subtypes and Their Resistance Phenotypes

GRANT TERM: October 2009 – September 2014, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Dennis J. Slamon, MD, PhD, University of California, Los Angeles

Team Co-leader:
Joe W. Gray, PhD, Oregon Health & Science University

DREAM TEAMS

Research > Research Portfolio > Dream Teams > Breast Cancer Resistant Phenotypes Dream Team

SU2C BREAST CANCER DREAM TEAM:
AN INTEGRATED APPROACH TO TARGETING BREAST CANCER MOLECULAR SUBTYPES AND THEIR RESISTANCE PHENOTYPES

Grant Term: October 2009–September 2014

The SU2C Breast Cancer Dream Team addresses the most significant issues related to the three major subtypes of breast cancer—ER positive, HER2 positive, and triple negative. It uses its findings to develop innovative and less toxic therapies with the potential to improve the treatment outcomes for women with this disease.

Learn more about this team at the SU2C website.

Principals:

- Alan Ashworth, PhD, UCSF Helen Diller Family Comprehensive Cancer Center
- Joan S. Brugge, PhD, Harvard Medical School
- Arul M. Chinnaiyan, MD, PhD, University of Michigan
- Gregory J. Hannon, PhD, Cold Spring Harbor Laboratory
- David Haussler, PhD, University of California, Santa Cruz
- Craig V. Jordan, DSc, PhD, Fox Chase Cancer Center
- C. Kent Osborne, PhD, Baylor College of Medicine
- Peter K. Sorger, PhD, Harvard Medical School
- Terence P. Speed, PhD, University of California, Berkeley
- Zena Werb, PhD, University of California, San Francisco (deceased)
- Max S. Wicha, MD, University of Michigan

Advocates:

- Janice Barlow, Zero Breast Cancer (Retired)
- Cindy Geoghegan, Patient & Partners, LLC
- Ellen L. Stoval, National Coalition for Cancer Survivorship (deceased)
- Frances M. Visco, National Breast Cancer Coalition

SU2C BREAST CANCER DREAM TEAM DT5920

Purpose:

The SU2C Breast Cancer Dream Team studied the mechanisms of resistance to treatment in three major subtypes of breast cancer—ER positive, HER2 positive, and triple negative. It used its findings to develop less toxic therapies with the potential to improve treatment outcomes.

Specific Aims:

AIM 1. Expand the understanding of the known "driving" initial molecular mechanisms responsible for the pathogenesis and clinical behavior of the three known therapeutic breast cancer subtypes, i.e., estrogen (E2)/estrogen receptor (ER-positive), HER2-positive, and triple-negative (TN) subtypes of breast cancer.

AIM 2. Study the "driving" mechanisms responsible for de novo as well as acquired resistance to appropriately targeted treatments of the three known therapeutic breast cancer subtypes, i.e., estrogen (E2)/estrogen receptor (ER-positive), HER2-positive, and triple-negative (TN) breast cancers.

AIM 3. Investigate the potential initial "driving" pathogenetic as well as de novo or acquired "resistance" mechanisms mediated by "stem/ progenitor" breast cancer cells within each or across all of the three known breast cancer therapeutic subtypes, with the ultimate objective being the design, development, and clinical testing of new and innovative therapies for the "tumorigenic" and "resistance" phenotypes potentially mediated by these stem/progenitor cells.

AIM 4. Develop new and/or characterize existing relevant and representative cell line and xenograft models, as well as utilize annotated clinical material to query the contributions of "normal" and "malignancy-derived" matrix/stromal components of each breast cancer subtype, including those that might contribute to or mediate the "resistance" phenotype to targeted therapeutics.

AIM 5. Develop an integrated discovery and informatics research unit that cuts across the above aims and is designed to deploy, inform, and facilitate implementation of relevant discovery and informatics platforms needed for these aims.

Key Accomplishments:

The Breast Cancer Dream Team endeavored to develop less toxic therapies with the potential to improve treatment outcomes, study the malignant cancer stem cells impact of resistance across the three major breast cancer subtypes, and develop a "discovery platform" for identifying and validating new drug combinations and targets that can be pursued in clinical trials by creating a database which integrates existing information about breast cancer. A significant outcome of these efforts contributed to the 2015 FDA approval of the first-in-class CDK4/6 inhibitor palbociclib in combination with letrozole for ER+, HER2- metastatic breast cancer.

Clinical Trial:

Novel (PD 0332991: CDK4/6 Inhibitor, Pfizer) ER-Positive, HER2-Negative Advanced Breast Cancer in Postmenopausal Women; NCT00721409; Completed

FUNDERS:

STAND UP TO CANCER®

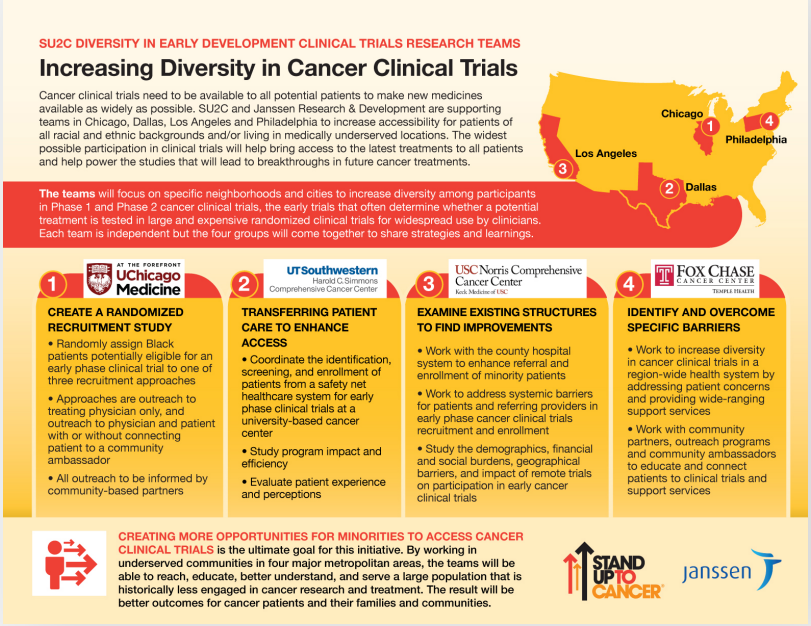
RESEARCH TEAMS

Increasing Diversity in Cancer Clinical Trials

GRANT TERM: TWO YEARS, START DATE TBD

The Diversity in Early Development Clinical Trials Research Grants Program is supporting four teams to increase diversity among participants in Phase 1 and Phase 2 cancer clinical trials. The objective is to increase accessibility for patients of all racial and ethnic backgrounds and/or medically underserved locations to equally participate in studies.

Each Team is bringing together key stakeholders that are deeply connected to the impacted communities, integrating social/behavioral determinants of health, community engagement and outreach with cancer biology, prevention, and treatment, and realizing the ideal of health equity.



A larger version of this infographic is available in the appendix.

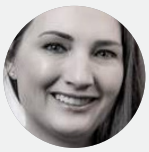
Learn more about this team at the SU2C website.

UNIVERSITY OF CHICAGO RT6344

Project: Enhancing Diversity in Early Phase Clinical Trials in an Urban Underserved Community

KEY PERSONNEL:

Team Leader:
Walter Stadler, MD



Team Co-leader:
Brisa Aschebrook, PhD

Specific Aims:

AIM 1. Conduct a randomized recruitment study for available phase 1 and 2 cancer trials.

AIM 2. Assess the long-term impact of the community engagement program.

UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER RT6342

Project: Transferring Care to Enhance Access to Early-phase Cancer Clinical Trials

KEY PERSONNEL:

Team Leader:
David Gerber, MD

Team Co-leader:
Chika Nwachukwu, MD, PhD

Specific Aims:

AIM 1. Implement a program for screening, recruiting, and enrolling patients from a safety-net medical system on early-phase cancer clinical trials in a university-based NCI-designated cancer center.

AIM 2. Determine program impact and efficiency.

AIM 3. Determine experience with and perceptions of the program.

UNIVERSITY OF SOUTHERN CALIFORNIA RT6345

Project: Eliminating Enrollment Barriers to Early Phase Trials in a Diverse Population in Los Angeles County

KEY PERSONNEL:

Team Leader:
Anthony El-Khoueiry, MD

Team Co-leader:
Chanita Hughes-Halbert, PhD

Specific Aims:

AIM 1. Engage oncology care providers in a safety net hospital system to identify referral barriers and facilitators using key informant interviews.

AIM 2. Create a multicomponent intervention tailored to address barriers at the patient, provider, and system levels and to optimize the referral and enrollment process in early phase therapeutic trials in a safety-net setting.

AIM 3. Evaluate the impact of remote trial enrollment in a funded investigator-initiated trial.

THE RESEARCH INSTITUTE OF FOX CHASE CANCER CENTER RT6343

Project: Accelerating and Diversifying Access to Clinical Trials

KEY PERSONNEL:

Team Leader:
Martin Edelman, MD

Team Co-leader:
Linda Fleisher, PhD

Specific Aims:

AIM 1. Develop infrastructure/personnel to extend early phase clinical trials

AIM 2. Provide extensive patient support and services to support patients in early phase clinical trials

AIM 3. Leverage community and patient engagement for community education and integrating existing community services to support early phase clinical trials participation.

FUNDERS:

janssen

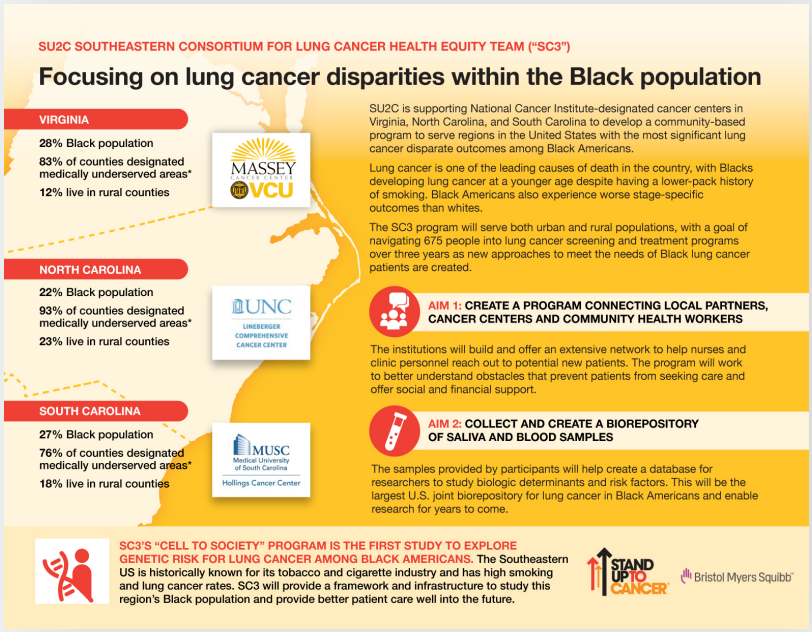
Southeastern Consortium for Lung Cancer Health Equity

GRANT TERM: February 2022 - January 2025

KEY PERSONNEL:

Team Leader:
Robert A. Winn, MD,
Virginia Commonwealth University

Team Co-leader:
Marvella E. Ford, PhD,
Medical University of South Carolina



A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Principal:

- Louise Henderson, PhD,
  University of North Carolina at Chapel Hill

Project Managers:

- Rosuany Vélez Acevedo, PhD,
  Virginia Commonwealth University,
  velezrn@vcu.edu

Advocates:

- Tomma Hargraves, UNC Lineberger Comprehensive Cancer Center
- Rudene Mercer Haynes, Virginia Commonwealth University
- Deborah Roland-Jaremba, MUSC Hollings Cancer Center

SU2C LUNG CANCER HEALTH EQUITY RESEARCH TEAM RT6228

Purpose:

The Southeastern Consortium for Lung Cancer Health Equity Team is focusing on lung cancer disparities within the Black/African American population using a "cell-to-society" approach. They aim to create a sustainable infrastructure to gather relevant data needed to increase lung cancer screening and develop better methods for identifying those at the highest risk for a diagnosis of and/or poor treatment outcomes for lung cancer.

Specific Aims:

AIM 1. Initiate and evaluate a high-impact, multimodal, and multilevel navigation intervention to promote LCS among Black/African American individuals from both rural and urban medically underserved communities in Virginia, North Carolina, and South Carolina.

AIM 2. Develop a robust, shared population–based cohort and biorepository to further support research in understanding biologic determinants or risk factors for poor lung cancer outcomes among Black/African American individuals.

Progress: This Team was commended for efficient start-up in a preliminary review.

FUNDERS:

Bristol Myers Squibb™

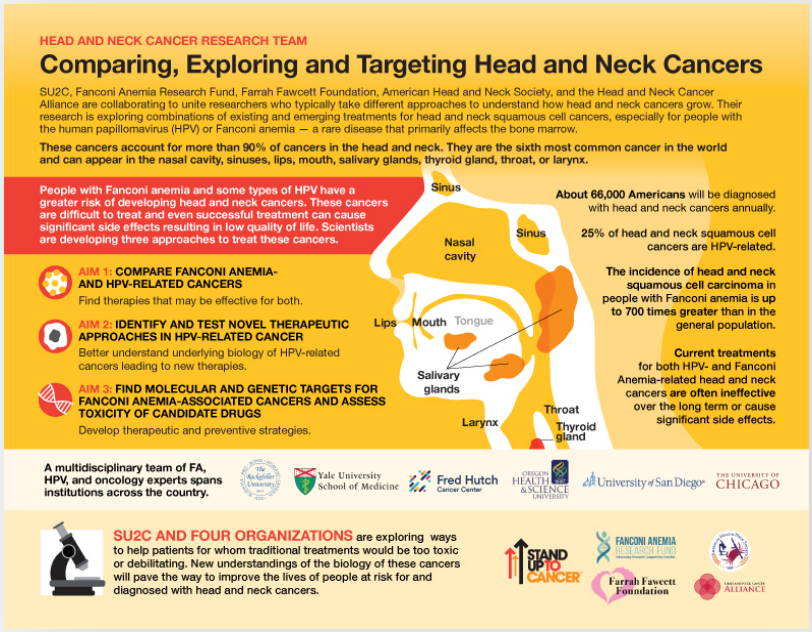
Precision Therapy for Fanconi Anemia and HPV-Related Head and Neck Cancers

GRANT TERM: October 2021 – September 2024

KEY PERSONNEL:

Team Leader:
Agata Smogorzewska, MD, PhD,
The Rockefeller University

Team Co-leader:
Barbara Burtness, MD,
Yale School of Medicine



A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Principals:

- Amanda Paulovich, MD, PhD,
  Fred Hutchinson Cancer Research Center
- Markus Grompe, MD,
  Oregon Health & Science University
- Jorge Silvio Gutkind, PhD,
  University of California, San Diego

Project Manager:

- Anna Arnal Estape, PhD, Yale School of Medicine, anna.arnal@yale.edu

Advocates:

- Allison Breininger
- Peter Krause, MD, Yale School of Medicine

Purpose:

The goal of the Precision Therapy for Fanconi Anemia and HPV-Related Head and Neck Cancers Team is to develop improved treatments for patients with head and neck squamous cell carcinoma. The Team is concentrating on treatments for patients who develop this cancer due to human papillomavirus infection (HPV) or Fanconi anemia. Cancers that develop due to HPV infection are often diagnosed when cancer has already spread, and a quarter of these patients are not cured with current therapies. Standard therapies cannot be used in patients with Fanconi anemia due to their disease, leading to poor outcomes. In both patient groups, successful treatment may be associated with serious side effects resulting in low quality of life.

STAND UP TO CANCER–FANCONI ANEMIA RESEARCH FUND–FARRAH FAWCETT FOUNDATION HEAD AND NECK CANCER RESEARCH TEAM RT6219

Specific Aims:

AIM 1. Perform proteogenomic and digital histologic analysis of FA-related and HPV-related HNSCCs to identify common and cohort-specific therapeutic approaches.

AIM 2. Identify and test novel therapeutic approaches in HPV-related HNSCC.

AIM 3. Identify effective chemoprevention and treatments in FA-associated HNSCC.

AIM 4. Assess the toxicity of potential cancer therapeutics using FA mice bone marrow function assays.

Progress:

This Team was commended for efficient start-up in a preliminary review.

FUNDERS:

FANCONI ANEMIA RESEARCH FUND Advancing Research. Supporting Families.

Farrah Fawcett Foundation

American Head & Neck Society

Head and Neck Cancer Alliance

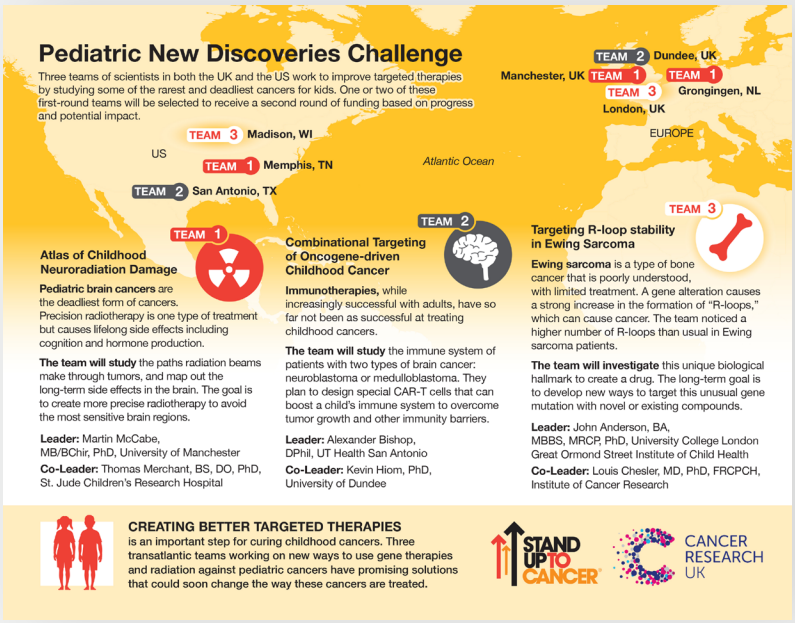
Combinatorial Targeting of Oncogene-Driven Childhood Cancer

GRANT TERM: March 2021 – September 2023

KEY PERSONNEL:

Team Leader:
John Anderson, MBBS, MRCP, PhD, University College London Great Ormond Street Institute of Child Health

Team Co-leader:
Louis Chesler, MD, PhD, FRCPCH, Institute of Cancer Research



A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Principals:

- Paul M. Sondel, MD, PhD, University of Wisconsin, Madison
- Darren Hargrave, MD, FRCPCH, MRCP, University College London Great Ormond Street Institute of Child Health
- Laura Donovan, PhD, University College London Great Ormond Street Institute of Child Health

Project Managers:

- Jennifer Furman, PhD, University College London, j.furman@ucl.ac.uk

Advocates:

- Parker Moss
- Lori R. Schultz, UW Health American Family Children's Hospital

SU2C-CRUK PEDIATRIC CANCER NEW DISCOVERIES CHALLENGE RESEARCH TEAM RT6188

Purpose:

The Combinatorial Targeting of Oncogene-Driven Childhood Cancer Team is working to overcome the diminished efficacy of immunotherapies in the treatment of pediatric cancers, specifically in neuroblastoma and medulloblastoma using immune competent models of resistant disease. They are designing CAR T cells to overcome immune evasion and barriers using new compounds to overcome tumor growth and immune barrier formation and are also using a combination of drugs to strengthen immune responses, employing multiparameter proteomics to measure response and resistance.

Specific Aims:

AIM 1. Evaluate MYC inhibitor combinations with chemotherapy and anti-GD2 antibody in neuroblastoma model.

AIM 2. Evaluate MYC inhibitor agents with local delivery of CAR T cells in medulloblastoma model.

AIM 3. Optimize CAR T to incorporate into combination studies.

AIM 4. Evaluate MYC inhibitor with in situ vaccine in neuroblastoma.

AIM 5. Evaluate addition of in situ vaccine to MYC targeting in medulloblastoma.

AIM 6. Evaluate addition of in situ vaccine to MYC targeting and systemic CAR T in neuroblastoma.

AIM 7. Evaluate addition of in situ vaccine to MYC targeting and systemic CAR T in medulloblastoma.

Key Progress:

The Team has demonstrated the capacity of synthetic immunotherapy combined with immune modulators to induce endogenous memory response in immune cold neuroblastoma. The Team has generated prototypes for next generation CAR-T targeting neuroblastoma and medulloblastoma.

FUNDERS:

CANCER RESEARCH UK

Targeting R-loop Stability in Ewing Sarcoma

GRANT TERM: January 2021 – September 2023

KEY PERSONNEL:

Team Leader:
Alexander Bishop, DPhil,
UT Health San Antonio

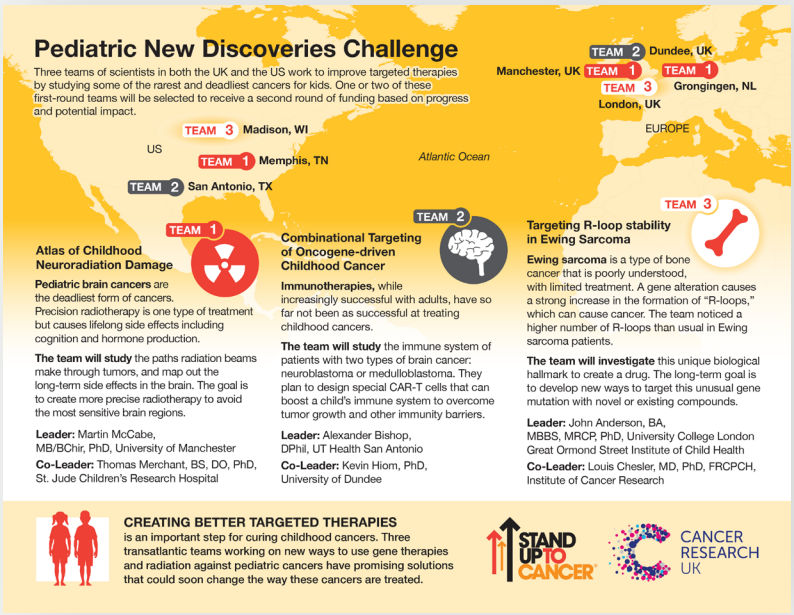
Team Co-leader:
Kevin Hiom, PhD,
University of Dundee

Principal:

- Chun Wei-Chen, PhD,
  Beckman Research Institute
  of the City of Hope

Project Manager:

- Sneha Prabhu, MPH,
  UT Health San Antonio,
  prabhus@uthscsa.edu



A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Advocates:

- Laura Jean Rutledge, Rutledge Cancer Foundation
- Gregory Aune, UT Health San Antonio

Purpose:

The Targeting R-loop Stability in Ewing Sarcoma Research Team is investigating the increase in R loops seen in Ewing sarcoma to determine if novel therapeutic targets can be identified. The long-term goal is to leverage insights gained into Ewing sarcoma biology by identifying vulnerabilities that can be targeted with available compounds or new formulations.

Specific Aims:

AIM 1. Target SF3B1/SRSF2 complex in EwS to induce toxic levels of R-loops.

AIM 2. Disrupt DHX9:EWSR1-FLI1 interaction to promote pathological R-loops.

Progress:

The Team has developed a database of high-quality R-loop sequencing data (about 800 datasets) allowing for a detailed meta-analysis of R-loops resulting in categorization of R-loops and associated features. The Team's CRISPR scanning work is being used to interrogate functional characteristics of candidate proteins BRCA1 and SF3B1. Mechanistic insight into the dysregulation of R-loops in Ewing sarcoma has provided novel targets, several of which are being tested, including small molecule compounds that alter G4-quadruplex stability, a structure that is involved in R-loop dynamics, as well as compounds that alter both BRCA1 and SF3B1 protein function to impact R-loop levels and Ewing sarcoma viability. These aspects of Ewing sarcoma biology are now being exploited and tested in preclinical models.

FUNDERS:

CANCER RESEARCH UK

BRAINatomy: A Validated Anatomical Atlas of Childhood Neuroradiation Damage

GRANT TERM: April 2021 – September 2023

KEY PERSONNEL:

Team Leader:
Martin G. McCabe, MB/BChir, PhD, University of Manchester

Team Co-leader:
Thomas E. Merchant, BS, DO, PhD, St. Jude Children's Research Hospital

A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Principal:

- Lara Barazzuol, PhD, University Medical Center Groningen

Project Manager:

- Kate Vaughan, PhD, University of Manchester, kate.vaughan@manchester.ac.uk

Advocates:

- James Adams
- Helen Bulbeck, Braintrust
- Joshua Goddard
- Adam Thomson, Braintrust

Purpose:

The BRAINatomy: A Validated Anatomical Atlas of Childhood Neuroradiation Damage Team is studying the path radiation travels in treating pediatric brain tumors to link brain regions to long term side effects and to differentiate the damaging effects of radiotherapy from other clinical factors. In parallel, the biological effects of proton and X-ray radiotherapy on single cells and bulk brain regions are being investigated in an animal model. The team hopes to develop an atlas of brain regions to be avoided during radiotherapy.

SU2C-CRUK PEDIATRIC CANCER NEW DISCOVERIES CHALLENGE RESEARCH TEAM RT6186

Specific Aims:

AIM 1. Analyze brain regions responsible for cognitive and endocrine damage in a large, retrospective cohort of children treated with cranial radiotherapy.

AIM 2. Prospectively evaluate the functional and biological effects of brain irradiation in a well-described rat model.

AIM 3. Compare the effects on multiple brain compartments of irradiation with X-ray photons and high-energy protons.

Progress:

Collection of clinical, imaging, and radiotherapy data is underway. An image-based data mining registration methodology has been validated with relevant MR scan data. Three methods to segment neuroanatomical structures have been evaluated and the best performing method chosen. Initial analysis has identified brain regions where variation in radiotherapy dose correlates with processing speed, a major determinant of cognitive damage. Further analysis and validation are ongoing. Tissue and cell analyses are underway. Initial functional and radiation dose-finding experiments in an animal model are complete.

FUNDERS:

CANCER RESEARCH UK

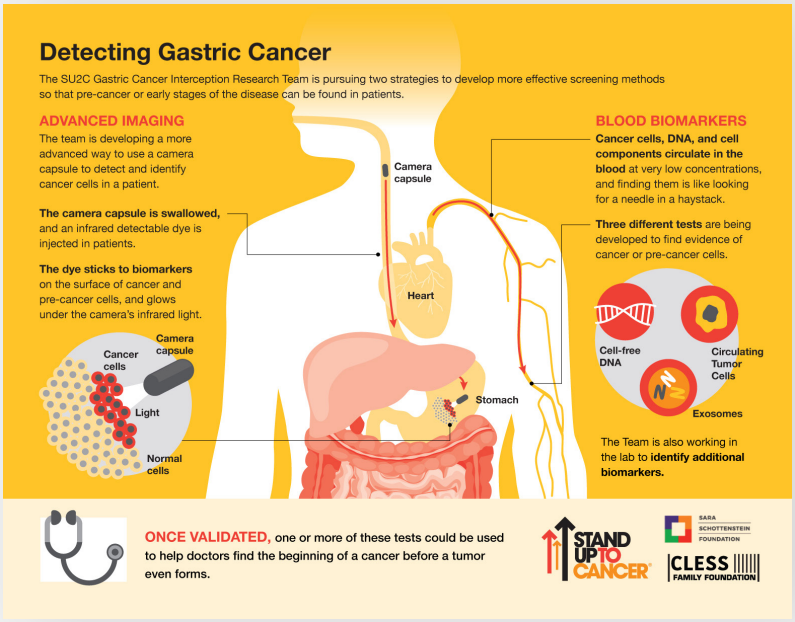
Early Detection and Interception of Diffuse and Intestinal Gastric Cancer

GRANT TERM: September 2020 – August 2023, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Andrew T. Chan, MD, MPH,
Massachusetts General Hospital

Team Co-leader:
Sandra W. Ryeom, PhD,
Columbia University Irving Medical Center



A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Principals:

- Jeeyun Lee, MD, Samsung Medical Center
- Blase Polite, MD, University of Chicago
- Yanghee Woo, MD, Beckman Research Institute of City of Hope
- Sam S. Yoon, MD, Columbia University Irving Medical Center

Project Manager:

- Marina Magicheva-Gupta, Massachusetts General Hospital, mmagicheva-gupta@mgh.harvard.edu

Advocates:

- Jason Diaz, Stomach Cancer Awareness Network
- Aki Agata Smith, Stomach Cancer Awareness Network

Purpose:

The Early Detection and Interception of Diffuse and Intestinal Gastric Cancer Team is developing ways to intercept intestinal and diffuse-type gastric cancer through identification and treatment of gastric "precancers" and early-stage disease.

SU2C GASTRIC CANCER INTERCEPTION RESEARCH TEAM RT6072

Specific Aims:

AIM 1. Discover and optimize molecularly specific imaging agents and novel circulating biomarkers for early-stage GC using mouse models recapitulating the major TCGA GC subtypes.

AIM 2. Translate preclinical findings to humans by assessing the feasibility of molecular endoscopic or capsule-based imaging across the spectrum of gastric premalignancy and refine circulating biomarkers within cohorts of individuals undergoing routine GC screening and surgery for early-stage disease.

AIM 3. Assess initial performance of a molecular and/or capsule imaging platform for detection of GC and validate circulating biomarkers in locally advanced GC patients enrolled in a clinical trial.

Key Progress:

The Team has identified 16 proteins as potential biomarkers in genetic mouse models of early gastric cancer. The Team is currently enrolling patients with early-stage gastric cancer into the LUM015 GI feasibility trial. The Team has also developed an ex vivo tissue imaging protocol which utilizes the fluorescence optical coherence tomography capsule and a molecular imaging probe to image stomach and esophageal cancer tissue specimens.

Clinical Trials:

Feasibility of the LUM Imaging System for Detection of Gastrointestinal Cancers; NCT02584244; Recruiting

A Phase II Study of Neoadjuvant NALIRIFOX Followed by Chemoradiation With Paclitaxel and Carboplatin in Locally Advanced Esophagogastric Cancer; NCT04656041; Recruiting

FUNDERS:

SARA SCHOTTENSTEIN FOUNDATION

CLESS FAMILY FOUNDATION

Identification of Genomic and Immune Factors in High-Risk Populations for Pancreatic Cancer

GRANT TERM: May 2019 – February 2022

KEY PERSONNEL:

Team Leader:
Raul Rabadan, PhD,
Columbia University

Team Co-leader:
Núria Malats, MD, MPH, PhD,
Spanish National Cancer Research Centre (CNIO)

RESEARCH TEAMS

Research > Research Portfolio > Research Teams > PCC AI Genomic Immune Factors

PANCREATIC CANCER COLLECTIVE RESEARCH TEAM: COMPUTATIONAL APPROACHES TO IDENTIFYING HIGH-RISK PANCREATIC CANCER POPULATIONS – IDENTIFICATION OF GENOMIC AND IMMUNE FACTORS IN HIGH-RISK POPULATIONS FOR PANCREATIC CANCER

Grant Term: May 2019 - April 2021

This interdisciplinary, multi-institutional, and international team will focus on developing a collection of biomarkers that predict an individual's risk of developing pancreatic cancer. Samples will be obtained from large clinical and molecular datasets, and the research will be complemented by the identification of tumor microenvironmental factors to create a screening tool for pancreatic cancer risk.

Learn more about this team at the SU2C website.

Principals:

- Tal Korem, PhD, Columbia University
- Gulam Manji, MD, PhD, Columbia University
- Ken Olive, PhD, Columbia University

Project Manager:

- Paula Ralph-Birkett, Columbia University, pr2470@cumc.columbia.edu
- Evangelina López de Maturana, CNIO
- Lola Alonso, CNIO
- Oleksandr Kravets, Columbia University
- Ioan Filip, (formerly) Columbia University

Purpose:

Using five patient cohorts, the Pancreatic Cancer Collective Research Team— Identification of Genomic and Immune Factors in High-Risk Populations for Pancreatic Cancer leveraged the power of large datasets to assess the compounded risk of pancreatic cancer based on well-established empirical factors together with novel genomic and microenvironmental markers.

PANCREATIC CANCER COLLECTIVE RESEARCH TEAMS—COMPUTATIONAL APPROACHES TO IDENTIFYING HIGH-RISK PANCREATIC CANCER POPULATIONS RT6179

Specific Aims:

AIM 1A. Identify de novo and germline alterations.

AIM 1B. Annotate the non-coding landscape of alterations in pancreatic tumors.

AIM 2A. Characterize pathogenic infections in the tumor microenvironment.

AIM 2B. Characterize HLA allele-specific expression.

AIM 3. Pursue external validation and integration with other data modalities.

Key Accomplishments:

Association analysis of HLA loci variation with pancreatic cancer risk allowed the identification of specific HLA alleles and haplo-types, thereby improving the definition of a high-risk pancreatic cancer population when combined with the stabilized epidemiological risk factors (using the PanGen-EU as a discovery data set and the UK Biobank for validation). Association analysis of microbiome diversity (oral and fecal) and pancreatic cancer risk has been completed. Based on two risk prediction methods, the fecal microbiome was proven to predict PDAC risk better than the oral microbiome. HLA and microbiome integrative risk analysis has been carried out yielding moderate predictive ability. Comprehensive analysis of HLA class I allele-specific expression in the TCGA cohort, based on a novel HLA quantification method, showed that the corresponding loss of homozygosity is a pervasive phenomenon in PDAC and is associated with decreased overall survival in the basal-like subtype. The latter association was further validated in a cohort from Columbia University.

FUNDERS:

LUSTGARTEN FOUNDATION PANCREATIC CANCER COLLECTIVE
STAND UP TO CANCER

Identifying Individuals at High Risk of Pancreatic Cancer Through Machine Learning Analysis of Clinical Records and Images

GRANT TERM: May 2019 – April 2022

KEY PERSONNEL:

Team Leader:
Chris Sander, PhD,
Dana-Farber
Cancer Institute

Team Co-leader:
Regina Barzilay, PhD,
Massachusetts
Institute of
Technology

Learn more about this team at the SU2C website.

Principals:

- Peter Kraft, PhD,
  Harvard T. H. Chan School of Public Health
- Michael Rosenthal, MD, PhD,
  Dana-Farber Cancer Institute
- Brian Wolpin, MD,
  Dana-Farber Cancer Institute

Collaborator:

- Søren Brunak, PhD, University
  of Copenhagen

Project Manager:

- Elizabeth Andrews,
  Dana-Farber Cancer Institute,
  ElizabethA_Andrews@dfci.harvard.edu

Purpose:

The Pancreatic Cancer Collective Research Team— Identifying Individuals at High Risk of Pancreatic Cancer Through Machine Learning Analysis of Clinical Records and Images utilized machine learning to infer predictive patterns of increased risk for pancreatic cancer from structured data tables, unstructured clinical notes, and radiological images.

PANCREATIC CANCER COLLECTIVE RESEARCH TEAMS—COMPUTATIONAL APPROACHES TO IDENTIFYING HIGH-RISK PANCREATIC CANCER POPULATIONS RT6180

Specific Aims:

AIM 1. Curate and annotate data.

AIM 2. Extract features from data.

AIM 3. Conduct predictive modeling.

Key Accomplishments:

Training on disease code trajectories in the Danish National Patient Registry has been completed, and the Team constructed a data query system under this infrastructure for future analyses and modeling. A common data dictionary that includes disease-relevant demographic, laboratory and clinical information has now been completed, and this data framework will allow models to be trained and validated across sites independent of the medical record structure. The Team found that diabetes and weight loss were each independently associated with a moderately increased risk for development of pancreatic cancer. When weight loss co-occurred with recent-onset diabetes, the subsequent risk of pancreatic cancer was substantially elevated, which identifies a very high-risk group who may benefit from early detection strategies.

FUNDERS:

LUSTGARTEN FOUNDATION
PANCREATIC CANCER COLLECTIVE
STAND UP TO CANCER

Targeting SHP2 in Pancreatic Cancer

GRANT TERM: November 2018 – June 2023, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
René Bernards, PhD,
Netherlands Cancer Institute

Team Co-leader:
Hana Algül,
MD, PhD,
Technical University of Munich

Team Co-leader:
Emile E. Voest,
MD, PhD,
Netherlands Cancer Institute

Learn more about this team at the SU2C website.

Project Manager:

- Henri van Luenen, PhD,
  Netherlands Cancer Institute,
  h.v.luenen@nki.nl

Advocates:

- Ab Doorn, The Netherlands Cancer Institute
- Otto Lutz, Arbeitskreis der Pankreatektomierten e.V.

Purpose:

Members of the Targeting SHP2 in Pancreatic Cancer Research Team previously found that tumors with an activating KRAS mutation are sensitive to the inhibition of SHP2. In its first garnt, the Team found that SHP2/ERK inhibitor combination (RMC4550 and LY3214996, respectively) is efficacious and tolerable in preclinical models. With additional funding, they are set to conduct a phase I/Ib clinical trial of RMC4630 and LY3214996 to treat KRAS mutant pancreatic cancer.

PANCREATIC CANCER COLLECTIVE RESEARCH TEAM—NEW THERAPIES CHALLENGE RT6156

Specific Aims:

AIM 1. Evaluate the maximum tolerated dose of the SHP2 inhibitor and MEK inhibitor of choice in non-tumor-bearing mice.

AIM 2. Identify qualifying biomarkers for response that will allow us to identify patients most likely to respond to the proposed therapy.

AIM 3. Test different treatment schedules in different mouse models of pancreatic cancer, in order to maximize the antitumor effect and to minimize toxicity.

Key Progress:

The Team confirmed that RMC4550 and LY3214996 can penetrate pancreatic tumors in preclinical laboratory experiments. In addition, the Team has identified different ways by which tumors can become resistant to the RMC4550/LY3214996 treatment combination. They continue to enroll patients in their clinical trial.

Clinical Trial:

Phase I/Ib Study With the Combination of RMC-4630 (SHP2 Inhibitor) and LY3214996 (ERK Inhibitor) in Metastatic KRAS Mutant CRC, PDAC and NSCLC; NCT04916236; Recruiting

FUNDERS:

LUSTGARTEN FOUNDATION PANCREATIC CANCER COLLECTIVE
STAND UP TO CANCER

Exploiting DNA Repair Gene Mutations in Pancreatic Cancer

GRANT TERM: November 2018 – December 2023, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Alan D. D'Andrea, MD,
Dana-Farber Cancer Institute

Team Co-leader:
James M. Cleary, MD, PhD,
Dana-Farber Cancer Institute

RESEARCH TEAMS

Research > Research Portfolio > Research Teams > Exploiting DNA Repair

PANCREATIC CANCER COLLECTIVE RESEARCH TEAM: EXPLOITING DNA-REPAIR GENE MUTATIONS IN PANCREATIC CANCER NEW THERAPIES CHALLENGE

Grant Terms
Round 1: November 2018–December 2019
Round 2: January 2020–December 2022

Drugs called PARP inhibitors are being used to treat ovarian cancer by interfering with the processes of cell division that allows tumors to grow. Based on preclinical work suggesting a combination of first-line therapy gemcitabine with

Learn more about this team at the SU2C website.

Principals:

- Andrew Aguirre, MD, PhD, Dana-Farber Cancer Institute
- Geoffrey I. Shapiro, MD, PhD, Dana-Farber Cancer Institute
- Brian M. Wolpin, MD, Dana-Farber Cancer Institute

Project Manager:

- Donald R. Watson, Dana-Farber Cancer Institute, Donald_watson@dfci.harvard.edu

Purpose:

The Pancreatic Cancer Collective Research Team— Exploiting DNA Repair Gene Mutations in Pancreatic Cancer is testing the hypothesis that targeting DNA repair deficiency and replicative stress are effective therapeutic strategies in the treatment of pancreatic cancer.

Specific Aims:

AIM 1. Assess DNA damage repair (DDR) deficiency in pancreatic cancer.

AIM 2. Target replicative stress in platinum-resistant pancreatic cancer.

PANCREATIC CANCER COLLECTIVE RESEARCH TEAM—NEW THERAPIES CHALLENGE RT6155

Key Progress:

The Team has completed enrollment to its phase 2 trial of PARP inhibitor niraparib in pancreatic cancer patients with mutations in homologous recombination genes. Given the chemotherapy agent gemcitabine's ability to increase replicative stress, the Team is conducting clinical trials testing the combination of gemcitabine with inhibitors of proteins; namely, CHK1, ATR and WEE1. To understand the mechanisms of response/resistance to the gemcitabine/CHK1 inhibitor combination, the Team has generated 3D cultures called organoids from patient tumors.

Clinical Trials:

Phase Ib/IIa Two-Part, Open-Label, Multicenter Study to Evaluate the Safety and Efficacy of LY2880070 as Monotherapy and in Combination With Gemcitabine in Patients With Advanced or Metastatic Cancer; NCT02632448; Recruiting

Phase II Proof-of-Concept Trial Testing the PARP Inhibitor Niraparib in Patients With Pancreatic Cancer Harboring Deficiencies in Homologous Recombination DNA Repair; NCT03601923; Recruiting

Phase I Trial of Gemcitabine Combined With the BAY 1895344 ATR Inhibitor With Expansion Cohorts in Advanced Pancreatic and Ovarian Cancer; NCT04616534; Suspended

FUNDERS:

LUSTGARTEN FOUNDATION
PANCREATIC CANCER COLLECTIVE
STAND UP TO CANCER

Adoptive Transfer of TGF-ß-Resistant TIL to Defeat Immunosuppressive PDAC

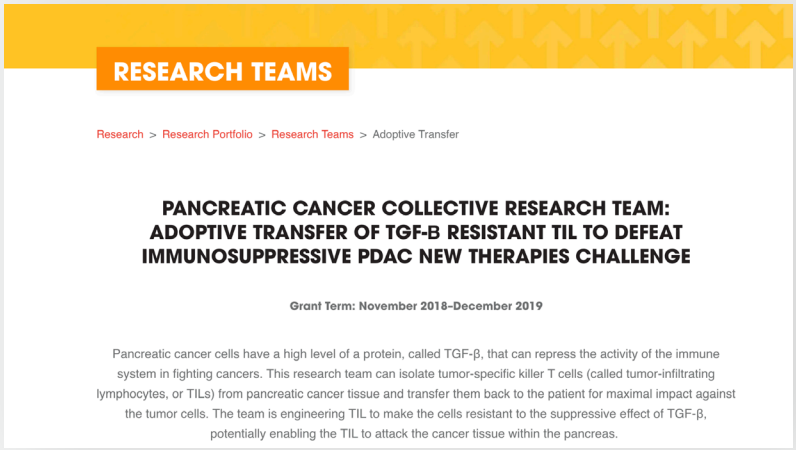
GRANT TERM: November 2018 – September 2020, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Patrick Hwu, MD,
The University of Texas MD Anderson Cancer Center

Team Co-leader:
Chantale Bernatchez, PhD,
The University of Texas MD Anderson Cancer Center

Team Co-leader:
Cliona M. Rooney, PhD,
Baylor College of Medicine



Learn more about this team at the SU2C website.

Project Manager:

- Karen Millerchip, The University of Texas MD Anderson Cancer Center

RESEARCH TEAMS

Purpose:

The Adoptive Transfer Pancreatic Cancer Collective New Therapies Challenge Research Team planned to engineer tumor-infiltrating lymphocytes (TIL) to make the cells resistant to the suppressive effect of TGF-ß, potentially enabling the TILs to attack the cancer tissue within the pancreas.

Specific Aims:

AIM 1. Optimize PDAC TIL retroviral transduction method.

AIM 2. Test the impact of the expression of TGF ßDNRII on PDAC TIL function.

AIM 3. Investigate in vivo efficacy of tumor-specific TGF ßDNRII- transduced T cells in patient-derived preclinical models of pancreatic cancer.

Key Accomplishments:

The Team demonstrated that TILs from two pancreatic cancer patients could be transduced with the TGF decoy receptor and expanded.

FUNDERS:

LUSTGARTEN FOUNDATION
PANCREATIC CANCER COLLECTIVE
STAND UP TO CANCER

Combined Targeting of MEK1/2 and Autophagy for Pancreatic Cancer Therapy

GRANT TERM: November 2018 –December 2020, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Martin McMahon, PhD,
University of Utah

Team Co-leader:
Eric A. Collisson, MD,
University of California,
San Francisco

RESEARCH TEAMS

Research > Research Portfolio > Research Teams > Combined Targeting

PANCREATIC CANCER COLLECTIVE RESEARCH TEAM: COMBINED TARGETING OF MEK1/MEK2 AND AUTOPHAGY FOR PANCREATIC CANCER

Grant Term: November 2018–December 2019

The standard of care for people with pancreatic cancer is difficult and often ineffective. To better control this type of cancer, the research team is testing a combination approach that involves shutting down two cellular pathways. The first pathway carries signals that relate to tumor growth, and the second controls a process called autophagy, in which the cell effectively reuses its own interior contents. By shutting down both pathways, the team hopes to slow or stop the growth of pancreatic tumors.

Learn more about this team at the SU2C website.

Principal:

- Conan G. Kinsey, MD, PhD, University of Utah

Project Manager:

- Karrie Lasater, University of Utah

Advocates:

- Phyllis D. Coley, University of Utah
- Thomas Kursar, University of Utah

Purpose:

The Combined Targeting of MEK1/2 and Autophagy for Pancreatic Cancer Therapy Team tested a combination approach to pancreatic cancer therapy shutting down two cellular pathways. The first pathway (MEK) carries signals that relate to tumor growth, and the second controls a process call autophagy, in which a cell effectively reuses its own interior contents to function. By shutting down both pathways, the Team hoped to slow or stop the growth of pancreatic tumors.

Specific Aims:

AIM 1. Test if there is a PDA cell genotype–T/HCQ drug response phenotype in PDA cell lines and PDX models with an initial emphasis on TP53 mutation status.

AIM 2. Explore novel targets and agents to inhibit trametinib-induced autophagy in PDA cells.

AIM 3. Initiate clinical trials of the combination of trametinib plus HCQ (T/HCQ) in PDA patients.

Key Accomplishments:

The Team completed a phase 1 trial designated THREAD -- testing a fixed dose of the MEK inhibitor trametinib and an escalating dose of the autophagy inhibitor hydroxychloroquine (T/HCQ) in patients with chemotherapy refractory PDAC. Two dose levels of HCQ in combination with trametinib were tested in 14 patients. A safe and tolerable dose of this combination was identified and a plan for an expansion cohort was developed.

Clinical Trial:

THREAD: Phase I Trial of Trametinib and Hydroxychloroquine in Patients With Advanced Pancreatic Cancer; NCT03825289; Recruiting

FUNDERS:

LUSTGARTEN FOUNDATION
PANCREATIC CANCER COLLECTIVE
STAND UP TO CANCER

Targeting Stem Cell Signals in Pancreatic Cancer

GRANT TERM: November 2018–October 2020, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Tannishtha Reya, PhD, University of California, San Diego

Team Co-leader:
Andrew M. Lowy, MD, University of California, San Diego

Team Co-leader:
Margaret A. Tempero, MD, University of California, San Francisco

Learn more about this team at the SU2C website.

Project Manager:

- Marcie Kritzik, PhD, University of California, San Diego

Purpose:

The Targeting Stem Cell Signals in Pancreatic Cancer Team tested whether blocking ROR gamma, a protein that regulates inflammation, can slow or stop the growth of pancreatic cancer.

Specific Aims:

AIM 1. Test inhibition of ROR-γ in combination with chemotherapy in preclinical models.

AIM 2. Identify biomarkers predictive of response and define a molecular signature reflective of response to ROR-γ inhibition.

Key Accomplishments:

The Team tested whether pharmacologic inhibition of ROR gamma using a small molecule inhibitor AZD-0284 could inhibit this nuclear receptor and alter the growth of pancreatic cancer cells. AZD-0284 exhibited modest activity in the models tested.

FUNDERS:

LUSTGARTEN FOUNDATION
PANCREATIC CANCER COLLECTIVE
STAND UP TO CANCER

Molecularly Targeted Radionuclide Therapy via the Integrin avß6

GRANT TERM: November 2018 – June 2023, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Julie L. Sutcliffe, PhD,
University of
California, Davis

Team Co-leader:
Richard J. Bold,
MD, MBA,
University of
California, Davis

RESEARCH TEAMS

Research > Research Portfolio > Research Teams > Molecularly Targeted Radionuclide Therapy

PANCREATIC CANCER COLLECTIVE RESEARCH TEAM: MOLECULARLY TARGETED RADIONUCLIDE THERAPY VIA INTEGRIN ALPHAVBETA6 NEW THERAPIES CHALLENGE

Grant Terms
Round 1: November 2018–December 2019
Round 2: January 2020–December 2022

This team proposes the protein called integrin αvβ6 as a target for peptide receptor radionuclide therapy (PRRT), an approved molecular targeted therapy used to treat neuroendocrine tumors. αvβ6 is significantly increased in pancreatic cancer, especially in metastasis. The scientists have developed a radiolabeled αvβ6-targeting peptide

Learn more about this team at the SU2C website.

Principal:

- Cameron C. Foster, MD, University of California, Davis

Project Manager:

- Sonal J. Desai, PhD, University of California, Davis, sjdesai@ucdavis.edu

Advocate:

- Lora Kelly, RN

Purpose:

The Molecularly Targeted Radionuclide Therapy via the Integrin avß6 Team is working to conduct a Phase I, first-in-human study to evaluate the safety and efficacy of a (^{68}Ga)Ga DOTA-5G / (^{177}Lu)Lu DOTA-ABM-5G theranostic pair in patients with locally advanced or metastatic pancreatic cancer.

Specific Aims:

AIM 1A. Establish that (^{68}Ga)Ga DOTA-5G can detect lesions in patients with locally advanced or metastatic pancreas cancer. The ability of (^{68}Ga)Ga DOTA-5G to detect lesions will be assessed by increased standard uptake values (SUVmax >2-fold above normal lung or liver) of (^{68}Ga)Ga DOTA-5G in at least one lesion assessed by (^{68}Ga)Ga DOTA-5G PET/CT.

AIM 1B. Establish the safety and tolerability of the theranostic pair (^{68}Ga)Ga DOTA-5G / (^{177}Lu)Lu DOTA-ABM-5G. Safety and tolerability of (^{68}Ga)Ga DOTA-5G / (^{177}Lu)Lu DOTA-ABM-5G will be assessed by number of patients with treatment-related adverse events using CTCAE v5.0.

Specific Aims Cont'd:

AIM 1C. Evaluate the maximum tolerated dose (MTD), and determine the recommended phase II dose (RP2D) of 177Lu-avb6-BP. Dose-limiting toxicities (DLT) of 177Lu-avb6-BP with activity levels starting from 25 mCi and increasing up to the "standard" PRRT level of 200 mCi will be assessed using SPECT/CT.

AIM 2. Establish an optimal dosing regimen in pre-clinical models. Fractionated dosing with the 177Lu-avb6-BP as well as combination with standard-of-care chemotherapy and novel avb6-BP drug conjugates will be explored in xenograft, orthotopic and metastatic mouse models.

Key Progress:

The integrin aVb6 is a protein that can be found on the surface of pancreatic cancer cells but is undetectable on normal cells. Receiving an initial round of funding support, the Team synthesized a pair of compounds, a 68Ga-aVb6 -binding peptide ((68Ga)Ga DOTA-5G) to visualize cancer, and a 177Lu-aVb6 -binding peptide ((177Lu)Lu DOTA-ABM-5G) to treat cancer, and confirmed that these peptides can home in on the aVb6 in vitro and in vivo. With the support of Round 2 funding, they have enrolled 20 patients in their Phase I clinical trial where they are determining whether (68Ga)Ga DOTA-5G can be used to detect lesions in patients with locally advanced or metastatic pancreatic cancer, establish the safety of the two peptides, and identify the maximum tolerated dose and recommended Phase II dose of (177Lu)Lu DOTA-ABM-5G. To date they have demonstrated that the (68Ga)Ga DOTA-5G can detect lesions and that the (68Ga)Ga DOTA-5G and (177Lu)Lu DOTA-ABM-5G are safe and well tolerated.

Clinical Trial:

First-in-human Study of the Theranostic Pair (68Ga)Ga DOTA-5G and (177Lu) Lu DOTA-ABM-5G in Pancreatic Cancer; NCT04665947; Recruiting

FUNDERS:

LUSTGARTEN FOUNDATION
PANCREATIC CANCER COLLECTIVE
STAND UP TO CANCER

Immunotherapy Targeting Mutant KRAS

GRANT TERM: November 2018 – June 2023, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Robert H. Vonderheide, MD, DPhil, University of Pennsylvania

Team Co-leader:
Elizabeth M. Jaffee, MD, Johns Hopkins University

Team Co-leader:
Beatriz M. Carreno, PhD, University of Pennsylvania

Learn more about this team at the SU2C website.

Principal:

- Neeha Zaidi, MD, Johns Hopkins University

Early-Career Investigator:

- Adham Bear, MD, PhD, University of Pennsylvania

Project Manager:

- TBD

Purpose:

KRAS mutations (mKRAS) occur in greater than 90% of pancreatic ductal adenocarcinoma (PDA) tumors. In Round 1 of its funding, the Immunotherapy Targeting Mutant KRAS Team isolated mKRAS-specific T-cell receptors (TCRs) from neoantigen-reactive T cells. These TCRs have been confirmed in preclinical experiments to confer selective cytotoxicity against mKRAS-expressing PDA tumors. In Round 2, the team will conduct a phase I clinical study of adoptively transferred autologous T cells engineered to express a mKRAS-specific TCR.

PANCREATIC CANCER COLLECTIVE RESEARCH TEAM—NEW THERAPIES CHALLENGE RT6151

Specific Aims:

AIM 1. To identify novel mKRAS-specific TCRs in PDAC patients.

AIM 2. To initiate a phase I clinical study of adoptively transferred autologous T cells engineered to express a mKRAS-specific TCR.

Key Progress:

The investigators have identified candidate KRAS epitopes using computational, biochemical, and proteomic determinations. The Team continues enrollment in their two vaccine trials, which have enabled epitope validation and provide samples for mKRAS-specific TCR identification and isolation.

Clinical Trials:

Pilot Study of Mature Dendritic Cell Vaccination Against Mutated KRAS in Patients With Resectable Pancreatic Cancer; NCT03592888; Recruiting

Pooled Mutant KRAS-Targeted Long Peptide Vaccine Combined With Nivolumab and Ipilimumab for Patients With Resected MMR-p Colorectal and Pancreatic Cancer; NCT04117087; Recruiting

FUNDERS:

LUSTGARTEN FOUNDATION PANCREATIC CANCER COLLECTIVE
STAND UP TO CANCER

Developing Novel Approaches to Detect and Treat Early Pancreatic Cancer

GRANT TERM: January 2018 – December 2022, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
David P. Ryan, MD,
Massachusetts General Hospital

Team Co-leader:
Alec C. Kimmelman, MD, PhD,
New York University

RESEARCH TEAMS

Research > Research Portfolio > Research Teams > Pancreatic Cancer Interception Research Team

SU2C–LUSTGARTEN FOUNDATION FOR PANCREATIC RESEARCH INTERCEPTION RESEARCH TEAM: DEVELOPING NOVEL APPROACHES TO TREAT AND EVALUATE EARLY PANCREATIC CANCER

Grant Term: January 2018–December 2021

To intercept pancreatic cancer, the SU2C–Lustgarten Foundation For Pancreatic Research Interception Research Team is taking a comprehensive, two-pronged approach. Team members are testing novel and intensive preoperative treatments allowing doctors to achieve a complete surgical removal of a tumor and eradicate micrometastatic disease in more patients. They are also using organoids-cultured tumor cell colonies—to identify

Learn more about this team at the SU2C website.

Principals:

- Richard A. Burkhart, MD, Johns Hopkins University
- Daniel Laheru, MD, Johns Hopkins University
- Wells A. Messersmith, MD, University of Colorado, Denver
- Cullen M. Taniguchi, MD, PhD, The University of Texas MD Anderson Cancer Center

Project Manager:

- Leilana Ly, Massachusetts General Hospital, LLY2@mgh.harvard.edu

Advocates:

- Robert A. Ettl, Harvard Management Co., Inc. (deceased)
- Regina Pyle, Massachusetts General Hospital
- Carole Seigel, Massachusetts General Hospital

Purpose:

The Interception Research Team is evaluating in a randomized setting whether the addition of losartan and nivolumab to FOLFIRINOX increases the rate of surgical resection for localized pancreatic cancer. The Team is also utilizing tumor organoid technology in which an individual patient's tumor cells are grown in the laboratory to create "minitumors" that can be used to test treatments. The Team is also studying changes in the tumor microenvironment.

SU2C-LUSTGARTEN FOUNDATION PANCREATIC CANCER INTERCEPTION RESEARCH TEAM RT6059

Specific Aims:

AIM 1. Evaluate novel neoadjuvant approaches in PDAC patients.

AIM 1A: Conduct neoadjuvant clinical trial to increase curability.

AIM 1B: Determine whether therapeutic screening of patient-derived organoids can identify an optimal clinical treatment.

AIM 1C: Conduct primary tumor molecular analysis.

AIM 1D: Determine the ctDNA, CTC, and exosomes at presentation, during treatment, and after surgery.

AIM 1E: Determine the changes in the tumor microenvironment (TME) between arms.

Key Accomplishments:

The Team aimed to improve the number of pancreatic cancer patients who are curable by pre-treating patients with with new combination therapies prior to surgery. They have successfully completed their accrual goal of 160 patients. They were also able to demonstrate the feasibility of assess the feasibility of a hospital-at-home intervention for a subset of patients in their clinical trial. With additional funding from a SU2C Sharp Challenge grant, pre-treatment biopsies, post-treatment resection, and serial blood samples are being analyzed to uncover new mechanistic insights into pancreatic cancer pathogenesis and to understand how the therapeutic interventions in this trial led to the observed R0 resection rates.

Clinical Trial:

A randomized Phase II Study of Losartan and Nivolumab in Combination With FOLFIRINOX and SBRT in Localized Pancreatic Cancer; NCT03563248; Active, not recruiting

FUNDERS:

LUSTGARTEN FOUNDATION
PANCREATIC CANCER COLLECTIVE
STAND UP TO CANCER

Blood-Based Early Interception of Lung Cancer

GRANT TERM: December 2017 – February 2019, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Lecia V. Sequist, MD,
Massachusetts
General Hospital

Team Co-leader:
Maximilian Diehn,
MD, PhD,
Stanford University

RESEARCH TEAMS

Research > Research Portfolio > Research Teams > Lung Cancer Interception Research Team

SU2C-LUNGEVITY-AMERICAN LUNG ASSOCIATION LUNG CANCER INTERCEPTION RESEARCH TEAM: BLOOD-BASED EARLY INTERCEPTION OF LUNG CANCER

Grant Term: December 2017–November 2018

The SU2C-LUNGevity-American Lung Association (ALA) Lung Cancer Interception Research Team hypothesizes that the early detection of invasive lung cancers can be improved through new technological approaches, and that progress on this front can quickly bring about more effective patient treatments. The team is working to build a new tool—a composite of blood-based biomarker tests called the Lung Cancer Interception Assay—that can be used in

Learn more about this team at the SU2C website.

Project Manager:

- Elaina PuiYee Chan, PhD,
  Massachusetts General Hospital

Advocate:

- Chris M. Draft, Chris Draft
  Family Foundation

Purpose:

The Blood-Based Early Interception of Lung Cancer Team hypothesized that the early detection of invasive lung cancers could be improved through new technological approaches, and that progress on this front can quickly bring about more effective patient treatments.

Specific Aim:

Develop a multianalyte Lung Cancer Interception Assay (LCIA) incorporating circulating tumor DNA, CTC-derived RNA signatures, and plasma proteomics for use in early-stage lung cancer detection.

Key Progress:

The investigators laid the groundwork for a multianalyte lung cancer early detection test. They demonstrated promising performance of circulating tumor DNA and further explored circulating tumor cells (CTCs) and patterns of proteins in the plasma of early stage lung cancer patients.

FUNDERS:

LUNGEVITY
Find it. Treat it. Live.

American Lung Association.

Chimeric Antigen Receptor T-cell (CAR T) Therapy for Pancreatic Cancer

GRANT TERM: April 2017 – November 2022

KEY PERSONNEL:

Team Leader:
Carl H. June, MD,
University of Pennsylvania

Team Co-leader:
Shelley L. Berger, PhD,
University of Pennsylvania

Team Co-leader:
E. John Wherry, PhD,
University of Pennsylvania

RESEARCH TEAMS

Research > Research Portfolio > Research Teams > CAR T Therapy for Pancreatic Cancer Research Team

SU2C–LUSTGARTEN FOUNDATION CAR T RESEARCH TEAM: CHIMERIC ANTIGEN RECEPTOR T CELL (CAR T) THERAPY FOR PANCREATIC CANCER

Grant Term: April 2017–March 2019

CAR T therapy, a therapeutic strategy to use the patient's immune cells to fight cancer, has been promising with blood cancers but seems less effective in treating solid cancers. The SU2C–Lustgarten Foundation CAR T Research Team is using state-of-the-art epigenetic approaches and preclinical models to examine CAR T cells and tumor cells in patients who respond to CAR T therapy and in those who do not, with a particular focus on pancreatic

Learn more about this team at the SU2C website.

Principals:

- M. Angela Aznar, PhD, University of Pennsylvania
- Charly R. Good, PhD, University of Pennsylvania
- Mark H. O'Hara, MD, University of Pennsylvania
- Janos L. Tanyi, MD, PhD, University of Pennsylvania

Project Manager:

- Regina M. Young, PhD, University of Pennsylvania, ryoung@upenn.edu

Advocate:

- James E. Prevor, Phoenix Media Network

Purpose:

The CAR T Therapy for Pancreatic Cancer Team (June, Berger, and Wherry) came together to identify mechanisms of resistance to CAR T cell therapy and discover strategies to enhance the potency of immunotherapies targeting pancreatic cancer. The goals were to open a phase 1 study to evaluate the safety and feasibility of treating metastatic PDAC patients with CART cells directed against mesothelin and conduct research to interrogate CAR T cells and tumor cells in patients.

SU2C–LUSTGARTEN FOUNDATION TRANSLATIONAL RESEARCH TEAM RT6116, RT6162

Specific Aims:

AIM 1. Carry out clinical trials in cancer immunotherapy for metastatic pancreatic cancer and transcriptionally and epigenetically interrogate samples prior to and following therapy to compare CAR T cell signatures from responsive and resistant patients, with the objective of improving therapeutic response.

AIM 2. Define the epigenetic landscape and sensitivities of pancreatic cancer cells and therapeutic immune cells, with the goal of identifying baseline molecular differences in pancreatic patients that may impede optimal CAR T cell function.

Key Progress:

The Team has made significant progress on both aims. They opened a trial for patients with metastatic pancreatic cancer to test the safety and feasibility of mesothelin-directed (M5) CAR T cells (NCT03323944) and completed enrollment on cohort 1. Currently, they are enrolling to cohort 2, intraperitoneal infusion of CAR T cells and cohort 3, local infusion via a microcatheter placed into the hepatic artery. Biopsy samples are being examined by flow cytometry, scRNA-seq and scATAC-seq for changes in the CAR T cells as they traffic to the tumor site.

Clinical Trials:

Phase I Study of Human Chimeric Antigen Receptor Modified T Cells in Patients With Mesothelin-Expressing Cancers; NCT03054298; Recruiting

Phase I Study of Human Chimeric Antigen Receptor Modified T Cells (CAR T Cells) in Patients With Pancreatic Cancer; NCT03323944; Active, not recruiting

FUNDERS:

LUSTGARTEN FOUNDATION PANCREATIC CANCER COLLECTIVE
STAND UP TO CANCER

Phosphatidylinositol 3-kinase δ Inhibition to Treat Patients With Relapsed or Refractory Follicular Lymphoma

GRANT TERM: March 2016 – May 2020

KEY PERSONNEL:

Team Leader:
Siddhartha Mukherjee, MD, Columbia University

Co-Investigators:

- Abdullah Ali, PhD, Columbia University
- Jafarov Toghrul, PhD, Columbia University

Project Manager:

- Yan Ma, Columbia University

Purpose:

The Phosphatidylinositol 3-kinase δ Inhibition Team investigated PI3K inhibition in the treatment of relapsed or refractory lymphoma. They studied a novel PI3k inhibitor TGR-1202 (umbralisib) while analyzing mechanisms of resistance and response, along with the effects of PI3K inhibition on the tumor cells.

Specific Aims:

AIM 1. Assess markers of responsiveness versus resistance to PI3K δ inhibition in a population of patients with relapsed or refractory FL using genomic, epigenomic, and metabolomics profiling.

AIM 2. Use cell lines to determine how PI3K δ inhibition affects growth and survival of lymphoma cells and their sensitivity to other drugs active in lymphoma.

AIM 3. Develop mouse models of FL and use these models to study the response of lymphoma to duvelisib in vivo.

Key Accomplishments:

The clinical trial was launched but due to personnel changes was terminated. Five subjects had been enrolled, and the required blood and tumor samples are being analyzed via genetic and RNA sequencing. Findings have direct clinical implications for the multiple p110 δ inhibitors that are in clinical trials and provide a way to increase treatment efficacy for patients with many types of tumors. Studies of the novel PI3K inhibitor, CUD-207, demonstrated that it is substantially more potent than currently available PI3K inhibitors such as idelalisib, duvelisib, and tenalisib in lymphoma cells.

Clinical Trial:

Study of the Phosphoinositide-3-Kinase-Delta Inhibitor TGR-1202 in Patients With Relapsed or Refractory Follicular Lymphoma; NCT03178201; Terminated

FUNDERS:

THE LAURA ZISKIN FAMILY TRUST

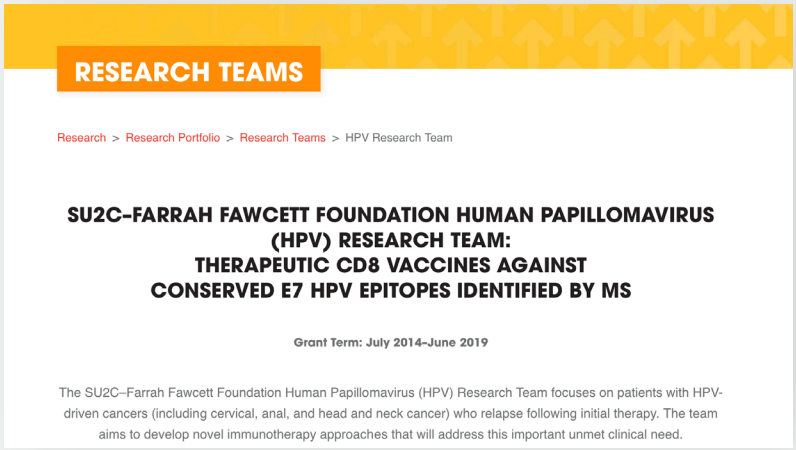
Therapeutic CD8 Vaccines Against Conserved E7 HPV Epitopes Identified by MS

GRANT TERM: July 2014 – February 2020, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Ellis L. Reinherz, MD,
Dana-Farber Cancer Institute

Team Co-leader:
Robert I. Haddad, MD,
Dana-Farber Cancer Institute


RESEARCH TEAMS

Research > Research Portfolio > Research Teams > HPV Research Team

SU2C-FARRAH FAWCETT FOUNDATION HUMAN PAPILLOMAVIRUS (HPV) RESEARCH TEAM: THERAPEUTIC CD8 VACCINES AGAINST CONSERVED E7 HPV EPITOPES IDENTIFIED BY MS

Grant Term: July 2014–June 2019

The SU2C–Farrah Fawcett Foundation Human Papillomavirus (HPV) Research Team focuses on patients with HPV-driven cancers (including cervical, anal, and head and neck cancer) who relapse following initial therapy. The team aims to develop novel immunotherapy approaches that will address this important unmet clinical need.

Learn more about this team at the SU2C website.

Project Managers:

- Joanie Lindstrom, Dana-Farber Cancer Institute
- Farzana Masood, PhD, Dana-Farber Cancer Institute

Advocate:

- Mary-Jo Murphy

Purpose:

The Therapeutic CD8 Vaccines Against Conserved E7 HPV Epitopes Identified by MS Team focused on patients with HPV-driven cancers, including cervical, anal, and head and neck cancer, who relapse following initial therapy. The Team aimed to develop novel immunotherapy approaches that will address this important unmet clinical need.

SU2C-FARRAH FAWCETT FOUNDATION HPV RESEARCH TEAM RT5914

Specific Aims:

AIM 1. Perform a phase IB/II trial of adjuvant E711-19 nanomer vaccine DPX-E7 in 40 HLA-A*0201-positive patients with HPV16+ squamous cancers of the cervix, anus, or oropharynx.

AIM 2. Define additional immunogenic HLA-bound tumor antigens on HPV-driven cancers of the cervix, anus, and head and neck.

AIM 3. Investigate clonal heterogeneity and molecular functional avidity of TCRs elicited by vaccination to engender those supporting the most sensitive tumor antigen recognition/tumor cell killing as well as future adoptive cell therapy.

Key Accomplishments:

The Team identified the $E7^{11-19}$ tumor antigen using miniscule amounts of tumor tissue via fine needle biopsy. The Team, in conjunction with the NCI, explored the possibility of treating patients who did not respond to the vaccine, with T cell receptor gene therapy targeting the same $E7^{11-19}$ epitope.

Clinical Trial:

Phase Ib/II Trial to Test the Safety and Efficacy of Vaccination With HPV16-E711-19 Nanomer for the Treatment of Incurable HPV16-Related Oropharyngeal, Cervical, and Anal Cancer in HLA-A*02-Positive Patients; NCT02865135; Active, not recruiting

FUNDERS:

Farrah Fawcett Foundation

ACF ANAL CANCER FOUNDATION

Next-Generation Sequencing of Small Cell Lung Cancer to identify Actionable Targets for Treatment

GRANT TERM: August 2014 – July 2016

KEY PERSONNEL:

Team Leader:
Jeffrey Trent, PhD,
Translational Genomics Research Institute (TGEN)

Principals:

- Jessica Aldrich
  Translational Genomics Research Institute (TGEN)
- Carly Benford, CRC
  Translational Genomics Research Institute (TGEN)
- John Carpten, PhD,
  Translational Genomics Research Institute (TGEN)
- David Craig, PhD
  Translational Genomics Research Institute (TGEN)
- Jeff Kiefer, PhD
  Translational Genomics Research Institute (TGEN)
- Sara Nasser, PhD
  Translational Genomics Research Institute (TGEN)
- Glen Weiss, MD
  Cancer Treatment Centers of America
- Tim Whitsett, PhD
  Translational Genomics Research Institute (TGEN)

Purpose:

This study sought to understand the molecular factors that lead to progression of advanced small cell lung cancer (SCLC) after at least one line of chemotherapy. The goals were to (1) align best practice clinical and research efforts across TGen and Cancer Treatment Centers of America in Arizona, (2) use novel methods including whole genome and transcriptome next-generation sequencing and bioinformatics analysis to identify individual patients' genomic characteristics, (3) match this information to individual actionable drug treatment plans, and (4) conduct joint Clinical and Molecular Tumor Boards.

Specific Aims:

AIM 1. Pilot Study.

AIM 2. Treatment Selection.

Key Accomplishments:

The pilot clinical study completed accrual with 12 patients. All patients had at least two clinically actionable targets identified. The Team planned to continue developing this approach and potentially expand it to other cancer types.

FUNDERS:

STAND UP TO CANCER

Prospective Use of DNA-Guided Personalized Cancer Treatment

GRANT TERM: January 2013 – December 2017, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Emile E. Voest, MD, PhD,
Netherlands Cancer Institute

Team Co-leader:
René Bernards, PhD,
Netherlands Cancer Institute

RESEARCH TEAMS

Research > Research Portfolio > Research Teams > DNA-Guided Care Research Team

SU2C–DUTCH CANCER SOCIETY TRANSLATIONAL RESEARCH TEAM: PROSPECTIVE USE OF DNA-GUIDED PERSONALIZED CANCER TREATMENT

Grant Term: January 2013–December 2017

The ultimate goal of personalized, or "precision," medicine—delivering the right drug to the right cancer patient—requires a detailed understanding of how alterations in tumor DNA are linked to responses to cancer drugs. The SU2C–Dutch Cancer Society (DCS) Translational Research Team studies how changes in the tumor DNA of patients

Learn more about this team at the SU2C website.

Principals:

- Trey Ideker, PhD, University of California, San Diego
- Stefan Sleijfer, MD, PhD, Erasmus MC Rotterdam
- Laura J. van't Veer, PhD, University of California, San Francisco

Project Manager:

- Alice Tondeur, Netherlands Cancer Institute

Purpose:

The aim of the Prospective Use of DNA-Guided Personalized Cancer Treatment Research Team was to refine treatment algorithms for cancer patients based on large-scale mutational analyses of tumor DNA.

Specific Aims:

AIM 1. Identify DNA-based biomarkers of response to neoadjuvant chemotherapy+/- neratinib in breast cancer through analyses of biopsies from the trial.

AIM 2. Generate genomic selection criteria for patients with KRAS wild-type colorectal tumors to improve the outcome of anti-EGFR antibody treatment using genomic analyses of metastases for a cancer mini-genome of genes.

AIM 3. Deliver systems biology tools to analyze alterations in our cancer mini-genome to refine patient selection criteria for individualized treatment.

AIM 4. Identify DNA- and RNA- based biomarkers of response to chemotherapy + atezolizumab in metastatic lobular breast cancer.

Key Accomplishments:

The Team demonstrated the value of an integrative genomics approach, combining DNA, RNA, and proteomic analyses on a small series of tumor biopsies to identify pathways relevant for response to targeted cancer agents. The finding that DNA, RNA, or protein individually were unable to predict drug responses underscores the need for an integrative approach. The Team's work on the analyses of biopsies of patients treated with immune-oncology drugs helped deepen understanding of the factors that determine whether patients respond to these therapies. The work of the team contributed to the 2020 FDA approval of encorafenib and cetuximab combination for treatment of metastatic colorectal cancer with the BRAF V600E mutation.

Clinical Trials:

I-SPY 2 Trial (Investigation of Serial Studies to Predict Your Therapeutic Response With Imaging and Molecular Analysis 2); NCT01042379; Recruiting

Development of a Platform for Next-Generation DNA Sequencing–Based Personalized Treatment for Cancer Patients: Protocol to Obtain Biopsies From Patients With Locally Advanced or Metastatic Cancer (CPCT-02 Biopsy Protocol); NCT01855477; Recruiting

Assessing Efficacy of Carboplatin and Atezolizumab in Metastatic Lobular Breast Cancer GELATO Trial; NCT03147040; Terminated

Phase Ib/II Multicenter, Open-Label, Dose-Escalation Study of LGX818 and Cetuximab or LGX818, BYL719, and Cetuximab in Patients With BRAF Mutant Metastatic Colorectal Cancer; NCT01719380; Completed

FUNDERS:

DUTCH CANCER SOCIETY

SU2C CONVERGENCE™ RESEARCH TEAMS

STAND UP TO CANCER®
CONVERGENCE

Molecular and Biophysical Definition of Tumor–Host Interactions and Impact on Tumorigenesis and Therapeutic Response

GRANT TERM: January 2021 – December 2023

KEY PERSONNEL:

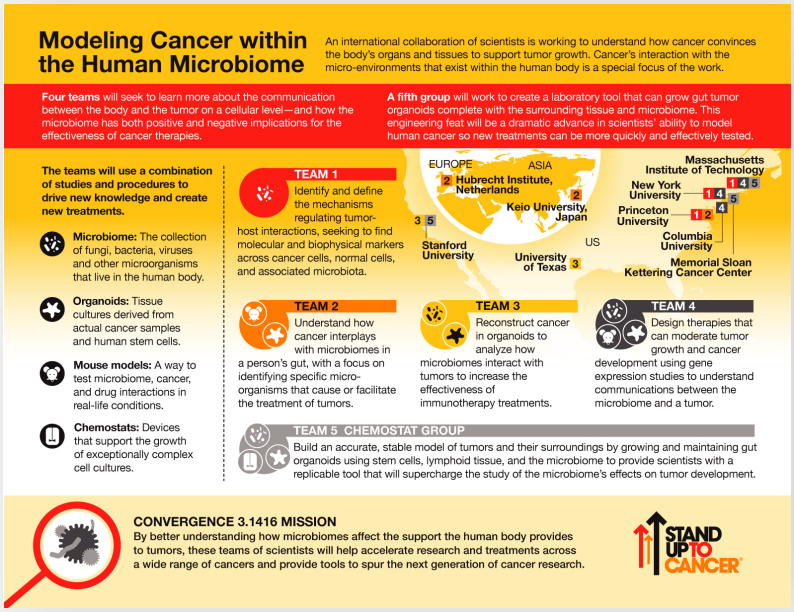
Team Leader:
Ileana Cristea, PhD,
Princeton University

Team Members:

- Shawn Davidson, PhD, Princeton University
- Scott Manalis, PhD, Massachusetts Institute of Technology
- Benjamin Neel, MD, PhD, New York University

Project Manager:

- Alice Lustig, Stand Up To Cancer, alustig@su2c.org



A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Purpose: The Molecular and Biophysical Definition of Tumor–Host Interactions and Impact on Tumorigenesis and Therapeutic Response Team is seeking to provide an understanding of the mechanisms regulating the tumor-host interaction interface and their effects on host immunity, tumorigenesis, and therapeutic response.

Specific Aims:

Cristea Lab/Princeton University

AIM 1. Uncover molecular drivers of tumor–host interactions by developing methods for defining surface proteomes in 3D cell models in conjunction with secretome and intracellular proteome assays.

AIM 2. Define global protein complex dynamics underlying signaling and immune responses in organoids.

AIM 3. Determine how organelle contact sites link lipid metabolism and immune signaling in organoids.

Specific Aims (Cont'd):

Manalis Lab/Massachusetts Institute of Technology

AIM 1. Develop chemostat for organoid culture.

AIM 2. Study mechanisms by which microbiota affect tumor responses to anti-PD-1 therapy.

AIM 3. Understand how microbial peptides alter biophysical properties of mammalian cells.

AIM 4. Use genotype-defined syngeneic organoid models to study tumor/TME interactions and therapy.

AIM 5. Determine if single-cell biophysical measurements can optimize strategies to enhance immunotherapy.

Davidson Lab/Princeton University

AIM 1. Define the metabolic tumor microenvironment by integrating spatial-omics in mouse and organoid models of cancer.

AIM 1A. Define the metabolic and immunologic microenvironment of high-grade serous tubo-ovarian cancer (HGSC).

AIM 1B. Determine the functional metabolic interaction of commensal gut microbiota, T cells, and lung cancer.

AIM 2. Conduct high-throughput metabolic characterization of organoids based on biophysical separation.

AIM 2A: Perform metabolic screening of organoids from primary dissociated tumors separated by biophysical methods

AIM 3. Develop methods for MALDI (3D imaging and improved spatial resolution) and nanoflow-LCMS.

AIM 3A. Develop 3D MALDI for labeled metabolite distribution in tumors, organs, and organoids.

AIM 3B. Improve MALDI spatial resolution and metabolic pathway coverage.

AIM 3C. Investigate nanoflow metabolomics toward obtaining separation-based single-cell metabolism measurements.

Neel Lab/New York University

AIM 1. Use genotype-defined organoids to delineate cell autonomous/non-autonomous effects on HGSC evolution.

AIM 2. Further characterize tumor/TME interactions and optimize therapy for Ccne1OE and Nf-/- HGSC.

AIM 3. Develop more refined, TME-retaining human and mouse organoid models of HGSC.

Key Progress: Scientists at Princeton University have developed a three-dimensional organ analysis of metabolic processes and used this to demonstrate that the roles of different cell types and anatomical differences in an organ dictate diverse metabolic pathways and substrate utilization.

FUNDERS:

Genentech
A Member of the Roche Group

ThermoFisher
SCIENTIFIC

Integrating Gnotobiotic, Organoid, and Metabolomic Pipelines to Probe the Cancer–Microbiome Connection

GRANT TERM: January 2021 – December 2023

KEY PERSONNEL:

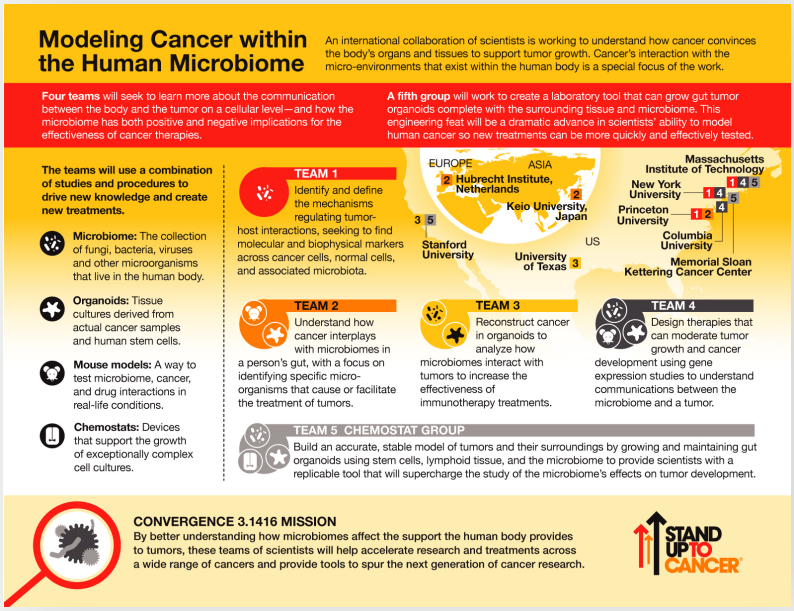
Team Leader:
Kenya Honda, MD, PhD,
Keio University, Japan

Team Members:

- Hans Clevers, MD, PhD,
  Hubrecht Institute, Netherlands
- Josh Rabinowitz, MD, PhD,
  Princeton University
- Toshiro Sato, MD, PhD,
  Keio University, Japan

Project Manager:

- Alice Lustig,
  Stand Up To Cancer,
  alustig@su2c.org



A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Purpose: This Integrating Gnotobiotic, Organoid, and Metabolomic Pipelines to Probe the Cancer–Microbiome Connection Team is studying gastrointestinal malignancies using gnotobiotic assays, organoids, and metabolomics to identify the mechanisms by which bacteria interact with the host cells to cause tumor development or regression.

Specific Aims:

Honda Lab/Keio University

AIM 1. Establish an in vivo model appropriate for screening of CRC-promoting bacteria.
AIM 2. Search for bacterial strains that promote CRC development.
AIM 3. Model bacteria-induced colon carcinogenesis using an in vitro organoid co-culture system.
AIM 4. Search for bacterial strains that can prevent CRC development.
AIM 5. Elucidate diet-microbiome-immune connection.

Specific Aims (Cont'd):

Clevers Lab/Hubrecht Institute

AIM 1. Build on top of our identification of the first bacterially induced mutational signature by screening further bacterial toxins, strains, and species of potentially genotoxic bacteria.

AIM 2. Focus on the impact of colorectal cancer–associated bacteria on cellular behavior beyond mutation accumulation. This will be performed both on individual cancer-associated species and on microbial communities derived from healthy donors and colorectal cancer patients.

AIM 3. Study the role in tumorigenesis of bacteria from the Clostridium genus associated with CRC tumorigenesis by metagenomics studies.

AIM 4. Obtain microbial communities derived from healthy donors and colorectal cancer patients, and expose healthy human colon and colorectal cancer organoids to microbial communities and the metabolites produced by these, to identify community-level effects on colorectal cancer cell behavior.

Rabinowitz Lab/Princeton University

AIM 1. Investigate diet–microbiome connection.

AIM 2. Study diet–microbiome–immune connection.

AIM 3. Explore diet–cancer therapy connection.

Sato Lab/Keio University

AIM 1. Study carcinogenic potential of gut microbes on colonic epithelium in vivo.

AIM 2. Develop new in vivo human CRC model.

AIM 3. Model bacteria-induced colon carcinogenesis using an in vitro organoid co-culture system.

AIM 4. Understand the molecular determinants of invasiveness and metastatic capacity during colon carcinogenesis.

Key Progress: Team members across the project are reporting progress. At the Hubrecht Institute, a strain of E. coli has been uncovered that has an additional 10-12 genes, E. coli pks, from a foreign source that synthesizes a mutagen that reacts with the DNA of the colon cells and causes mutations in the APC gene, the first gene to acquire mutations in the progression of colon cancer. This is a clear demonstration of the contribution of the microbiome to colon cancer formation. Scientists at Princeton University have varied the diet of mice undergoing chemotherapy to reduce or eliminate tumors that they carry and have demonstrated that dietary changes do have a large impact upon the efficiency of tumor reduction or elimination.

FUNDERS:

Genentech
A Member of the Roche Group

ThermoFisher
SCIENTIFIC

Integrating Microbiome and Organoid Analyses of Patient Cohorts for Immuno-oncology Therapeutic Development

GRANT TERM: January 2021 – December 2023

KEY PERSONNEL:

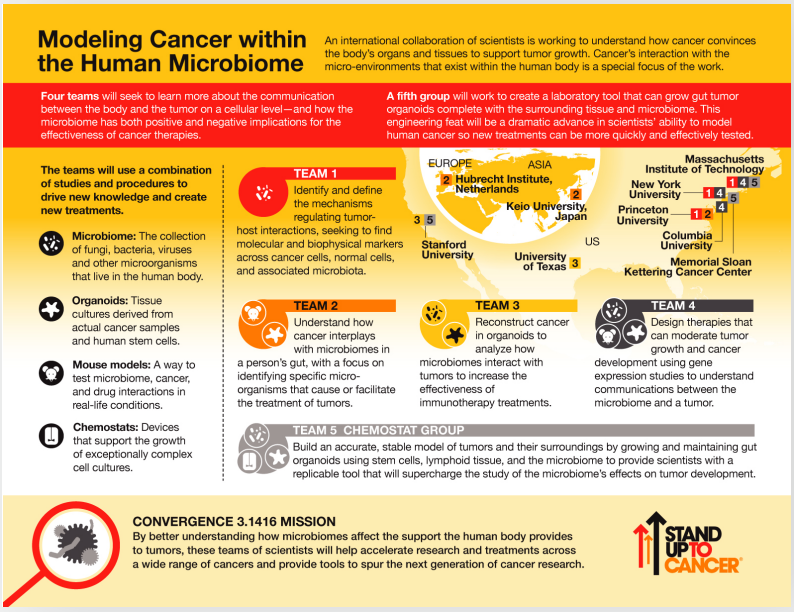
Team Leader:
Calvin Kuo, MD, PhD,
Stanford University

Team Members:

- Ami Bhatt, MD, PhD,
  Stanford University
- Michael Fischbach, PhD,
  Stanford University
- Jennifer Wargo, MD, MMSc,
  The University of Texas MD Anderson Cancer Center

Project Manager:

- Alice Lustig,
  Stand Up To Cancer,
  alustig@su2c.org



A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Purpose:

The Integrating Microbiome and Organoid Analyses of Patient Cohorts for Immuno-oncology Therapeutic Development Team is investigating the limitations of immunotherapy, including both intrinsic and acquired resistance. Their work is integrating integrate microbiome and organoid analyses of immunotherapy patient cohorts to develop novel immunotherapeutic combinations.

SU2C CONVERGENCE™ 3.1416 RESEARCH TEAM CV6206

Specific Aims:

Kuo Lab/Stanford University

AIM 1. Investigate ALI tumor organoid-based anoxic culture for obligate anaerobes.

AIM 1A. Flow-based anaerobic/aerobic transwell platform for organoid culture.

AIM 1B. Organoid and anaerobic bacterial interaction and growth.

AIM 2. Integrate microbiota into ALI tumor organoids from neoadjuvant anti-PD-1 patient cohorts.

AIM 2A. Combination with candidate microbiota.

AIM 2B. Addition of microbiota-derived small molecules and peptides.

AIM 2C. Effects on anti-PD-1 responses.

AIM 3. Incorporate peripheral immune components with ALI tumor organoids.
AIM 3A. Human ALI tumor organoid co-culture with autologous lymph node organoids.

AIM 3B. Murine ALI tumor organoid co-culture with autologous lymph node organoids.

Bhatt Lab/Stanford University

AIM 1. Leverage culture-free approaches to strain tracking in human microbiome studies.

AIM 1A. Culture-free genome assembly from microbiomes.

AIM 1B. Measuring genomic plasticity.

AIM 1C. Dissecting the role of translated microbial genes in immunotherapy response.

AIM 2. Identify bioactive microbial small peptides that may modulate cancer biology and therapy efficacy.

AIM 2A. Decoding microbial communication.

AIM 2B. Microbial microproteins and their impact on cellular biophysics.

AIM 2C. Mining microbial microprotein communication signals to transform drug discovery.

Fishbach Lab/Stanford University

AIM 1. Study the role of bacterially derived molecules in dictating the fate of an elicited T cell.

AIM 2. Determine whether tumor-specific T cells can be induced by expressing host antigens in bacterial colonists.

AIM 3. Investigate whether we can study the contribution of each strain in a complex community to immune modulation.

Wargo Lab/MD Anderson Cancer Center

AIM 1. Determine characteristics of the gut microbiome associated with optimal response to immunotherapy in a prospective cohort of immunotherapy-treated patients.

AIM 2. Identify optimal strategies to enhance response to immunotherapy via gut microbiota modulation by deep profiling and integrated analysis of data from existing cohorts.

AIM 3. Optimize strategies to enhance immunotherapy response via gut microbiota/functional interventions with testing in preclinical models.

Key Progress:

The team has successfully created organoid cultures that contain cancer and immune cells, to which microbial components can be added. Based on work at Stanford University, a particular strain of streptococcus has been found to result in the immunization of CD-4 cells that protect mice from further infection, whereas the identical bacteria in a wound immunizes CD-4 inflammatory cells and causes tissue destruction. Bacteria in different organ systems lead to diverse immune responses by triggering different CD-4 T- cell types which give rise to diverse cytokines. A similar result has been observed with other bacterial strains in laboratories at Keio University and New York University. Different bacteria regulate different CD-4 T-cell subtypes and cytokines. Which bacterial species impact CD-8 killing of cancer cells is under intensive study.

FUNDERS:

Genentech
A Member of the Roche Group

ThermoFisher
SCIENTIFIC

Multi-omic Analysis of Immune System and Microbiota Influence on Temporal and Spatial Evolution of Tumor Microenvironments

GRANT TERM: January 2021 – December 2023

KEY PERSONNEL:

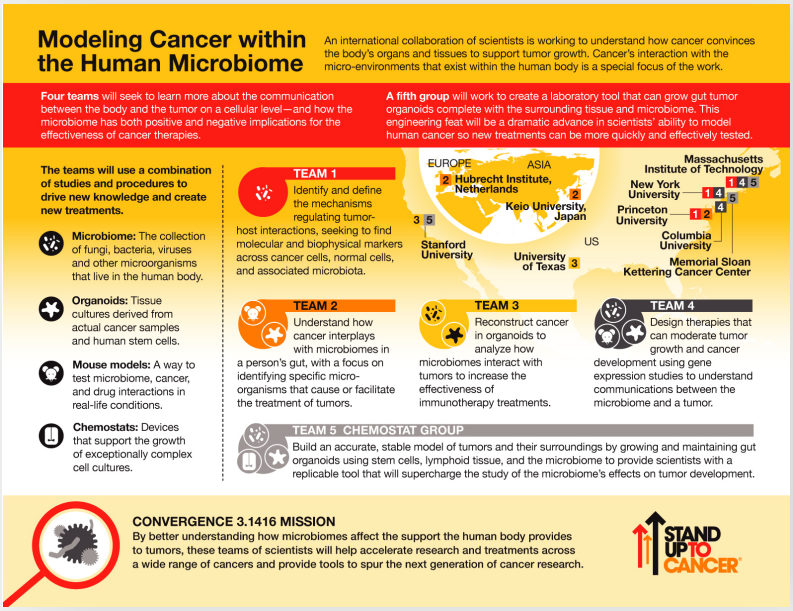
Team Leader:
Dan Littman, MD, PhD,
New York University
Grossman School of
Medicine

Team Members:

- Karuna Ganesh, MD, PhD, Memorial Sloan Kettering Cancer Center
- Tyler Jacks, PhD, Massachusetts Institute of Technology
- Raul Rabadan, PhD, Columbia University

Project Manager:

- Alice Lustig, Stand Up To Cancer, alustig@su2c.org



A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Purpose: The Multi-omic Analysis of Immune System and Microbiota Influence on Temporal and Spatial Evolution of Tumor Microenvironments Team is working to advance understanding of tumor-intrinsic and -extrinsic factors that contribute to the dynamic interactions between immune system cells and cells in the tumor microenvironment. The Team aims to identify tumor vulnerabilities and new molecular and cellular targets that can be validated in pre-clinical models and then applied to clinical practice.

Specific Aims:

Littman Lab/New York University

AIM 1. Investigate mechanisms by which microbiota influence anti-tumor responses, in the presence and absence of exogenous anti-PD-1 therapy.

AIM 1A: Examination of how gut microbiota exert immune functions at distal sites, including scenarios where epitopes are shared between gut-colonizing flora and tumor neoantigens.

Specific Aims (Cont'd):

AIM 1B: Characterization of candidate microbiota/diet-derived metabolites and gut microenvironment-derived cytokines/signals in regulation of antitumor responses.

AIM 2. Study effects of microbiota on intra-tumoral T cells and their subsequent differentiation programs, in mice and organoids.

AIM 2A: Mechanisms of microbiota-induced Th1/Th17 cell differentiation, and their effects on anti-tumor immunity.

AIM 2B: Screening of bacterial peptide libraries for effects on the tumor microenvironment and T-cell differentiation.

AIM 3. Analyze role of SAAs and effector T cells in tumor growth and checkpoint therapy.

AIM 3A: Role of SAAs in initial epithelial tumorigenesis, established tumor progression, and metastastic propensity.

AIM 3B: Elucidation of the SAA signaling pathway in Th17 cell differentiation.

Ganesh Lab/Memorial Sloan Kettering Cancer Center

AIM 1. Develop a prospective functional longitudinal biospecimen platform to dissect tumor, immune, and microbial determinants of metastasis.

AIM 2. Develop a novel fluidic platform for in vitro modeling of epithelial-immune-microbial interactions.

AIM 3. Define molecular determinants of regenerative plasticity and innate immune activation during infection and cancer.

Jacks Lab/Massachusetts Institute of Technology

AIM 1. Investigate the tumor-immune contexture in immunogenic and immune refractory pancreas and colon cancers by single-cell mRNA sequencing (sc-mRNAseq) and spatial analysis of gene expression, protein expression, and metabolites.

AIM 2. Conduct ex vivo and in vivo organoid-based functional studies.

Rabadan Lab/Columbia University

AIM 1. Quantify host expression and microbial abundances for bulk and single-cell data analysis.

AIM 2. Quantify allele-specific HLA class I expression.

AIM 3. Random matrix theory (RMT) for single-cell denoising.

AIM 4. Topological data analysis (TDA) for dissecting dynamical single-cell data.

AIM 5. Gaussian random fields (GRF) approach for studying cell-cell interactions with special protein and transcriptomic data.

Key Progress: The Team has compiled a large cohort of esophageal and colorectal cancer patients for which primary tumors, metastases, and stool samples are available for study and has performed detailed single cell analyses and identified a non-canonical transcriptional program that resembles a dedifferentiated state that is observed in the colon of normal fetus. They have established new mouse models to study anti-tumor T cell responses and the properties of distinct commensal microbes that elicit effective T cell-mediated control of tumor growth independently of anti-PD-1 therapy.

FUNDERS:

Genentech
A Member of the Roche Group

ThermoFisher
SCIENTIFIC

Intra-team Collaboration: The Multi-organ Organoid Chemostat Group

GRANT TERM: January 2021 – December 2023

KEY PERSONNEL:

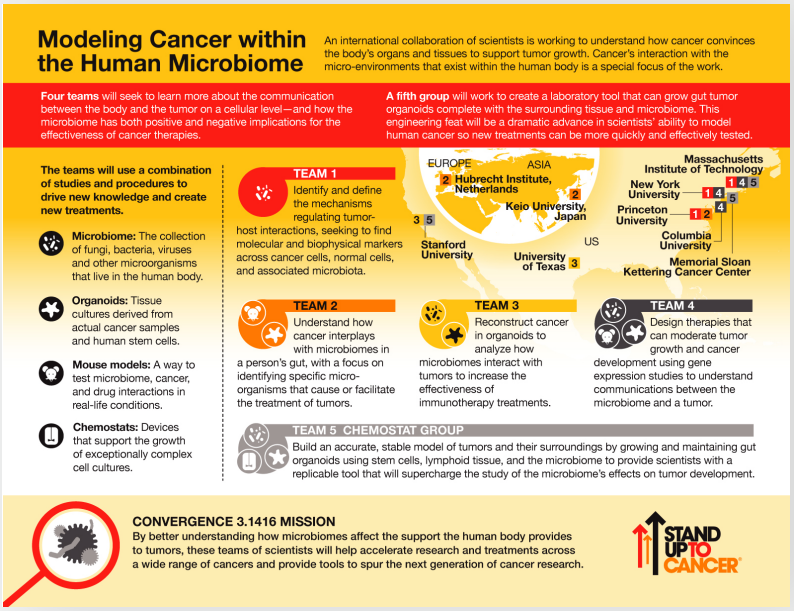
Team Leader:
Calvin Kuo, MD, PhD,
Stanford University

Team Members:

- Michael Fischbach, PhD, Stanford University
- Karuna Ganesh, MD, PhD, Memorial Sloan Kettering Cancer Center
- Scott Manalis, PhD, Massachusetts Institute of Technology

Collaborator:

- Man-Wah Tan, PhD, Genentech



A larger version of this infographic is available in the appendix.

Learn more about this team at the SU2C website.

Project Manager:

- Alice Lustig, Stand Up To Cancer, alustig@su2c.org

Purpose:

This Multi-organ Organoid Chemostat Group Team is a collaboration across members of the SU2C Convergence 3.1416 Teams and seeks to build and populate a chemostat – a device to culture gut organoids with stem cells, lymphoid tissue, and a microbiome. The Team is applying molecular, biochemical, and biophysical technologies to address additional fundamental questions in tumor-host interactions, tumor evolution, the effects of the immune system and microbiome, and determinants of regenerative plasticity.

Specific Aims:

AIM 1. Build and populate a new device to culture gut organoids with stem cells, lymphoid tissue, and a microbiome.

AIM 2. Apply molecular, biochemical, and biophysical technologies to address additional fundamental questions in tumor-host interactions: tumor evolution, the effects of the immune system and the microbiome, and determinants of regenerative plasticity.

AIM 3. Use the chemostat platform to be developed to study various organoid types and explore their interactions with immune cells.

AIM 4. Use the blood exchange method to uncover soluble and cellular mediators of immune response.

Key Progress:

At Massachusetts Institute of Technology, the team has constructed a first generation chemostat that functions like a human colon (anaerobic and aerobic regions for the microbiome and the immune system), and with support and material from the members of the Convergence 3.1416 it is being populated with colon tissue (normal and cancerous), organoids, and with an intact immune system and microbiome). These cultures constantly refresh substrates, bacteria, metabolic products, etc. The products can be analyzed by microscopic observations and eventually by mass spectroscopy to help elucidate the metabolic pathways of the cancers, the normal cells, the microbiome and the immune system interactions.

FUNDERS:

Genentech
A Member of the Roche Group

ThermoFisher
SCIENTIFIC

Correlating Immunological Health to Cancer Susceptibility

GRANT TERM: January 2018 – December 2021

KEY PERSONNEL:

Team Leader:
Mark M. Davis, PhD,
Stanford University

Team Members:

- David Furman, PhD,
  Buck Institute
- Thomas Montine, MD, PhD,
  Stanford University
- Kari Nadeau, MD, PhD,
  Stanford University
- Stephen Quake, PhD,
  Stanford University

CONVERGENCE TEAMS

Research > Research Portfolio > Convergence Teams > Cancer Susceptibility Convergence Research Team

SU2C CANCER SUSCEPTIBILITY CONVERGENCE RESEARCH TEAM: CORRELATING IMMUNOLOGICAL HEALTH TO CANCER SUSCEPTIBILITY

Grant Term: January 2018 - December 2020

Scientists across many disciplines are working to understand how the immune system affects, mediates, or even controls cancer growth in different parts of the body. This SU2C Cancer Susceptibility Convergence Research Team is using blood cells and other markers to intensively monitor the immune system over time in participants in three scientific research cohorts: an aging cohort, a twin cohort, and a cohort with inherited immunodeficiency. The results will be used to determine signatures of poor immune health that might predispose an individual to cancer. If

Learn more about this team at the SU2C website.

Project Manager:

- Alice Lustig, Stand Up To Cancer,
  alustig@su2c.org

Purpose:

The Correlating Immunological Health to Cancer Susceptibility Convergence Research Team used blood cells and other markers to intensively monitor the immune system over time in participants in three research cohorts: an aging cohort, a twin cohort, and a cohort with inherited immunodeficiency. The results will be used to determine signatures of poor immune health that might predispose an individual to cancer.

Specific Aims:

AIM 1. Correlates of cancer susceptibility in the Stanford-Ellison cohort.

AIM 2. Complementary cohorts.

AIM 3. Validation cohorts.

Key Accomplishments:

The Team undertook a longitudinal analysis of elderly individuals (> 80 years old) from the Stanford-Ellison Cohort that identified an inflammatory signature present 1-2 years before cancer diagnosis. The cancers were primarily UV-mediated skin cancers, including melanoma, squamous cell carcinomas, and basal cell carcinomas. This suggests that some cancers could be identified years before diagnosis and treatment could be initiated at cancer's earliest stages. A consistent elevation of cytokine transcriptional activity was correlated with aging across 10 types of cancer, coinciding with cellular senescence signatures characterized by p53 activation.

FUNDERS:

Microsoft

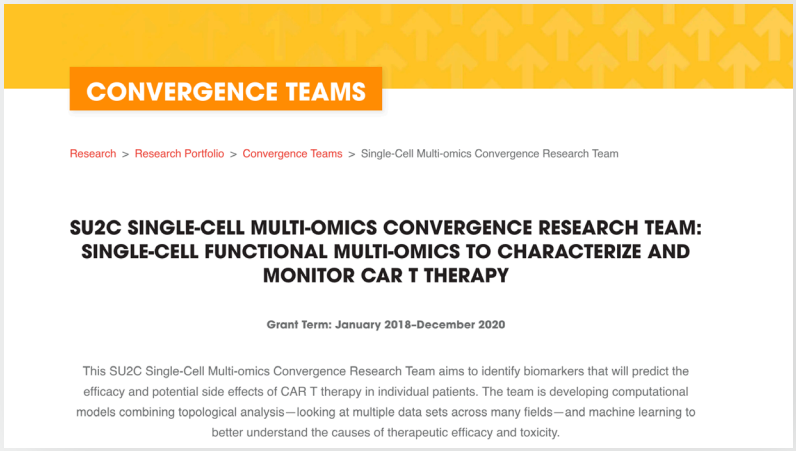
sitc
Society for Immunotherapy of Cancer

Single-Cell Functional Multi-omics to Characterize and Monitor CAR T Therapy

GRANT TERM: January 2018 – November 2022

KEY PERSONNEL:

Team Leader:
Rong Fan, PhD,
Yale University



Learn more about this team at the SU2C website.

Team Members:

- Pablo Gonzalez Camara, PhD, University of Pennsylvania Perelman School of Medicine
- Stephanie Halene, MD, PhD, Yale University
- Carl H. June, MD, University of Pennsylvania Perelman School of Medicine
- J. Joseph Melenhorst, PhD, University of Pennsylvania Perelman School of Medicine

Project Manager:

- Alice Lustig, Stand Up To Cancer, alustig@su2c.org

Purpose:

The Single-Cell Functional Multi-omics to Characterize and Monitor CAR T Therapy Team worked to identify biomarkers that will predict the efficacy and potential side effects of CAR T therapy in individual patients. The Team is developing computational models combining topological analysis – looking at multiple data sets across many fields – with machine learning to better understand the causes of therapeutic efficacy and toxicity.

Specific Aims:

AIM 1. Measure the full spectrum of cytokine functions in pre-infusion CAR T cells upon antigen-specific stimulation, correlating to objective response and adverse effect.

AIM 2. Measure circulating and/or tumor-infiltrating CAR T cells ex vivo to monitor patient outcome and investigate the mechanism of efficacy versus immune-toxicity.

AIM 3. Develop computational models combining topological analysis and machine learning to unveil the molecular characteristics that underlie therapeutic efficacy and toxicity of CAR T therapy, and identify candidate biomarkers.

Key Accomplishments:

The team is exploring reasons for failure of CAR T anti CD-19 therapy for B-cell ALL, CLL, and NHL. Preparation of the CAR-T cells appears to be a major reason for the failure. This team is identifying several biomarkers in the preparation of CAR-T cells that indicate effective killing and long-term survival prior to the infusion of the CAR-T cells into the patient. Surface proteomic analysis indicates that CD19-positive relapse is highly associated with deficiencies in the capacity of CAR T cells for maintaining early memory states, which was further confirmed by the flow data from the Team's validation cohort. The Team developed a binomial logistic regression model to integrate their key findings into a predictive index, however neither TCR-mediated activation states nor the basal states were useful to predict clinical outcomes.

FUNDERS:

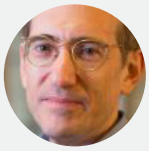
Microsoft

sitc
Society for Immunotherapy of Cancer

Machine Learning for Cancer Immunotherapy

GRANT TERM: January 2018 – November 2023

KEY PERSONNEL:



Team Co-leader:
Ernest Fraenkel, PhD,
Massachusetts Institute
of Technology

Team Co-leader:
Regina Barzilay, PhD,
Massachusetts Institute
of Technology

Learn more about this team at the SU2C website.

Project Manager:

- Alice Lustig, Stand Up To Cancer, alustig@su2c.org

Purpose:

The Machine Learning for Cancer Immunotherapy Team is using artificial intelligence to predict molecular pathways and clinical outcomes for cancer patients. Data scientists are working to reconstruct signaling pathways and identify previously unrecognized regulatory mechanisms that contribute to the development of cancer. Their discoveries may provide new approaches for treatment with immunotherapy.

Specific Aims:

AIM 1. Conduct integrative modeling of immune health and tumor biology.

AIM 2. Identify pathways conferring resistance to natural killer cells.

AIM 3. Predict CD8+ and CD4+ T-Cell epitopes.

Key Progress:

Collaborating to model NK cell killing pathways. Applied AI to cancer imaging for diagnostic improvements and to the analysis of chemical space and classes for the development of drugs. Work is underway to predict pathways distinguishing responders and non- responders to immunotherapy and to predict immune-tumor interactions.

FUNDERS:

Microsoft

sitc
Society for Immunotherapy of Cancer

Computational Deconstruction of Neoantigen-TCR Degeneracy for Cancer Immunotherapy

GRANT TERM: January 2018 – November 2022

KEY PERSONNEL:

Team Co-leader:
Benjamin Greenbaum, PhD,
Memorial Sloan Kettering Cancer Center

Team Co-leader:
Vinod Balachandran, MD,
Memorial Sloan Kettering Cancer Center

Learn more about this team at the SU2C website.

Team Members:

- Marta Luksza, PhD,
  Icahn School of Medicine at Mount Sinai
- Eileen M. O'Reilly, MD,
  Memorial Sloan Kettering Cancer Center
- Jedd Wolchok, MD, PhD,
  Memorial Sloan Kettering Cancer Center

Project Manager:

- Alice Lustig,
  Stand Up To Cancer,
  alustig@su2c.org

Purpose:

The Computational Deconstruction of Neoantigen-TCR Degeneracy for Cancer Immunotherapy Team is investigating why a small group of pancreatic cancer patients survive for many years after diagnosis and developing tools to devise new cancer vaccines that will turn all pancreatic cancer patients into long-term survivors.

Specific Aims:

AIM 1. Define the rules of recognition of cancer neoantigens by human T cells.

AIM 2. Identify the role of the host microbiome in modulating neoantigen recognition.

AIM 3. Evaluate a neoantigen cancer vaccine as an adjuvant pancreatic cancer therapy.

Key Accomplishments:

Researchers carried out a clinical trial with 16 stage 2 and 3 pancreatic cancer patients who underwent surgery, Folfirinox treatment, and immunization with RNA encoded vaccines that were matched to 20 different neo-antigens that arose in the genomes of the pancreatic cancer. In this trial, half of the patients responded to the vaccines, and have not seen their cancers return. This is the first demonstration of how to immunize pancreatic cancer patients with an mRNA vaccine. A follow up trial is now being planned.

Clinical Trial:

Phase I Clinical Trial of Personalized Neoantigen Tumor Vaccines and Programmed Death-Ligand 1 (PD-L1) Blockade in Patients With Surgically Resected Pancreatic Cancer; NCT04161755; Recruiting

FUNDERS:

Microsoft

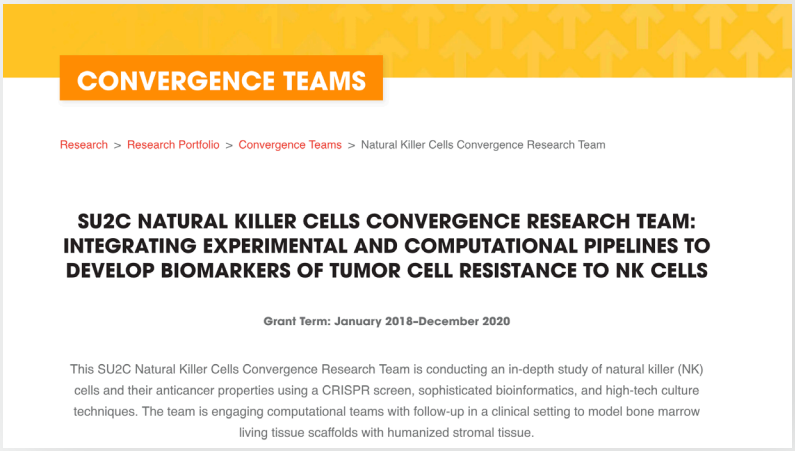
sitc
Society for Immunotherapy of Cancer

Integrating Experimental and Computational Pipelines to Develop Biomarkers of Tumor Cell Resistance to NK Cells

GRANT TERM: January 2018 – November 2022

KEY PERSONNEL:

Team Leader:
Constantine S. Mitsiades, MD, PhD, Dana-Farber Cancer Institute


CONVERGENCE TEAMS

Research > Research Portfolio > Convergence Teams > Natural Killer Cells Convergence Research Team

SU2C NATURAL KILLER CELLS CONVERGENCE RESEARCH TEAM: INTEGRATING EXPERIMENTAL AND COMPUTATIONAL PIPELINES TO DEVELOP BIOMARKERS OF TUMOR CELL RESISTANCE TO NK CELLS

Grant Term: January 2018–December 2020

This SU2C Natural Killer Cells Convergence Research Team is conducting an in-depth study of natural killer (NK) cells and their anticancer properties using a CRISPR screen, sophisticated bioinformatics, and high-tech culture techniques. The team is engaging computational teams with follow-up in a clinical setting to model bone marrow living tissue scaffolds with humanized stromal tissue.

Learn more about this team at the SU2C website.

Team Members:

- Aedin Culhane, PhD, Dana-Farber Cancer Institute
- Olga Dashevsky, PhD Dana-Farber Cancer Institute
- Todd Golub, MD, Broad Institute of MIT and Harvard
- Ricardo de Matos Simoes, PhD, Dana-Farber Cancer Institute
- Jennifer Roth, MSc, MBA, Broad Institute of MIT and Harvard
- Michal Sheffer, PhD, Dana-Farber Cancer Institute
- Aviad Tshemiak, MSc, Broad Institute of MIT and Harvard

Project Manager:

- Alice Lustig, Stand Up To Cancer, alustig@su2c.org

Purpose:

This SU2C team integrated experimental (e.g., CRISPR screens, and novel types of preclinical models in the lab and in living tissues) and computational pipelines to develop biomarkers of tumor cell resistance to NK cells in solid tumors and hematologic malignancies and validate the relevance of these biomarkers in patient-derived samples from diverse neoplasias.

Specific Aims:

AIM 1. Apply and develop next-level computational resources to optimize identification of biomarkers of tumor cell sensitivity versus resistance to NK cells.

AIM 2. Expand the spectrum of phenotypic data on NK cell responses.

AIM 3. Validate candidate markers in our in vitro and in vivo experimental platforms.

Key Accomplishments:

Human NK cells are increasingly applied in various immunotherapies, including CAR-NK cells. This SU2C team employed CRISPR systems to identify which genes, when deleted or activated in tumor cells, prevent vs. enhance the antitumor activity of NK cells. They identified many previously underappreciated genes and pathways which regulate NK cell killing in solid tumors or hematologic malignancies; and applied single-cell technologies to understand how tumor cells adapt to NK cell attack. Work from this team was published in Nature Genetics (2021), Nature Cancer (2022), and Biorxhiv (2022).

FUNDERS:

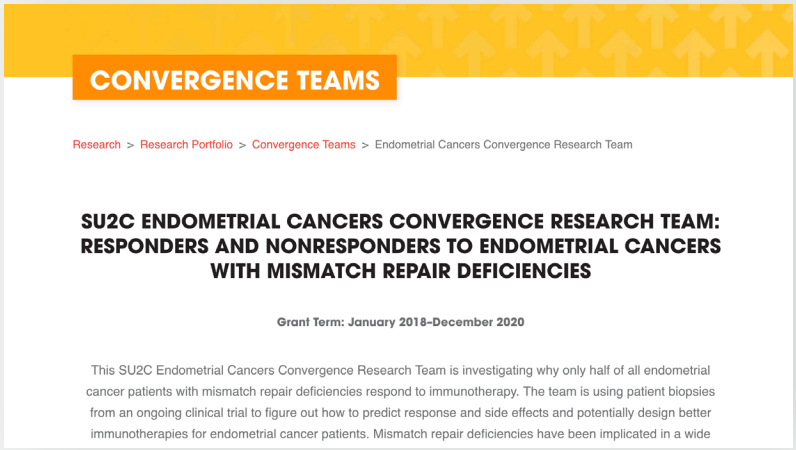
Microsoft

Responders and Non-Responders to Endometrial Cancers With Mismatch Repair

GRANT TERM: January 2018 – December 2021

KEY PERSONNEL:

Team Leader:
Alessandro D. Santin,
MD, Yale University



Learn more about this team at the SU2C website.

Team Members:

- Ludmil Alexandrov, PhD,
  University of California, San Diego
- Stephania Bellone, PhD,
  Yale University
- Akiko Iwasaki, PhD,
  Yale University

Project Manager:

- Alice Lustig,
  Stand Up To Cancer,
  alustig@su2c.org

Purpose:

The Responders and Non-responders to Endometrial Cancers With Mismatch Repair Team is investigating why only half of all endometrial cancer patients with mismatch repair deficiencies respond to immunotherapy. Researchers are utilizing patient biopsies from a clinical trial to try to predict response and side effects and potentially design better immunotherapies for endometrial cancer patients.

Specific Aims:

AIM 1. How can we predict responders from non-responders to checkpoint inhibitors?

AIM 2. Can we predict which patients will develop side effects to these therapies? How can we relate the peptide sequence of antigens to the nucleic acid sequence of T-cell receptor variable regions?

AIM 3. Can we predict peptide antigens from T-cell receptor sequences? Can we determine with some confidence the neoantigens that are expressed by tumors that are recognized by the immune system in an HLA-dependent fashion?

Key Accomplishments:

The Team completed enrollment in the planned clinical trial (83% clinical benefit) and evaluated samples from 25 hypermutated, MSI-High endometrial cancer patients. Matched recurrent tumor samples from patients with secondary resistance identified multiple mutations in genes affecting antigen presentation. Analysis of T cells showed that the most-prominent clones were more skewed towards the effector CD8 population in the patients responding with CR/PR when compared to those with SD/PD.

Clinical Trial:

Phase II Evaluation of Pembrolizumab, a Humanized Antibody Against PD-1, in the Treatment of Persistent or Recurrent Hypermutated/Ultramutated Endometrial Cancer Identified by Next-Generation Sequencing (NGS) and Comprehensive Genomic Profiling (CGP); NCT02899793; Active, not recruiting

FUNDERS:

Microsoft

Connecting Immune Health and Tumor Biology in Gynecologic Cancers

GRANT TERM: January 2018 – November 2022

KEY PERSONNEL:

Team Leader:
E. John Wherry, PhD, University of Pennsylvania

Team Co-leader:
Claire Friedman, MD, Memorial Sloan Kettering Cancer Center

Learn more about this team at the SU2C website.

Team Members:

- Shelley Berger, PhD, University of Pennsylvania
- Robert Burger, MD, FACOG, FACS, Hospital of the University of Pennsylvania
- Erica Carpenter, MBA, PhD, University of Pennsylvania
- Travis Hollman, MD, Memorial Sloan Kettering Cancer Center
- Dana Pe'er, PhD, Memorial Sloan Kettering Cancer Center
- Daniel Powell, PhD, University of Pennsylvania
- Dmitriy Zamarin, MD, PhD, Memorial Sloan Kettering Cancer Center

Project Manager:

- Alice Lustig, Stand Up To Cancer, alustig@su2c.org

Purpose:

The Connecting Immune Health and Tumor Biology in Gynecologic Cancers Team studies immune defects in gynecologic cancer patients with highly mutated tumors to gain insights into immune responsiveness. The scientists are working to predict therapeutic outcomes and tailor treatment regimens for this subset of gynecologic cancers.

Specific Aims:

AIM 1. Test how tumor-intrinsic factors predispose to response or resistance to checkpoint blockade.

AIM 2. Test how baseline immune function and quality affects response to checkpoint blockade.

AIM 3. Define how on-treatment blood markers may reflect the tumor-immune interaction.

Key Accomplishments:

The Team collected data from a Phase 1 clinical study to test the impact of chemotherapy (carboplatin and paclitaxel) of ovarian cancers upon the effectiveness of immunotherapy with nivolumab. Data were mathematically analyzed employing information theory and mass transport analysis to examine the signal transduction pathways in the cancer cells using both RNA seq and copy number of genes (in a node) in the cells of a tumor. The most important pathway in this cancerous serous ovarian cell was determined to be the p53 pathway, which is mutated in 100% of serous ovarian cancers. However, different Tp53 mutations had different quantitative impacts upon the efficiency of information transfer. The work was published in Nature Genome Medicine, 2021, and the approach has now been repeated with NSCLC.

Clinical Trials:

Pilot Study of Nivolumab in Combination With Front-Line Neoadjuvant Dose-Dense Paclitaxel and Carboplatin Chemotherapy and Postsurgical Dose-Dense Paclitaxel and Carboplatin Chemotherapy in Patients With High-Grade Serous Ovarian, Fallopian Tube, or Primary Peritoneal Cancer; NCT03245892; Recruiting

Phase II Trial of Single-Agent Nivolumab in Patients With Microsatellite Unstable/Mismatch Repair Deficient/Hypermutated Uterine Cancer; NCT03241745; Recruiting

FUNDERS:

Microsoft

sitc
Society for Immunotherapy of Cancer

Ecology of the Tumor Microenvironment in Breast Cancer

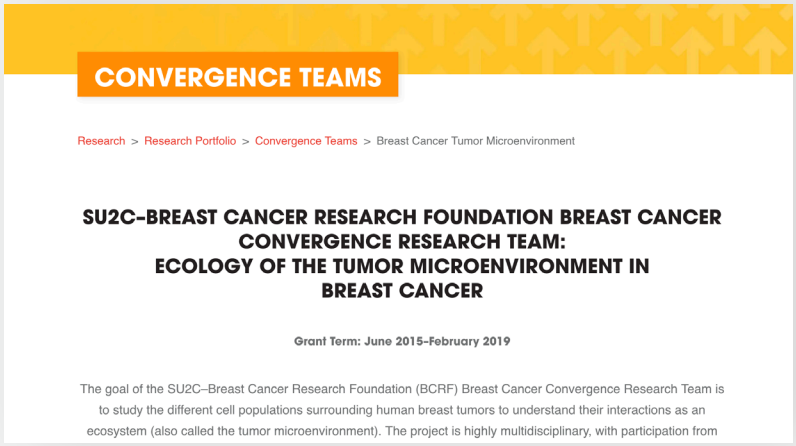
GRANT TERM: June 2015 – December 2019

KEY PERSONNEL:

Team Leader:
Peter P. Lee, MD,
City of Hope

Team Members:

- Gurinder S. "Mickey" Singh Atwal, PhD,
  Cold Spring Harbor Laboratory
- Darrell J. Irvine, PhD,
  Massachusetts Institute of Technology
- Herbert Levine, PhD,
  Rice University
- Clare C. Yu, PhD,
  University of California, Irvine


CONVERGENCE TEAMS

Research > Research Portfolio > Convergence Teams > Breast Cancer Tumor Microenvironment

SU2C-BREAST CANCER RESEARCH FOUNDATION BREAST CANCER CONVERGENCE RESEARCH TEAM: ECOLOGY OF THE TUMOR MICROENVIRONMENT IN BREAST CANCER

Grant Term: June 2015–February 2019

The goal of the SU2C–Breast Cancer Research Foundation (BCRF) Breast Cancer Convergence Research Team is to study the different cell populations surrounding human breast tumors to understand their interactions as an ecosystem (also called the tumor microenvironment). The project is highly multidisciplinary, with participation from

Learn more about this team at the SU2C website.

Project Manager:

- Alice Lustig,
  Stand Up To Cancer,
  alustig@su2c.org

Purpose:

The goal of the Ecology of the Tumor Microenvironment in Breast Cancer Team was to study the different cell populations within/surrounding human breast tumors to understand their interactions in the tumor microenvironment (TME). The project included participation from experts in breast cancer, immunology, genomics, bioinformatics, mathematical modeling, ecology, and drug delivery to destabilize the TME as novel treatments.

Specific Aims:

AIM 1. Study the breast cancer TME via deconstruction into key components and 3-D reconstruction.

AIM 2. Study the intact breast cancer TME and TDLN via quantitative, spatial tissue analysis.

AIM 3. Investigate combination therapy targeting multiple components of the TE.

Key Accomplishments:

The Team used high dimensional histology, image analysis, cell cultures from primary breast tumors, next generation and single cell genomics, bioinformatics, ecology modeling, and nanotechnology to study the ecology of the TME in breast cancer and to develop therapeutic and imaging applications.

FUNDERS:

Bristol Myers Squibb™

V FOUNDATION® Victory Over Cancer

BCRF BREAST CANCER RESEARCH FOUNDATION

Rational Design of Anticancer Drug Combinations with Dynamic Multi-Dimensional Input

GRANT TERM: September 2015 – August 2019

KEY PERSONNEL:

Team Leader:
Anthony G. Letai, MD, PhD, Dana-Farber Cancer Institute

CONVERGENCE TEAMS

Research > Research Portfolio > Convergence Teams > Rational Design of Anticancer Drug Combinations

SU2C-NATIONAL SCIENCE FOUNDATION DRUG COMBINATIONS CONVERGENCE RESEARCH TEAM: RATIONAL DESIGN OF ANTICANCER DRUG COMBINATIONS WITH DYNAMIC MULTI-DIMENSIONAL INPUT

Grant Term: September 2015–August 2019

This SU2C–National Science Foundation (NSF) Drug Combinations Convergence Research Team is focused on understanding cancer mutations that can be key to developing therapeutic responses. Normal cells have mechanisms for determining whether they will divide or not and whether they will die or not, and these mechanisms

Learn more about this team at the SU2C website.

Team Members:

- Reka Z. Albert, PhD, Pennsylvania State University
- Raul Rabadan, PhD, Columbia University
- Maurizio Scaltriti, PhD, Memorial Sloan Kettering Cancer Center
- Nikhil Wagle, MD, Dana-Farber Cancer Institute/ Harvard Cancer Center

Project Manager:

- Alice Lustig, Stand Up To Cancer, alustig@su2c.org

SU2C CONVERGENCE™ TEAMS

Purpose:

The Rational Design of Anticancer Drug Combinations with Dynamic Multi-Dimensional Input Team focused on understanding cancer mutations that can be key to developing therapeutic responses. Five biological and computation labs engaged collaboratively to identify how cancer cells distort protein-protein communications and how drug combinations can be used to restore proper function.

Specific Aims:

AIM 1. Construct dynamic models for signal transduction in PIK3CA-mutant, ER+ breast cancer cells.

AIM 2. Perform systematic gain-of-function screens to refine and iterate the dynamic models.

AIM 3. Dissect the evolutionary trajectories of acquired cancer drug resistance.

Key Accomplishments:

Researchers developed a test employing the tissue sections of cancers to measure the BCL-2 family of proteins that regulate the release of cytochrome from mitochondria channel VDAC. This helped to predict whether treatments of the tumor would result in apoptosis or not. A biotech company was initiated to validate and carry out the tests.

Clinical Trials:

Phase I Trial of BYL719 Plus Letrozole or Exemestane for Patients With Hormone Receptor– Positive, Locally Advanced, Unresectable or Metastatic Breast Cancer; NCT01870505; Active, not recruiting

Phase II, Randomized, Double-Blind Study of Neoadjuvant Letrozole Plus GDC-0032 Versus Letrozole Plus Placebo in Postmenopausal Women With ER-Positive/HER2-Negative, Early-Stage Breast Cancer; NCT02273973; Completed

Phase I, Open-Label, Dose-Escalation Study Evaluating the Safety, Tolerability, and Pharmacokinetics of GDC-0077 as a Single Agent in Patients With Locally Advanced or Metastatic PIK3CA-Mutant Solid Tumors and in Combination With Endocrine and Targeted Therapies in Patients With Locally Advanced or Metastatic PIK3CA-Mutant Hormone Receptor–Positive Breast Cancer; NCT03006172; Recruiting

FUNDERS:

Bristol Myers Squibb™

V FOUNDATION® Victory Over Cancer

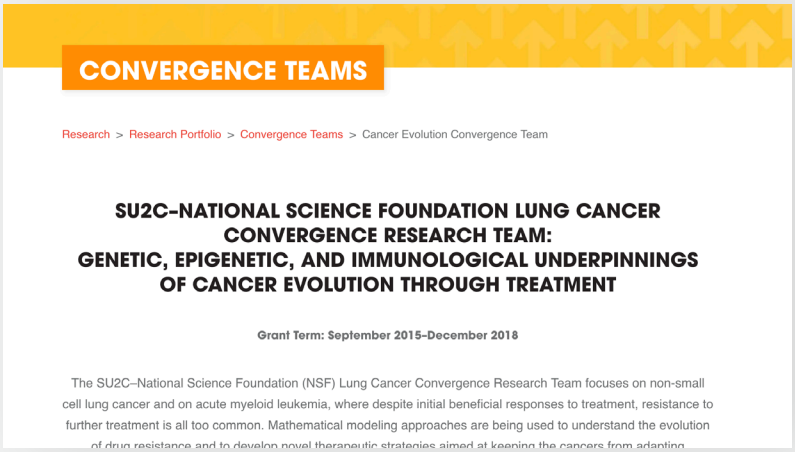
NSF National Science Foundation

Genetic, Epigenetic, and Immunological Underpinnings of Cancer Evolution Through Treatment

GRANT TERM: September 2015 – December 2019

KEY PERSONNEL:

Team Leader:
Ross Levine, MD,
Memorial Sloan Kettering Cancer Center


CONVERGENCE TEAMS

Research > Research Portfolio > Convergence Teams > Cancer Evolution Convergence Team

SU2C-NATIONAL SCIENCE FOUNDATION LUNG CANCER CONVERGENCE RESEARCH TEAM: GENETIC, EPIGENETIC, AND IMMUNOLOGICAL UNDERPINNINGS OF CANCER EVOLUTION THROUGH TREATMENT

Grant Term: September 2015–December 2018

The SU2C–National Science Foundation (NSF) Lung Cancer Convergence Research Team focuses on non-small cell lung cancer and on acute myeloid leukemia, where despite initial beneficial responses to treatment, resistance to further treatment is all too common. Mathematical modeling approaches are being used to understand the evolution of drug resistance and to develop novel therapeutic strategies aimed at keeping the cancers from adapting

Learn more about this team at the SU2C website.

Team Members:

- Steven J. Altschuler, PhD, University of California, San Francisco
- Chang S. Chan, PhD, Rutgers Cancer Institute of New Jersey
- Daniel S. Fisher, PhD, Stanford University
- Aaron Hata, MD, PhD, Massachusetts General Hospital
- Harlan Robins, PhD, Fred Hutchinson Cancer Research Center
- Lecia VanDam Sequist, MD, MPH, Massachusetts General Hospital

Project Manager:

- Alice Lustig, Stand Up To Cancer, alustig@su2c.org

Purpose:

The Genetic, Epigenetic, and Immunological Underpinnings of Cancer Evolution Through Treatment Team focused on NSCLC and AML where, despite initial beneficial responses to treatment, resistance to further treatment is all too common. Mathematical modeling approaches were used to understand the evolution of drug resistance and to develop novel therapeutic strategies aimed at keeping the cancers from adapting to treatments.

SU2C-NATIONAL SCIENCE FOUNDATION CONVERGENCE™ RESEARCH TEAM CV6007

Specific Aims:

AIM 1. Investigate genetic, epigenetic, and phenotypic diversity in response to cancer therapies.

AIM 2. Examine immune system dynamics in response to cancer therapies.

AIM 3. Conduct functional interrogation of drug response/resistance.

Clinical Trial:

Phase II Study of EGF816 and Gefitinib in TKI-Naive EGFR-Mutant Non-small Cell Lung Cancer; NCT03292133; Recruiting

Key Accomplishments:

Scientists have described clonal hematopoiesis and the increase in the myeloid compartment with aging in some individuals. Team members also described the evolution of mutations in clonal hematopoiesis, their fitness and selection. This described a path in the development of AML in older adults.

FUNDERS:

Bristol Myers Squibb™

V FOUNDATION® Victory Over Cancer

NSF National Science Foundation

Liberating T-Cell Mediated Immunity to Pancreatic Cancer

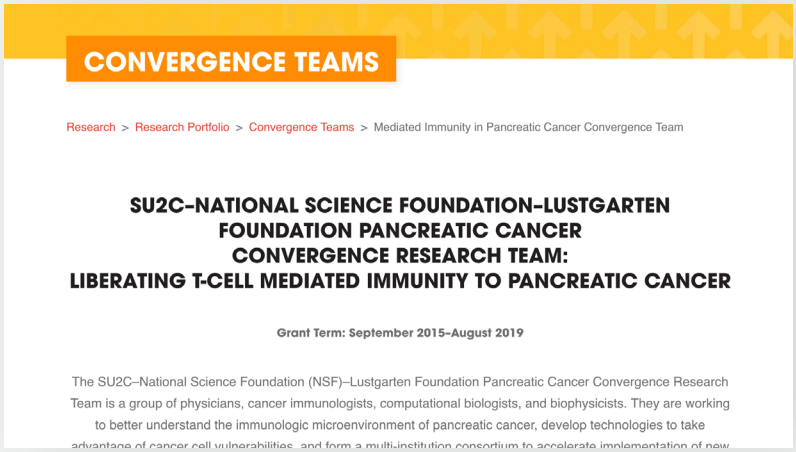
GRANT TERM: September 2015 – January 2020

KEY PERSONNEL:

Team Co-leader:
Peter O'Dwyer, MD,
University of
Pennsylvania

Team Co-leader:
Jeffrey Drebin, MD,
Memorial Sloan Kettering
Cancer Center

Team Co-leader:
Jedd Wolchok,
MD, PhD,
Memorial Sloan Kettering
Cancer Center



Learn more about this team at the SU2C website.

Team Members:

- Curtis G. Callan, PhD, Princeton University
- Benjamin D. Greenbaum, PhD, Icahn Medical School at Mount Sinai
- Harlan Robins, PhD, Fred Hutchinson Cancer Research Center
- David T. Ting, MD, Massachusetts General Hospital/Harvard Medical School

Project Manager:

- Alice Lustig, Stand Up To Cancer, alustig@su2c.org

SU2C CONVERGENCE™ TEAMS

Purpose:

This group of physicians, cancer immunologists, computational biologists, and biophysicists in the Liberating T-Cell Mediated Immunity to Pancreatic Cancer Team worked to better understand the immunologic microenvironment of pancreatic cancer, develop technologies to take advantage of cancer cell vulnerabilities, and form a multi-institutional consortium to accelerate implementation of new strategies that could change the course of this deadly disease.

SU2C-NATIONAL SCIENCE FOUNDATION-LUSTGARTEN FOUNDATION CONVERGENCE™ RESEARCH TEAM CV6005

Specific Aims:

AIM 1. Characterize neoadjuvant vitamin D effects on the T-cell repertoire and immunologic milieu in human pancreatic cancer.

AIM 1.1. Understand the interplay of TCR diversity and neoepitopes in PDAC.

AIM 1.2. Characterize pancreatic cancer transcriptional response to immunomodulatory signals.

AIM 2. Conduct exploratory study of neoadjuvant chemoimmunotherapy in pancreatic cancer.

AIM 2.1. Phase I trial of neoadjuvant gemcitabine/nab-paclitaxel/paricalcitol/nivolumab. (Work on this Aim is continuing as an SU2C subproject.)

AIM 2.2. Perform T-cell repertoire analysis and in vitro characterization of neoantigen reactivity.

Key Accomplishments:

Convergence Team scientists have developed a CLIA certified test employing paraffin embedded tissue sections and in situ hybridization that distinguishes between pancreatic cancer cells that were either of epithelial or mesenchymal morphologies. This work has demonstrated that tumor cells undergo changes between these different epigenetic cell types and showed that many tumors have both cell types, and that Folfirinox preferentially kills one cell type and Albumin-bound-Paclitaxel treatment kills the other cell type. This test is now employed at several different cancer centers to provide prognostic information about these tumors.

Clinical Trial:

Phase Ib Pharmacodynamic Study of Neoadjuvant Paricalcitol in Resectable Pancreatic Cancer; NCT03300921; Active, not recruiting

FUNDERS:
Bristol Myers Squibb™
FOUNDATION® Victory Over Cancer
NSF National Science Foundation
LUSTGARTEN FOUNDATION PANCREATIC CANCER COLLECTIVE STAND UP TO CANCER

SU2C CATALYST® TEAMS

STAND UP TO CANCER® CATALYST

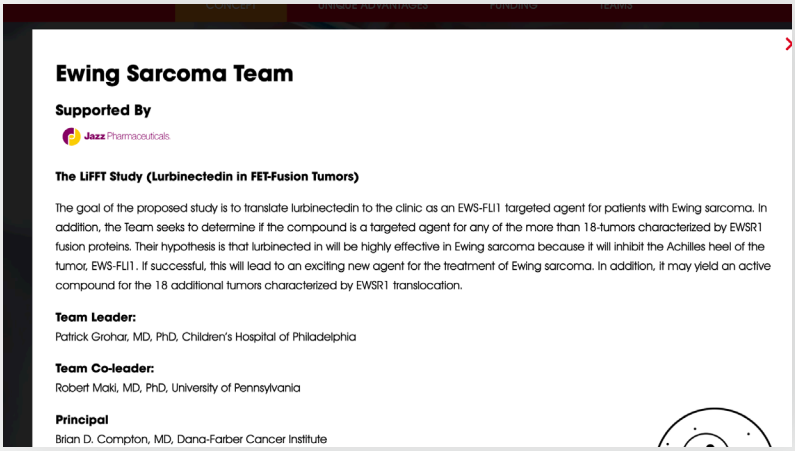
The LiFFT Study (Lurbinectedin in FET-Fusion Tumors)

GRANT TERM: TBD

KEY PERSONNEL:

Team Leader:
Patrick Grohar, MD, PhD, Children's Hospital of Philadelphia

Team Co-leader:
Robert Maki, MD, PhD, University of Pennsylvania



Learn more about this team at the SU2C website.

Principal:

- Brian D. Compton, MD, Dana-Farber Cancer Institute

Project Managers:

- Jennifer Baldi, Children's Hospital of Philadelphia, baldij@chop.edu

Senior Co-Investigator:

- Theodore W. Laetsch, MD, The Children's Hospital of Philadelphia

Young Investigator:

- Jenna Gedminas, MD, University of Iowa

Co-Investigators:

- John W. Glod, MD, PhD, National Cancer Institute
- Julia Glade-Bender, MD, Memorial Sloan Kettering Cancer Center
- Leo Mascarenhas, MD, MS, Children's Hospital Los Angeles
- Rashmi Chugh, MD, University of Michigan
- Steven DuBois, MD, MS, Dana Farber Cancer Institute

Advocates:

- Carol R. Basso, 1 Million 4 Anna Foundation
- Laurie E. Karl, Sean Karl Foundation

SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM JAZZ PHARMACEUTICALS CT6330

Purpose:

The goal of the proposed study is to translate lurbinectedin to the clinic as an EWS-FLI1 targeted agent for patients with Ewing sarcoma. In addition, the Team seeks to determine if the compound is a targeted agent for any of the more than 18-tumors characterized by EWSR1 fusion proteins. If successful, this will lead to an exciting new agent for the treatment of Ewing sarcoma. In addition, it may yield an active compound for the 18 additional tumors characterized by EWSR1 translocation.

Specific Aims:

AIM 1. Determine the safety, tolerability, and pharmacokinetic profile of lurbinectedin in patients with FET-fusion tumors.

AIM 2. Determine if lurbinectedin inhibits EWS-FLI1 and/or shows antitumor activity in Ewing's sarcoma.

Progress:

To be assessed at first review.

FUNDERS:

Jazz Pharmaceuticals

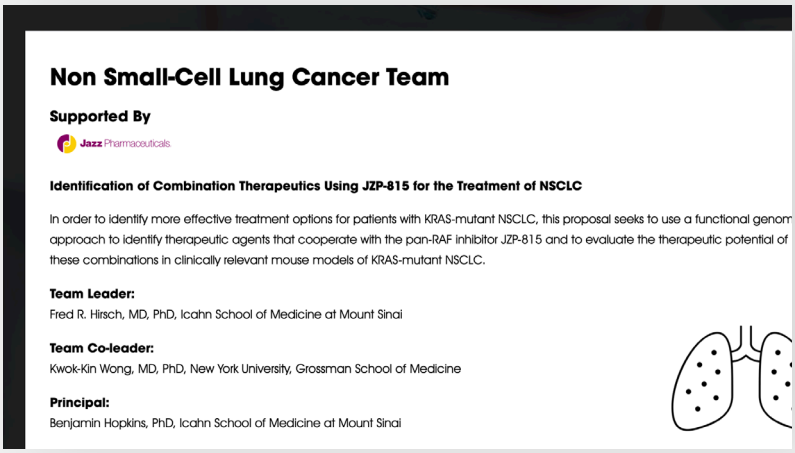
Identification of Combination Therapeutics Using JZP-815 for the Treatment of NSCLC

GRANT TERM: TBD

KEY PERSONNEL:

Team Leader:
Fred R. Hirsch, MD, PhD, Icahn School of Medicine at Mount Sinai

Team Co-leader:
Kwok-Kin Wong, MD, PhD, New York University, Grossman School of Medicine



Learn more about this team at the SU2C website.

Project Manager:

- Benjamin Hopkins, PhD, Icahn School of Medicine at Mount Sinai, benjamin.hopkins@mssm.edu

Principal Investigator:

- Jiehui Deng, PhD, New York University, Grossman School of Medicine
- Rajwanth Veluswamy, MD, Icahn School of Medicine at Mount Sinai

Purpose:

To identify more effective treatment options for patients with KRAS-mutant NSCLC, this research is using a functional genomics approach to identify therapeutic agents that cooperate with the pan-RAF inhibitor JZP-815 and to evaluate the therapeutic potential of these combinations in clinically relevant mouse models of KRAS-mutant NSCLC.

Specific Aims:

AIM 1. Take functional genomics approach to identify JZP-815-based combinations for the treatment of KRAS mutant NSCLC.

AIM 2. Evaluate therapeutic potential of JZP-815-based combination in GEMM models of KRAS mutant NSCLC.

Progress:

To be assessed at first review.

FUNDERS:
Jazz Pharmaceuticals

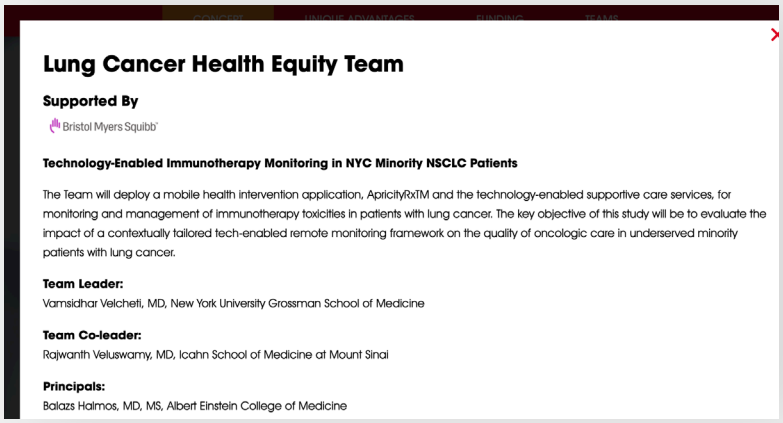
Technology-Enabled Immunotherapy Monitoring in NYC Minority NSCLC Patients

GRANT TERM: TBD

KEY PERSONNEL:

Team Leader:
Vamsidhar Velcheti, MD,
New York University Grossman School of Medicine

Team Co-leader:
Rajwanth Veluswamy, MD,
Icahn School of Medicine at Mount Sinai



Learn more about this team at the SU2C website.

Principals:

- Balazs Halmos, MD, MS, Albert Einstein College of Medicine
- Brian Henick, MD, Columbia University

Project Manager:

- Kristen Labbe, MPH, New York University Grossman School of Medicine, Kristen.Labbe@nyulangone.org

Advocates:

- Alexandra Awad, RN New York University Grossman School of Medicine
- Sulaiha Mastan

Purpose:

The Team is deploying a mobile health intervention application, ApricityRxTM and technology-enabled supportive care services, for monitoring and management of immunotherapy toxicities in patients with lung cancer. The key objective of this study will be to evaluate the impact of a contextually tailored tech-enabled remote monitoring framework on the quality of oncologic care in underserved minority patients with lung cancer.

Specific Aims:

AIM 1. Evaluate the barriers to adoption and optimal utilization of technology-enabled remote monitoring and adverse event management of underserved minority patients with non-small cell lung cancer (NSCLC) on immunotherapy.

AIM 2. Determine the impact of patient-reported outcome measures collected using ApricityRx™ and CARE service on the management of NSCLC patients receiving immunotherapy in a highly diverse New York City community.

AIM 3. Utilize technology-enabled monitoring to enhance the overall quality of care and translational research in underserved minority patients with NSCLC.

Progress:

To be assessed at first review.

FUNDERS:
Bristol Myers Squibb™

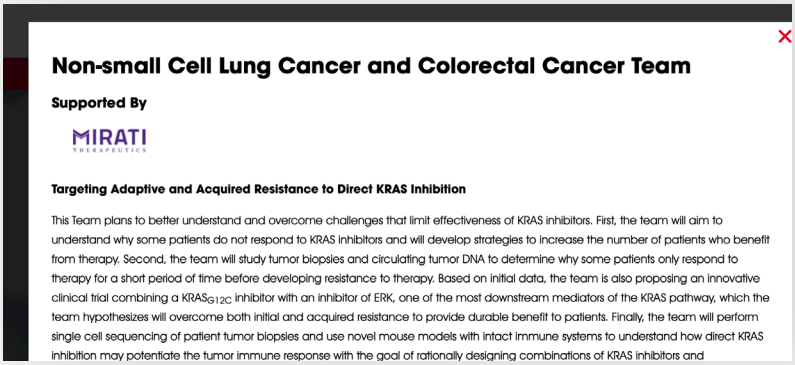
Targeting Adaptive and Acquired Resistance to Direct KRAS Inhibition

GRANT TERM: February 2022 – January 2025

KEY PERSONNEL:

Team Leader:
Ryan B. Corcoran, MD, PhD, Massachusetts General Hospital

Team Co-leader:
Scott Kopetz, MD, PhD, The University of Texas MD Anderson Cancer Center



Learn more about this team at the SU2C website.

Principals:

- Rebecca Heist, MD, Massachusetts General Hospital
- David Hong, MD, The University of Texas MD Anderson Cancer Center
- Pasi A. Jänne, MD, PhD, Harvard Medical School and Dana-Farber Cancer Institute

Project Manager:

- Stephanie McQueen, Massachusetts General Hospital, smcqueen1@partners.org

Advocates:

- Bonnie Addario, GO2 Foundation for Lung Cancer
- Anjee Davis, Fight CRC
- Manju George, Colontown

Purpose:

This team is working to better understand and overcome challenges that limit effectiveness of KRAS inhibitors. The team will aim to understand why some patients do not respond to KRAS inhibitors, develop strategies to increase the number of patients who benefit from therapy, and study tumor biopsies and circulating tumor DNA to determine why some patients only respond to therapy for a short period before developing resistance. The team is also proposing a clinical trial combining a KRASG12C inhibitor with an inhibitor of ERK. Finally, the team will perform single cell sequencing of patient tumor biopsies and use novel mouse models with intact immune systems to understand how direct KRAS inhibition may potentiate the tumor immune response.

Specific Aims:

AIM 1. Elucidate mechanisms of adaptive resistance to direct KRAS inhibition and understand the drug-tolerant persister state.

AIM 2. Identify mechanisms of acquired resistance to KRASG12C inhibition and perform clinical trials to overcome resistance.

AIM 3. Define interactions between direct KRAS inhibition and the tumor immune response and perform preclinical prioritization of novel therapeutic strategies.

Progress:

To be assessed at first review.

FUNDERS:

MIRATI THERAPEUTICS

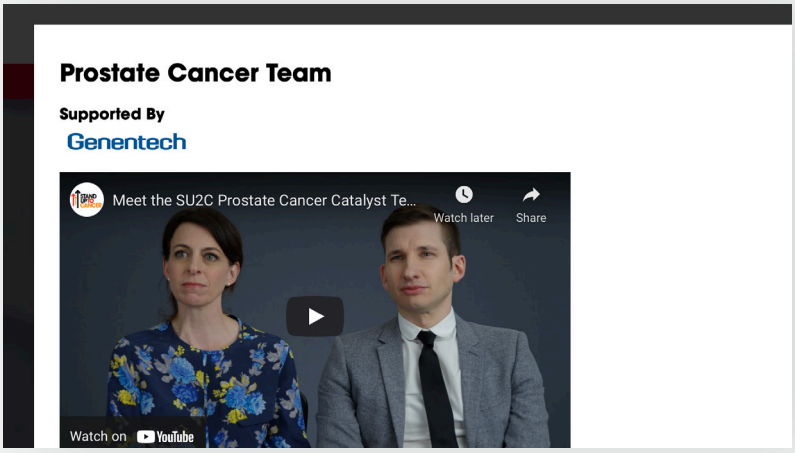
Atezolizumab, Androgen Receptor (AR) targeted therapy, and SBRT in Hormone Sensitive Prostate Cancer

GRANT TERM: September 2019 – February 2023, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Sean M. McBride, MD,
Memorial Sloan Kettering Cancer Center

Clinical Lead:
Dana E. Rathkopf, MD,
Memorial Sloan Kettering Cancer Center



Learn more about this team at the SU2C website.

Principals:

- Matthew Dallos, MD,
  Memorial Sloan Kettering Cancer Center
- Anuradha Gopalan, MD,
  Memorial Sloan Kettering Cancer Center
- Mark Stein, MD,
  Columbia University Medical Center

Project Manager:

- Kevin DeRudder,
  Memorial Sloan Kettering Cancer Center,
  deruddek@mskcc.org

Advocates:

- Jan Manarite, Prostate Cancer International
- Joel Nowark, Cancer ABCs

Purpose:

The Hormone Sensitive Prostate Cancer Team is conducting a single-arm phase II study of androgen receptor targeted therapy in combination with atezolizumab and SBRT in men with newly diagnosed metastatic hormone-sensitive prostate cancer (mHSPC). The goal is to capitalize upon potential synergy between SBRT and anti-PD-L1 immunotherapy to improve outcomes for mHSPC patients who will otherwise succumb to their disease.

SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM GENENTECH CT6181

Specific Aims:

AIM 1. Determine if the addition of SBRT and atezolizumab to abiraterone or enzalutamide + leuprolide improves failure-free survival (FFS) at two years relative to the FFS in the STAMPEDE trial.

AIM 2. Evaluate potential immunologic biomarkers of response.

AIM 3. Evaluate whether noninvasive blood-based and imaging-based biomarkers can be used to monitor and/or predict treatment response.

Key Progress:

More than half the target number of patients have been enrolled. In light of adverse events, the clinical trial protocol has been revised. Revisions include exclusion of patients with 'significant' diverticulosis, or prior history of bowel surgery or obstruction were excluded, and replacement of androgen receptor targeted therapy abiraterone with enzalutamide. Enrollment has resumed.

Clinical Trial:

SAABR: Single-Arm Phase II Study of Androgen Receptor (AR) Targeted Therapy + Atezolizumab + GnRH Analog and Stereotactic Body Radiotherapy (SBRT) to the Prostate in Men With Newly Diagnosed Hormone-Sensitive Metastatic Prostate Cancer; NCT04262154; Recruiting

FUNDERS:

Genentech
A Member of the Roche Group

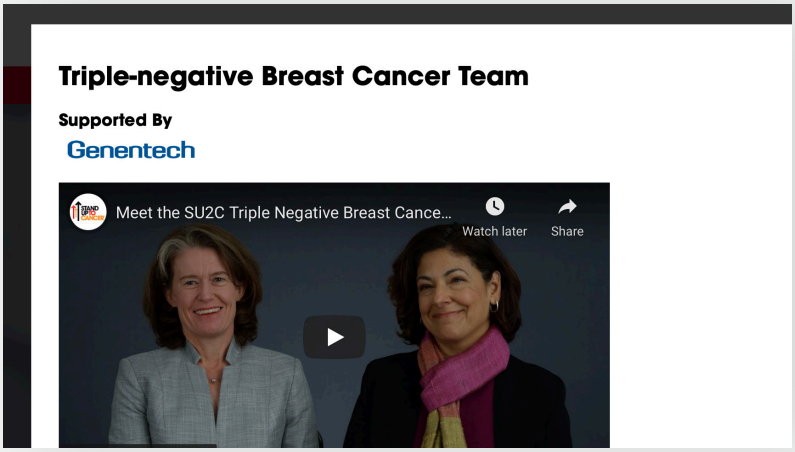
Combination Sacituzumab and Atezolizumab to Prevent Recurrence in Triple Negative Breast Cancer (TNBC)

GRANT TERM: July 2019 – December 2022, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Elizabeth A. Mittendorf, MD, PhD, Dana-Farber Cancer Institute

Clinical Lead:
Angela M. DeMichele, MD, University of Pennsylvania



Learn more about this team at the SU2C website.

Principals:

- Vandana Abramson, MD, Vanderbilt University Medical Center
- Heather L. McArthur, MD, Cedars-Sinai Medical Center
- Rita Nanda, MD, University of Chicago
- Ben Ho Park, MD, PhD, Vanderbilt University Medical Center
- Hope S. Rugo, MD, University of California, San Francisco
- Sara M. Tolaney, MD, Dana-Farber Cancer Institute

Project Manager:

- Michelle DeMeo, Dana-Farber Cancer Institute, Michelle_DeMeo@dfci.harvard.edu

Advocates:

- Caroline Abi-Khattar, JD, University of Pennsylvania
- Elizabeth S. Frank, Dana-Farber Cancer Institute

SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM GENENTECH CT6174

Purpose:

The Team seeks to eradicate micrometastatic disease in patients with triple-negative breast cancer (TNBC) who have minimal residual disease, by conducting a clinical trial testing the combination of sacituzumab, govitecan and atezolizumab.

Specific Aims:

AIM 1. Conduct a single-arm, phase II trial of sacituzumab govitecan in combination with atezolizumab, enrolling TNBC patients with residual disease and cfDNA following NACT.

AIM 2. Perform correlative studies to determine whether PD-L1 expression on CTCs has utility as a pharmacodynamic biomarker, and whether there is an association between molecular and immunobiological features in residual disease after NACT and response to sacituzumab govitecan plus atezolizumab.

Key Progress:

The Team has screened 18 patients and has enrolled one.

Clinical Trial:

Single-Arm Phase II Trial of Atezolizumab With Sacituzumab Govitecan to Prevent Recurrence in Triple-Negative Breast Cancer (ASPRIA); NCT04434040; Recruiting

FUNDERS:

Genentech
A Member of the Roche Group

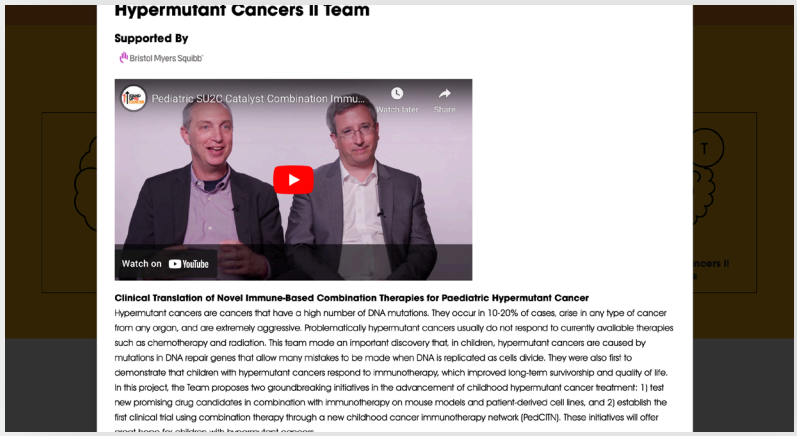
Clinical Translation of Novel Immune-Based Combination Therapies for Pediatric Hypermutant Cancers

GRANT TERM: June 2019- November 2023

KEY PERSONNEL:

Team Leader:
Uri Tabori, MD,
The Hospital for Sick Children

Clinical Lead:
Daniel Morgenstern, MB, BChir, PhD,
The Hospital for Sick Children



Learn more about this team at the SU2C website.

Principals:

- Crystal Mackall, MD, Stanford University
- John Maris, MD, Children's Hospital of Philadelphia

Project Manager:

- Vanessa Bianchi, PhD, The Hospital for Sick Children, vanessa.bianchi@sickkids.ca

Advocates:

- Denise Bebenek, Meagan's Hug
- Karen Haas, The Hospital for Sick Children
- Jenell Holstead, PhD, University of Wisconsin
- Parvathy Krishnan, Krishnan Family Foundation

Purpose:

This Team is exploring combinational immune based therapies for childhood hypermutant cancers, based on initial promising findings from single agent PD-1 inhibition in children with recurrent cancers. Using patient derived cells and immunocompetent animal models, the team is screening promising new drug candidates for testing in combination with immunotherapy on preclinical mouse models. In parallel, the first clinical trial using combinational therapies will be performed through Pediatric CITN, a new childhood cancer immunotherapy network.

PEDIATRIC SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM BRISTOL MYERS SQUIBB CT6148

Key Progress:

High-throughput drug screening performed on childhood and adult hypermutant and non-hypermutant glioma cell lines identified 23 common targets and additional unique vulnerabilities. Testing candidates developed by Bristol Myers Squibb for clinical use revealed that the best combination is of anti-PD1 and anti-Lag3. The combination showed improved response over PD1 or LAG3 inhibition alone, not only in ultrahypermutant tumors, but also in tumors with lower mutational burden which are resistant to PD1 blockade. Importantly, ENU-induced mouse gliomas, which mimic treatment related hypermutation, are not responsive to PD1 blockade but respond well to the PD1/LAG3 combination. Due to funding changes and other challenges, the clinical trial was closed, although the team continues to receive material from for both clinical and research testing and collaborates in over 50 countries and sites. A new combination clinical trial is in development.

Specific Aims:

AIM 1. Perform a phase Ib clinical trial of combinational immune checkpoint inhibitor (ICI) therapies in childhood hypermutant cancers.

AIM 2. Determine the biological aspects and preclinical benefits of combined BMS lead compounds with ICI on replication repair deficiency (RRD) hypermutant immunocompetent mouse models.

AIM 3. Define immediately translatable tumor intrinsic molecular vulnerabilities in RRD hypermutant cancers.

Clinical Trial:

3CI Study: Childhood Cancer Combination Immunotherapy. Phase Ib and Expansion Study of Nivolumab Combination Immunotherapy in Children, Adolescent, and Young Adult (CAYA) Patients With Relapsed/Refractory Hypermutant Cancers; NCT04500548; Closed

FUNDERS:

Bristol Myers Squibb™

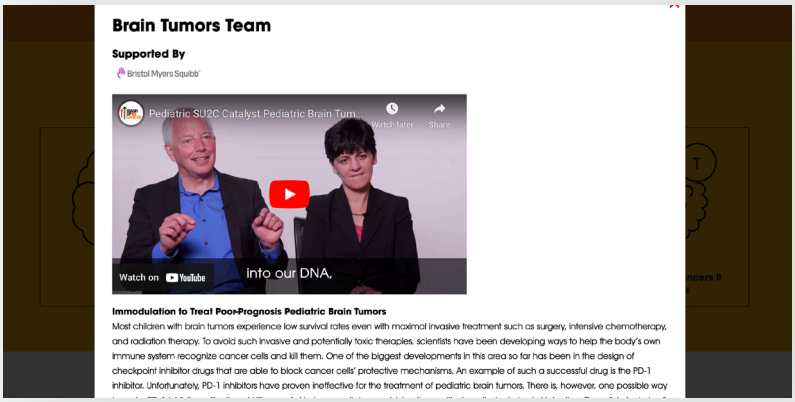
Immunomodulation to Treat Poor-Prognosis Pediatric Brain Tumors

GRANT TERM: February 2019 – August 2021

KEY PERSONNEL:

Team Leader:
Maryam Fouladi, MD,
Nationwide Children's Hospital

Team Co-leader:
James Olson, MD, PhD,
Fred Hutchinson Cancer Research Center



Learn more about this team at the SU2C website.

Principals:

- Rachid Drissi, PhD,
  Nationwide Children's Hospital
- Annie Huang, MD, PhD,
  The Hospital for Sick Children
- Nada Jabado, MD, PhD,
  McGill University Health Centre

Project Manager:

- Sara Lawellin,
  Cincinnati Children's Hospital
  Medical Center, Sara.Lawellin@cchmc.org

Advocate:

- Keith Desserich, Cure Starts Now

Purpose:

The objectives of the Immunomodulation to Treat Poor-Prognosis Pediatric Brain Tumors Team are to: determine the extent to which 5-aza, ribociclib, or other non-cytotoxic FDA approved drugs enhance T-cell mediated PBT cell death; assess the efficacy of 5-aza, ribociclib in combination with nivolumab, and establish a biomarker-based responder hypothesis.

Specific Aims:

AIM 1. Determine the extent to which 5-aza, ribo, or other non-cytotoxic FDA-approved drugs enhance T-cell mediated PBT cell death in vitro.

AIM 1B. Assess the efficacy of 5-aza, ribo, or a superior candidate in vivo.

AIM 2. Establish a biomarker-based responder hypothesis.

Key Accomplishments:

Through this collaborative study, the team generated and/or evaluated several important syngeneic mouse models across a spectrum of rare pediatric brain tumors. Additionally, the team has overcome poor tumor penetrance and difficulties using luciferase markers in vivo. Drug efficacy studies have demonstrated improved survival with decitabine and 4H2 in a subset of models – specifically IUE-DIPG-24-C5 and ATRT SU2C_54_i_5. Quantitative IHC and CyTOF analyses is underway to profile immune cell infiltration in tumor models.

FUNDERS:

Bristol Myers Squibb™

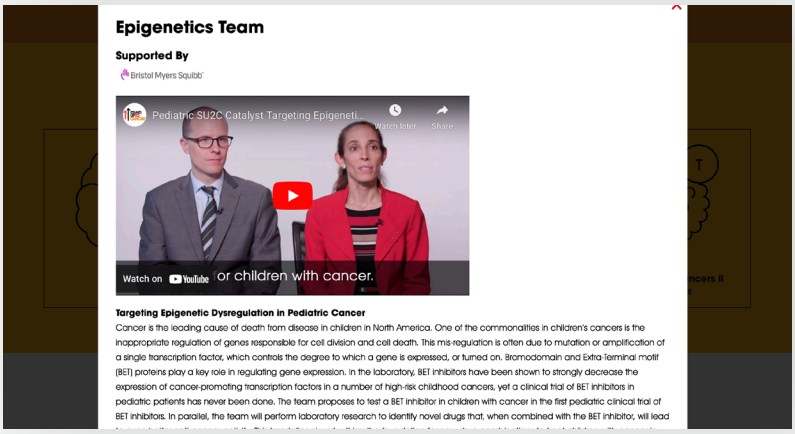
Targeting Epigenetic Dysregulation in Pediatric Cancer

GRANT TERM: January 2019 – June 2023

KEY PERSONNEL:

Team Leader:
Kimberly Stegmaier, MD,
Dana-Farber Cancer Institute

Team Co-leader and Clinical Lead:
Steven DuBois, MD,
Dana-Farber Cancer Institute



Learn more about this team at the SU2C website.

Principals:

- Peter Dirks, MD, PhD,
  The Hospital for Sick Children
- David Kirsch, MD, PhD,
  Duke University
- Elizabeth Lawlor, MD, PhD,
  Seattle Children's Research Institute

Project Manager:

- Jennifer Perry, PhD,
  Dana-Farber Cancer Institute,
  Jennifer_perry@dfci.harvard.edu

Advocate:

- Kathleen Malcolmson

Purpose:

The Targeting Epigenetic Dysregulation in Pediatric Cancer Team was assembled to understand the potential role of BET bromodomain inhibition in pediatric cancer and to identify new targeted agents for a variety of pediatric cancers. If successful, these studies should have a major impact on cancer treatment and outcome for patients improving both survival and long-term outcomes.

PEDIATRIC SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM BRISTOL MYERS SQUIBB CT6143

Key Progress:

The Team activated a first-in-child clinical trial of the BET bromodomain inhibitor BMS-986158 at six sites, with amendments to add a new CNS-penetrant BET inhibitor known as CC-90010. The Team is also assessing the efficacy of combinations with BET inhibition on pediatric cancer cell line models of soft tissue sarcoma, Ewing sarcoma, neuroblastoma, and medulloblastoma. Among the successes to date, researchers have demonstrated in vitro synergy with PI3K inhibitors in Ewing sarcoma and neuroblastoma, and HDAC inhibition in soft tissue sarcoma, Ewing sarcoma, and neuroblastoma.

Specific Aims:

AIM 1. Conduct a phase I clinical trial testing the BMS BETi BMS-986158 in children with cancer.

AIM 2. Test rational drug combinations with BMS-986158 in preclinical models of pediatric cancer.

AIM 3. Identify novel drug combinations with BMS-986158 through genome-scale CRISPR-Cas9 synergy screens.

Clinical Trial:

Study of the Bromodomain (BRD) and Extra-Terminal Domain (BET) Inhibitors BMS-986158 and BMS-986378 in Pediatric Cancer; NCT03936465; Recruiting

FUNDERS:

Bristol Myers Squibb™

Neoadjuvant Therapy for Patients With High-Risk Stage III Melanoma

GRANT TERM: June 2018 – November 2024, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Matthew S. Block, MD, PhD,
Mayo Clinic

Clinical Lead:
Tina J. Hieken, MD,
Mayo Clinic

Learn more about this team at the SU2C website.

Principals:

- Jun Chen, PhD, Mayo Clinic
- Evidio Domingo-Musibay, MD, University of Minnesota
- Roxana S. Dronca, MD, Mayo Clinic
- Thomas J. Flotte, MD, Mayo Clinic
- Rachel L. Maus, PhD, Mayo Clinic
- Vera J. Suman, PhD, Mayo Clinic

Project Manager:

- Jill Schimke, Mayo Clinic, schimke.jill@mayo.edu

Advocates:

- Cynthia Chauhan
- Alisha Birgin, Mayo Clinic
- Emalie Marion, University of Minnesota

Purpose:

The purpose of the Neoadjuvant Therapy for Patients With High-Risk Stage III Melanoma Team's clinical trial is to study how well drug therapies given prior to surgery work in treating participants with high-risk stage III melanoma. In the first two treatment arms of the study, patients received either the combination of cobimetinib and atezolizumab or the combination of vemurafenib, cobimetinib, and atezolizumab; followed by surgery; followed by atezolizumab treatment. The team has added a third treatment arm to test the combination of atezolizumab and tiragolumab.

SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM GENENTECH CT6054

Key Progress:

Accrual is complete for Arms A and B. A promising rate (54%) of pCR/ncCR has been observed, with 75% showing <50% tumor viability at operation post-neoadjuvant treatment. Accrual to Arm C approaches 50% of target accrual.

Specific Aims:

AIM 1. Test the safety and efficacy of the neoadjuvant combination of vemurafenib/cobimetinib/atezolizumab followed by surgery followed by adjuvant atezolizumab in patients with BRAFm high-risk stage III melanoma.

AIM 2. Test the safety and efficacy of neoadjuvant combination of cobimetinib/atezolizumab followed by surgery followed by adjuvant atezolizumab in patients with BRAFwt high-risk stage III melanoma.

AIM 3. Test the safety and efficacy of the neoadjuvant combination of tiragolumab/atezolizumab followed by surgery and adjuvant atezolizumab in patients with high-risk stage III melanoma.

Clinical Trial:

Neoadjuvant Therapy for Patients With High-Risk Stage III Melanoma: A Pilot Clinical Trial; NCT03554083, Recruiting

FUNDERS:

Genentech
A Member of the Roche Group

Immunotherapy Combination Strategies in ER-Positive Metastatic Breast Cancer

GRANT TERM: May 2018 – December 2019, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Ingrid A. Mayer, MD,
Vanderbilt University

Team Co-leader:
Justin M. Balko,
PharmD, PhD,
Vanderbilt University

Learn more about this team at the SU2C website.

Principals:

- Rita Nanda, MD, University of Chicago
- Hope S. Rugo, MD, University of California, San Francisco
- Melinda E. Sanders, MD, Vanderbilt University
- Yu Shyr, PhD, Vanderbilt University

Project Manager:

- Catherine Weir, Vanderbilt University

Advocates:

- Lynn Cargen
- Linda J. Horton

Purpose:

The Team proposed new treatment combination strategies, within a clinical trial for ER+ BC, that sought to increase the presence of specific immune system cells (T-cells) around the tumor and increase the presence of immune proteins (MHC and PD-L1) in the surface of the cancer cell, which would allow T-cells to recognize the tumor as "foreign." This should therefore render immunotherapies much more effective against ER+ BC.

Specific Aims:

AIM 1. Perform preclinical assays to determine the functional effect of MDM2 inhibition on T cells.

AIM 2. Perform preclinical studies to model the molecular and therapeutic effects of MDM2 inhibition with anti-PD-L1 therapy in breast cancer.

AIM 3. Perform a multicenter, open-label, two-arm phase Ib/II clinical trial that will evaluate the antitumor effect of atezolizumab (ATEZ, an anti-PD-L1 mAb) in combination with cobimetinib (COBI, a MEK inhibitor) in patients with TP53-mutated ER+ mBC (metastatic breast cancer), or idasanutlin (IDASA, an MDM2 antagonist) in patients with TP53-wt ER+ mBC.

AIM 4. Determine whether IDASA or COBI enhances T-cell infiltration and activation in ER+ breast tumors, and whether this effect is associated with patient-specific clinical response to ATEZ. In addition, molecular correlates both intra-tumoral and in the peripheral blood of patients will be tested as correlative analyses.

AIM 5. Perform active monitoring of T-cell populations in PBMCs from IDASA-treated patients. To ensure that treatment for two weeks with IDASA does not eliminate peripheral effector T-cell populations, we will perform CyTOF to identify expanded or eliminated T-cell populations in the peripheral blood in the phase I portion of the IDASA arm.

Key Accomplishments:

Twelve patients were enrolled in the trial (5 in the atezolizumab + cobimetinib arm, and 7 in the atezolizumab + idasanutlin arm). Tumor biopsies and blood were collected before treatment initiation and 2 weeks after treatment initiation to perform molecular analysis for better understanding on why these combinations of drugs will be effective in ER+ BC. No unexpected side effects were seen with either combination. The trial was closed due to low accrual.

Clinical Trial:

BRE 17107: Phase Ib/II Trial of Atezolizumab (an Anti-PD-L1 Monoclonal Antibody) With Cobimetinib (a MEK1/2 Inhibitor) or Idasanutlin (an MDM2 Antagonist) in Metastatic ER+ Breast Cancer; NCT03566485; Terminated

FUNDERS:

Genentech
A Member of the Roche Group

Overcoming Urothelial Cancer Atezolizumab Resistance by Epigenetic Therapy

GRANT TERM: November 2017 – April 2021, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Peter A. Jones, PhD, DSc, (hon), Van Andel Institute

Team Co-leader:
Elizabeth R. Plimack, MD, Fox Chase Cancer Center

Learn more about this team at the SU2C website.

Principals:

- Stephen B. Baylin, MD, Johns Hopkins University
- Noah M. Hahn, MD, Johns Hopkins University
- Jean-Pierre J. Issa, MD, Coriell Institute for Medical Research
- David I. Quinn, MD, USC Norris Comprehensive Cancer Center

Project Managers:

- Ryan Burgos, Van Andel Institute, Ryan.Burgos@vai.org
- Revathi Penumatsa, Van Andel Institute, Revathi.Penumatsa@vai.org

Advocate:

- Rick Bangs

Purpose:

Extensive preliminary data from the Team has shown that epigenetic modifiers can dramatically affect the immune microenvironment and promote an inflamed phenotype in tumors. A large number of urothelial cancer (UC) patients are or become resistant to immune checkpoint antibodies. The Team explored the therapeutic potential of combining the epigenetic agent called guadecitabine with anti-PDL1 antibody atezolizumab.

Specific Aims:

AIM 1. Dose selection: Identify a safe, biologically active dose of concurrent guadecitabine and atezolizumab for patients with advanced UC in the safety run-in portion of our phase II study.

AIM 2. Dose expansion: Determine the efficacy (ORR) of the combination in patients with advanced UC who progressed after immune checkpoint therapy in a single-arm phase II expansion cohort.

AIM 3. Correlative science: Use paired pre- and post-treatment biopsies and peripheral blood to explore genomes, genome-wide expression, pathway alterations, and epigenomes in tumor and immune cells.

Key Accomplishments:

The Team identified a safe, biologically active dose for concurrent guadecitabine and atezolizumab for patients with advanced urothelial cancer. Although the trial was closed for futility, a small subset of patients experienced stable disease with prolonged survival of greater than 17 months. Correlative analysis involving tumor transcriptomics, whole exome sequencing, DNA methylome, immunohistochemistry, and flow cytometry revealed that patient survival associated with immune activation of circulating immune cells and pre-existing levels of CD8 T cells within the tumor. These results suggest that further studies to target the reprogramming of T cells with alternative methodologies may be of benefit in this disease setting.

Clinical Trial:

GU-114: Overcoming Checkpoint Inhibitor Resistance With Epigenetic Therapy in Urothelial Cancer; NCT03179943; Completed

FUNDERS:

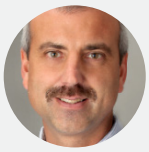
Genentech
A Member of the Roche Group

Tumor Infiltrating Lymphocyte Adoptive T-Cell Therapy for Non-small Cell Lung Cancer (NSCLC)

GRANT TERM: June 2017 – May 2020, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Co-leader:
Eric B. Haura, MD,
H. Lee Moffitt Cancer Center & Research Institute



Team Co-leader:
Scott J. Antonia, MD, PhD,
Duke University

Clinical Lead:
Benjamin C. Creelan, MD,
H. Lee Moffitt Cancer Center & Research Institute

Learn more about this team at the SU2C website.

Investigators:

- Frederic J. Kaye, MD, University of Florida
- John M. Koomen, PhD, H. Lee Moffitt Cancer Center& Research Institute

Project Manager:

- Carol Ulge, H. Lee Moffitt Cancer Center & Research Institute, Carol.Ulge@moffitt.org

Advocates:

- Rosalynne I. Miller
- Joan Tashbar

Purpose:

The Tumor Infiltrating Lymphocyte Adoptive T-Cell Therapy Team's goals were to conduct a clinical trial combining (TIL) therapy with anti-PD1 therapy and to use advanced proteogenomic technologies to characterize the TILs obtained from patients who have clinical response. These efforts can contribute to the optimization of TIL therapy for lung cancer.

Specific Aims:

AIM 1. Conduct a trial of TIL ACT and α-PD-1 in advanced-stage NSCLC patients.

AIM 2. Characterize tumor and TIL features associated with response using proteogenomics.

Key Accomplishments:

The Team's work demonstrated that: 1) TIL therapy was logistically feasible and safe in stage 4 lung cancer patients: 2) TIL could provide meaningful and durable responses in stage 4 lung cancer patients; 3) infused TILs therapy could target neoantigens in the tumors of patients with non-small cell lung cancer (NSCLC) and could persist over time; and 4) antigen loss may be a potential cause of acquired resistance.

Clinical Trial:

A Phase I Clinical Trial Combining Nivolumab and Tumor Infiltrating Lymphocytes (TIL) for Patients With Advanced Non-small Cell Lung Cancer; NCT03215810; Active, not Recruiting

FUNDERS:

Bristol Myers Squibb™

Immunotherapy to Prevent Progression in Multiple Myeloma

GRANT TERM: May 2017 – October 2021, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader and Clinical Lead:
Irene M. Ghobrial, MD,
Dana-Farber Cancer Institute

Learn more about this team at the SU2C website.

Principals:

- Viktor A. Adalsteinsson, PhD, Broad Institute
- Mark W. Bustoros, MD, Weill Cornell Medical College
- Marzia Capelletti, PhD, Dana-Farber Cancer Institute
- Jihye Park, PhD, Dana-Farber Cancer Institute
- Romanos Sklavenitis Pistofidis, MD, Dana-Farber Cancer Institute
- Yujia Shen, PhD, Dana-Farber Cancer Institute
- Oksana Zavidij, PhD, Dana-Farber Cancer Institute

Project Manager:

- Alexandra Savell, Dana-Farber Cancer Institute, asavell@partners.org

Advocate:

- Jenny Ahlstrom, Myeloma Crowd

Purpose:

This Team's research was based on the idea that treating a precursor state of multiple myeloma called smoldering multiple myeloma (SMM) with immunotherapy can activate the immune system and trigger a response to the tumor to delay or prevent progression to myeloma.

Specific Aims:

AIM 1. Define the immune-oncogenomic landscape of smoldering multiple myeloma (SMM) in response to immunotherapy.

AIM 2. Characterize somatic aberrations present in cell-free DNA (cfDNA) and circulating tumor cells (CTCs) as biomarkers of response/resistance in SMM enrolled in the trial.

AIM 3. Define markers of the permissive bone marrow microenvironment that characterize risks of progression in SMM patients enrolled in the trial.

Key Accomplishments:

Suggested alternate text based on Cancer Cell paper of Team: The Team completed accrual on their phase II trial. They have found that early treatment with elotuzumab, lenalidomide, and dexamathasone is safe and effective. and in patients. They showed that the similarity of a patient's immune cell composition to that of healthy donors may have prognostic relevance at diagnosis and after treatment. They also uncovered similarities between immune alterations observed in the bone marrow and blood, suggesting that blood-based immune profiling may have diagnostic and prognostic utility.

Clinical Trial:

Phase II Trial of Combination of Elotuzumab, Lenalidomide, and Dexamethasone in High-Risk Smoldering Multiple Myeloma; NCT02279394; Active, not recruiting

FUNDERS:

Bristol Myers Squibb™

Pembrolizumab and Radiation Therapy to Improve Outcome in High-Risk Sarcoma

GRANT TERM: May 2017 – October 2023, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader and Clinical Lead:
David G. Kirsch, MD, PhD,
Duke University Medical School

Learn more about this team at the SU2C website.

Principals:

- Karla V. Ballman, PhD, Weill Cornell Medical College
- Brian E. Brigman, MD, Duke Cancer Institute
- George D. Demetri, MD, Dana-Farber Cancer Institute
- Richard F. Riedel, MD, Duke Cancer Institute
- Matt van de Rijn, MD, PhD, Stanford University
- Andrew J. Wagner, MD, PhD, Dana-Farber Cancer Institute
- Kent J. Weinhold, PhD, Duke University Medical Center
- Steven Young, Sarcoma Alliance for Research Through Collaboration

Early Career Investigators:

- Everett Moding, MD, PhD, Stanford University
- Yvonne Mowery, MD, PhD, Duke Cancer Institute

Project Managers:

- Erin Kozlowski, Sarcoma Alliance for Research Through Collaboration, ekozlowski@sarctrials.org
- Lindsay Overman, Sarcoma Alliance for Research Through Collaboration, leoverman@sarctrials.org

Advocate:

- Corrie A. Painter, PhD, Broad Institute

SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM MERCK CT6032

Purpose:

The High-Risk Sarcoma Team is conducting a clinical trial to test the safety and efficacy of pembrolizumab combined with preoperative radiotherapy to reduce the development of metastatic disease in sarcoma patients.

Specific Aims:

AIM 1. Test the safety and efficacy of pembrolizumab combined with preoperative radiotherapy to reduce the development of metastatic disease in sarcoma patients.

AIM 2. Characterize immune response to radiotherapy with or without pembrolizumab and identify predictors of pembrolizumab response in patients with soft-tissue sarcoma.

Key Progress:

The clinical trial is enrolling 126 patients at eleven US sites and five international sites (three in Australia, one in Milan, and one in Montreal). Using a method called CAPP-Seq, the Team has observed in an initial cohort of 45 patients, approximately 40% have detectable circulating tumor DNA three months after surgery. This data set is the first of its kind in a sarcoma study and may reveal opportunities for clinical follow-up and stratification/selection for adjuvant therapies.

Clinical Trial:

SU2C-SARC032: Phase II Randomized Controlled Trial of Neoadjuvant Pembrolizumab With Radiotherapy and Adjuvant Pembrolizumab in Patients With High-Risk, Localized Soft-Tissue Sarcoma of the Extremity; NCT03092323; Recruiting

FUNDERS:

MERCK

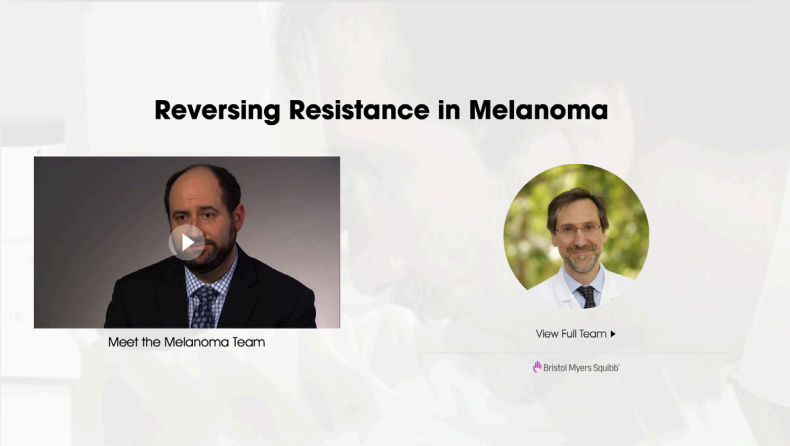
Reversing Primary Anti-PD-1 Resistance with Ipilimumab and Nivolumab

GRANT TERM: May 2017 – October 2022, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Antoni Ribas, MD, PhD,
University of California,
Los Angeles

Clinical Lead:
Ari M.
Vanderwalde, MD,
West Cancer
Center and
Research Institute



Learn more about this team at the SU2C website.

Principals:

- Kenneth F. Grossmann, MD, PhD,
  Huntsman Cancer Institute, University of Utah
- Siwen Hu-Lieskovan, MD, PhD,
  Huntsman Cancer Institute, University of Utah
- Jeffrey A. Sosman, MD,
  Northwestern University

Project Manager:

- Jia M. Chen, PhD,
  University of California, Los Angeles,
  JiaChen@mednet.ucla.edu

Advocate:

- Samantha Guild, AIM at
  Melanoma Foundation

Purpose:

The Team set out to test the hypothesis that adding ipilimumab to continued nivolumab will reverse primary resistance to anti-PD-1/L1 blockade therapy in patients with metastatic melanoma. They tested this hypothesis within a phase II trial at Southwest Oncology Group (SWOG), conducting multiple biopsy analyses to provide mechanistic understanding of the effects of ipilimumab added to nivolumab.

Specific Aims:

AIM 1. Conduct a phase II study of ipilimumab and nivolumab in patients with metastatic melanoma progressing on prior anti-PD-1 therapy.

AIM 2. Investigate cellular and genomic changes in biopsies when adding ipilimumab to continued PD-1 inhibition.

Key Accomplishments:

The clinical trial met its accrual target of 94 patients (enrolled across 19 states). Progression Free Survival (PFS) was significantly improved with the combination treatment of nivolumab + ipilimumab compared to ipilimumab alone. Although the number of high-grade adverse events was higher with the nivolumab + ipilimumab combination, most high-grade events were in line with the known safety profile. Overall, the data supports the combination of nivolumab + ipilimumab as an appropriate next-line treatment for patients with advanced melanoma who do not response to anti-PD-1 alone.

Clinical Trial:

Phase II Randomized Study of Nivolumab (NSC-748726) With Ipilimumab (NSC-732442) or Ipilimumab Alone in Advanced Melanoma Patients Refractory to an Anti-PD1 or Anti-PD-L1 Agent; NCT03033576; Active, not recruiting

FUNDERS:

Bristol Myers Squibb™

Targeting VDR to Make Pancreatic Cancer Competent for Immunotherapy

GRANT TERM: May 2017 – June 2020, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader and Clinical Lead:
Daniel D. Von Hoff, MD, Translational Genomics Research Institute

Learn more about this team at the SU2C website.

Principals:

- Angela T. Alistar, MD, Atlantic Health System
- Michael T. Barrett, PhD, Mayo Clinic Arizona
- Carlos H. Becerra, MD, Baylor University Medical Center
- Erkut H. Borazanci, MD, Honor Health Research Institute
- Vincent Chung, MD, City of Hope
- Michael R. Downes, PhD, Salk Institute for Biological Studies
- Ronald M. Evans, PhD, Salk Institute for Biological Studies
- Haiyong Han, PhD, Translational Genomics Research Institute
- Anup Kasi, MD, University of Kansas Medical Center
- Ronald L. Korn, MD, PhD, Imaging Endpoints, LLC
- Winnie Liang, PhD, Translational Genomics Research Institute
- Andrew M. Lowy, MD, University of California, San Diego
- Hitendra P. Patel, MBBS, UCSD Moores Cancer Center
- Paul S. Ritch, MD, Medical College of Wisconsin

Project Manager:

- Jatan Clark, Translational Genomics Research Institute, jclark@tgen.org

Advocates:

- Roger E. Magowitz, Seena Magowitz Foundation
- Howard E. Young, General Wholesale Beer Company

SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM MERCK CT6031

Purpose:

The overall goal of the Targeting the Vitamin D receptor (VDR) to Make Pancreatic Cancer Competent for Immunotherapy Team was to see if targeting VDR would unlock the potential of immunotherapies to keep patients in remission after their chemotherapy.

Specific Aims:

AIM 1. Determine the synergy between the VDR agonist paricalcitol and the PD-1 inhibitor pembrolizumab in effecting an antitumor immune response in clinical trials.

AIM 2. Define the impact of paricalcitol and pembrolizumab combination therapy on the mutational landscapes and transcriptional programs of pancreatic tumors.

AIM 3. Identify cellular and molecular VDR targets in the immune microenvironment that synergize with PD-1 blockade.

Key Accomplishments:

By conducting a double-blind placebo-controlled clinical trial, the Team demonstrated that maintenance trials can be conducted in stage IV pancreatic cancer patients who have received induction chemotherapy. However, they did not observe an improvement in percentage of patients who were progression-free at 6 months, in patients who were treated with a combination of paricalcitol and pembrolizumab versus those who were treated with pembrolizumab alone.

Clinical Trial:

SU2C Catalyst® Randomized Phase II Trial of the PD1 Inhibitor Pembrolizumab With or Without Vitamin D Receptor Agonist Paricalcitol in Patients With Stage IV Pancreatic Cancer Who Have Been Placed in Best Possible Response; NCT03331562; Completed

FUNDERS:

MERCK

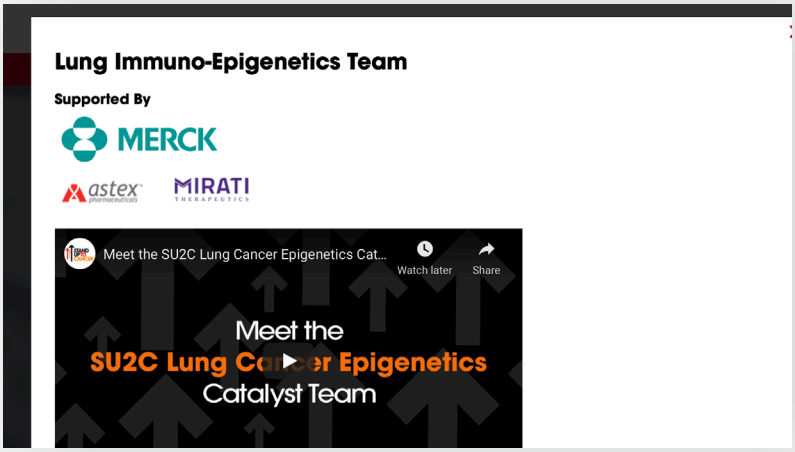
Combined Epigenetic Therapy and Pembrolizumab for Advanced Non-small Cell Lung Cancer (NSCLC)

GRANT TERM: April 2017 – June 2022, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Stephen B. Baylin, MD,
Johns Hopkins University

Team Co-leader:
Kathryn C. Arbour, MD,
Memorial Sloan Kettering Cancer Center



Learn more about this team at the SU2C website.

Principals:

- Hossein Borghaei, DO,
  Fox Chase Cancer Center
- Peter A. Jones, PhD, DSc (hon),
  Van Andel Institute
- Kristen A. Marrone, MD,
  Johns Hopkins University
- Jarushka Naidoo, MBBCh,
  Johns Hopkins University
- Charles M. Rudin, MD, PhD,
  Memorial Sloan Kettering Cancer Center
- Hui Shen, PhD,
  Van Andel Institute
- E. John Wherry, PhD,
  University of Pennsylvania

Project Managers:

- Penny Berger,
  Van Andel Institute,
  Penny.Berger@vai.org
- Ryan Burgos,
  Van Andel Institute,
  Ryan.Burgos@vai.org
- Kerri Muenkel Calderone,
  Memorial Sloan Kettering Cancer Center,
  muenkelk@mskcc.org
- Revathi Penumatsa,
  Van Andel Institute,
  Revathi.Penumatsa@vai.org

Advocate:

- Beth Flory, Van Andel Institute

SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM MERCK CT6030

Purpose:

The goal of the Combined Epigenetic Therapy and Pembrolizumab Team was to conduct a Phase1b clinical trial to examine the synergy that can be achieved in NSCLC patients by combining epigenetic (mocetinostat and guadecitabine) and immune (pembrolizumab) therapies.

Specific Aims:

AIM 1. Dose selection: Identify a safe, biologically active dose of concurrent combination pembrolizumab, guadecitabine, and mocetinostat for patients with advanced NSCLC in a Phase I study.

AIM 2. Dose expansion: Determine the efficacy of this triplet combination in patients with advanced NSCLC as part of a Phase Ib dose expansion, in the context of tumor PD-L1 expression.

AIM 3. Use paired pre-and post-treatment biopsies and serial peripheral blood to explore (in collaboration with Merck) the attraction of immune cells to the tumor microenvironment and genome-wide changes in expression, pathway alterations, and epigenome in tumor and host immune cells.

Key Accomplishments:

The Team identified that patients can be safely treated with 200mg pembrolizumab, 70mg mocetinostat (with options of dose reduction to 45mg if patients did not tolerate), and 24mg/m2 guadecitabine. Out of 23 patients, two experienced partial responses and one experienced a complete response. The patient who experienced a complete response has now remained on trial without progression for 25+ months. Three patients with stable disease are currently in follow up 25+ months after treatment initiation. The Team is finalizing genome-wide data analysis, in collaboration with Merck, which includes methylation, flow cytometry, whole exome sequencing, spatial transcriptomics (Nanostring DSP), and RNA-sequencing. Their overall present goal is to finalize a molecular signature for the best outcome in patients, allowing for a personalized, precision medicine approach for these individuals.

Clinical Trial:

Phase I/Ib Study of Combined Pembrolizumab Plus Guadecitabine and Mocetinostat for Patients With Advanced NSCLC (dose selection); NCT03220477; Active, not recruiting

FUNDERS:

MERCK

Combined Approaches by Immune Checkpoint Inhibition for Hypermutant Cancers

GRANT TERM: April 2017 – March 2020, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Uri Y. Tabori, MD,
The Hospital for Sick Children

Investigator:
John M. Maris, MD,
Children's Hospital of Philadelphia

Learn more about this team at the SU2C website.

Principals:

- Eric Bouffet, MD,
  The Hospital for Sick Children
- Michael J. Fisher, MD,
  Children's Hospital of Philadelphia

Project Manager:

- Melissa Edwards, PhD,
  The Hospital for Sick Children,
  melissa.edwards@sickkids.ca

Advocate:

- Denise Bebenek,
  Meagan's HUG: Creating a Circle of Hope

Purpose:

The Team tested their hypotheses that: a) childhood cancer patients with a hypermutant tumor phenotype can be identified, and b) tumors in these patients are highly sensitive to immune checkpoint inhibition with rationally selected combination therapy.

Specific Aims:

AIM 1. Determine the prevalence and type of hypermutant human cancers.

AIM 2. Test three types of combinational ICI therapies using hypermutant cancer mouse models.

AIM 3. Perform pilot case studies of ICI combinational therapies on recurrent hypermutant human cancers.

SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM BRISTOL MYERS SQUIBB CT6051

Key Accomplishments:

The Team characterized the prevalence of hypermutation in 80,000 adult and pediatric cancers and identified characteristics that can help detect replication repair deficiency in normal cells and predict response to immunotherapy. These findings can improve the diagnosis and treatment of individuals with hypermutant cancers. The Team also developed the first animal models for replication repair deficiency and completed a registry study where they treated patients with 46 different tumor types with immunotherapy as single agents or in combination.

Clinical Trial:

Pilot Study of Nivolumab in Pediatric Patients With Hypermutant Cancers; NCT02992964; Active, not recruiting

FUNDERS:

Bristol Myers Squibb™

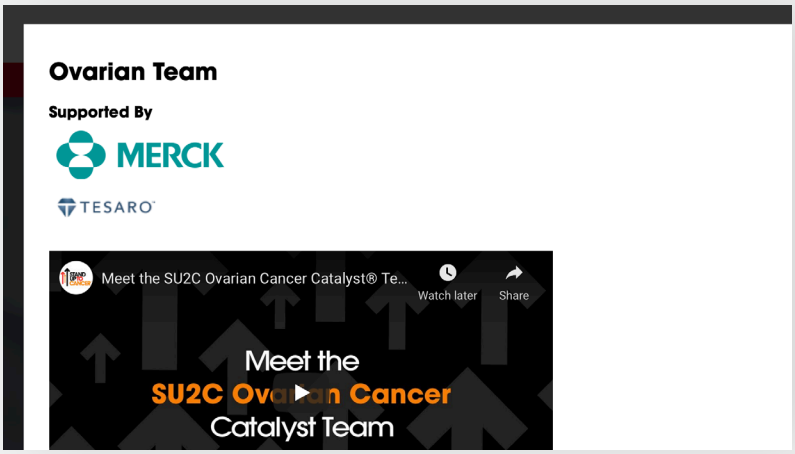
DNA Repair Therapies for Ovarian Cancer

GRANT TERM: July 2016 – December 2020, administered by the American Association for Cancer Research

KEY PERSONNEL:

Team Leader:
Alan D. D'Andrea, MD, Dana-Farber Cancer Institute

Team Co-leader:
Elizabeth M. Swisher, MD, University of Washington



Learn more about this team at the SU2C website.

Principal:

- Panagiotis (Panos) A. Konstantinopoulos, MD, PhD, Dana-Farber Cancer Institute

Project Manager:

- Donald R. Watson, Dana-Farber Cancer Institute, donald_watson@dfci.harvard.edu

Advocates:

- Jamie Crase, University of Washington
- Sue Friedman, FORCE: Facing Our Risk of Cancer Empowered
- Kathleen Gavin, Minnesota Ovarian Cancer Alliance
- Deborah Polinsky, FORCE: Facing Our Risk of Cancer Empowered (deceased)

Purpose:

The DNA Repair Therapies for Ovarian Cancer Team was assembled to conduct correlative studies related to the TOPACIO clinical trial with a combination of the PARP inhibitor, niraparib plus the anti-PD1 antibody, pembrolizumab, for ovarian cancer patients with recurrent disease.

SU2C CATALYST® RESEARCH TEAM WITH SUPPORT FROM MERCK CT5978

Specific Aims:

AIM 1. Collect and distribute tumor samples and blood samples from TNBC (triple-negative breast cancer) and HGSOC (high-grade serous ovarian cancer) patients enrolled in this joint Tesaro/Merck/SU2C clinical trial.

AIM 2. Complete the indicated biomarker studies, from multiple industry-sponsored and academic laboratories, and analyze the collected data.

Key Accomplishments:

Three important achievements by the team are: i) demonstration that a combination of PARP inhibitor plus anti-PD1 antibody can result in an improved overall response rate, compared to monotherapy with either agent, for patients with recurrent, heavily treated ovarian cancer, ii) identification of predictive biomarkers which identify the patients with an improved response, and iii) use of CyCIF to identify the tumor cell and immune cell architecture which is most likely, or least likely, to respond. The team continued working towards additional funding and secured a SPORE grant in ovarian cancer.

Clinical Trial:

Phase I/II Clinical Study of Niraparib in Combination With Pembrolizumab (MK-3475) in Patients With Advanced or Metastatic Triple-Negative Breast Cancer and in Patients With Recurrent Ovarian Cancer; NCT02657889; Active, not recruiting

FUNDERS:

MERCK

INNOVATIVE RESEARCH GRANTS

CLASS OF 2017

The 2017 class is specifically focused on immuno-oncology, supported by a grant from Bristol Myers Squibb.

Harnessing Dipeptidyl Peptidase Inhibition for Cancer Immunotherapy
Daniel A. Bachovchin, PhD, Memorial Sloan Kettering Cancer Center

Rescuing T-Cell Function for Immunotherapy of Pediatric Malignancies
David M. Barrett, MD, PhD, Children's Hospital of Philadelphia

Targeting the Pro-Metastatic Niche in the Liver for Cancer Immunotherapy
Gregory L. Beatty, MD, PhD, University of Pennsylvania

T-Cell Immunotherapy for Core Binding Factor Acute Myeloid Leukemia
Marie E. Bleakley, MD, PhD, Fred Hutchinson Cancer Research Center

Imaging CAR T Cells With a Dual-Function PET Reporter Gene
Michael D. Farwell, MD, University of Pennsylvania

Identifying and Targeting Mechanisms of Resistance to Immunotherapy
Rizwan Haq, MD, PhD, Dana-Farber Cancer Institute

Reworking Negative Receptor Signals for Improved Anti-glioma T-Cell Therapy
Meenakshi G. Hegde, MD, Baylor College of Medicine

Potentiating Novel Engineered Cellular Therapies for Solid Tumors
Marcela V. Maus, MD, PhD, Massachusetts General Hospital

Delineating the Role of the Microbiome in Modulating Tumor and Host Immunity
Jennifer A. Wargo, MD, The University of Texas MD Anderson Cancer Center

Reprogramming Tumor Immunogenicity with STING-Activating Nanoparticles
John T. Wilson, PhD, Vanderbilt University

CLASS OF 2016

Targeting Cellular Plasticity in Individual Basal-Type Breast Cancer Cells
John G. Albeck, PhD, University of California, Davis

Uncovering How RAD51 Paralog Mutations Contribute to Cancer Predisposition
Kara A. Bernstein, PhD, University of Pittsburgh

Phospholipid Messengers as Drivers of Dendritic Cell Dysfunction in Cancer
Juan R. Cubillos-Ruiz, PhD, Weill Cornell Medicine

Metabolic Reprogramming Using Oncolytic Viruses to Improve Immunotherapy
Greg M. Delgoffe, PhD, University of Pittsburgh

"Weak Links" in Cancer Proteostasis Networks as New Therapeutic Targets
Martin Kampmann, PhD, University of California, San Francisco

Algorithmically Driven Quantitative Combination Cancer Therapy Engineering
Dan A. Landau, MD, PhD, Weill Cornell Medicine

Deubiquitinating Enzymes as Novel Anticancer Targets
Li Ma, PhD, The University of Texas MD Anderson Cancer Center

Imaging Cell-Level Heterogeneity in Solid Tumors for Personalized Treatment
Melissa C. Skala, PhD, Morgridge Institute for Research

Defining the Metabolic Dependencies of Tumors
Matthew Vander Heiden, MD, PhD, Massachusetts Institute of Technology

Defining the Mechanistic Connections Between Injury, Regeneration, and Cancer
Hao Zhu, MD, The University of Texas Southwestern Medical Center

CLASS OF 2011

Targeting MLL in Acute Myeloid Leukemia
Yali Dou, PhD, University of Michigan

Targeting Genetic and Metabolic Networks in T-ALL
Adolfo A. Ferrando, MD, PhD, Columbia University

Targeting Protein Quality Control for Cancer Therapy
Estela Jacinto, PhD, Rutgers University

Targeting PP2A and the Glutamine-Sensing Pathway as Cancer Treatment
Mei Kong, PhD, Beckman Research Institute, City of Hope

Chimeric RNAs Generated by Trans-splicing and Their Implications in Cancer
Hui Li, PhD, University of Virginia

Allan H. (Bud) and Sue Selig Stand Up To Cancer Melanoma Innovative Research Grant: Exome Sequencing of Melanomas With Acquired Resistance to BRAF Inhibitors
Roger S. Lo, MD, PhD, University of California, Los Angeles

Identification and Targeting of Novel Rearrangements in High-Risk ALL
Charles G. Mullighan, MD, St. Jude Children's Research Hospital

A Systems Approach to Understanding Tumor-Specific Drug Response
Dana Pe'er, PhD, Columbia University

Targeting Sleeping Cancer Cells
Sridhar Ramaswamy, MD, Massachusetts General Hospital

Inhibiting Innate Resistance to Chemotherapy in Lung Cancer Stem Cells
Eric Alejandro Sweet-Cordero, MD, Stanford University

Developing New Therapeutic Strategies for Soft-Tissue Sarcoma
Amy J. Wagers, PhD, Joslin Diabetes Center

Framing Therapeutic Opportunities in Tumor-Activated Gametogenic Programs
Angelique W. Whitehurst, PhD, UT Southwestern Simmons Comprehensive Cancer Center

Coupled Genetic and Functional Dissection of Chronic Lymphocytic Leukemia
Catherine J. Wu, MD, Dana-Farber Cancer Institute

CLASS OF 2009

An Emerging Tumor Suppressor Pathway in Human Cancer
Fernando D. Camargo, PhD, Boston Children's Hospital

Modeling Ewing Tumor Initiation in Human Neural Crest Stem Cells
Elizabeth R. Lawlor, MD, PhD, University of Michigan

Cancer Cell–Specific, Self-Delivering Prodrugs
Matthew Levy, PhD, Albert Einstein College of Medicine of Yeshiva University

Targeted Inhibition of BCL6 for Leukemia Stem Cell Eradication
Markus Müschen, MD, PhD, Children's Hospital Los Angeles

Identifying Solid Tumor Kinase Fusions via Exon Capture and 454 Sequencing
William Pao, MD, PhD, Vanderbilt University

Therapeutically Targeting the Epigenome in Aggressive Pediatric Cancers
Charles M. Roberts, MD, PhD, Dana-Farber Cancer Institute

Endogenous Small Molecules That Regulate Signaling Pathways in Cancer Cells
Rajat Rohatgi, MD, PhD, Stanford University

Genetic Approaches for Next Generation of Breast Cancer Tailored Therapies
Jose M. Silva, PhD, Columbia University

Modulating Transcription Factor Abnormalities in Pediatric Cancer
Kimberly Stegmaier, MD, Dana-Farber Cancer Institute

Noninvasive Molecular Profiling of Cancer via Tumor-Derived Microparticles
Muneesh Tewari, MD, PhD, Fred Hutchinson Cancer Research Center

A Transformative Technology to Capture and Drug New Cancer Targets
Loren D. Walensky, MD, PhD, Dana-Farber Cancer Institute

Functional Oncogene Identification
David M. Weinstock, MD, Dana-Farber Cancer Institute

Probing EBV-LMP-1's Transmembrane Activation Domain With Synthetic Peptide
Hang Hubert Yin, PhD, University of Colorado

THE PHILLIP A. SHARP INNOVATION IN COLLABORATION AWARDS

CLASS OF 2020

Genomic and Therapeutic Implications of Selective Bacterial and Fungal Colonization of Gastrointestinal Malignancies
Luis A. Diaz Jr., MD, and Florencia McAllister, MD

Utilizing Tumor Organoids to Facilitate the Development of Effective Strategies to Target Pancreatic Cancer with Engineered T Cells
Philip D. Greenberg, MD, Tyler E. Jacks, PhD, and William A. Freed-Pastor, MD, PhD

Harnessing NK Cells to Treat Pediatric Cancers
David G. Kirsch, MD, PhD, and Michal Sheffer, PhD

Can scRNAseq-Derived Gene Programs Predict Anti-PD-1 Response in High TMB CRC and NSCLC Patients?
Karin Pelka, PhD, and Matthew D. Hellmann, MD

Enhancing Ferroptosis to Block Ewing Sarcoma Metastatic Capacity
Poul H. B. Sorenson, MD, PhD, and Elizabeth Lawlor, MD, PhD

CLASS OF 2019

Resistance to PARP Inhibitor Plus Anti-PD1 Therapy Driven by ER Stress and Bioactive Lipids in Ovarian Cancer
Juan R. Cubillos-Ruiz, PhD, and Alan D. D'Andrea, MD

Uncovering Mutant TP53 Dependencies in Spontaneously Arising Triple-Negative Breast Cancer
Denada Dibra, PhD, and Peter P. Lee, MD

Noninvasive Monitoring of Tumor Phenotype by Interrogation of Plasma Cell Free RNA
Maximilian Diehn, MD, PhD, and Aaron N. Hata, MD, PhD

Precision Combinatorial Immunotherapeutic Targeting of Thymic Stromal Lymphopoietin Receptor (TSLPR) Signaling in Pediatric and Young Adult CRLF2-Rearranged ALL
Sarah K. Tasian, MD, and Kimberly Stegmaier, MD

Antigenicity of Mutant KRAS and Impact on Cancer Evolution
Robert H. Vonderheide, D Phil, MD, and Vinod P. Balachandran, MD

CLASS OF 2018

Defining Effective T-Cell Response in Viral and Nonviral Gynecologic Cancers
Claire F. Friedman, MD, and Marta J. Luksza, PhD

Cupid-Seq-High Throughput Transcriptomic Spatial Mapping of Immune-Tumor Interactions in the Microenvironment
Dan Landau, MD, PhD, and Raul Rabadan, PhD

Characterizing Immune Variability in Children Following Standard-of-Care Treatment to Enable Precision
Trevor J. Pugh, PhD, and David M. Barrett, MD, PhD

Studies of Colorectal Cancer Patient–Derived Organoids to Validate Candidate Biomarkers of Resistance to Natural Killer Cells
Michal Sheffer, PhD, and Hugo J. Snippert, PhD

Interrogating Impact of Epigenetic Modifiers on Durable Reprogramming of Exhausted CD8 T Cells in Patients With NSCLC Treated With PD-1 Blockade
E. John Wherry, PhD, and Matthew D. Hellmann, MD

ADMINISTERED BY
AACR American Association for Cancer Research
SCIENTIFIC PARTNER OF STAND UP TO CANCER

CLASS OF 2017

Interrogation of Resistance Mechanisms to Checkpoint Inhibitors Using Functional Genomics
Siwen Hu-Lieskovan, MD, PhD, and René Bernards, PhD

Dissecting the Epigenetic Mechanisms of Repeat RNA Regulation in Cancer
David T. Ting, MD, and Shelley L. Berger, PhD

Probing the Metabolic Interactions Between Tumor and Stroma in Pancreatic Cancer
Matthew G. Vander Heiden, MD, PhD, and Melissa C. Skala, PhD

Aptamer-Based Detection and Binding of Peptide-MHC Complexes
Cassian Yee, MD, and Bruce A. Sullenger, PhD

CLASS OF 2016

Defining the Role of Epigenetics in Chimeric Antigen Receptor T-cell Therapy for CLL
Shelley L. Berger, PhD, Carl H. June, MD, and Junwei Shi, PhD

Towards Predictive Models of Immunotherapy Response
Benjamin D. Greenbaum, PhD, and Jedd D. Wolchok, MD, PhD

Checkpoint Inhibition in Children With Ultra-Mutated Cancer Due to Biallelic Mismatch Repair Deficiency (bMMRD)
Crystal L. Mackall, MD, and Patrick M. Forde, MD

Fingerprinting the Systemic Microbiome in Plasma to Predict Immunotherapy Outcomes in Melanoma
Muhammed Murtaza, MBBS, PhD, and Antoni Ribas, MD, PhD

Functional Verification of DNA Repair Mutations in Prostate and Ovary Tumors
Eliezer M. Van Allen, MD, and Maria Jasin, PhD

CLASS OF 2015

Development of a High-Throughput Method to Screen Drugs With Organoids
Hans Clevers, MD, PhD, and David A. Tuveson, MD, PhD

Cross-talk Between Histone H3K4 Mono-Methylation and Cancer Metabolism to Explore New Therapeutic Strategies
Yali Dou, PhD, and Mei Kong, PhD

Targeting Epigenetic Plasticity and Drug Resistance in Pediatric Cancer
Adolfo Ferrando, MD, PhD, and Kimberly Stegmaier, MD

Identification and Analysis of Prostate Reactive TCRs for T-cell Mediated Adoptive Cellular Immunotherapy of Metastatic Prostate Cancer
Owen N. Witte, MD, and Padmanee Sharma, MD, PhD

CLASS OF 2014

The Intersection of Epigenetic and Immune Checkpoint Therapy
Stephen B. Baylin, MD, and James P. Allison, PhD

Determinants of Sensitivity and Resistance to MEK-Based Targeted Therapies in NRAS Mutant Melanomas
Roger S. Lo, MD, PhD, and Jeffrey A. Sosman, MD

Analysis of High-Dimension Single-Cell Data From Cancer Immunotherapy Clinical Trials
Dana Pe'er, PhD, and Padmanee Sharma, MD, PhD

Clinical Development of CFI-400945, a PLK4 Inhibitor, in Breast Cancer
Dennis J. Slamon, MD, PhD, and Tak W. Mak, PhD

cBioPortal for Stand Up To Cancer
David B. Solit, MD, and Nikolaus Schultz, PhD

ADMINISTERED BY
AACR American Association for Cancer Research
SCIENTIFIC PARTNER OF STAND UP TO CANCER

ADDITIONAL AWARDS AND PRIZES

ZISKIN PRIZE

THE LAURA ZISKIN FAMILY TRUST

The Ziskin Prize is named for Laura Ziskin, legendary Hollywood producer, who cofounded SU2C and lived with breast cancer for seven years before she died in 2011.

- The prize provides a one-year, $250,000 grant.
- The grant is shared by two scientists at different institutions.
- Funds are used to collaborate on high-risk, high reward breast cancer research.

Recipients:

2012 – Stephen B. Baylin, MD, and Feyruz V. Rassool, PhD

2014 – Taru E. Muranen, PhD, and Gordon B. Mills, MD, PhD

2015 – Matthew J. Ellis, PhD, and Charles Swanton, PhD

2018 – Jos Jonkers, PhD, and Helen Piwnica-Worms, PhD

2019 – Silvia C. Formenti, MD, and Heather L. McArthur, MD, MOH

2020 – Leisha A. Emens, MD, PhD, and Xiang Zhang, PhD

2022 – Jane E. Visvader, PhD, and Geoffrey J. Lindeman, MBBS (Hon.), PhD

THE JIM TOTH SR. BREAKTHROUGH LUNG CANCER RESEARCH AWARD

This award is named in honor of Jim Toth Sr., who passed away from lung cancer. It provides funding for highly innovative, clinically focused lung cancer research.

Two awards, covering the period 2014 – 2017

Leaders: Stephen B. Baylin, MD, and Peter A. Jones, PhD

PEGGY PRESCOTT EARLY CAREER SCIENTIST AWARD

FAITH FIGHT FINISH FOUNDATION BY DAK PRESCOTT

The SU2C-Peggy Prescott Early Career Scientist Award in Colorectal Cancer Research supports a novel cancer research project with significant potential for advancing key questions in colorectal cancer research.

Recipient: 2019 – Karin Pelka, PhD

GOLDEN ARROW EARLY CAREER SCIENTIST AWARD

The SU2C Golden Arrow Early Career Scientist Award supports a novel cancer research project that, through collaboration with a current SU2C project, has significant potential for advancing key questions in cancer research.

Recipient: 2019 – William Freed-Pastor, MD, PhD

SU2C SHARP TANK EARLY CAREER SCIENTIST AWARD

The SU2C Sharp Tank Early Career Scientist Award supports an early-career investigator with a novel cancer research proposal incorporating cutting-edge, high-risk ideas and offering the greatest potential impact for cancer patients.

Recipient: 2020 – Catherine Marinac, PhD

PHILLIP A. SHARP CHALLENGE AWARD

The Pancreatic Cancer Collective Phillip A. Sharp Challenge Award supports a novel cancer research project that explores synergistic and innovative collaborations exploring pancreatic cancer interception.

Recipients: 2021 – Alec Kimmelman, MD, PhD, and Benjamin Greenbaum, PhD

SU2C MAVERICK AWARD

The SU2C Maverick Award supports an early-career investigator with a novel cancer research proposal incorporating cutting-edge, high-risk ideas and offering the greatest potential impact for cancer patients.

Recipient: 2022 – Anirban Das, MD

EMPEROR SCIENCE AWARDS

From 2016 to 2018 the Emperor Science Award program encouraged high school students to explore careers in cancer research through a unique mentoring opportunity. This education initiative was inspired by the Ken Burns documentary Cancer: The Emperor of All Maladies and supported with grants from Genentech, Bristol-Myers Squibb, and Novartis. Three hundred students were selected in national competitions and received a $1,500 stipend, a laptop computer, and the opportunity to work alongside an esteemed scientist on a multi-week cancer research project.

SU2C KIMMEL SCHOLARS

Sidney Kimmel FOUNDATION FOR CANCER RESEARCH

SU2C Kimmel Scholars were supported in 2009-2011 through a collaboration with the Sidney Kimmel Foundation which provided administration. The program provided funding ($50,000 or more) to each of forty-three grantees as a bridge in the funding gap for gifted early cancer researchers at the initial outset of their careers. Applicants were required to hold an MD, PhD, or equivalent degree, be appointed at the assistant professor level, and be engaged in basic, clinical, or translational cancer research. In addition, applicants must not have had current R01 funding or a concurrent award for the same project.

Nabeel Bardeesy, PhD
Valerie Brown, MD, PhD
Barbara Buttin, MD
Paul Chang, PhD
Clark Chen, MD, PhD
Lara Collier, PhD
Maximilian Diehn, MD, PhD
Muller Fabbri, MD, PhD
Danica Galonic Fujimori, PhD
Matthew Gamble, PhD
Richard Gardner, PhD
Michela Garofalo, PhD
Zev Gartner, PhD
Ramiro Garzon, MD
Suzanne Gaudet, PhD
Rani George, MD, PhD
Roger Greenberg, MD, PhD
Geraldine Guasch, PhD
Min Guo, PhD
A. McGarry Houghton, MD
Erich Huang, MD, PhD
Patrick Hwu, MD
Dimitrios Iliopoulos, PhD
Antoine Karnoub, PhD
Tae Hoon Kim, PhD
Alec Kimmelman, MD, PhD
Mei Kong, PhD
Terry Lechler, PhD
Karen Liby, PhD
Roger Lo, MD, PhD
Ivan Maillard, MD, PhD
Christine Mayr, MD, PhD
Alexander Minella, MD
Stephen Oh, MD, PhD
Dinesh Rao, MD, PhD
Sohail Tavazoie, MD, PhD
Andrea Ventura, MD, PhD
Narendra Wajapeyee, PhD
Bin Wang, PhD
Zefeng Wang, PhD
Catherine Yan, PhD
Eddy Yang, MD, PhD
Hongwu Zheng, PhD

REVIEWERS

SU2C's groundbreaking research programs are made possible because of the dedicated efforts of dozens of scientific reviewers. We thank them for their commitment and hard work.

James L. Abbruzzese, MD
Duke University

Julian Adams, PhD
Gamida Cell

Christine Alewine, MD, PhD
National Cancer Institute

Stephen M. Ansell, MD, PhD
Mayo Clinic

Scott A. Armstrong, MD, PhD
Dana-Farber Cancer Institute

Carlos L. Arteaga, MD
UT Southwestern Medical Center

Kimlin T. Ashing, PhD
City of Hope

Gurinder Singh (Mickey) Atwal, PhD
Cold Spring Harbor Laboratory

Dafna Bar-Sagi, PhD
NYU Langone Health

Charles Baum, MD, PhD
Mirati Therapeutics, Inc.

Stephen B. Baylin, MD
Johns Hopkins University

David G. Beer, PhD
University of Michigan

Stacey L. Berg, MD
Texas Children's Cancer Center

Shelley L. Berger, PhD
University of Pennsylvania School of Medicine

Jordan D. Berlin, MD
Vanderbilt-Ingram Cancer Center

Nina Bhardwaj, MD, PhD
Icahn School of Medicine at Mount Sinai

Elizabeth H. Blackburn, PhD
University of California, San Francisco

Krastan B. Blagoev, PhD
National Science Foundation

Jeffrey A. Boyd, PhD
Florida International University

Cynthia Brogdon, RN, PhD
Bristol Myers Squibb

Howard S. Brown
Patient Advocate

Regina Brown, MD
Janssen

Steven J. Burakoff, MD
Tisch Cancer Institute

Barbara Burtness, MD
Yale School of Medicine

Lauren A. Byers, MD, MS
The University of Texas MD Anderson Cancer Center

Curtis Callan, Jr., PhD
Princeton University

Lewis C. Cantley, PhD
Weill Cornell Medicine

Lisa A. Carey, MD
UNC Lineberger Comprehensive Cancer Center

John D. Carpten, PhD
Keck School of Medicine of USC

Debasis Chakrabarti, MD, PhD
Jazz Pharmaceuticals

Andrew Chan, MD, MPH
Massachusetts General Hospital

Chang S. Chan, PhD
Rutgers Cancer Institute of New Jersey

Suresh T. Chari, MD
Mayo Clinic College of Medicine

James Christensen, PhD
Mirati Therapeutics, Inc.

Christine H. Chung, MD
Moffitt Cancer Center

Susan L. Cohn, MD
University of Chicago

Andrew Conrad, PhD
Google X

Neal Copeland, PhD
The University of Texas MD Anderson Cancer Center

Sara A. Courtneidge, PhD
Oregon Health and Science University

Marcia Cruz-Correa, MD, PhD
University of Puerto Rico Comprehensive Cancer Center

SU2C's groundbreaking research programs are made possible because of the dedicated efforts of dozens of scientific reviewers. We thank them for their commitment and hard work.

Suzanne Dahlberg, PhD
Boston Children's Hospital

Nancy E. Davidson, MD
Fred Hutchinson Cancer Research Center

Yves DeClerck, MD
USC Norris Comprehensive Cancer Center

Susan Desmond-Hellman
Bill & Melinda Gates Foundation

Maximilian Diehn, MD, PhD
Stanford University

Jessica Donington, MD
University of Chicago

Bettina Drake, PhD, MPH
Washington University School of Medicine in St. Louis

Steven M. Dubinett, MD
University of California, Los Angeles

Raymond N. DuBois, MD, PhD
Medical University of South Carolina

Gail Eckhardt, MD
University of Texas at Austin

Matthew J. Ellis, MD, PhD
Baylor College of Medicine

Tariq Enver, PhD
University College London Cancer Institute

Meira Epplein, PhD
Duke University Medical Center

Awny Farajallah, MD
Bristol Myers Squibb

David Feltquate, MD, PhD
Bristol Myers Squibb

Leslie G. Ford, MD,
National Cancer Institute

Margaret Foti, PhD, MD (hc)
American Association for Cancer Research

Mona N. Fouad, MD, MPH
University of Alabama at Birmingham

David Alan Frank, MD, PhD
Emory University

Justin F. Gainor, MD
Massachusetts General Hospital

Shridar Ganesan, MD, PhD
Rutgers Cancer Institute of New Jersey

Judy E. Garber, MD
Dana-Farber Cancer Institute

Chris Garcia, PhD
Stanford University

Levi Garraway, MD, PhD
Genentech, Inc.

Richard B. Gaynor, MD
BioNTech US

Elodie Ghedin, PhD
National Institute of Allergy and Infectious Diseases

Kathy Giusti
Multiple Myeloma Research Foundation

John Glaspy, MD, MPH
University of California, Los Angeles

Nancy F. Goodman, JD
Kids v Cancer

Jennifer Grandis, MD
University of California, San Francisco

Benjamin D. Greenbaum, PhD
Memorial Sloan Kettering Cancer Center

Philip D. Greenberg, MD
Fred Hutchinson Cancer Research Center

James L. Gulley, MD, PhD
National Cancer Institute

William C. Hahn, MD, PhD
Dana-Farber Cancer Institute

William N. Hait, MD, PhD
Johnson & Johnson

Raj Hanvesakul, MD, PhD
Jazz Pharmaceuticals

Eric Haura, MD
Moffitt Cancer Center

Ernest T. Hawk, MD
The University of Texas MD Anderson Cancer Center

Adrian Hayday, PhD
Francis Crick Institute

James R. Heath, PhD
Institute for Systems Biology

Elizabeth M. Hecht, MD
Weill Cornell Medicine

Matthew Hellman, MD
AstraZeneca

SU2C's groundbreaking research programs are made possible because of the dedicated efforts of dozens of scientific reviewers. We thank them for their commitment and hard work.

Lee J. Helman, MD
Keck School of Medicine, USC

Kathy J. Helzlsouer, MD, MPH
National Cancer Institute

Candace Henley
Blue Hat Foundation

Helen E. Heslop, MD
Baylor College of Medicine

Eric C. Holland, MD, PhD
Fred Hutchinson Cancer Research Center

Michael A. Hollingsworth, PhD
University of Nebraska Medical Center

Nancy Hopkins, PhD
Massachusetts Institute of Technology

A. McGarry Houghton, MD
Fred Hutchinson Cancer Research Center

Shawna Hudson, PhD
Rutgers Robert Wood Johnson Medical School

Patrick Hwu, MD
Moffitt Cancer Center

Elizabeth M. Jaffee, MD
Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins

Lee James, MD, PhD
Bristol Myers Squibb

Nancy Jenkins, PhD
The University of Texas MD Anderson Cancer Center

Michael B. Kastan, MD, PhD
Duke Cancer Institute

Kimberly A. Kelly, PhD
University of Virginia

Mark Kieran, MD, PhD
Day One Biopharmaceuticals

Edward Kim, MD, MBA
City of Hope

Ann S. LaCasce, MD
Dana-Farber Cancer Institute

Marikki K. Laiho, MD, PhD
Johns Hopkins University

Suzanne Lentzsch, MD, PhD
Columbia University

Caryn Lerman, PhD
USC Norris Comprehensive Cancer Center

Caleb Levell, MA
American Cancer Society

Arnold J. Levine, PhD
Institute for Advanced Study

Sean Lim, PhD
University of Southampton

Scott M. Lippman, MD
University of San Diego Moores Cancer Center

Jeffrey M. Lipton, MD, PhD
LIJ School of Medicine at Hofstra North Shore

Andrew M. Lowy, MD
University of California, San Diego

Guillermina Lozano, PhD
The University of Texas MD Anderson Cancer Center

Rishi Manchanda, MD, MPH
HealthBegins

Richard M. Marais, PhD
Cancer Research UK Manchester Institute

Ingrid A. Mayer, MD, MSCI
AstraZeneca

Ira Mellman, PhD
Genentech, Inc.

Ari M. Melnick, MD
Weill Cornell Medicine

Gordon B. Mills, MD, PhD
Oregon Health & Science University

Lee M. Nadler, MD
Dana-Farber Cancer Institute

Cherie-Ann Nathan, MD
Ochsner LSU Health Shreveport

William G. Nelson, MD, PhD
Johns Hopkins University

Andre Nussenzweig, PhD
National Cancer Institute

Olufunmilayo Olopade, MD
University of Chicago

Eileen M. O'Reilly, MD
Memorial Sloan Kettering Cancer Center

William Pao, MD, PhD
Roche

SU2C's groundbreaking research programs are made possible because of the dedicated efforts of dozens of scientific reviewers. We thank them for their commitment and hard work.

Premal Patel, MD, PhD
eFFECTOR Therapeutics

Dana Pe'er, PhD
Memorial Sloan Kettering Cancer Center

Edith A. Perez, MD
Mayo Clinic Cancer Center Jacksonville

Cecil Pickett, PhD
Biogen Inc. (retired)

Lawrence D. Piro, MD
Angeles Clinic and Research institute

Hidde L. Ploegh, PhD
Boston Children's Hospital

Scott Pomeroy, MD, PhD
Boston Children's Hospital

Mark Powers, PhD
Thermo Fisher Scientific

Carol L. Prives, PhD
Columbia University

Scott K. Pruitt, MD
Merck & Company, Inc.

Ellen Puré, PhD
University of Pennsylvania

Raul Rabadan, PhD
Columbia University

Timothy Rebbeck, PhD
Dana-Farber Cancer Institute

Karen Reckamp, MD
City of Hope

James W. Rocco, MD, PhD
Ohio State University Comprehensive Cancer Center

David P. Ryan, MD
Massachusetts General Hospital

Sandra W. Ryeom, PhD
Columbia University Irving Medical Center

Lynn M. Schuchter, MD
University of Pennsylvania

Padmanee Sharma, MD, PhD
The University of Texas MD Anderson Cancer Center

Arlene H. Sharpe, MD, PhD
Harvard Medical School

Reuben Shaw, PhD
Salk Institute for Biological Studies

Dennis Slamon, MD, PhD
University of California, Los Angeles

Jodi Smith, PhD
Mirati Therapeutics, Inc.

Agata Smogorzewska, MD, PhD
The Rockefeller University

Poul Sorensen, MD, PhD
BC Cancer Research Institute

Kimberly Stegmaier, MD
Dana-Farber Cancer Institute

William D. Tap, MD
Memorial Sloan Kettering Cancer Center

Margaret A. Tempero, MD
University of California, San Francisco

Kim Thiboldeaux
Cancer Support Community

Jeffrey M. Trent, PhD
Translational Genomics Research Institute

David A. Tuveson, MD, PhD
Cold Spring Harbor Laboratory Cancer Center

Kees Verhoef, PhD
Erasmus Medical Center

Selwyn M. Vickers, MD
University of Alabama Birmingham

Victor Villalobos, MD, PhD
Janssen

Marc Vooijs, PhD
Maastricht University

H. Josef Vormoor, MD
Princess Máxima Center

Tony Wagner, PhD
Jazz Pharmaceuticals

Scott A. Waldman, MD, PhD
Thomas Jefferson University

Ru-Amir Walker, MD
Genentech, Inc.

Katherine E. Warren, MD
Dana-Farber Cancer Institute

Lesley Watson, PhD
NORC at the University of Chicago

SU2C's groundbreaking research programs are made possible because of the dedicated efforts of dozens of scientific reviewers. We thank them for their commitment and hard work.

Jelle Wesseling, MD, PhD
Netherlands Cancer Institute

Raymond M. Williams, JD
DLA Piper

Karen Winkfield, MD, PhD
Meharry-Vanderbilt Alliance

Jordan M. Winter, MD
University Hospitals
Cleveland Medical Center

Jedd Wolchok, MD, PhD
Memorial Sloan Kettering Cancer Center

Brian M. Wolpin, MD, MPH
Dana-Farber Cancer Institute

Kwok-Kin Wong, MD, PhD
New York University, Grossman School of Medicine

Susan Yang, PharmD
Mirati Therapeutics, Inc.

Nancy Yao, MD
Genentech, Inc.

Jen Jen Yeh, MD
UNC Lineberger Comprehensive Cancer Center

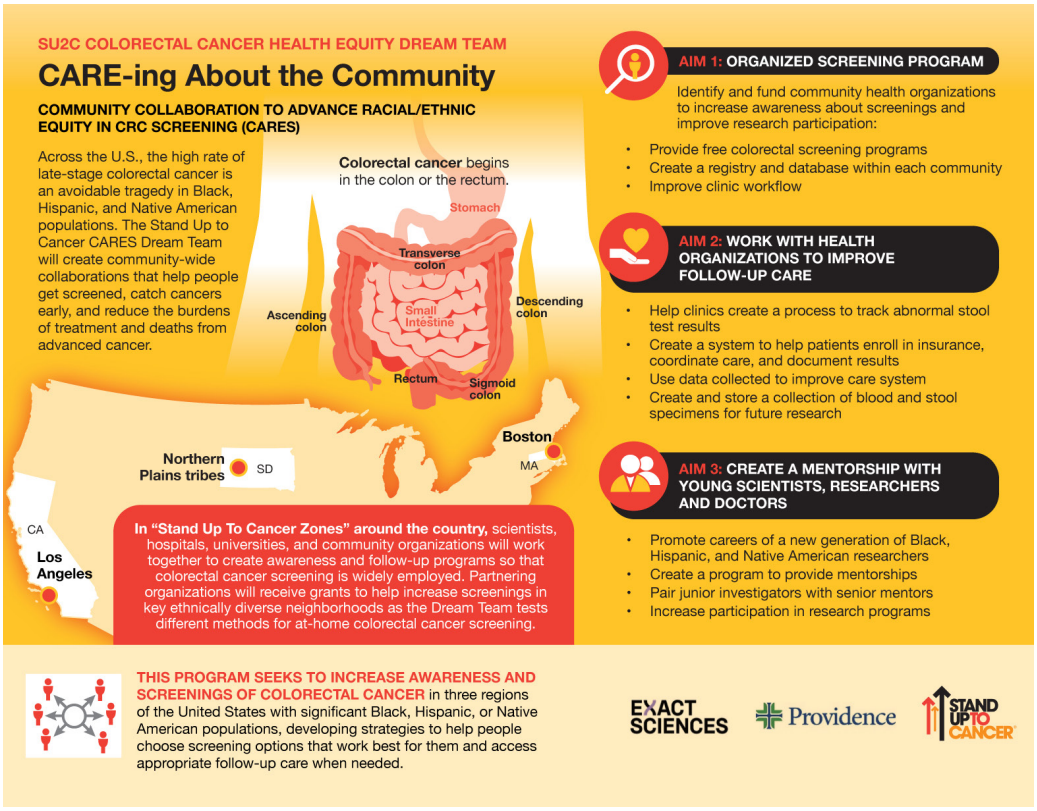
Benjamin A. Youngblood, PhD
St. Jude Children's Research Hospital

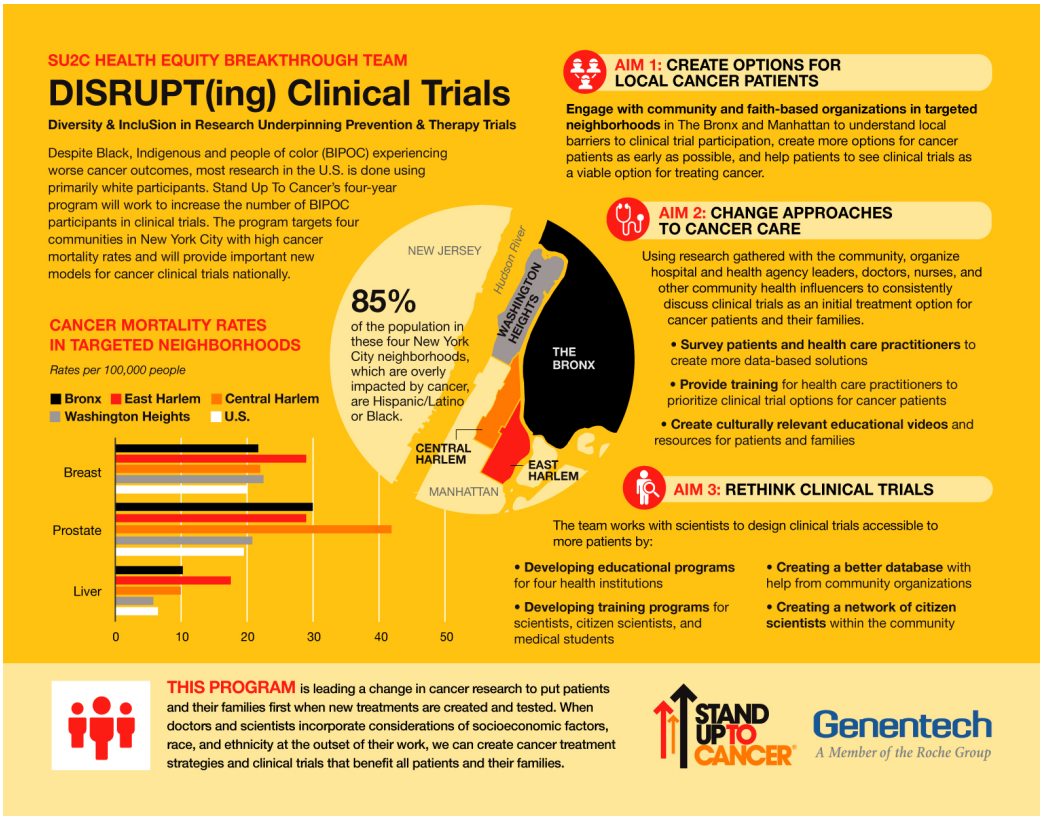
Kenneth H. Yu, MD
Memorial Sloan Kettering Cancer Center

Jianda Yuan, MD, PhD
Merck & Company, Inc.

Stergios Zacharoulis, MD
Bristol Myers Squibb

INFOGRAPHICS INDEX


SU2C COLORECTAL CANCER HEALTH EQUITY DREAM TEAM
CARE-ing About the Community
COMMUNITY COLLABORATION TO ADVANCE RACIAL/ETHNIC EQUITY IN CRC SCREENING (CARES)
Across the U.S., the high rate of late-stage colorectal cancer is an avoidable tragedy in Black, Hispanic, and Native American populations. The Stand Up to Cancer CARES Dream Team will create community-wide collaborations that help people get screened, catch cancers early, and reduce the burdens of treatment and deaths from advanced cancer.
Colorectal cancer begins in the colon or the rectum.
Stomach
Transverse colon
Small Intestine
Ascending colon
Descending colon
Rectum
Sigmoid colon
Boston
MA
Northern Plains tribes
SD
CA
Los Angeles
In "Stand Up To Cancer Zones" around the country, scientists, hospitals, universities, and community organizations will work together to create awareness and follow-up programs so that colorectal cancer screening is widely employed. Partnering organizations will receive grants to help increase screenings in key ethnically diverse neighborhoods as the Dream Team tests different methods for at-home colorectal cancer screening.
AIM 1: ORGANIZED SCREENING PROGRAM
Identify and fund community health organizations to increase awareness about screenings and improve research participation:
• Provide free colorectal screening programs
• Create a registry and database within each community
• Improve clinic workflow
AIM 2: WORK WITH HEALTH ORGANIZATIONS TO IMPROVE FOLLOW-UP CARE
• Help clinics create a process to track abnormal stool test results
• Create a system to help patients enroll in insurance, coordinate care, and document results
• Use data collected to improve care system
• Create and store a collection of blood and stool specimens for future research
AIM 3: CREATE A MENTORSHIP WITH YOUNG SCIENTISTS, RESEARCHERS AND DOCTORS
• Promote careers of a new generation of Black, Hispanic, and Native American researchers
• Create a program to provide mentorships
• Pair junior investigators with senior mentors
• Increase participation in research programs
THIS PROGRAM SEEKS TO INCREASE AWARENESS AND SCREENINGS OF COLORECTAL CANCER in three regions of the United States with significant Black, Hispanic, or Native American populations, developing strategies to help people choose screening options that work best for them and access appropriate follow-up care when needed.
EXACT SCIENCES
Providence
STAND UP TO CANCER


SU2C HEALTH EQUITY BREAKTHROUGH TEAM
DISRUPT(ing) Clinical Trials
Diversity & IncluSion in Research Underpinning Prevention & Therapy Trials
Despite Black, Indigenous and people of color (BIPOC) experiencing worse cancer outcomes, most research in the U.S. is done using primarily white participants. Stand Up To Cancer's four-year program will work to increase the number of BIPOC participants in clinical trials. The program targets four communities in New York City with high cancer mortality rates and will provide important new models for cancer clinical trials nationally.
CANCER MORTALITY RATES IN TARGETED NEIGHBORHOODS
Rates per 100,000 people
Bronx
East Harlem
Central Harlem
Washington Heights
U.S.
Breast
Prostate
Liver
0
10
20
30
40
50
85%
of the population in these four New York City neighborhoods, which are overly impacted by cancer, are Hispanic/Latino or Black.
NEW JERSEY
Hudson River
WASHINGTON HEIGHTS
THE BRONX
CENTRAL HARLEM
EAST HARLEM
MANHATTAN
AIM 1: CREATE OPTIONS FOR LOCAL CANCER PATIENTS
Engage with community and faith-based organizations in targeted neighborhoods in The Bronx and Manhattan to understand local barriers to clinical trial participation, create more options for cancer patients as early as possible, and help patients to see clinical trials as a viable option for treating cancer.
AIM 2: CHANGE APPROACHES TO CANCER CARE
Using research gathered with the community, organize hospital and health agency leaders, doctors, nurses, and other community health influencers to consistently discuss clinical trials as an initial treatment option for cancer patients and their families.
• Survey patients and health care practitioners to create more data-based solutions
• Provide training for health care practitioners to prioritize clinical trial options for cancer patients
• Create culturally relevant educational videos and resources for patients and families
AIM 3: RETHINK CLINICAL TRIALS
The team works with scientists to design clinical trials accessible to more patients by:
• Developing educational programs for four health institutions
• Developing training programs for scientists, citizen scientists, and medical students
• Creating a better database with help from community organizations
• Creating a network of citizen scientists within the community
THIS PROGRAM is leading a change in cancer research to put patients and their families first when new treatments are created and tested. When doctors and scientists incorporate considerations of socioeconomic factors, race, and ethnicity at the outset of their work, we can create cancer treatment strategies and clinical trials that benefit all patients and their families.
STAND UP TO CANCER
Genentech
A Member of the Roche Group

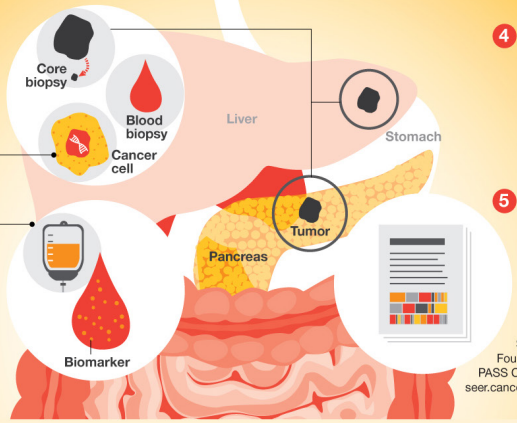
INFOGRAPHICS INDEX

Pancreatic Cancer: The Hunt for Precision Therapies

With a five-year survival rate of 10%, the need to find an effective treatment for pancreatic cancer is critical. Currently, there are two leading chemotherapy combinations, but doctors don't have enough knowledge about the different types of pancreatic cancer to know which will be best for an individual patient. A Dream Team is testing ways to use the molecular characteristics of the tumor to predict which medicines should be prescribed, and develop tests to distinguish specific tumor sub-types.

WHAT IS PRECISION THERAPY? Precision therapy matches proposed treatments to the cancer's DNA and expressed proteins.

1. **The patient undergoes one or two biopsies.**
   - **Tumor:** A sample of the tumor is taken and analyzed.
   - **Blood** is drawn.
2. **The team analyzes the DNA** and **key proteins** of the cancer to predict useful ways to categorize individual tumors.
3. **For as long as effective and tolerated, a patient is given one of the chemotherapies.** Indicators within the body, called **biomarkers**, are measured using lab tests or scans to determine if the treatment is working or if the patient should switch to another treatment.



4. **More biopsies and blood samples** may be taken to try to understand why the treatment is working or not, and what biomarkers seem to correspond to the treatment response.
5. **Tumor sub-types** based on the study results and measured with the biomarkers developed along the way will help doctors choose the best treatment for each patient.

Sources: SU2C Canada-Lustgarten Foundation-Pancreatic Cancer Canada PASS Convergence Dream Team research, seer.cancer.gov/statfacts/html/pancreas.html

UNDERSTANDING TUMOR SUB-TYPES can help doctors and patients make better treatment decisions, as well as guide further development of precision therapies to combat pancreatic cancer. This is a vital step towards getting the right treatment to the right patient at the right time.

LUSTGARTEN FOUNDATION PANCREATIC CANCER COLLECTIVE · STAND UP TO CANCER · STAND UP TO CANCER StandUpToCancer.ca · PANCREATIC CANCER CANADA

SU2C DIVERSITY IN EARLY DEVELOPMENT CLINICAL TRIALS RESEARCH TEAMS

Increasing Diversity in Cancer Clinical Trials

Cancer clinical trials need to be available to all potential patients to make new medicines available as widely as possible. SU2C and Janssen Research & Development are supporting teams in Chicago, Dallas, Los Angeles and Philadelphia to increase accessibility for patients of all racial and ethnic backgrounds and/or living in medically underserved locations. The widest possible participation in clinical trials will help bring access to the latest treatments to all patients and help power the studies that will lead to breakthroughs in future cancer treatments.

The teams will focus on specific neighborhoods and cities to increase diversity among participants in Phase 1 and Phase 2 cancer clinical trials, the early trials that often determine whether a potential treatment is tested in large and expensive randomized clinical trials for widespread use by clinicians. Each team is independent but the four groups will come together to share strategies and learnings.

1 AT THE FOREFRONT UChicago Medicine

CREATE A RANDOMIZED RECRUITMENT STUDY

- Randomly assign Black patients potentially eligible for an early phase clinical trial to one of three recruitment approaches
- Approaches are outreach to treating physician only, and outreach to physician and patient with or without connecting patient to a community ambassador
- All outreach to be informed by community-based partners

2 UTSouthwestern Harold C. Simmons Comprehensive Cancer Center

TRANSFERRING PATIENT CARE TO ENHANCE ACCESS

- Coordinate the identification, screening, and enrollment of patients from a safety net healthcare system for early phase clinical trials at a university-based cancer center
- Study program impact and efficiency
- Evaluate patient experience and perceptions

3 USC Norris Comprehensive Cancer Center Keck Medicine of USC

EXAMINE EXISTING STRUCTURES TO FIND IMPROVEMENTS

- Work with the county hospital system to enhance referral and enrollment of minority patients
- Work to address systemic barriers for patients and referring providers in early phase cancer clinical trials recruitment and enrollment
- Study the demographics, financial and social burdens, geographical barriers, and impact of remote trials on participation in early cancer clinical trials

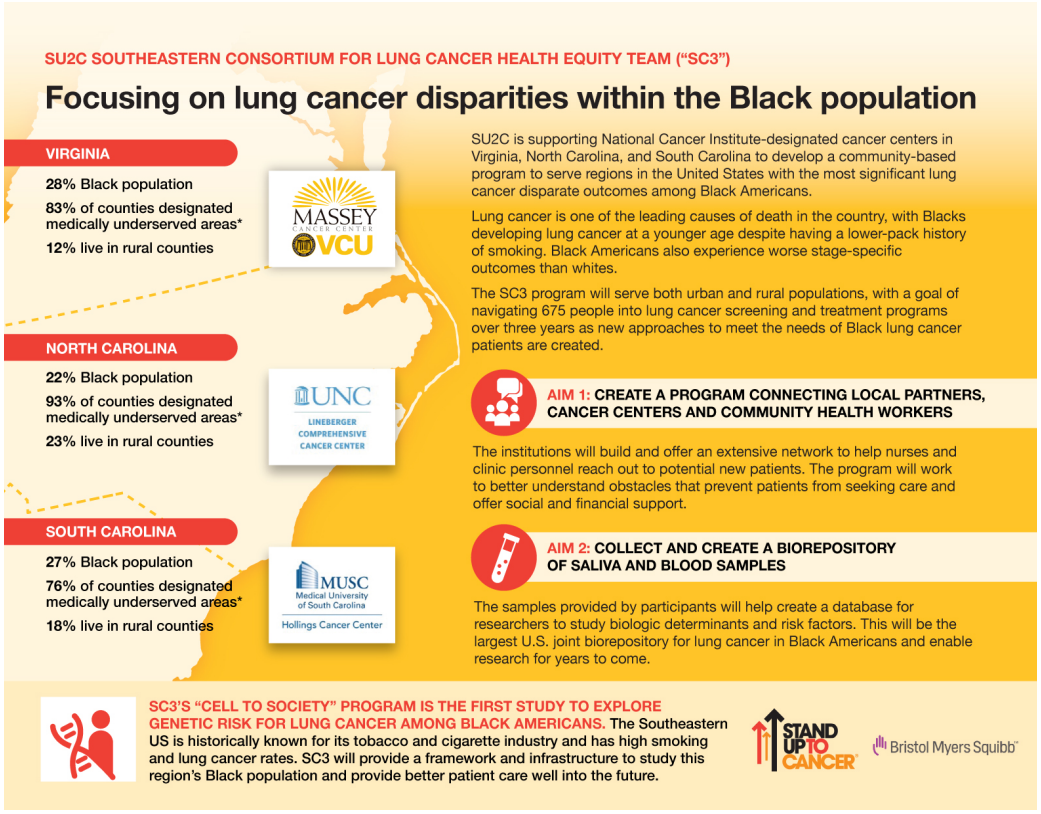
4 FOX CHASE CANCER CENTER TEMPLE HEALTH

IDENTIFY AND OVERCOME SPECIFIC BARRIERS

- Work to increase diversity in cancer clinical trials in a region-wide health system by addressing patient concerns and providing wide-ranging support services
- Work with community partners, outreach programs and community ambassadors to educate and connect patients to clinical trials and support services

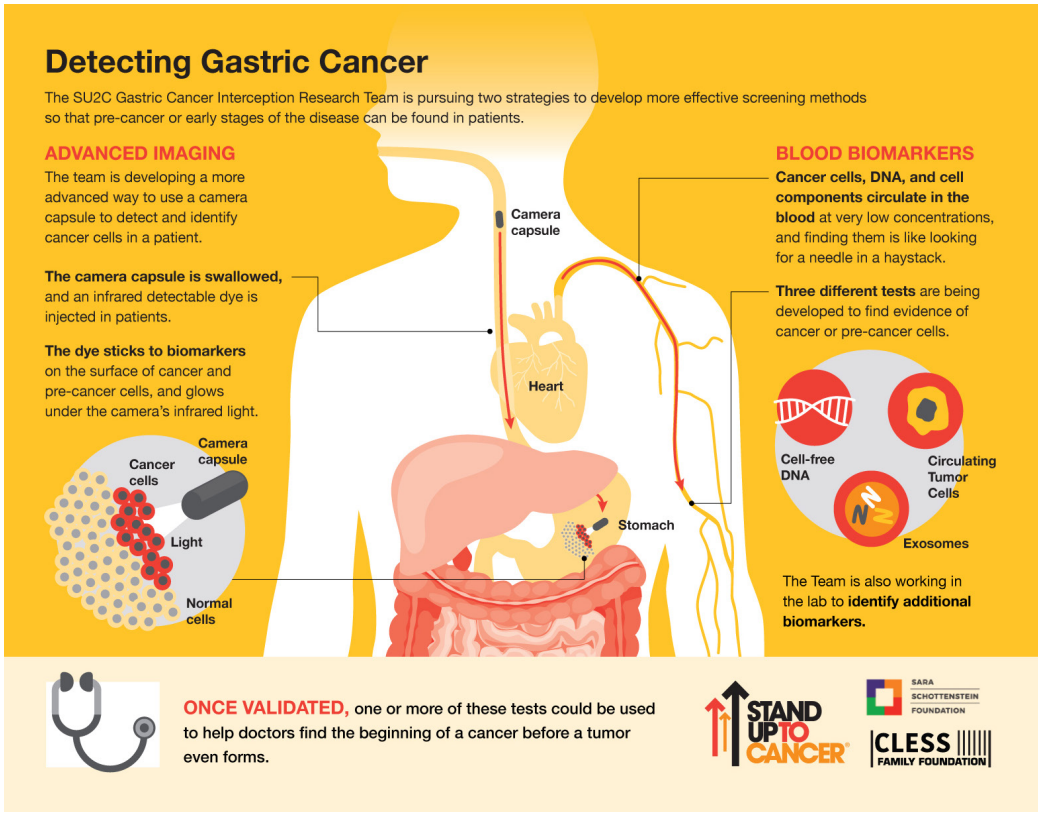
CREATING MORE OPPORTUNITIES FOR MINORITIES TO ACCESS CANCER CLINICAL TRIALS is the ultimate goal for this initiative. By working in underserved communities in four major metropolitan areas, the teams will be able to reach, educate, better understand, and serve a large population that is historically less engaged in cancer research and treatment. The result will be better outcomes for cancer patients and their families and communities.

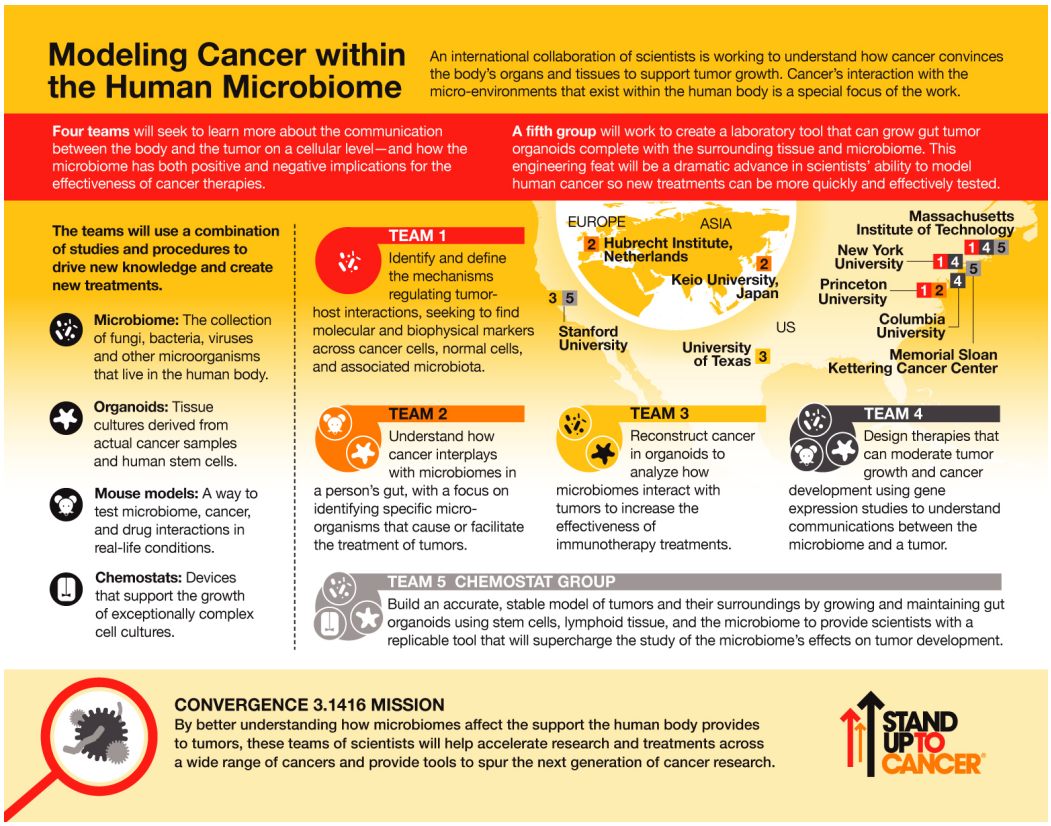
STAND UP TO CANCER · janssen

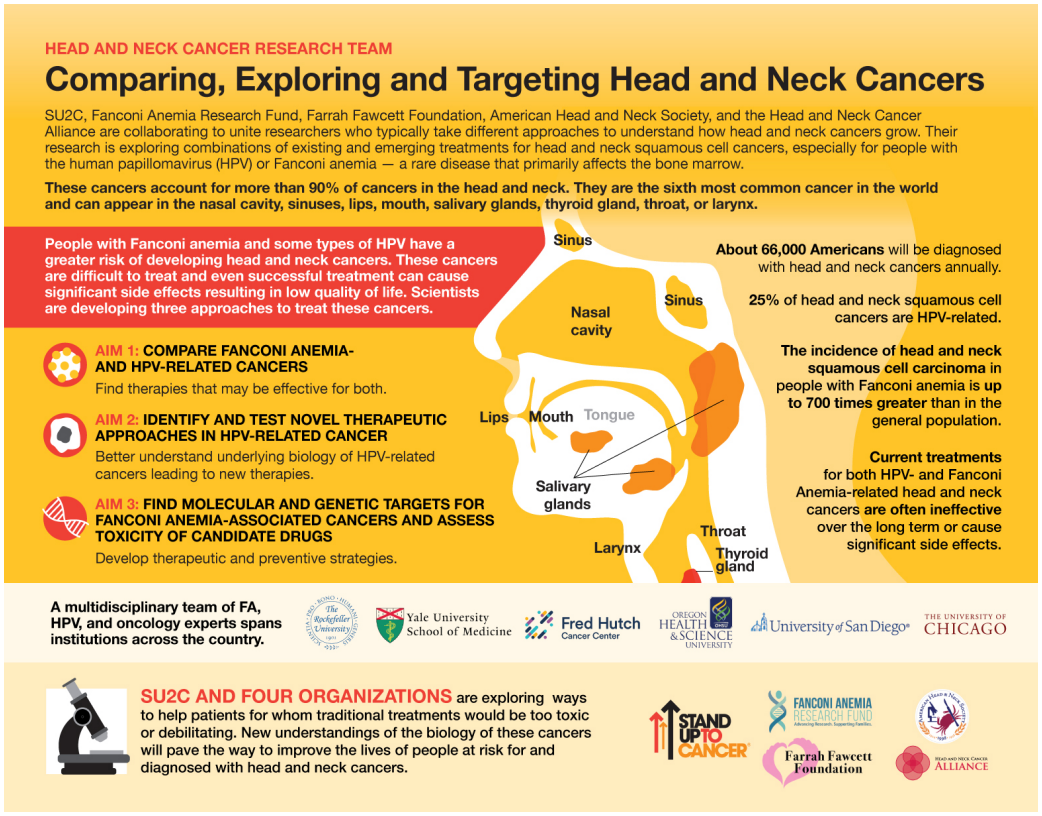

SU2C SOUTHEASTERN CONSORTIUM FOR LUNG CANCER HEALTH EQUITY TEAM ("SC3")
Focusing on lung cancer disparities within the Black population
VIRGINIA
28% Black population
83% of counties designated medically underserved areas*
12% live in rural counties
MASSEY CANCER CENTER VCU
NORTH CAROLINA
22% Black population
93% of counties designated medically underserved areas*
23% live in rural counties
UNC LINEBERGER COMPREHENSIVE CANCER CENTER
SOUTH CAROLINA
27% Black population
76% of counties designated medically underserved areas*
18% live in rural counties
MUSC Medical University of South Carolina Hollings Cancer Center
SU2C is supporting National Cancer Institute-designated cancer centers in Virginia, North Carolina, and South Carolina to develop a community-based program to serve regions in the United States with the most significant lung cancer disparate outcomes among Black Americans.
Lung cancer is one of the leading causes of death in the country, with Blacks developing lung cancer at a younger age despite having a lower-pack history of smoking. Black Americans also experience worse stage-specific outcomes than whites.
The SC3 program will serve both urban and rural populations, with a goal of navigating 675 people into lung cancer screening and treatment programs over three years as new approaches to meet the needs of Black lung cancer patients are created.
AIM 1: CREATE A PROGRAM CONNECTING LOCAL PARTNERS, CANCER CENTERS AND COMMUNITY HEALTH WORKERS
The institutions will build and offer an extensive network to help nurses and clinic personnel reach out to potential new patients. The program will work to better understand obstacles that prevent patients from seeking care and offer social and financial support.
AIM 2: COLLECT AND CREATE A BIOREPOSITORY OF SALIVA AND BLOOD SAMPLES
The samples provided by participants will help create a database for researchers to study biologic determinants and risk factors. This will be the largest U.S. joint biorepository for lung cancer in Black Americans and enable research for years to come.
SC3'S "CELL TO SOCIETY" PROGRAM IS THE FIRST STUDY TO EXPLORE GENETIC RISK FOR LUNG CANCER AMONG BLACK AMERICANS. The Southeastern US is historically known for its tobacco and cigarette industry and has high smoking and lung cancer rates. SC3 will provide a framework and infrastructure to study this region's Black population and provide better patient care well into the future.
STAND UP TO CANCER
Bristol Myers Squibb

Pediatric New Discoveries Challenge
Three teams of scientists in both the UK and the US work to improve targeted therapies by studying some of the rarest and deadliest cancers for kids. One or two of these first-round teams will be selected to receive a second round of funding based on progress and potential impact.
TEAM 2 Dundee, UK
Manchester, UK TEAM 1
TEAM 1
TEAM 3 Grongingen, NL
London, UK
EUROPE
TEAM 3 Madison, WI
US
TEAM 1 Memphis, TN
Atlantic Ocean
TEAM 2 San Antonio, TX
TEAM 1
Atlas of Childhood Neuroradiation Damage
Pediatric brain cancers are the deadliest form of cancers. Precision radiotherapy is one type of treatment but causes lifelong side effects including cognition and hormone production.
The team will study the paths radiation beams make through tumors, and map out the long-term side effects in the brain. The goal is to create more precise radiotherapy to avoid the most sensitive brain regions.
Leader: Martin McCabe, MB/BChir, PhD, University of Manchester
Co-Leader: Thomas Merchant, BS, DO, PhD, St. Jude Children's Research Hospital
TEAM 2
Combinational Targeting of Oncogene-driven Childhood Cancer
Immunotherapies, while increasingly successful with adults, have so far not been as successful at treating childhood cancers.
The team will study the immune system of patients with two types of brain cancer: neuroblastoma or medulloblastoma. They plan to design special CAR-T cells that can boost a child's immune system to overcome tumor growth and other immunity barriers.
Leader: Alexander Bishop, DPhil, UT Health San Antonio
Co-Leader: Kevin Hiom, PhD, University of Dundee
TEAM 3
Targeting R-loop stability in Ewing Sarcoma
Ewing sarcoma is a type of bone cancer that is poorly understood, with limited treatment. A gene alteration causes a strong increase in the formation of "R-loops," which can cause cancer. The team noticed a higher number of R-loops than usual in Ewing sarcoma patients.
The team will investigate this unique biological hallmark to create a drug. The long-term goal is to develop new ways to target this unusual gene mutation with novel or existing compounds.
Leader: John Anderson, BA, MBBS, MRCP, PhD, University College London Great Ormond Street Institute of Child Health
Co-Leader: Louis Chesler, MD, PhD, FRCPCH, Institute of Cancer Research
CREATING BETTER TARGETED THERAPIES is an important step for curing childhood cancers. Three transatlantic teams working on new ways to use gene therapies and radiation against pediatric cancers have promising solutions that could soon change the way these cancers are treated.
STAND UP TO CANCER
CANCER RESEARCH UK

INFOGRAPHICS INDEX






HEAD AND NECK CANCER RESEARCH TEAM
Comparing, Exploring and Targeting Head and Neck Cancers
SU2C, Fanconi Anemia Research Fund, Farrah Fawcett Foundation, American Head and Neck Society, and the Head and Neck Cancer Alliance are collaborating to unite researchers who typically take different approaches to understand how head and neck cancers grow. Their research is exploring combinations of existing and emerging treatments for head and neck squamous cell cancers, especially for people with the human papillomavirus (HPV) or Fanconi anemia — a rare disease that primarily affects the bone marrow.
These cancers account for more than 90% of cancers in the head and neck. They are the sixth most common cancer in the world and can appear in the nasal cavity, sinuses, lips, mouth, salivary glands, thyroid gland, throat, or larynx.
People with Fanconi anemia and some types of HPV have a greater risk of developing head and neck cancers. These cancers are difficult to treat and even successful treatment can cause significant side effects resulting in low quality of life. Scientists are developing three approaches to treat these cancers.
AIM 1: COMPARE FANCONI ANEMIA- AND HPV-RELATED CANCERS
Find therapies that may be effective for both.
AIM 2: IDENTIFY AND TEST NOVEL THERAPEUTIC APPROACHES IN HPV-RELATED CANCER
Better understand underlying biology of HPV-related cancers leading to new therapies.
AIM 3: FIND MOLECULAR AND GENETIC TARGETS FOR FANCONI ANEMIA-ASSOCIATED CANCERS AND ASSESS TOXICITY OF CANDIDATE DRUGS
Develop therapeutic and preventive strategies.
Sinus
Nasal cavity
Sinus
Lips
Mouth
Tongue
Salivary glands
Throat
Larynx
Thyroid gland
About 66,000 Americans will be diagnosed with head and neck cancers annually.
25% of head and neck squamous cell cancers are HPV-related.
The incidence of head and neck squamous cell carcinoma in people with Fanconi anemia is up to 700 times greater than in the general population.
Current treatments for both HPV- and Fanconi Anemia-related head and neck cancers are often ineffective over the long term or cause significant side effects.
A multidisciplinary team of FA, HPV, and oncology experts spans institutions across the country.
The Rockefeller University
Yale University School of Medicine
Fred Hutch Cancer Center
Oregon Health & Science University
University of San Diego
The University of Chicago
SU2C AND FOUR ORGANIZATIONS are exploring ways to help patients for whom traditional treatments would be too toxic or debilitating. New understandings of the biology of these cancers will pave the way to improve the lives of people at risk for and diagnosed with head and neck cancers.
Stand Up To Cancer
Fanconi Anemia Research Fund
Farrah Fawcett Foundation
American Head and Neck Society
Head and Neck Cancer Alliance

INDEX BY TYPES OF CANCER

INDEX BY TYPES OF CANCER

Anal Cancer 125, 126

Brain Tumors 39, 40, 47, 48, 64, 65, 66, 97, 99, 173, 199, 208, 219

Breast Cancer 24, 25, 28, 29, 43, 44, 53, 58, 62, 66, 80, 82, 84, 85, 86, 87, 128, 129, 154, 155, 156, 157, 169, 170, 175, 178, 179, 197, 200, 202, 204, 205, 207, 217

Cervical Cancer 125, 126

Colorectal Cancer 22, 23, 37, 41, 42, 54, 55, 57, 58, 60, 62, 80, 108, 118, 128, 129, 133, 134, 138, 166, 204, 207, 217

Endometrial Cancer 84, 150

Esophageal Cancer 62, 102, 138

Gastric Cancer 101, 102, 220

Gynecologic Cancer 53, 85, 152, 153, 204

Head and Neck Cancer 94, 95, 125, 126, 221

Hypermutant Cancers 171, 194

Kidney 68

Leukemia 39, 40, 57, 58, 64, 65, 66, 80, 144, 157, 199, 201, 202, 204, 205

Liver Cancer 24, 25, 57, 58, 62, 199, 217

Lung Cancer 34, 35, 42, 49, 50, 51, 57, 58, 68, 69, 72, 79, 80, 81, 82, 92, 93, 108, 121, 127, 132, 157, 158, 164, 165, 166, 182, 183, 192, 193, 201, 204, 207, 219

Lymphoma 30, 31, 39, 40, 65, 66, 124, 144

Melanoma 42, 68, 69, 75, 76, 81, 142, 176, 177, 188, 189, 201, 205, 208

Myeloma 32, 33, 184, 185

Ovarian Cancer 52, 53, 60, 85, 110, 132, 153, 196, 197, 204, 205

Pancreatic Cancer 26, 27, 36, 37, 42, 45, 46, 57, 59, 60, 62, 77, 78, 81, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 122, 123, 146, 147, 159, 160, 190, 191, 204, 205, 208, 218

Pediatric Cancer 38, 39, 40, 47, 48, 63, 64, 65, 66, 96, 97, 98, 99, 100, 171, 173, 174, 194, 195, 199, 202, 204, 205, 208, 219

Prostate Cancer 24, 25, 69, 70, 71, 72, 73, 74, 81, 82, 167, 168, 205, 217

Sarcoma 40, 65, 98, 163, 175, 186, 187, 201, 202, 204, 219, 220

Urothelial Cancer 69, 180, 181

INDEX BY PERSON

INDEX BY PERSON

A

Abi-Khattar, C. 169
Abramson, V. 169
Acevedo, R. V. 92
Adalsteinsson, V. A. 184
Adams, James 99
Adams, Julian 15
Addario, B. 166
Aguirre, A. 109
Ahlstrom, J. M. 32, 184
Ahmed, N. M. 38, 63
Albeck, J. G. 200
Albert, R. Z. 155
Aldrich, J. 127
Alexandrov, L. 150
Algül, H. 107
Ali, A. 124
Alistar, A. T. 190
Allison, J. P. 67, 205
Alonso, L. 103
Altschuler, S. J. 157
Anderson, J. 96
Andrews, E. 105
Antonia, S. J. 182
Aparici, C. M. 34
Aparicio, S. 43
Aquirre, A. 26
Arbour, K. C. 192
Arrowsmith, C. H. 47
Arteaga, C. L. 15, 16, 83
Aschebrook, B. 89
Ashworth, A. 86
Atwal, G. S. 154
Aune, G. 98
Awad, A. 165
Ayala, G. 30
Azad, N. S. 41
Aznar, M. A. 122

B

Baber, B. A. 63
Bachovchin, D. A. 199
Bader, G. D. 47
Baker, M. 22
Balachandran, V. 146, 204
Baldi, J. 38, 63, 162
Balko, J. M. 178
Ballman, K. V. 186
Bame, T. L. 75
Bangs, R. 56, 180
Barazzuol, L. 99
Bardeesy, N. 209
Barlow, J. 86
Barrett, D. M. 199, 204
Barrett, M. T. 190
Barzilay, R. 105, 145
Baselga, J. 83
Basso, C. R. 162
Baylin, S. B. 56, 79, 180, 192, 205, 207
Bear, A. 117
Beatty, G. L. 199
Bebenek, D. 171, 194
Becerra, C. H. 190
Beer, T. M. 70
Behrens, R. E. 67
Belinsky, S. A. 79
Bellone, S. 150
Benford, C. 127
Berenger, S. 45
Berger, P. 192
Berger, S. L. 122, 152, 205
Berger, T. 43
Bernards, R. 107, 128, 205
Bernatchez, C. 111
Bernstein, A. 15, 16
Bernstein, K. A. 200
Bhatia, S. N. 81
Bhatt, A. 135
Bianchi, V. 171
Bickell, N. A. 24
Bilchik, A. 22
Birgin, A. 176
Bishop, A. 98
Blackburn, E. H. 15
Black, D. 67
Bleakley, M. E. 199
Block, M. S. 176
Bold, R. J. 115
Booher, B. 59
Borazanci, E. H. 190
Borghaei, H. 192
Borrello, I. M. 32
Bos, J. L. 61
Bouffet, E. 194
Bove, N. 24
Boyce, C. A. 18, 32
Brahmer, J. R. 34
Breininger, A. 94
Brigman, B. E. 186
Brodney, S. 22
Brown, E. 41
Brown, V. 209
Brown, W. 73
Brugge, J. S. 86
Brunak, S. 105
Bulbeck, H. 99
Burger, R. 152
Burgos, R. 56, 180, 192
Burke, K. 24
Burkhart, R. A. 119
Burtness, B. 94
Bustoros, M. W. 184
Buttin, B. 209

C

Calderone, K. M. 192
Callan, C. G. 159
Camara, P. G. 143
Camargo, F. D. 202
Cantarell, P. 83
Cantley, L. C. 41, 83
Capelletti, M. 184
Cargen, L. 178
Carpenter, E. 152
Carpten, J. 15, 18, 127
Carreno, B. M. 117
Chan, A. T. 18, 101
Chan, C. S. 157
Chan, E. P. 121
Chang, J. C. 16
Chang, P. 209
Chauhan, C. 176
Chen, C. 209
Chen, J. 176
Chen, J. M. 188
Cherisol, M. 32
Chesler, L. 96
Chingos, D. T. 79
Chinnaiyan, A. M. 73, 86
Chugh, R. 162
Chung, V. 190
Clark, J. 45, 190
Cleary, J. M. 109
Clevers, H. 61, 133, 205
Colchie, J. 32
Coley, P. D. 112
Collier, L. 209
Collisson, E. A. 112
Compton, B. D. 162
Cook, C. 28
Corcoran, R. B. 41, 166
Costello, Rev. Z. 24
Cotter, K. 39, 63
Coupé, V. 54
Craig, D. 127
Crase, J. 52, 196
Creelan, B. C. 182
Cristea, I. 131
Cubillos-Ruiz, J. R. 200, 204
Culhane, A. 148

D

Dallos, M. 167
D'Andrea, A. D. 17, 52, 109, 196, 204
Dang, C. 77
Das, A. 208
Dashevsky, O. 148
Davidson, N. E. 79
Davidson, S. 131
Davis, A. 22, 41, 166
Davis, M. M. 142
de Bono, J. S. 73
Dekker, E. 54
Delgoffe, G. M. 200

D (Cont'd)

de Maturana, E. L. 103
DeMeo, M. 169
Demetri, G. D. 186
DeMichele, A. M. 169
den Brok, W. 43
Deng, C. 124
Deng, J. 164
DeRudder, K. 167
Desai, S. J. 115
DeSantes, K. B. 38
Desserich, K. 173
de Wit, M. 54
Diaz, J. 101
Diaz Jr., L. A. 41, 204
Dibra, D. 204
Diehn, M. 121, 204, 209
Diller, L. R. 17
Dimitrov, D. 38
Dirks, P. B. 47, 174
Dodd, A. 26
Domingo-Musibay, E. 176
Donovan, L. 96
Doorn, A. 107
Dotti, Gianpietro 30
Douglass, R. 81
Doumani, R. 67, 70
Dou, Y. 201, 205
Downes, M. R. 190
Draft, C. M. 121
Dranoff. G. E. 67
Drebin, J. A. 77, 159
Drissi, R. 173
Dronca, R. S. 176
Dubinett, S. M. 34
DuBois, R. N. 15, 17
DuBois, S. 162, 174
Durigon, W. M. 47

E

Edelman, M. 91
Edwards, M. 194
Elgart, K. S. 24
El-Khoueiry, A. 56, 90
Ellis, M. J. 207
Emens, L. A. 207
Estape, A. A. 94
Ettl, R. A. 119
Evan, G. I. 45
Evans, C. P. 70
Evans, R. M. 45, 190
Evers, P. 61

F

Fabbri, M. 209
Fan, R. 143
Farrington, T. A. 73
Farwell, M. D. 199
Fax, R. 83
Feinstein, A. 52
Ferrando, A. 201, 205
Ferris, A. E. 49
Filip, I. 103
Fischbach, M. 135, 140
Fisher, D. S. 157
Fisher, M. J. 194
Fleisher, L. 91
Fleming, G. F. 52
Fleshman, J. M. 77
Flory, B. 56, 192
Flotte, T. J. 176
Forde, P. M. 205
Ford, M. E. 92
Forebough, K. 39
Formenti, S. C. 207
Foster, C. C. 115
Fouladi, M. 173
Fraenkel, E. 145
Frank, E. S. 83, 169
Freed-Pastor, W. 204, 208
Friedman, C. 152, 204
Friedman, S. 52, 196
Fry, T. J. 38
Fuchs, J. R. 41
Fujimori, D. G. 209
Furman, D. 142
Furman, J. 96

G

Gainor, J. F. 49
Gallinger, S. 26
Gamble, M. 209
Gandara, D. R. 49
Ganesh, K. 138, 140
Garber, J. E. 15
Gardner, R. 209
Garofalo, M. 209
Garraway, L. A. 73
Gartner, Z. 209
Garzon, R. 209
Gaudet, S. 209
Gavin, K. A. 52, 196
Gaynor, R. B. 15
Gedminas, J. 162
Gelmon, K. A. 43
Gentile, L. 28
Geoghegan, C. 86
George, M. 41, 166
George, R. 209
Gerber, D. 90
Getz, G. A. 32, 49
Ghobrial, I. M. 32, 184
Giles, K. 73
Glade-Bender, J. 162
Gleave, M. E. 70
Glimcher, L. H. 15
Glod, J. W. 162
Goddard, J. 99
Goggins, M. G. 36
Golub, T. 148
Good, C. R. 122
Goodman, N. F. 15
Gopalan, A. 167
Gore, L. 38
Gorman, M. 75
Gray, J. W. 86
Greenbaum, B. 146, 159, 205, 208
Greenberg, P. D. 59, 67, 204
Greenberg, R. 209
Gregory, W. G. 73
Grilley, B. J. 30, 39
Grohar, P. 162
Grompe, M. 94
Grønbæk, K. 56
Grossmann, K. F. 188
Grupp, S. 38
Guasch, G. 209
Guild, S. 188
Guild, V. 67
Gulley, J. L. 15
Guo, M. 209
Gutkind, J. S. 94

H

Haas, J. 22
Haas, K. 171
Haber, D. A. 81
Haddad, R. I. 125
Hahn, N. M. 180
Hait, W. N. 15
Halene, S. 143
Hall, D. M. 75
Halmos, B. 165
Han, H. 190
Hannon, G. J. 86
Haq, R. 199
Hargrave, D. 96
Hargraves, T. 92
Hata, A. 157, 204
Haura, E. B. 182
Haussler, D. 86
Haynes, R. M. 92
Heath, J. R. 67
Hegde, M. G. 199
Heist, R. 166
Hellmann, M. D. 204
Helman, L. J. 15, 17
Henderson, L. 92
Henick, B. 165
Herbst, R. S. 49
Herman, J. G. 54
Herrera, R. 30
Heslop, H. E. 30
Heymach, J. V. 49, 81
Hieken, T. J. 176
Hiom, K. 98
Hirsch, F. 164
Hirschfield-Bartek, J. 83

H (Cont'd)

Hodi, F. S. 67
Hollman, T. 152
Holstead, J. 171
Honda, K. 133
Hong, D. 166
Hong, W. K. 15
Hopkins, B. 164
Horn, M. 34, 54
Horton, L. J. 178
Houghton, A. M. 209
Huang, A. 173
Huang, E. 209
Hubbard, K. 24
Hudson, S. 18
Hughes-Halbert, C. 18, 90
Hu-Lieskovan, S. 188, 205
Hwu, P. 111, 209

I

Ideker, T. 128
Iliopoulos, D. 209
Irvine, D. J. 154
Issa, J. P. J. 56, 79, 180
Iwasaki, A. 150

J

Jabado, N. 47, 173
Jacinto, E. 201
Jacks, T. 36, 138, 204
Jaffee, E. M. 18, 26, 59, 117
Jänne, P. A. 49, 166
Janzen, J. 61
Jasin, M. 52, 205
Jeffries, C. 22
Jensen, M. C. 63
Johnson, B. E. 81
Johnson, G. 22
Johnson, J. A. 32
Jones, P. A. 56, 79, 180, 192, 207
Jonker, M. 61
Jonkers, J. 207
Jordan, C. V. 86
June, C. H. 122, 143, 205

K

Kamen, B. A. 77
Kampmann, M. 200
Kane, E. E. 34
Kantoff, P. W. 73
Kaplan, K. 77
Kaplan, R. N. 38
Kapoor, P. 32
Karl, L. E. 162
Karnoub, A. 209
Kasi, A. 190
Kastan, M. B. 16
Katz, R. M. 77
Kaufmann, S. H. 52
Kaye, F. J. 182
Kelly, L. 115
Kenner, B. J. 36
Kern, A. H. 70
Kiefer, J. 127
Kiefert, J. 73
Kimmelman, A. 119, 208, 209
Kim, T. H. 209
King, D. 26
Kinsey, C. G. 112
Kirsch, D. G. 174, 186, 204
Klein, S. 73
Knox, J. 26
Kong, M. 201, 205, 209
Konstantinopoulos, P. A. 196
Koomen, J. M. 182
Koopman, M. 54
Kopetz, S. 166
Korem, T. 103
Korn, R. L. 190
Kozlowski, E. 186
Kraft, P. 105
Krause, P. 94
Kravets, O. 103
Krishnan, P. 171
Kris, M. G. 81
Kritzik, M. 114
Kroes, J. 54
Kuipers, E. J. 54
Kuo, C. 135, 140
Kursar, T. 112

L

LaBaer, J. 75
Labbe, K. 165
Laetsch, T. W. 162
Laheru, D. 26, 119
Landau, D. 200, 204
Lasater, K. 112
Lawellin, S. 173
Lawlor, E. 174, 202, 204
Lechler, T. 209
Lee, J. 101
Lee, P. 83
Lee, P. P. 154, 204
Letai, A. G. 155
Levine, A. J. 15, 17
Levine, H. 154
Levine, R. 157
Levy, M. 202
Liang, W. 190
Liby, K. 209
Li, H. 201
Lindberg, G. 39
Lindeman, G. J. 207
Lindstrom, J. 125
Lippman, S. M. 36
Liston, I. S. 73
Listwin, D. 83
Littman, D. 138
Lo, R. 201, 205, 209
LoRusso, P. M. 75
Lowy, A. M. 114, 190
Lozano, G. 16, 18
Lucas, C. L. 75
Lu, K. H. 52
Luksza, M. 146, 204
Lupien, M. 47
Lustig, A. 131, 133, 135, 138, 140, 142, 143, 145, 146, 148, 150, 152, 154, 155, 157, 159
Lutz, O. 107
Ly, L. 119

M

Ma, L. 200
Ma, Y. 124
Mackall, C. 38, 63, 171, 205
Magicheva-Gupta, M. 101
Magowitz, R. E. 190
Maillard, I. 209
Maitra, A. 36
Maki, R. 162
Mak, T. W. 16, 43, 205
Malats, N. 103
Malcolmson, K. 174
Manalis, S. 131, 140
Manarite, J. 167
Mancuso, J. J. 67
Manji, G. 103
Marinac, C. 208
Marion, E. 176
Maris, J. M. 38, 63, 171, 194
Markovic, S. N. 75
Marra, M. A. 47
Marrone, K. A. 192
Mascarenhas, L. 162
Masood, F. 125
Mastan, S. 165
Maus, M. V. 199
Maus, R. L. 176
Mayer, I. A. 178
May, F. 22
Mayr, C. 209
Mazilli, S. 34
McAllister, F. 204
McArthur, H. L. 169, 207
McBride, S. M. 167
McCabe, M. G. 99
McCormick, F. 49
McGillicuddy III, C. A. 75
McMahon, M. 112
McNeill, K. 70
McQueen, S. 166
Meijer, G. A. 54
Melenhorst, J. J. 143
Mellon, R. 43
Merchant, T. E. 99
Messersmith, W. A. 119
Meyerson, M. L. 34

M (Cont'd)

Millerchip, K. 111
Miller, R. I. 182
Mills, G. B. 83, 207
Minella, A. 209
Mitsiades, C. S. 148
Mittendorf, E. A. 169
Moding, E. 186
Moll, M. F. 39
Monje, M. 38
Montine, T. 142
Morgenstern, D. 38, 171
Moss, P. 96
Mowery, Y. 186
Mukherjee, S. 124
Mullighan, C. G. 201
Muranen, T. E. 207
Murphy, M. J. 125
Murtaza, M. 205
Müschen, M. 202

N

Nadeau, K. 142
Naidoo, J. 192
Nanda, R. 169, 178
Nasser, S. 127
Neel, B. 131
Nelson, P. S. 73
Nelson, S. 36
Nelson, W. G. 15, 17
Nephew, K. P. 56
Nickoloff, B. J. 75
Norris, K. 34
Nowark, J. 167
Nussenzweig, A. 16
Nutley, R. A. 32
Nwachukwu, C. 90

O

O'Dwyer, P. 159
O'Hara, M. H. 122
Oh, S. 209
Olive, K. 103
Olson, J. 173
O'Reilly, E. M. 26, 146
Orentas, R. 38
Osborne, C. K. 86
Overman, L. 186

P

Page, I. 41
Pager, D. 45
Painter, C. A. 186
Palmer, A. 39
Pao, W. 202
Papadopoulos, P. C. 36
Pardoll, D. M. 49, 67
Park, B. H. 169
Park, J. 184
Park, J. R. 38
Park, M. 43
Parsons, D. W. 38
Parsons, R. E. 83
Patel, H. P. 190
Patel, M. 41
Paulovich, A. 94
Pechacek, J. E. 45
Pe'er, D. 152, 201, 205
Pelka, K. 204, 207
Penumatsa, R. 56, 180, 192
Perez, E. A. 15, 18
Perez, K. 26
Pergament, D. 73
Perlmutter, J. 75, 83
Perry, J. 174
Petersen, G. M. 36
Petricoin, E. F. 75
Pettigrew, R. I. 16
Pickett, C. B. 16, 17
Pishvaian, M. 26
Pistofidis, R. S. 184
Piwnica-Worms, H. 207
Plimack, E. R. 180
Polinsky, D. 52, 196
Polite, B. 101
Pollak, M.N. 28
Porter, S. 59
Postovit, L. M. 28
Powell, B. L. 30
Powell, D. 152
Prabhu, S. 98
Prevor, J. E. 122
Pritchard, K. I. 43
Prives, C. L. 16
Propper, D. J. 45
Pugh, T. J. 204
Pyle, R. 119

Q

Quake, S. 142
Quinn, D. I. 180

R

Rabadan, R. 103, 138, 155, 204
Rabinowitz, J. D. 45, 77, 133
Ralph-Birkett, P. 103
Ramanathapuram, L. 49
Ramaswamy, S. 201
Rao, D. 209
Rapkin, B. 24
Rassool, F. V. 56, 207
Rathkopf, D. E. 167
Raymond, M. 41
Rebbeck, T. R. 32
Reidy, K. 39
Reinherz, E. L. 125
Renouf, D. 26
Reya, T. 114
Rezvani, K. 30
Ribas, A. 67, 188, 205
Richards, T. 47
Rickerson, S. 59
Riedel, R. F. 186
Ritch, P. S. 190
Roach, N. 41
Roberts, C. M. 202
Roberts, T. M. 83
Robins, H. 157, 159
Rohatgi, R. 202
Roland-Jaremba, D. 92
Rooney, C. M. 111
Rosen, N. 75
Rosenthal, M. 105
Roth, J. 148
Rountree, J. 22
Rubin, M. A. 73
Rudin, C. M. 49, 56, 192
Rugo, H. S. 169, 178
Rutledge, L. J. 98
Ryan, D. P. 119
Ryeom, S. W. 101

S

Sadelain, M. 67
Salter, M. W. 47
Sampayo, I. 24
Sander, C. 105
Sanders, M. E. 178
Sandi, C. 39
Santin, A. D. 150
Sato, T. 133
Savell, A. 184
Sawyers, C. L. 73, 83
Scaltriti, M. 155
Schimke, J. 176
Schipper, H. 54
Schoolcraft, K. 22
Schork, N. J. 75
Schreiber, R. D. 59
Schultz, K. R. 38
Schultz, L. 39, 96
Schultz, N. 205
Schumacher, T. N. 67
Schwarze, S. 41
Scott, J. 63
Scott, L. 63
Scrivens, Z. 43
Seigel, C. 119
Sekulic, A. D. 75
Sequist, L. V. 121, 157
Shah, N. N. 38
Shapiro, G. I. 109
Sharma, P. 205
Sharpe, A. H. 16
Sharp, P. A. 15, 16, 17
Shawver, L. K. 16
Sheffer, M. 148, 204
Shen, H. 192

S (Cont'd)

Shen, Y. 184
Shi, J. 205
Shockney, L. D. 79
Shyr, Y. 178
Silva, J. M. 202
Simoes, R. 148
Simons, J. W. 67
Siu, L. L. 17
Skala, M. C. 200, 205
Slamon, D. J. 86, 205
Sleijfer, S. 128
Small, E. J. 70
Smith, A. A. 101
Smith, H. W. 28
Smith, K. 32
Smith, S. 45
Smith, Y. 32
Smogorzewska, A. 94
Snippert, H. 204
Solit, D. B. 83, 205
Sondel, P. M. 38, 63, 96
Sonenberg, N. 28
Sorelle, R. 30
Sorenson, P. H. B. 28, 38, 63, 204
Sorger, P. K. 86
Sosman, J. A. 75, 188, 205
Spears, P. 30
Speed, T. P. 86
Spira, A. E. 34
Stadler, W. 89
Stegmaier, K. 174, 202, 204, 205
Stein, M. 167
Stoval, E. L. 86
Stratton, Sir M. R. 61
Stuart, J. M. 70
Sullenger, B. A. 205
Sullivan, P. J. 16, 39, 47, 63
Suman, V. J. 176
Sutcliffe, J. L. 115
Swanton, C. 34, 207
Sweet-Cordero, E. A. 201
Swisher, E. M. 52, 196
Syngal, S. 22, 36

T

Tabori, U. Y. 171, 194
Taniguch, C. M. 119
Tan, M. 140
Tanyi, J. L. 122
Tashbar, J. 182
Tasian, S. K. 204
Tavazoie, S. 209
Taylor, M. D. 38, 47, 63
Tempero, M. A. 114
Terry, M. B. 24
Tewari, M. 202
Thompson, C. B. 77
Thomson, A. 99
Tichenor, L. 63
Tichenor, M. 63
Ting, D. T. 159, 205
Toghrul, J. 124
Tolaney, S. M. 169
Tondeur, A. 128
Toner, M. 81
Tran, C. A. 49
Transler, C. 61
Trent, J. 75, 127
Tshemiak, A. 148
Tuan, J. 22
Turner, H. 176
Tuveson, D. 16, 26, 205
Tyers, M. 47

U

Ulge, C. 182
Ungerleider, J. 81

V

Van Allen, E. M. 205
Vander Heiden, M. 200, 205
van de Rijn, M. 186
Vanderwalde, A. M. 188
van Engeland, M. 54
van Es, J. H. 61
van Luenen, H. 107
van't Veer, L. J. 128
Vaughan, K. 99
Velcheti, V. 165
Velculescu, V. E. 54
Veluswamy, R. 164, 165
Ventura, A. 209
Visco, F. M. 86
Visvader, J. E. 207
Voest, E. E. 107, 128
Vonderheide, R. H. 59, 117, 204
Von Hoff, D. D. 45, 77, 190
Vuori, K. 75

W

Wagers, A. J. 201
Wagle, N. 155
Wagner, A. J. 186
Wahl, G. M. 77
Wajapeyee, N. 209
Walensky, L. D. 202
Walker, D. 24
Wang, B. 209
Wang, Z. 209
Wang, Z. J. 41
Wargo, J. 135, 199
Watson, D. R. 52, 83, 109, 196
Wei-Chen, C. 98
Weinhold, K. J. 186
Weinstock, D. M. 202
Weir, C. 178
Weiss, G. 127
Weiss, Samuel 47
Weiss, Sara 83
Wendt, S. J. 22
Werb, Z. 86
Wessels, L. 61
Wherry, E. J. 122, 152, 192, 204
Whitehurst, A. W. 201
Whitsett, T. 127
Whyte, J. 18
Wicha, M. S. 86
Wigbels, J. L. 49
Williams, H. L . 22
Williams, M. E. 67
Williams, R. M. 18
Wilson, D. R. 18
Wilson, J. T. 199
Winkfield, K. M. 18
Winn, R. A. 18, 92
Witte, O. N. 70, 205
Wolchok, J. D. 49, 67, 146, 159, 205
Wolpin, B. M. 105, 109
Wong, K. 164
Woo, Y. 101
Wright, B. 22
Wu, C. J. 201

Y

Yagnik, R. M. 24
Yan, C. 209
Yang, E. 209
Yee, C. 67, 205
Yin, H. H. 202
Yoon, S. S. 101
Youngblood, B. A. 56
Young, H. E. 45, 77, 190
Young, R. M. 122
Young, S. 186
Yu, C. C. 154
Yu, K. 26

Z

Zaidi, N. 117
Zamarin, D. 152
Zavidij, O. 184
Zhang, X. 207
Zheng, H. 209
Zhu, H. 200

THANK YOU

Stand Up To Cancer thanks the generous collaborators, donors and organizations that have helped fund our groundbreaking programs, including:

American Airlines

American Lung Association

Arte & Carole Moreno, Angels Baseball Foundation

Bob Judelson

Bristol Myers Squibb

Bud & Sue Selig

Cancer Research UK

Cless Family Foundation

Count Me In

Cross Over Marketing – Visit Myrtle Beach

David Alden & Dina Al-Sabah

Exact Sciences

Fanconi Anemia Research Fund

Farrah Fawcett Foundation

Fisher Family

Genentech

Janssen Pharmaceutical Companies of Johnson & Johnson

Jazz Pharmaceuticals

Jerry & Martyl Reinsdorf

Jim Toth

Kari Wolff

Laura Ziskin Family Trust

Lewis & Jean Wolff

LUNGevity Foundation

Lustgarten Foundation

Major League Baseball - Founding Donor

Mastercard

Mirati Therapeutics

Pancreatic Cancer North America

Peter & Sheel Seidler

Providence

Sara Schottenstein Foundation

The Marcus Corporation Foundation

Thermo Fisher Scientific

Torrey Coast Foundation

Van Andel Institute

Zentalis

JOIN THE MOVEMENT TO ACCELERATE CANCER RESEARCH

Right now, most clinical information is not regularly shared with the researchers who are trying to uncover new information about cancer every day, **but you can help change that.** Patients can help accelerate research **by sharing their data and unique experiences.**

When patients stand together with researchers, they can unlock new discoveries and treatments. People with all types of cancer may be eligible to **join Stand Up To Cancer, Count Me In and more than 7,500 patients who have already participated in this mission** to accelerate the pace of cancer research.

Find out more and sign up to join the movement at StandUpToCancer.org/CountMeIn

Uzo Aduba
Stand Up To Cancer Ambassador

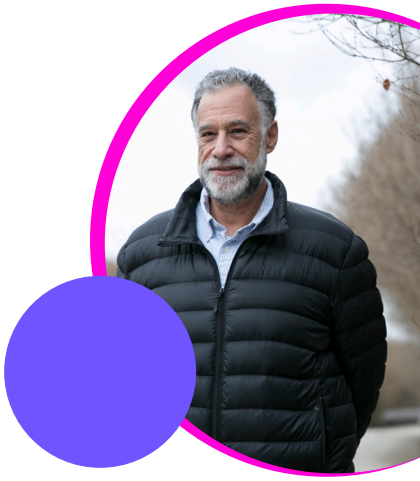


Photo By ***Matt Sayles***

STAND UP TO CANCER

Count Me In

Stand Up To Cancer is a division of the Entertainment Industry Foundation (EIF), a 501(c)(3) charitable organization.