NIH NATIONAL CANCER INSTITUTE

CENTER TO REDUCE CANCER HEALTH DISPARITIES

Partnerships to Advance Cancer Health Equity (PACHE) Program Meeting

Forging Innovative and Sustainable Partnerships to Advance Cancer Health Equity

September 20–21, 2021

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Welcome Letter

Dear Attendees:

On behalf of the National Cancer Institute (NCI) Center to Reduce Cancer Health Disparities (CRCHD), I have the great pleasure of welcoming you to the 2021 Partnerships to Advance Cancer Health Equity (PACHE) Program Meeting. With its focus on Forging Innovative and Sustainable Partnerships to Advance Cancer Health Equity, this year's meeting will provide a forum for PACHE investigators, program managers, administrators, trainees/early-stage investigators, and NCI program staff to discuss Partnership strengths, innovations, and best practices for continued growth and sustainability of the PACHE program.

The 2021 PACHE Program Meeting, hosted on a virtual platform, also will provide you with opportunities to meet, network, and collaborate virtually with other PACHE Partnerships and NCI CRCHD program staff through interactive panel and breakout sessions.

The panel sessions will highlight strategies for enhancing your Partnership's strengths in institutional capacity and commitment, workforce development, and community engagement, as well as program evaluation and fiscal management. In addition, unique to this year, there will be an emphasis on strengthening research competitiveness. Members of your team also can participate in designated breakout sessions that will focus on current issues and concerns, as well as spotlighting best practices and strategies developed to meet program goals and overcome challenges. These interactive sessions will provide you with additional opportunities for virtual networking and sharing of information, resources, and lessons learned.

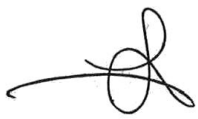
PACHE Program Meeting objectives are as follows:

- Discuss effective strategies for strengthening research competitiveness.
- Share knowledge, resources, and best practices to continue building successful PACHE partnerships.
- Provide an overview and update on common measures for PACHE program evaluation.
- Highlight strategies for advancing the career development of trainees and early-stage investigators.
- Engage in discussion on topics of relevance to PACHE Partnership investigators and administrators.

This year, we also plan to acknowledge and honor former PACHE leaders for their seminal contributions to the development of the NCI Comprehensive Partnerships to Advance Cancer Health Equity (CPACHE) program.

We are pleased that this meeting continues to provide a forum for fostering, supporting, and strengthening the PACHE Partnership Program. Working together, the PACHE program is committed to enhancing our understanding of cancer disparities and its impact on underserved populations, a research area that is more timely now than ever. We look forward to your active participation in this exciting and engaging meeting.

With warm regards,



Sanya A. Springfield, Ph.D.
Director, Center to Reduce Cancer Health Disparities

Agenda

Partnerships to Advance Cancer Health Equity (PACHE) Program Meeting
Monday, September 20, 2021

All times listed in the agenda are Eastern time.

12:00 – 12:10 PM **Welcome and PACHE Program Meeting Objectives**

Dr. LeeAnn Bailey
NCI CRCHD

12:10 – 12:25 PM **PACHE Program Highlights and Updates**

Dr. H. Nelson Aguila
NCI CRCHD

12:25 – 1:15 PM **CPACHE Evaluator Work Group Update**

This session will describe the CPACHE Evaluator Work Group (EWG) and methods used to arrive at common process and outcome measures, and inform the audience of common REC and outreach metrics.

Moderator: Mr. Fred Snyder
NCI CRCHD

Outcome-based Objectives for CPACHE

12:30 – 12:40 PM Dr. Isabel C. Scarinci
Tuskegee University, Morehouse School of Medicine, and University of Alabama at Birmingham Cancer Center

Common Measures to Support a National Evaluation of the Research Education Core (REC) – Process and Products

12:40 – 12:50 PM Dr. Sarah V. Suiter
Tennessee State University, Meharry Medical College, and Vanderbilt-Ingram Cancer Center

Common Measures to Support a National Evaluation of the Outreach Core – Process and Products

12:50 – 1:00 PM Ms. Kelly Laurila
Northern Arizona University and University of Arizona Cancer Center

1:00 – 1:15 PM Discussion

1:15 – 1:20 PM **Break**

1:20 – 3:35 PM **Forging Innovation and Sustainability-Part I**

Moderator: Dr. Anil Wali
NCI CRCHD

Agenda

Strengthening Institutional Commitment and Capacity

This session will discuss effective strategies for strengthening institutional commitment and capacity, including current approaches, challenges/pitfalls, outcomes, and potential future directions/opportunities.

1:25 – 1:40 PM Dr. Olorunseun Ogunwobi
Hunter College and Temple University Fox Chase Cancer Center

1:40 – 1:55 PM Dr. Francesca Gany
City College of New York and Memorial Sloan Kettering Cancer Center

Building Strong Program Steering Committees (PSC) and Internal Advisory Committees (IAC) to Achieve U54 Objectives

This session will discuss effective strategies for building strong PSCs and IACs within PACHE, including current approaches, challenges/pitfalls, outcomes, and potential future directions/opportunities.

1:55 – 2:10 PM Dr. Carlos A. Casiano
PSC Chair, Ponce Health Sciences University-Moffitt Cancer Center Partnership

2:10 – 2:25 PM Dr. Richard Warnecke
IAC Co-chair, The Chicago Cancer Health Equity Collaborative (ChicagoCHEC)

2:25 – 2:45 PM Discussion

Building Research Competitiveness

This session will discuss effective strategies for building research competitiveness within PACHE, including current approaches, challenges/pitfalls, outcomes, and potential future directions/opportunities.

2:45 – 3:00 PM Dr. Neal A. Palafox
University of Guam and University of Hawaii Cancer Center

3:00 – 3:15 PM Dr. Upender Manne
Tuskegee University, Morehouse School of Medicine, and University of Alabama at Birmingham Cancer Center

3:15 – 3:35 PM Discussion

3:35 – 3:40 PM **Break**

3:40 – 3:55 PM **Fiscal Management of U54/P20 Budget**

This session will discuss carryovers, best practices, and pitfalls to avoid in budget management, and outline any new policy or guidelines related to COVID-19.

Moderator: Dr. H. Nelson Aguila
NCI CRCHD

Ms. Jacquelyn Saval
NCI Office of Grants Administration

3:55 – 4:10 PM Discussion

4:10 – 4:20 PM **Evaluation and Adjournment of Day 1**
Dr. LeeAnn Bailey
NCI CRCHD

Agenda

Partnerships to Advance Cancer Health Equity (PACHE) Program Meeting
Tuesday, September 21, 2021

All times listed in the agenda are Eastern time.

12:00 – 12:10 PM **Welcome to Day 2 (Recap of Day 1 and Day 2 Preview)**

Dr. Mary Ann S. Van Duyn
NCI CRCHD

12:10 – 12:30 PM **Acknowledging Previous PACHE Leaders**

Drs. Sanya A. Springfield, H. Nelson Aguila, and Mary Ann S. Van Duyn
NCI CRCHD

12:30 – 2:40 PM **Forging Innovation and Sustainability-Part II**

Moderator: Dr. H. Nelson Aguila
NCI CRCHD

Workforce Development: Training the Next Generation of Independent Cancer Researchers (ESIs and Postdocs)

This session will discuss effective strategies and new/innovative models for advancing the career development of ESIs and postdocs, including potential and current approaches, challenges/pitfalls, outcomes, and future directions/opportunities.

12:35 – 12:50 PM Ms. Karen Burns White
University of Massachusetts, Boston and Dana-Farber/Harvard Cancer Center

12:50 – 1:05 PM Dr. Ana Patricia Ortiz
University of Puerto Rico Cancer Center, Medical Sciences Campus and University of Texas M.D. Anderson Cancer Center

Workforce Development: Training the Next Generation of Independent Cancer Researchers (Trainees)

This session will discuss effective strategies for PACHE research education programming for trainees, including current approaches, challenges/pitfalls, outcomes, and potential future directions/opportunities.

1:05 – 1:20 PM Drs. Wendy Heck Grillo and Temitope Keku
North Carolina Central University and University of North Carolina-Chapel Hill Lineberger Comprehensive Cancer Center

1:20 – 1:35 PM Drs. Victoria L. Seewaldt and Ernest Martinez
University of California, Riverside and City of Hope Comprehensive Cancer Center

1:35 – 1:55 PM Discussion

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Engaging Communities in PACHE Research and Dissemination

This session will discuss effective strategies for PACHE outreach programs to support partnership science, including current approaches, challenges/pitfalls, outcomes, and potential future directions/opportunities.

1:55 – 2:10 PM Dr. Jani Ingram
Northern Arizona University and University of Arizona Cancer Center

2:10 – 2:25 PM Prof. Anna (Aziza) Lucas-Wright and Dr. Annette Maxwell
Charles R. Drew University of Medicine and Science and University of California, Los Angeles Jonsson Comprehensive Cancer Center

2:25– 2:40 PM Discussion

2:40 – 2:45 PM **Break**

2:45 – 3:35 PM **Innovations and Adaptations During COVID-19**

This session will describe how to identify, plan for, and successfully compete for funding opportunities that leverage the strengths and expertise of the Partnership.

Moderator: Dr. LeeAnn Bailey
NCI CRCHD

2:50 – 3:05 PM Drs. Bereket Mochona and Kinfe Redda
Florida Agricultural & Mechanical University, University of Florida, and University of Southern California Norris Comprehensive Cancer Center

3:05 – 3:20 PM Dr. Corinne McDaniels-Davidson
San Diego State University and University of California, San Diego Moores Cancer Center

3:20 – 3:35 PM Discussion

3:35 – 4:20 PM **Breakout Sessions**

Early Stage Investigators and Postdocs Breakout Session

This session will discuss how the partnership is supporting your career development/professional advancement as well challenges, opportunities, and recommendations.

Moderator: Dr. Samson Gebreab
NCI CRCHD

Dr. Dalmin Cho
University of Houston and University of Texas MD Anderson Cancer Center

Dr. Diana Monsivais
University of Houston College of Pharmacy and Dan L. Duncan Comprehensive Cancer Center at Baylor College of Medicine

Dr. Yamilé Molina
Northeastern Illinois University, Northwestern University, and University of Illinois at Chicago

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Outreach Core Community Engagement and Best Practices Breakout Session

This session will discuss experiences and best practices on bi-directional community engagement to reach PACHE goals as well as discuss challenges, opportunities, and recommendations.

Moderator: Ms. Sandra L. San Miguel
NCI CRCHD

Dr. Nicolette Teufel-Shone
Northern Arizona University and University of Arizona Cancer Center

Dr. Brian Rivers
Tuskegee University, Morehouse School of Medicine, University of Alabama at Birmingham O'Neal Comprehensive Cancer Center

Institutions Serving Underserved Health Disparity Populations and Underrepresented Students (ISUPS) Breakout Session

This session will discuss experiences and best practices in developing cancer research capacity in your ISUPS to achieve PACHE goals as well as discuss challenges, opportunities, and recommendations.

Moderator: Dr. Mulualem Tilahun
NCI CRCHD

Dr. Christina Ciecierski
Northeastern Illinois University, Northwestern University Robert H. Lurie Comprehensive Cancer Center, and University of Illinois at Chicago

Dr. Karen Hubbard
City College of New York and Memorial Sloan Kettering Cancer Center

Program Managers Breakout Session

This session will discuss experiences and best practices in managing your Partnership as well as challenges, opportunities, and recommendations.

Moderator: Dr. Anil Wali
NCI CRCHD

Ms. Helena Loest
New Mexico State University, Las Cruces and Fred Hutchinson Cancer Research Center

Ms. Sabrina M. Rodriguez
Ponce Health Sciences University-Moffitt Cancer Center Partnership

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Principal Investigators Breakout Session

This session will discuss experiences and best practices in developing cancer disparities research capacity related to collaborative research partnerships, resource sharing, and underserved community engagement, as well as discuss challenges, opportunities, and recommendations.

Moderator: Dr. H. Nelson Aguila
NCI CRCHD

Dr. Adán Colón-Carmona
University of Massachusetts, Boston and Dana-Farber/Harvard Cancer Center

Dr. Grace Ma
Hunter College and Temple University Fox Chase Cancer Center

Dr. Samuel Adunyah
Tennessee State University, Meharry Medical College, and Vanderbilt-Ingram Cancer Center

4:20 – 4:25 PM **Break**

4:25 – 4:55 PM **Summary of Breakout Sessions**

Moderator: Dr. Maria Jamela R. Revilleza
NCI CRCHD

4:55 – 5:05 PM **Closing Remarks, Evaluation, and Adjournment of Day 2**

Drs. Sanya A. Springfield and Mary Ann S. Van Duyn
NCI CRCHD

PACHE Program Partnership Descriptions

U54

U54 PACHE Partnerships

- CCNY-MSK Partnership for Cancer Research, Training, and Community Outreach
- CDU/UCLA Cancer Center Partnership to Eliminate Cancer Health Disparities
- Florida-California Cancer Research Education and Engagement (CaRE2) Health Equity Center
- Meharry Medical College/Vanderbilt-Ingram Cancer Center/Tennessee State University Cancer Partnership (MVTCP) to Eliminate Cancer Health Disparities
- Morehouse School of Medicine (MSM), Tuskegee University (TU), and the O'Neal Comprehensive Cancer Center at University of Alabama at Birmingham (UAB OCCC) Partnership
- National Cancer Institute U54 PACHE South Carolina Cancer Disparities Research Center (SC CADRE)
- North Carolina Central University (NCCU)-Lineberger Comprehensive Cancer Center (LCCC) Partnership in Cancer Research
- Pacific Island Partnership for Cancer Health Equity (PIPCHE)
- Partnership for Native American Cancer Prevention (NACP)
- Partnership for the Advancement of Cancer Research (PACR)
- Ponce Health Sciences University-Moffitt Cancer Center (PHSU-MCC) Partnership
- SDSU/UCSD Cancer Partnership
- The Chicago Cancer Health Equity Collaborative (ChicagoCHEC)
- TUFCCC/HC Regional Comprehensive Cancer Health Disparity Partnership (2018-2023)
- UMB-DF/HCC Partnership to Advance Cancer Health Equity
- University of Puerto Rico/MD Anderson Cancer Center: Partnership for Excellence in Cancer Research (Partnership)

Partnership Descriptions – U54

CCNY-MSK Partnership for Cancer Research, Training, and Community Outreach

https://ccnymsk-partnership.ccny.cuny.edu/

Partnership Institutions:
City College of New York, Memorial Sloan Kettering Cancer

Research Team:
Drs. Tim A. Ahles & Francesca Gany – MSKCC Principal Investigators
Drs. Karen Hubbard & Bao Vuong – CCNY Principal Investigators
Leo Spychala & Nicole Roberts-Eversley – Program Managers
Drs. Gita Bosch, Jennifer Leng, Erica Lubetkin, Ümit Uyar, Carlos Riobó,
Lisa Diamond, & Hedvig Hricak – Core Leaders

Overview of Partnership:
In June 2002, The City College of New York (CCNY) and Memorial Sloan Kettering Cancer Center (MSK) established a Partnership based on mutual cancer research and training objectives. The Partnership brings together these two historic institutions, with long histories of major contributions to cancer education, research, and clinical care. The CCNY-MSK Partnership has successfully created a mutually beneficial, cross- institutional collaboration that has emphasized research across the translational continuum, the creation of an education pipeline for attracting minority and low-income students to careers in cancer research, and the establishment of community networks and resources for conducting linguistically and culturally-responsive community engaged research among diverse, at-risk populations.

The primary goals of the partnership are to:

- Encourage and support basic and applied cancer research initiated by CCNY investigators.
- Encourage and support research on health disparities and cancer burden in minority populations initiated by MSK investigators.
- Implement joint education and training opportunities to attract minority students at all levels in their careers in cancer research, and to support their career development.
- Use the combined resources of the institutions to develop and evaluate innovative health outreach initiatives to reduce the impact of cancer in medically underserved communities.

Over the last five years, areas of significant strength have been developed, including: 1) rich collaborations between engineers and computer scientists at CCNY and clinicians and imaging experts at MSK to develop innovative solutions to improve cancer care; 2) sustainable, translational health disparities research and activities that directly benefit underserved communities in New York, and serve as national models, in terms of: a) screening / identification of cancer risk factors that disproportionately affect minorities; b) socioeconomic determinants of access to and successful completion of clinical care and cancer clinical trials; and c) policy change on the city and state levels; 3) formed the LCRSR (Linguistic and Cultural Responsiveness Shared Resource Core) which aims to provide linguistically and culturally responsive support to the all U54 cores, and to build the capacity of U54 connected researchers and community members to reduce cancer disparities by conducting community-engaged, culturally, and linguistically inclusive translational research, outreach, education, and navigation; and 4) developed new working groups including Immunotherapy Access Equity and Breast Cancer, Engineering for Cancer Health Disparities, and Discrimination and Health which intersect with many of the U54 cores and serve as vehicles for forming new pilot project teams. These working groups have resulted in innovative research projects and research education and outreach initiatives.

Partnership Descriptions – U54

CDU/UCLA Cancer Center Partnership to Eliminate Cancer Health Disparities

Division of Cancer Research and Training
Center to Eliminate Cancer Health Disparities

UCLA Jonsson Comprehensive Cancer Center

https://www.cdrewu.edu/research/Center/CECHD/

Partnership Institutions:
Charles R. Drew University of Medicine & Science / University of California Los Angeles Jonsson Comprehensive Cancer Center

Research Team:
Dr. Jay Vadgama (CDU PI), Dr. Richard Pietras (UCLA PI), Dr. Yanyuan Wu (CDU MPI), Dr. Madhuri Wadehra (UCLA (MPI), Dr. Hector Balcazar (CDU Outreach Director), Dr. Annette Maxwell (UCLA Outreach Director, Jacob De La Torre (CDU PM), Dr. Diana Marquez-Garban (UCLA PM)

Overview of Partnership:
The CDU and UCLA JCCC has a long-standing, strong, and sustainable partnership to "Eliminate Cancer Health Disparities in Underserved and Under-Resourced Communities" in South Los Angeles. Our Partnership has strategically leveraged the respective strengths of each institution and their geographical locations to form an integrative partnership that is a strong nucleus for cancer health disparities research, research education, and outreach in Los Angeles.

Accomplishments and/or Discoveries:
The CPACHE program has greatly impacted the research infrastructure and surrounding community at CDU. Notably, CDU pioneered the Community Faculty Program in the Division of Cancer Research and Training to engage community leaders better to advance the investigation of cancer health disparities among underserved minorities. In addition, we have made advances to build and sustain networks for research, education, and synergy with multiple new program development.

Precision Medicine Program: The Partnership, in collaboration with NIMHD/CDU U54 AXIS Center, further improved the research infrastructure with a Digital scanner for tissue microarray, cell sorters, confocal microscopy, Luminex 200 multiplex protein detection, and a NextSeq-550 sequencing system. These clinical resources provided the support to initiate the Precision Medicine Program at CDU.

Clinical Trials Education Program: The Clinical Trial Education program provides direct educational benefits to participants and allows us to understand the barriers to participating in clinical trials in our local communities. Our Partnership developed a theory-based readiness assessment to plan health promotion activities that take advantage of church resources and facilitating factors. From 2017 to 2018, an African American pastor and an English-Spanish bilingual Latino health educator conducted surveys with leaders of 142 African-American and Latinx churches in South LA.

Impact/Outcomes of the Partnership:
The We are incredibly proud of the impact made by the Partnership. We have strengthened research projects focusing on Cancer health disparities, developed strong research education program, and created a strong cancer outreach program. Since 2009, the Partnership has supported **5** full projects, **14** pilot projects, **5** pre-pilots, and several seed pilots led by the community. The Partnership between CDU and UCLA has received over **90** awards from various funding institutions. This success utilized the established structure, new collaboration development, newly recruited faculty, and new community partnerships. We have also provided excellent hands-on training to **261** trainees (144 undergraduates, 21 post-baccalaureate, 36 graduate, 10 medical, 21 postdoctoral fellows, and 29 early-stage investigators).

Sustainability:
Dr. Vadgama has received numerous extramural grants and is currently PI of the NIMHD funded U54 AXIS Center that was renewed with a budget of **$20.3** Million for 5 years. This Center is a critical partner to support and build

the foundation for future PACHE research, research education/training, and community opportunities at both institutions. Its pilot project program has funded over 14 cancer-related projects to facilitate innovative approaches in translational research in basic mechanisms, prevention, diagnosis, and treatment of health disparities. Dr. Vadgama also received **$2.06** Million from the American Cancer Society to increase diversity in the biomedical workforce by expanding CDU's career development activities around cancer research.

Shared Resources:
The shared resource, ICTBD (Integrated Clinical, Tissue, and Biomarker Database), comprises of breast and colon tissue/specimens and an informational database. The specimens includes blood samples, bone marrow aspirates, paraffin tissue blocks, and primary tissue, as well as tissue microarray (TMA) generated from different subtypes of breast cancer. The blood samples are collected at the time of diagnosis, prior, between, and after each treatment protocol, clinical follow-up, until 5 years. Overall, the repository has blood samples from over 2000 participants (95% African-American/Latinx) and primary tissue from 345 women with breast cancer or benign tumors. The uniqueness of our shared resource is that it not only contains larger specimens from minorities, included Latinx, but we have also linked to their demographic, lifestyle, clinical information, including clinical follow-up and detailed treatment info.

Areas of Collaboration:
Recent collaborators: CDU AXIS Center, Watts Health, Watts Area Ministers, American Cancer Society, Stand up to Cancer, Celebrate Life Cancer Ministry, Susan G. Komen, The Men's Cancer Network Inc., Esperanza Community Housing, and local church organizations.

Partnership Descriptions – U54

Florida-California Cancer Research Education and Engagement (CaRE2) Health Equity Center

https://care2usc.org

Partnership Institutions:
Florida Agricultural and Mechanical University, University of Florida Health Science Center, and University of Southern California Norris Comprehensive Cancer Center

Research Team:
MPI Team: Dr. Renee Reams and Dr. Kenfe Redda (FAMU), Dr. Diana Wikie, Dr. Chengguo Xing, and Dr. Folakemi Odedina (UF) Dr. John Carpten and Dr. Mariana Stern (USC)

Program Managers: Ms. Floya Fisher (FAMU), Ms. Nissa Askins (UF), Ms. Anne Taguchi (USC)

Bioinformatics Core Leaders: Dr. Gerbre-Egziabher Kiros (FAMU), Dr. Yingwei Yao (UF), Dr. Enrique Velazquez Villareal (USC)

Community Outreach Core Leaders: Dr. Sandra Suther (FAMU), Dr. Fern Webb (UF), Dr. Lourdes Baezconde-Garbanati (USC)

Planning and Evaluation Core Leaders: Dr. Ukamaka Smith (FAMU), Dr. Miriam Ezenwa (UF), Dr. Joyce Richie (USC)

Research Education Core Leaders: Dr. Bereket Mochona and Dr. Kinfe Redda (FAMU), Dr. John Allen (UF), Dr. Ite Offringa (USC)

Tissue Modeling Core Leaders: Dr. Hernan Flores-Rozas (FAMU), Dr. Paul Okunieff (UF), Dr. Bodour Salhia (USC)

Research Project 1 PIs: Dr. Renee Reams (FAMU), Dr. Li-Ming Su (UF), Dr. Hassy Cohen (USC)

Research Project 2 PIs: Dr. Edward Agyare (FAMU), Dr. Jose Trevino (UF), Dr. Bo Han (USC)

Pilot Research Project PIs: Dr. Jamel Ali (FAMU), Dr. Thomas Schmittgen (UF), Dr. Wendy Setiawan (USC)

Overview of Partnership:
The main scientific focus of the Center is translational disparities research among minority populations focusing on cancers with high burden and those that represent emerging cancer disparities. The strengths of each of the three institutions have been leveraged synergistically in this CaRE2 Health Equity Center to uniquely address the urgent need to develop a cadre of racially and ethnically diverse, well-trained URM scientists. The overarching goals of CaRE2 are aimed towards: (1) increasing the capacity for conducting cutting-edge cancer translational research to advance understanding of the biological underpinning of cancer disparities; and (2) designing and delivering culturally appropriate cancer prevention and control interventions to eliminate disparities in these populations. The Florida-California CaRE2 Health Equity Center combines cutting-edge expertise in and resources for translational research, cancer research training and education, innovative community initiatives, and process and outcome evaluation to increase our impact towards reducing cancer disparities among Black and Latino subpopulations.

Accomplishments and/or Discoveries:
Project 1: A supplement was awarded through a dual mechanism NCI-NIA entitled "The role of the Mito-Transcriptome in the Pathogenesis of Alzheimer's Disease and its relation to Prostate Cancer and Androgen Blockade". This study dovetails in a unique fashion with the aims of the main Full Project 1, in assessing the role of ethnic-specific mito-transcriptomes in prostate cancer from Black versus White cases.

Project 2: Created a highly unique set of organoid and PDX models from a diverse set of pancreatic cancer patients. A number of these models have been used in preclinical drug testing of a novel nanoparticle coated gemcitabine analog for development of a more effective therapy for pancreatic cancer. (Inkoom A, Ndemazie N, Affram K, Smith T, Zhu X, Underwood P, Krishnan S, Ofori E, Han B, Trevino J, Agyare E. Enhancing efficacy of gemcitabine in pancreatic patient-derived xenograft mouse models. Int J Pharm X. 2020 Sep 23;2:100056.)
-Obtained a highly diverse cohort of pancreatic archival clinical specimens for genomic profiling. There are over 600 unstained slides that were macrodissected to collect tumor tissue, normal pancreatic tissue, and in many cases pancreatitis tissue for DNA and RNA extraction, DNA sequencing, and future RNA sequencing.
Awarded NCI Supplement (3U54CA233444-03S1), titled "Investigations of Black Ancestry on Pancreatic Cancer Tumor Biology for US-related Cancer Health Disparities". This project is led by Dr. Jose Trevino and primary aim is to explore if there are genomic differences between US Blacks and their ancestral populations in Nigeria relative to PDAC.

Pilot Project: Utilized a highly unique set of fresh normal pancreatic tissue samples from diverse patients, which were used in functional genomic assays. They now have compelling evidence that ADM does occur at higher rates in pancreatic cells derived from African Americans. RNA-sequencing was completed on a set of these normal pancreatic cell populations and has revealed potential novel markers of increased ADM formation.

Impact/Outcomes of the Partnership:
Florida A&M University: Pancreatic PDX mice have been transferred to FAMU's AAALAC Animal Facility and the animals have flourished each year of this grant for the past three years. FAMU Full Project 2 researchers will now use PDX mice tumors to create pancreatic organoids. Full Project 1 researchers demonstrated that intact mitochondrial RNA could be isolated from FFPE Prostate Tumor Tissues and found preliminary indications that mitochondrial peptides that protect against apoptosis are present in prostate cancer cells. The CaRE2 Pilot Project demonstrated that acinar cells can be grown in culture and become ductal cells within 6 days. Images of these cells can be examined at FAMU for further mechanical characterization.

Pilot Project trainee, Corey Perkins, is a PhD student who assisted in the culturing and RNA extraction of over 15 ADM samples and gave two presentations at a national conference and co-authored one manuscript (submitted). Furthermore, Postbac Chukwuemelie E. Okwo examined genetic association between genetic variants in genes involved in ADM and risk of pancreatic cancer in the Multiethnic Cohort Study (MEC) and the Southern Community Cohort Study (SCCS). Pilot Project Supplement postbac trainee Chayil C. Lattimore who worked on the supplement under Dr. Fredenburg was recently accepted into the University of Florida PhD program 2022 class.

Sustainability:
CaRE2 considers sustainability a very important aspect of our trajectory. There are several components related to our sustainability plan for continuing major scholastic, education/training, and outreach aspects of CaRE2. In addition to supplement awards for projects that will provide preliminary data that may lead to new NIH awards, four of our teams submitted three R01 applications and one R25 application to continue our research and training activities. Our Partnership has leveraged funding to support our trainees with diversity supplements on awards from other NIH institutes sources. We submitted a letter of intent to the Department of Defense to advance research in pancreatic cancer. To advance the achievements of our projects, two teams have collaborated with other PACHE centers to establish a foundation for future research on pancreatic cancer. At this stage of our Partnership, the most important changes at our institutions to support sustainability has been the hiring of underrepresented minority faculty into tenure track positions and inclusion of our members in senior leadership positions within our institutions. Additional work is needed in this area especially to retain investigators, continue the training and education programs, and work with
communities.

Training and education are of course a critically important component of CaRE2. An example is our Postbac program, which allows recent graduates to spend a year training in cancer disparities research across the partnership institutions. This component of our program requires funding for program management and for travel and stipends for our students. We are approaching the foundation at the partnership cancer centers to identify potential philanthropic support to help sustain this program. Moreover, our summer undergraduate student trainingship program housed within the minority serving institution of our partnership is one of our flagship programs. We are developing ideas for an R25 grant submission to help sustain this program to ensure that this program can persist given the significant impact that it has on training underrepresented minority students towards promoting careers in cancer disparities research. Also, we are developing an R13 conference/workshop

on bioinformatics and data science in cancer disparities, which we hope would provide a sustainable platform for training in cancer disparities. These activities are directly attributed to partnership achievements during the first three years of our center's existence.

Shared Resources:
The TMC is helping to design and develop novel infrastructure and expertise at the MSI for a residual tissue repository and a program for diverse cancer model systems in alignment with the FAMU School of Pharmacy. The BSMC has engaged with research projects and cores to help with a variety of solutions for computational requirements. Moreover, the BSMC has created an incredible educational platform to educate and train students and trainees at the CaRE2 MSI in novel, innovative, approaches for bioinformatics applications through video conference workshops and training sessions. We believe that this is a highly unique feature of CaRE2 with the potential to proliferate across the national PACHE network.

Areas of Collaboration:
CaRE2 COC is a member of the Florida Community Engagement Alliance (CEAL) Against COVID-19, an NIH funded collaboration of multiple institutions in Florida, including University of Florida, Florida A&M University and University of Miami.

Meharry Medical College/Vanderbilt-Ingram Cancer Center/Tennessee State University Cancer Partnership (MVTCP) to Eliminate Cancer Health Disparities

https://www.mvtcp.org/

Partnership Institutions:
Meharry Medical College (MMC)/ Vanderbilt-Ingram Cancer Center (VICC)/ Tennessee State University (TSU)

Research Team:
PI Team: Samuel Adunyah, PhD; Duane Smoot, MD; Tuya Pal, MD; Ann Richmond, PhD; Margaret Whalen, PhD; Venkataswarup Tiriveedhi, MD, PhD, MBA. Core Leaders: Debra Friedman, MD, MS; Billy Ballard, MD, DDS; Yu Shyr, PhD; Karen Winkfield, MD, PhD; Kim Dahlman, PhD; Sarah Suiter, PhD. Administrative Team: Michelle Martin-Pozo, PhD; Faith Christian-Hardwick, Monica Taylor

Overview of Partnership:
To identify and address health care inequities in cancer in underrepresented minorities through facilitation of research projects, cores and shared resources. The ultimate goal of the MVTCP is to reduce health disparities among cancer patients in minority and underserved communities in the 14-county Nashville Metropolitan Statistical Area. The MVTCP's impact to strengthen research infrastructure at Institutions Serving Underserved Health Disparity Populations and Underrepresented Students has included: revisions to institutional policies for use of animal care facilities; enabling Partnership ISUPS members to become VICC members, to use core facilities at internal institutional rates, and apply for VICC pilot funding opportunities; and access to other resources including journals in the Vanderbilt library and through the Vanderbilt Institute for Clinical and Translational Research.

Accomplishments and/or Discoveries:
MVTCP investigators have contributed to 200 publications between 2016 and January 2021, a 26% increase in publications compared to the prior grant cycle. MVTCP investigators are extensively involved in the training and mentorship of students, with 101 publications involving MVTCP students as collaborators.

Impact/Outcomes of the Partnership:
The MVTCP has been integral in securing continued NIH funding for the Meharry Clinical and Translational Research Center since 2009, under the leadership of Dr. Adunyah (MMC). This effort led to a supplement in 2017 to enrich the National Electronic Medical Records and Genomics (eMERGE) Network population through which 500 African Americans were successfully recruited. Notably, MMC was the only historically black college and university in the country invited to join the National eMERGE network. Additionally, 62 oncology fellows from Vanderbilt University Medical Center (VUMC) have rotated through the oncology clinic at MMC since 2006. At TSU, a highly successful Cancer Biology curriculum was established through the Partnership led by Dr. Whalen and MVTCP Research Education Core leaders, training both high school students for college admission and undergraduates for successful admission into professional school, including graduate school, medical and dental school. Additionally, the Partnership was integral in the formation of the Southern Community Cohort Study, one of the nation's significant investigations of cancer among African American and underserved populations.

Sustainability:
The MVTCP is the longest CPACHE program, with continuous funding since 1999. It has been integral in securing additional follow-on extramural research funding, including Dr. Hargreaves' patient navigation NCI grant and Dr. Adunyah's MeTRC grant (referenced above), along with multiple R21 grants from pilot project PIs. At TSU, Dr. Whalen successfully re- competed for a MARC grant in 2017.

The MVTCP is supported by the broader and overarching Meharry-Vanderbilt Alliance, which is an independent umbrella program initiated in 1998 that develops and supports collaborative opportunities for MMC and VUMC, including cancer initiatives and inter-institutional collaborations on graduate student training and aspects of medical education and training.

Shared Resources:
A unique aspect of the MVTCP across CPACHE sites is the Population Research And Clinical Trials In Cancer Equity (PRACTICE) Shared Resource Core, to which >500 underrepresented minority patients have been successfully enrolled in studies over the last cycle.

Additional research infrastructure supported by the MVTCP includes the biospecimen collection and processing through the Translational Pathology Shared Resource Core, which has grown its histological services (tissue processing sectioning, antibody validation, general and specialty staining, immunohistochemical staining, mRNA, FISH, and genomic FISH staining, and cryostat time, microscope time) for cancer investigators by six-fold and two-fold, respectively, compared to the prior funding cycles.

Areas of Collaboration:
VICC has demonstrated support for disparities research, investing significant pilot funds to support early-career investigators' career development. Institutional funding also offers opportunities to apply for pilot funding from its NCI breast and gastrointestinal cancer Specialized Programs of Research Excellence (SPORE) grants and Cancer Center Support Grant to support MVTCP investigators' continued career development. Dr. Sakwe and Dr. M'Koma at MMC received pilot funding from the VICC BREAST (P50CA098131) and GI (P50CA095103) SPOREs, respectively, clearly demonstrating the integration and mutual benefit represented by the Partnership.

Partnership Descriptions – U54

Morehouse School of Medicine (MSM), Tuskegee University (TU), and the O'Neal Comprehensive Cancer Center at University of Alabama at Birmingham (UAB OCCC) Partnership

https://www.uab.edu/msm-tu-uabcccpartnership/

Partnership Institutions:
MSM and TU are ISUPS, and UAB is a Cancer Center

Research Team:
MSM: Brian Rivers, PhD, MPH - Contact-PI, Co-Leader, Outreach Core; James Lillard, PhD, MBA – MPI; Beverly Taylor, MD, and Shailesh Singh, PhD - Co-Leaders, Research Education Core; Desiree Rivers, PhD – Co-Leader Planning & Evaluation Core; Mohammed Mubasher, PhD – Co-Leader, Biostatistics/Bioinformatics Shared Resource; Jennifer Creighton, BS - Program Manager.

TU: Clayton Yates, PhD – Contact PI; Vivian Carter, PhD - MPI, and Co-Leader, Outreach Core; Honghe Wang, PhD, and Richard Whittington, PhD - Co-Leaders, Research Education Core; Stephen Sodeke, PhD - and Windy Dean-Colomb, MD – Co-leaders, Bioethics Shared Resource; Lecarde Webb, MPH - Co-Leader, Planning & Evaluation Core; Fan Wu, PhD - Co-Leader, Biostatistics/Bioinformatics Shared Resource; Mary Brooks, MEd, Community Health Educator and Co-Leader, Outreach Core; and Chiquita Lee, MBA, MPA - Program Manager.

UAB OCCC: Upender Manne, PhD – Contact-PI; Isabel Scarinci, PhD, MPH - MPI; Co-Leader, Planning & Evaluation and Research Education Cores; Yu-Mei Schoenberger, MPH, PhD – Co-Leader, Outreach Core; Ann Smith, MPH – Co-Leader, Research Education Core; William Grizzle, MD, PhD - Co-Leader, Bioethics Shared Resource; Sejong Bae, PhD, MS and Sooryanarayana Varambally, MS, PhD - Co-Leaders, Biostatistics/Bioinformatics Shared Resource; and Suzanne Byan-Parker, BS - Program Manager.

Overview of Partnership:
This PACHE Partnership is located in the heart of the Southeast, a region with a large, historically underserved African American (AA) population.

History: Collaboration between MSM, TU, and UAB OCCC began in 2001 under a P20 grant (CA091443) between TU and the UAB OCCC and a U56 grant (CA092080) between MSM and the UAB OCCC. The present Partnership was funded as a U54 in 2006 (MSM, **CA118638**; TU, **CA118623**; and UAB OCCC, **CA118948**) and competitively renewed in 2011 and 2016. The Partnership is anticipating renewal in 2021.

Vision: The vision of this productive and nationally recognized Partnership is to make scientific contributions to eliminating cancer health disparities, particularly in underserved regions in the southeastern US. Our ***principal goal*** is to build on our successes and to enhance and sustain the integrated organizational frameworks at MSM, TU, and the UAB OCCC that enable us to conduct biological, preclinical, and behavioral research and evidence-based outreach with a participatory, multi-multifaceted/multidisciplinary strategy to educate and prepare the next generation of cancer researchers to aid in eliminating cancer disparities.

To achieve this, the Partnership will pursue the following ***specific objectives:*** (**1**) Intensify development of the competitive basic, clinical, behavioral, and community-based cancer programs at MSM, TU, and the UAB OCCC; (**2**) Promote integration of basic and community-based cancer programs at all three partnering institutions; (**3**) Accelerate the development of cancer scientists committed to conducting cancer disparities research at all three partnering institutions; (**4**) At TU and MSM, increase enrollment of undergraduate and graduate students who have an interest in careers in cancer biosciences and link them to doctoral programs at MSM, TU, and the UAB OCCC; and (**5**) Build on the current cancer outreach programs to develop hypothesis-driven research programs that increase use of, and provide access to, cancer care for traditionally underserved populations.

Accomplishments and/or Discoveries:
The U54 Partnership has achieved its specific aims established in prior funding cycles. Accomplishments include the

following: **1**) The Outreach Programs have increased enrollment of AAs **(N=500+)** in cancer therapeutic trials at the UAB OCCC, and MSM has increased the numbers of AAs **(N=600+**) screened for colorectal cancer in metro Atlanta. MSM has tested the UAB OCCC's clinical trial model and recruited **73** AA patients into trials at Grady Hospital. At TU, the program has established a cancer risk-reduction community program, *Healthy Lifestyles*, by involving community members **(N=400+)**, increased physical activity, and improved dietary choices among rural residents **(N=350)** of AL. **2**) The Research Education Core (REC) has trained 77 Early Stage Investigators (ESIs), including junior faculty, medical residents, and postdoctoral fellows, in cancer health disparities research; and 231 graduate students and 30 undergraduate racial/ethnic minority students in cancer research. Additionally, at the UAB OCCC, the Partnership Research Summer Training Program has provided laboratory training for 68 undergraduate students. **3**) The REC has developed a cancer-related course, "*Foundations of Cancer Biology*," now incorporated and sustained as part of the TU curriculum. TU also developed a "*Health Disparities, Bioethics, and Policy*" course. The REC has offered this course to all three institutions and others, at its *National Bioethics Conference* at TU in 2014 and 2019. Recently, MSM developed Masters' degree curricula in Biotechnology (2019), Health Informatics (2021), Bioinformatics (2022), with methods to link these scholars to doctoral programs at NCI-designated Cancer Centers, including the UAB OCCC, and to train ESIs. **4)** Partnership investigators have published >**220** peer-reviewed manuscripts specific to the aims of the U54. In addition, there are **795+** publications (408+ on cancer and 387 on other topics) from 60 of 77 scholars in the various ongoing training programs. **5**) A total of **86** related grants have been awarded to U54 investigators (10 R01s, 9 R21s, 4 SC1s, 9 DoDs, and 54 others); an additional 85+ extramural grant awards were obtained by ESI scholars (33 of 76, 43%) as PIs/MPIs (170+ total).

Impact/Outcomes of the Partnership:
This Partnership has markedly benefited all three institutions. Benefits include: **1**) MSM has developed a fully functional cancer research program that includes a director, four section leaders, and 30 research faculty members (increased from 19); **2**) TU has developed a cancer research program that includes 17 faculty members (increased from one) and 4 adjunct faculty members; **3**) The UAB OCCC has increased (>60) cancer disparity researchers (in the past 5 years, the UAB has recruited 16 new researchers in this field). At all three institutions, 46 faculty members who are involved in cancer heath disparity research were hired/retained (9 at MSM, 5 AAs, 1Hispanic/Latino, and 3 Asians; 21 at TU, 7 AAs and 14 Asians; and 16 at UAB OCCC, 8 AAs and 1 Hispanic/Latino) by utilizing various resources, including CPACHE supplemental grants for early-stage investigators from minority backgrounds. **4**) At MSM, $8M was secured in 2001 to support cancer research. This funding increased to $18M in 2006, to $26M in 2011, to $35 million in 2015, and to more than $68 million in 2020. Similarly, cancer research funding increased at TU, from less than $800K in 2001, to nearly $2M in 2006, to $6M in 2011, to $10M in 2015, and to more than $20M in 2020. At the UAB OCCC, the Cancer Control and Population Sciences Program alone had $12M in extramural funding in 2006, $18M in 2011, $25M in 2015, and $63M in 2020.

Sustainability:
To sustain the research projects, we are institutionalizing endeavors (e.g., genomic, bioinformatics, socio-omics, and tissue repositories). This will increase opportunities to submit competitive, cross-institutional, collaborative grant applications. Collaborative grants have been obtained from the AACR and the ACS (MSM and TU), and NIH (TU and UAB).

Shared Resources:
Although the **Bioethics Shared Resource (BESR)** strengthens all programs our partnership, this unique shared resource also aids other PACHE Partnerships by providing educational support to promote and ensure adherence to bioethical principles and to address ethical considerations in conducting cancer health disparity research. For example, the BESR is involved in our innovative educational interventions that are focused on the cancer genomics education program to address the determinants for AA and Latinx participation in clinical trials and cancer genomics research.

Partnership Descriptions – U54

National Cancer Institute U54 PACHE South Carolina Cancer Disparities Research Center (SC CADRE)

https://hollingscancercenter.musc.edu/outreach/statewide-commitments/sc-cadre/

Partnership Institutions:
ISUP: South Carolina State University (SCSU); Cancer Center: Medical University of South Carolina Hollings Cancer Center (MUSC-HCC)

Research Team:
MPIs: Judith D. Salley, PhD (SCSU) and Marvella E. Ford, PhD (MUSC-HCC); Co-Program Managers: Debra McAlister (SCSU) and Erica Martino, MPH, MSW (MUSC-HCC); Administrative Core Co-Leaders: Drs. Salley and Ford; Planning and Evaluation Core Co-Leaders: Cammie Berry (SCSU) and Melanie Jefferson, PhD (MUSC-HCC); Community Outreach Core Co-Leaders: Audrey McCrary-Quarles, PhD (SCSU) and Gayenell Magwood, RN, PhD, FAAN (MUSC-HCC); Research Education Core Co-Leaders: James Stukes, PhD (SCSU) and Victoria J. Findlay, PhD (MUSC-HCC); Biostatistics and Quantitative Methods Shared Resource Co-Leaders: Joseph Tahsoh, PhD (SCSU) and Alexander Alekseyenko, PhD (MUSC-HCC); Biorepository and Clinical Trials Office Shared Resource Co-Leaders: James Stukes, PhD (SCSU) and Steven Carroll, PhD (MUSC-HCC); AGE Analysis Shared Resource Leader: David P. Turner, PhD (MUSC-HCC).

Overview of Partnership:
Overall Goals and Objectives: This highly synergistic five-year U54 South Carolina Cancer Disparities Research Center (SC CADRE) is a collaborative, inter-institutional partnership. The overarching goals of the SC CADRE are to create a sustainable, transdisciplinary team of researchers from SCSU and MUSC-HCC partnered with community organizations to foster bi-directional communication and address cancer disparities in South Carolina. *Target Populations of the Partnership:* The SC CADRE research, education, and community engagement strategies focus on the South Carolina rural, racially/ethnically diverse, and medically underserved populations. *Mutual Benefits that the Partnering Institutions Derive from the Partnership:* SCSU faculty and students benefit from collaborating with MUSC-HCC and engaging in the stellar cancer research led by MUSC-HCC scientists. MUSC-HCC faculty benefit by learning from the tools and techniques employed at SCSU as well as through engagement with undergraduate students and community members. Community members benefit from being engaged in helping to drive the research, its interpretation, and its dissemination in their statewide communities.

Accomplishments and/or Discoveries: The SC CADRE investigators have produced 130 peer-reviewed publications, were awarded 10 new grants, hired four URM early stage investigators (ESIs: three at SCSU and one at MUSC-HCC), established an inaugural Biorepository at SCSU, and initiated a state-accredited SCSU Honors Program in Applied Oncology Sciences with 160 enrolled undergraduate students per year. Two Full Research Projects and four Pilot Research Projects were funded through the SC CADRE, and the research project investigators have mentored 15 SCSU undergraduate Scholars.

Impact/Outcomes of the Partnership:
The Community Outreach Core team has completed a Community Research Needs Assessment survey. Results will be incorporated into future community-focused activities to emphasize NCI cancer prevention, early detection, and treatment initiatives. Two Scholars applied to the NCI iCURE Postbac Program. All of the SCSU SC CADRE faculty are now Affiliate Members of the MUSC-HCC and have access to its pilot research project funding and cancer research training activities. Dr. Turner's TEDx talk on AGEs and disease now has almost 15,000 online hits. The MUSC-HCC reports that 25% of patients in its interventional clinical trials are racial/ethnic minoritized groups.

Sustainability:
The SC CADRE leverages cancer-research training opportunities through the MUSC-HCC Career Enhancement component. Additionally, the MUSC-HCC now provides a 2-year, $10,000/year scholarship to each SC CADRE Scholar.

Shared Resources: The SC CADRE's unique Advanced Glycation Endproducts Shared Resource could provide AGE analyses for other PACHE sites. The SC CADRE's new SCSU Biorepository could also be used by other PACHE investigators.

Areas of Collaboration: The SC CADRE investigators actively participate in the NCI NCORP, the ECOG-ACRIN Cancer Health Disparities Workgroup, the SWOG Recruitment Committee, the NCI NON CHE program, and the NCI SxQoL Committee. In the future, the SC CADRE leaders will establish dynamic interactions with other PACHE sites to optimize outcomes by maximizing the reach of the strategic activities.

Partnership Descriptions – U54

North Carolina Central University (NCCU)-Lineberger Comprehensive Cancer Center (LCCC) Partnership in Cancer Research

https://www.nccu.edu/research-projects/nccu-lccc-partnership-cancer-research
https://unclineberger.org/nccupartners/

Partnership Institutions:
North Carolina Central University (NCCU) and Lineberger Comprehensive Cancer Center (LCCC), University of North Carolina at Chapel Hill (UNC-CH)

Research Team:
PIs: Micheler R. Richardson (NCCU); Xiaoxin L. Chen (NCCU); Wendy Brewster (LCCC) & Shelton Earp (LCCC)
Program Managers*:* Nikia Smith (NCCU) & Jessica Platz (LCCC)

Outreach Core*:* Cherise Harrington (NCCU) & Anisa I Vines (LCCC)

Research Education Core: WendyHeck-Grillo (NCCU), LaHoma Romocki (NCCU), Temitope Keku (LCCC) & Trinette Cooper (LCCC)

Histopathology Core*:* Xiaoxin L. Chen (NCCU) & Sarah Wobker (LCCC)

Overview of Partnership:
The partnership between the Lineberger Comprehensive Cancer Center (LCCC) at the University of North Carolina at Chapel Hill (UNC-CH) and a sister institution serving underserved health disparity populations and underrepresented students (ISUPs), North Carolina Central University (NCCU), was developed in 2001 and continues with the goal of strengthening the cancer research capacity at NCCU as well as informing the disparity research agenda, goals, and training for the LCCC. Each institution has benefited; jointly developing junior faculty and building the infrastructure necessary for a lasting collaborative research and community outreach effort. The Partnership has continuously identified new ways to combine our complementary strengths and resources to address scientific questions of mutual interest and provide training opportunities. *The overarching goal of the Partnership is to meet the challenge of disparities in cancer incidence and mortality in North Carolina and the US through cancer research, education, and community outreach.*

Accomplishments and/or Discoveries:
The Partnership has accomplished much by recruiting faculty to NCCU and expanding its cancer disparity research portfolio. The LCCC has expanded its minority cancer research faculty and made major contributions to breast, head and neck, colon, cervical, and prostate cancer disparities. LCCC has also incorporated the cultural sensitivity and research ideas from the Partnership into its public health interventions in AA churches, barbershops, beauty salons, and communities, and recently into its HPV vaccination social marketing program.

Impact/Outcomes of the Partnership:

The Partnership has much that is outstanding.

1) LCCC has successful research faculty with over $60M in NCI funding yearly and expanding population/public health, clinical and translational research.
2) NCCU has grown research effective faculty by providing faculty salary lines to two research institutes and allowing true release-time from the often crushing burden of faculty teaching and service. Faculty in these institutes have been successful in obtaining NIH, DOD, NSF, and private agency grants.
3) NCCU remains the largest recipient of NIH funding among HBCUs without a medical school. It concluded the 2018-19 academic year with $33.1 million in extramural grants, the highest total in university history.
4) NCCU has Departments of Public Health Education, Psychology, Nursing, and Communication with faculty conducting minority health disparities research.
5) The Partnership has enabled NCCU to support undergraduate and graduate education in cancer research, and in collaboration with the RCMI U54 grant, the P20, and the Komen grant increased capacity in cancer

control and community outreach. Since 2015, the Partnership has mentored 42 undergraduate (29 NCCU and 13 UNC) students, with the next cohort arriving in Fall 2021. Our PARTNERS Training Program continues to mentor young and eager student scientists in Cancer Biology and Cancer Public Health research. The program provides two years of training and professional development activities for promising undergraduates from NCCU. Students spend two successive summers at LCCC performing research with mentors in the two focus areas, and participating in activities designed to make the students more competitive for advanced study in cancer-related research. Training continues during the academic year at NCCU where students work with a U54 partner faculty, take a cross-disciplinary course in cancer biology or public health, and participate in monthly journal clubs led by the PARTNERS Co-PIs. We are proud that 85% of students who have completed the training have gone on to advanced-degree level programs or have embarked on careers in the STEM sciences. Upon successful completion of the program, the students receive a special designation on their university transcript.

Sustainability:
NCCU remains the largest recipient of NIH funding among HBCUs without a medical school. It concluded the 2018-19 academic year with $33.1 million in extramural grants, the highest total in university history. A third of the funding is for cancer research including 2 RO1.
NCCU has an RCMI Center for Health Disparities Research (RCHDR) funded by NIMHD (U54 MD012392). Through its Investigator Development Core (IDC) the RCHDR has developed a successful pilot program that funds junior faculties at several departments including Human Sciences, Allied Professions, Psychology, Biological & Biomedical Sciences, Pharmaceutical Sciences, and Nursing. The partnership is an integral part of RCHDR and has made major contributions to the center. Some of the cancer investigators (Richardson, Chen, Williams) play leadership roles, and some others have research projects in the grant. The center Research Infrastructure Core is an extension of the Partnership Histopathology core. The Investigator Development Core has supported the development of pilot projects included in the Partnership competing renewal. Dr. Earp, a member of the External Advisory Committee of the RCMI, has contributed valuable inputs to the success of RCMI.

Shared Resources:
Academic Drug Discovery. A key collaboration between LCCC and NCCU is the Center for Integrative Chemical Biology and Drug Discovery (CICBDD). The CICBDD was initiated in 2007 with university and State funding to advance academic drug discovery within the UNC system in collaboration with NCCU's Biomanufacturing Research Institute and Technology Enterprise (BRITE)

Areas of Collaboration:
The Partnership has matured with an increasing emphasis on public health projects, an expanded educational effort, basic/translational collaborative projects in cancer disparities, recruitment of minority faculty at LCCC, and increased attention to outreach and intervention. Faculty at both institutions take advantage of LCCC infrastructure for cancer disparity research, including the landmark Carolina Breast Cancer Study (CBCS), Cancer Information & Population Health Resource (CIPHR), an integrated state-wide cancer information and surveillance system with 750,000 NC cancer cases to assess community cancer burden, patient samples/translational research and large epidemiologic/clinical studies in head and neck, and prostate cancer with high minority participation. These multi-million dollar investments show the commitment of LCCC and NCCU to the health of the state's minority populations. Coincident with this U54, a new population-based, biospecimens rich North Carolina study of endometrial cancer, Carolina Endometrial Cancer Study (CECS), is opening equally sampling African American (AA) and White patients which shows a multi-factorial difference in survival with AA patients twice as likely to die from this disease.

Partnership Descriptions – U54

Pacific Island Partnership for Cancer Health Equity (PIPCHE)

https://u54.guamcrc.org/
https://www.uhcancercenter.org/u54

Partnership Institutions:
University of Guam and University of Hawai'i Cancer Center

Research Team:
UOG: RL Guerrero, M Hattori-Uchima, A Borja, L Somera, T McVey, G Badowski, M Hechanova; UHCC: N Palafox, B Hernandez, H Robinett, K Cassel, G Maskarinec, L Wilkens

Overview of Partnership:
The PIPCHE aims to: develop cancer and cancer health disparities research focusing on Pacific Island (PI) populations in Guam (GU), Hawai'i (HI), and the U.S. Affiliated Pacific Islands; collaborate with community organizations to promote cancer health equity and enhance opportunities for research training and workforce development; implement evidence-based and culturally-relevant cancer prevention and control strategies in underrepresented communities; expand scientific collaboration, with an emphasis on Early Stage Investigators (ESI) and students of PI ancestry; and sustain, strengthen, and continuously evaluate PIPCHE's activities.

Accomplishments and/or Discoveries:
Since 2009, PIPCHE has funded 28 research projects addressing cancer research priorities of global and regional relevance, including breast, cervical and liver cancers as well as Areca (betel) nut chewing - a traditional practice associated with oral and esophageal cancers, affecting 600 million users worldwide. PIPCHE's Betel Nut Intervention Trial (BENIT) was the first randomized trial of an intensive behavioral cessation program focused exclusively on betel nut. Results indicate cessation prevalences of 39% for the intervention versus 9% for control at 22-day follow-up. Other U54 research provided novel evidence that environmental exposure to Cyanobacteria may result in localized and systemic levels of cyanotoxins, including potent liver toxins, in GU's population where a high burden of liver cancer has been observed. (Hernandez et al 2017; Hernandez et al 2021; Hernandez et al 2020) PIPCHE's Outreach Core initiated an HPV vaccination uptake project for GU's health care providers, and in HI, PIPCHE contributed to efforts to advance HI's administrative rules change (HAR 11-167), requiring HPV vaccination for seventh grade entry, effective 07/01/2020. In preparation, PIPCHE faculty secured an ACS grant to provide HPV vaccination training for HI's clinicians, building on a 2015 HPV environmental scan supported by an NCI administrative supplement (3P30 CA07189-15S4). (Tom et al 2016) PIPCHE's Member Handbook acquaints U54 faculty, staff and trainees with the Partnership's overall goals and objectives as well as roles and responsibilities; the handbook is available to PACHE grantees for adaptation. PIPCHE's outreach materials are available at: https://u54.guamcrc.org/

Impact/Outcomes of the Partnership:
PIPCHE partnered with UHCC to establish the first clinical trials site in GU under the Minority/Underserved HI National Community Oncology Research Program (NCORP). The Partnership provided essential infrastructure, training and technical assistance to GU's Cancer Registry, now largely supported by tobacco tax revenues. The Partnership played a critical role in the development of the Pacific Regional Central Cancer Registry covering the entire USAPI. Outreach activities have contributed to significant cancer control legislation, notably the prohibition of betel nut sales to minors in Saipan (P.L. 19-66) and the establishment of the GU Cancer Trust Fund (P.L. 30-80) which, through tobacco tax revenues, supports $1M in cancer prevention and treatment services per year. Two indigenous Chamorro ESIs have been supported: Dr. Yvette Paulino was supported by U56 and U54 funds as a master's (UOG) and doctoral student (UH). She subsequently secured a tenure-track faculty position at UOG while joining the U54 as an ESI and co-lead on a pilot study, providing some of the first documentation of betel nut chewing practices in Micronesia. Dr. Paulino has since directed four additional U54 projects, was awarded an U24 in 2016, and promoted to full Professor in 2020. She is currently co-I on a full project. Dr. Tressa Diaz joined PIPCHE in 2014 as a doctoral student (UH); she is currently tenure-track faculty at UOG and co-I of the Outreach Core. She co-leads a new pre-pilot study.

Sustainability: GU's Cancer Trust Fund supported U54 outreach activities to advance HPV vaccination as well as training for clinical staff at GU's new NCORP. ACS funding supported education to advance HPV vaccination in GU and HI. GMaP (Region 5) provided career development support for several ESIs, funds for an ESI-led pilot study, and funding for outreach materials development and dissemination in GU and HI.

Shared Resources: The Biostatistics Shared Resource, Cancer Registry Shared Resource, and Information Technology Shared Resource provide critical support for research, outreach and educational activities.

Areas of Collaboration: PIPCHE is an active member of PACHE's Evaluators' Group and the Geographical Management of Cancer Health Disparities Program (GMaP).

Partnership Descriptions – U54

Partnership for Native American Cancer Prevention (NACP)

https://in.nau.edu/nacp
https://cancercenter.arizona.edu/researchers/collaborative-research/nacp

Partnership Institutions:
Northern Arizona University (NAU) & University of Arizona Cancer Center (UACC)

Research Team:

Jani Ingram, NAU	**Francine Gachupin, UACC**	**Margaret Briehl, UACC**
Contact PI & GUIDeS	Contact PI, Outreach	MPI
Jason Wilder, NAU	**Jeffrey Burgess, UACC**	**Ronald Heimark, UACC**
MPI, Planning & Evaluation	Planning & Evaluation	GUIDeS
Nicolette Teufel-Shone, NAU	**Hendrik deHeer, NAU**	**Jennifer Bea, UACC**
Outreach	Research Education	Research Education
Maria Lluria-Prevatt, UACC	**Maria Elena Jackson, NAU**	**Kelly Laurila, NAU**
Program Manager	Program Manager	Evaluator

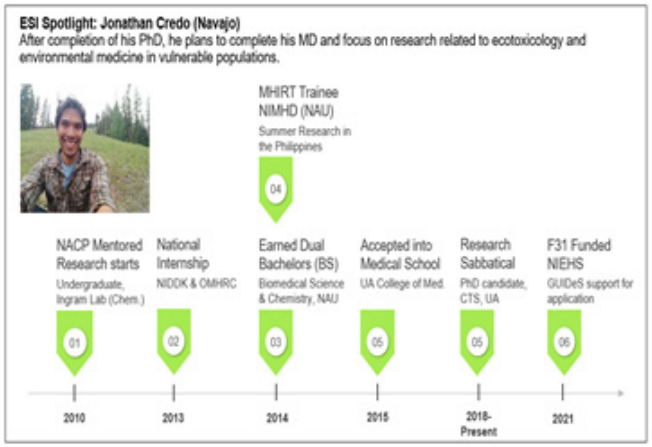
Overview of Partnership:
Overall goals are to increase NAU's cancer research & UACC's cancer health disparities capacities by honoring existing & establishing new Native American community partnerships. Objectives are: 1) Conduct research to address Native American cancer disparities & community cancer concerns; 2) Recruit & support Native American faculty focused on cancer research; 3) Transition early-stage investigators (ESIs)/junior investigators (JIs)to research independence; 4) Deliver cancer disparities research education with a focus on Native American students; 5) Integrate community engagement principles into all NACP activities, facilitating dissemination of the Partnership's research findings & the National Outreach Network's initiatives to Native American communities.

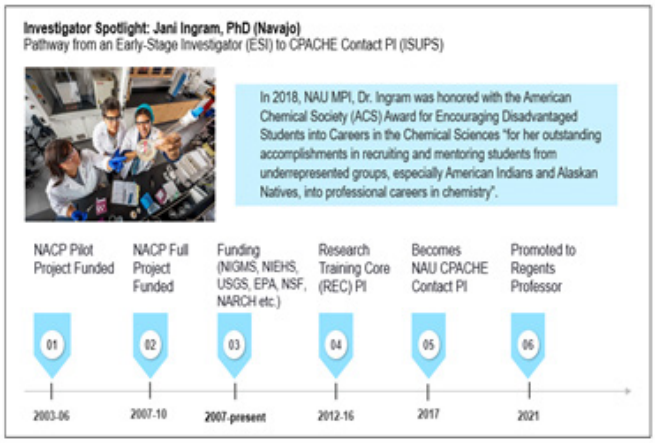
Mutual benefits: NACP partners NAU, an undergraduate-focused institution with a greater number of Native American students with UACC, the only comprehensive cancer center in Arizona.

Accomplishments and/or Discoveries:
In 2020, NAU ESIs were awarded three Geographic Management of Cancer Health Disparities Program (GMaP) Region 3 grants to ESI's & Trainees. Given the focus of our partnership, outcomes are centered on AIAN investigators. AIAN faculty affiliated with NACP have obtained six times more cancer or CHD funding from funding cycle one which started in 2002 to funding cycle 3, which ended in 2018. NACP Research Publications: https://in.nau.edu/nacp/nacp-research-publications-2003-present-2/.

Impact/Outcomes of the Partnership:
The Outreach Core developed a Dissemination Application & Translational Research (DATA) process to help investigators & student apply & translate NACP research results through enhanced health care services & community-based education activities. One outcome of the DATA process is a Well Woman Video produced in collaboration with UACC & Native Americans for Community Action clinic. Outreach team's Indigenous Cancer Prevention (ICP) webinar series showcases cancer control efforts in Indian Country. The series started in fall of 2019 & as of April 2021 has reached >250 participants across 25 states. More than half of participants identify as AIAN or are affiliated with a Tribal Organization.

Cancer research training, education & career development highlights:





Sustainability:
NAU & UACC Institutional funds are provided as a foundation for future cancer-based research, training & community outreach. UACC has established a Center for Outreach & Engagement (COE) which includes Investigator recruitment, training, education & community sustainability. NACP works with COE to compliment & support efforts. The institutional also support current NACP research. Additionally, at UACC, funds were used to support the activities of Guiding U54 Investigator Development to Sustainability (GUIDeS) Shared Resources. NACP affiliated faculty have developed significant research training infrastructure for AIAN trainees. Faculty associated with NACP strengthened AIAN focused research training infrastructure across the pipeline from community college to post-doctoral & ESI oriented opportunities.

Shared Resources:
GUIDeS Shared Resource provides new services & career enhancement opportunities, primarily targeted for ESIs & JIs. It has been strategically designed to interface with the other NACP components to ensure services & expertise across NACP are available to ESIs & JIs

Areas of Collaboration:
Kelly Laurila, Evaluator, has served as a Co-Lead for the National CPACHE Evaluator working group; this group developed Outreach & Research Education Toolkits to inform the use of standardized measures to be utilized across CPACHE sites. Our team met with the Meharry Medical College & Vanderbilt University CPACHE Evaluation team to share best practices for our trainee tracking process, utilization of the National Student Clearinghouse, institutional data, & tracking database structure. The Outreach Core met with the Fred Hutchinson Cancer Research Center & New Mexico State partnership to discuss Outreach efforts & impacts. Dr. Ingram has provided insights on competitive renewal proposals for the University of California San Diego/San Diego State University partnership & the Dana Faber/Harvard Cancer Center/University of Massachusetts Boston partnership. Dr. Ingram also serves on the Program Steering Committee for the Fred Hutchinson Cancer Research Center/New Mexico State University partnership.

Partnership Descriptions – U54

Partnership for the Advancement of Cancer Research (PACR)

https://cancer.nmsu.edu

Partnership Institutions:
New Mexico State University (NMSU), Fred Hutchinson Cancer Research Center (Fred Hutch)

Research Team:
MPIs: Drs. Graciela Unguez (NMSU) and Julian Simon (Fred Hutch) Program **Managers:** Helena (Lene) Loest (NMSU) and Marilyn Drennan (Fred Hutch) **Administrative Core Leads:** Drs. Graciela Unguez (NMSU) and Julian Simon (Fred Hutch)
Planning and Evaluation Core Leads: Drs. Graciela Unguez (NMSU) and Julian Simon (Fred Hutch)
Outreach Core Leads: Drs. Tamara Stimatze (NMSU) and Rachel Ceballos (Fred Hutch)
Research Education About Cancer and Health (REACH) Core Leads: Drs. Graciela Unguez (NMSU) and Julian Simon (Fred Hutch)
Sustain Competitive Cancer Early State Scientists (SuCCESS Core) Leads: Drs. Michele Shuster (NMSU) and Karen Peterson (Fred Hutch)

Overview of Partnership:
The U54 Partnership between NMSU and Fred Hutch is a mature mutually beneficial partnership; the institutions started with a U56 (2002-2007) and are in the third cycle of a U54 (2007 – 2023). Our partnership has accomplished many goals; including developing a strong cancer research infrastructure at NMSU and increasing health disparities research at Fred Hutch. Overall goals include increasing and maintaining excellence in cancer research, cancer education, and outreach and dissemination. The target populations include underserved communities in the border region of New Mexico, northwestern New Mexico and the Yakima Valley of Washington State.

Accomplishments and/or Discoveries:
Development of Small Grants Program, which trains community organizations in WA and NM in grant writing for interventions in underserved populations, promoting sustainability and community-based research.

Impact/Outcomes of the Partnership:
The partnership has funded 33 research projects, produced over 130 publications, supported 113 internships at Fred Hutch and educated more than 22,000 community members on cancer health. Former NMSU graduate intern Dr. Ernesto Moralez returned to NMSU as an Assistant Professor in Public Health Sciences, and now leads U54 graduate student training programs and has a pre-pilot project. Former NMSU graduate intern and community health educator Dr. Janeth Sanchez is now a program director in the Health Systems and Interventions Branch (HSIRB) of the Healthcare Delivery Research Program at NIH.

Sustainability:
Both institutions successfully integrated courses into their curriculum (Cancer Biology at NMSU, Health Disparities at UW/Fred Hutch). The partnership sponsored the launch of the Health Sciences Seminar Series at NMSU, continued by the College of Health, Education and Social Transformation.

Shared Resources:
The program hosts summer technical workshops (i.e., Proteomics and Deep Learning) open to all faculty at both institutions. SuCCESS Core lead Dr. Peterson provides development sessions open to all faculty at NMSU.

Areas of Collaboration:
Our partnership expands student opportunities at NMSU by collaborating with other **NIH-funded** programs for underrepresented students, to host/attend professional development sessions. Our Outreach Core established relationships with other U54 Outreach Cores to share methods for evaluating program impact. Our partnership has a research collaboration with MD Anderson under the UO1 *Building a Diverse Biomedical Workforce Through Communication Across Difference*.

Ponce Health Sciences University-Moffitt Cancer Center (PHSU-MCC) Partnership

Partnership Institutions:
Ponce Health Sciences University (ISUPS); Moffitt Cancer Center (Cancer Center)

Research Team:

Component	MCC	PHSU
MPI team	K. Wright (Contact PI), A. Monteiro (PI)	J. Matta (Contact PI), J. Dutil (PI)
Administrative Core	K. Wright, A. Monteiro, D. Cress	J. Matta, J. Dutil, H. Saavedra
Planning and Evaluation Core	C. Gwede	H. Saavedra
Outreach Core	S. Vadaparampil, S. Christy	J. Jiménez, M. Marzán, B. Ramos (CHE)
Puerto Rico BioBank	D. Cress, M. Rosa	I. Flores
Quantitative Sciences Core	S. Eschrich	J. Dutil
Research Education Core	K. Wright, D. Cress, J. Sanchez, E. Carballido	C. Appleyard, P. Santiago
Program Managers and Administrators	S. Rodríguez, Y. Rivera-Torgerson, J. Garcia, G. Tolentino	H. Delgado, A. Vela, L. Correa, M. Baez

Overview of Partnership:
Funded in 2006 with a U56 planning grant, the PHSU-MCC Partnership combines the best qualities of both institutions with the proven capacity to interact and collaborate despite the geographical separation and cultural differences. Joint programs have been established for enhancing basic and clinical research, enriching cancer community outreach, expanding cancer education, and creating a unique Hispanic/Latino (H/L) Biobank. The Partnership also provides centralized data management, statistical and bioinformatics support for research projects and cores. This has culminated in the development of a robust and vibrant network to support successful and long-term collaborations to improve cancer outcomes in the H/L population both in Florida and Puerto Rico (PR). Educational objectives include promoting, through joint research projects and training, cancer related careers of medical and graduate students, medical residents, post-doctoral and clinical fellows, and junior faculty.

Accomplishments and/or Discoveries:
- Basic science projects revealed a landscape of germline and somatic mutations in breast, lung, and lethal prostate cancer in H/Ls. These projects have also identified differentially expressed genes induced by stress hormones in ovarian cancer and provided a better understanding of the role of ancestry in breast and prostate cancers.
- Population science projects have developed optimal communication methods and identified barriers and facilitators for completion of HPV vaccination. These projects have also demonstrated feasibility and acceptability for delivering telephone-based genetic counseling for Spanish-preferring women and established the impact of genetic testing in adherence to skin cancer prevention recommendations.
- The Outreach Core has been actively involved in psychoeducational interventions for cancer patients and their families who have been affected by hurricanes and earthquakes in PR. The Outreach has also effectively promoting awareness about cancer-related issues affecting sexual minorities.

Impact/Outcomes of the Partnership:
Impact includes recruitment of 17 cancer research faculty at PHSU and >200 community outreach educational activities for H/Ls in FL and PR. The creation of two novel shared resource cores: the Puerto Rico Biobank (PRBB) and the Quantitative Sciences Core (QSC), and the development of the PHSU Clinical Trials Office with 7 new clinical trials activated since 2019. Furthermore, the Partnership had a critical role in the ACGME re-accreditation of the Hematology/Oncology Fellowship at the San Juan VA Hospital in PR, in the establishment of two stem cell transplant

programs in PR by fellows trained in the MCC Bone Marrow Transplant unit, and in the establishment of an ACGME-accredited surgical residency in Ponce with surgical oncology rotations at MCC. Since 2006, 91 medical students, 33 graduate/PhD/PsyD students, 29 clinical fellows, and 3 surgical residents have received training through inter-institutional research rotations. Furthermore, 3 pre-doc/post-doc research fellows and 19 ESIs have received training through the Partnership career development program. Additionally, 211 peer-reviewed manuscripts were published, and 102 grants funded out of a total of 251 submitted with 15 grants currently pending review. Several ESIs from both institutions have secured R-type grants, have achieved academic promotions and/or have transitioned to other positions.

Sustainability:
The Partnership's engagement with each institution has led to integration of our strategic goals. This is reflected in a new requirement at MCC for internal grant submissions to include a section on community needs and diversity, the creation of the MCC Enterprise-wide Equity Strategic Plan, and in the elevation of education and training to an Associate Center Director position. The Partnership also provides dedicated funding to support training and junior faculty development. The newly created PHSU Clinical Trials office is supported by Ponce Research Institute. The PRBB and QSC cores implemented chargebacks for non-PACHE studies to grow and sustain their essential activities.

Shared Resources:
The PRBB Core has been developed to address the paucity of H/L specimens available to the research community. The PRBB has collected 7,629 biospecimens from over 3,780 consented individuals. The QSC provides vital and rapid access to statistical and informatics analyses for all Partnership members. To expand these activities, the Partnership has joined the Oncology Research Information Exchange Network (ORIEN) to provide deep molecular data and analyses of the H/L biospecimen with 144 specimens collected thus far for ORIEN analysis.

Areas of Collaboration:
The Partnership collaborates in the development of evaluation metrics/methods to track outcomes and measure impact through the PACHE Evaluation Task Force, strategies to track scholars (CareerTrac), and ESI career development (CURE, NIH Training Navigation). We also collaborate with an MCC-based P20 "Southeast Partnership for Improving Research & Training in Cancer Health Disparities", with a PHSU-based RCMI program (NIMHD), and with scientists at the Puerto Rico Cancer Center in San Juan, PR.

SDSU/UCSD Cancer Partnership

https://sdsu-ucsdcancerpartnership.ucsd.edu/

Partnership Institutions:
San Diego State University, University of California San Diego

Research Team:
PIs: Hala Madanat, PhD (Lead) and Richard Cripps, DPhil (SDSU); Elena Martinez, PhD (Lead) and James Murphy, MD (UCSD). Investigators: Noe Crespo, PhD, Corinne McDaniels-Davidson, PhD, Jesse Nodora, PhD, Dennis Trinidad, PhD, Ricardo Zayas, PhD. Program Mangers: Jill Dumbauld Nery, MPH, (SDSU), Bilge Pakiz, EdD, (UCSD)

Overview of Partnership: The overall goal is to reduce the burden of cancer among the large and growing Hispanic/Latino communities in our catchment area of San Diego. The objectives are to: develop and support cancer research by funding state-of-the-art research projects; provide research education opportunities in cancer and cancer disparities for promising undergraduate students; and develop active and sustainable collaborations amongst community partners, researchers, and students. Our partnership helps address the existing gaps in research, education, and health care delivery by leveraging the distinct yet complementary strengths and resources of SDSU and UCSD. The mutual benefits of the partnership include a Cancer Center Support Grant (CCSG) and Community Outreach and Education which includes members from both partner institutions; a formal Consortium Agreement between UCSD Moores Cancer Center and SDSU; a strong research education program which allows SDSU students access to MCC laboratories benefiting both students and MCC investigators.

Accomplishments and/or Discoveries Include:

- Partnership affiliates submitted at least 110 grant proposals since 2015, 17 of which are joint/ inter-institutional. More than 55 grants have been funded.
- More than 85 publications acknowledge the SDSU-UCSD Partnership.
- Partnership Outreach Core infrastructure leveraged in successful funding of several proposals addressing local disparities in the COVID-19 pandemic, including receipt of a $5M RADx-UP-funded COVID testing initiative and a recent $3M inter-institutional NIMHD R01 by Outreach Core Lead Dr. Noe Crespo and a community partner.
- Partnership recruit Dr. Kristen Wells and Partnership IAC Co-Chair Dr. Guadalupe Ayala awarded $19.9M NIMHD center grant (SDSU's largest ever) in 2018 to fund SDSU's HealthLINK Center for Transdisciplinary Health Disparities Research.
- Helped implement a UCSD Colon Health Program in late 2019 to provide free diagnostic colonoscopies to uninsured CHC patients. The American College of Gastroenterology's 2020 SCOPY Awards recognized this program for Best Public Health Intervention for a Medically Underserved Patient Population.

Impact/Outcomes of the Partnership Include:

- Support for 13 Early-Stage Investigators (6 of which are URM), and 91 URM undergraduate and graduate students in cancer research
- ESI Dr. Humberto Parada, a 2017 Partnership recruit mentored by Dr. Elena Martinez, has published more than 28 times since 2018 and received a NCI K01
- Outreach Core's CancerDAT platform allows for sharing of data and resources with community stakeholders. In 2020-21, the site has received more than 13,000 hits

Sustainability: We demonstrated the use of the outstanding infrastructure and established community partners through recent peer-reviewed funding; additional grant applications have and will continue to be submitted. While sources of sustainability for future research projects are available through a variety of sponsors, including NIH, those for research education and community outreach are not as readily available. For the **Research Education Core**, we will submit applications for independent support, e.g., PAR-17-059 (NCI Youth Enjoy Science Program) and PAR-18-478 (Cancer Research Education Grants Program – Research Experiences), or any future iterations. The sustainability plan for the **Outreach Core** includes partnering with other institutional programs including: 1) MCC's Community Outreach and Engagement; 2) SDSU's Institute for Public Health; 3) Institution's

Clinical and Translational Research Institute's Community Engagement Core. PACHE investigators have leadership roles in all three.

Shared Resources: There are currently no Shared Resources for dissemination.

Areas of Collaboration: Dr. Madanat represents the partnership within the GMaP regional steering committee, and co-led the creation of the CPACHE Evaluation Workgroup. Dr. Martinez co-leads the Career Enhancement Program in the UC Pancreatic Cancer Consortium SPORE application, which includes all five NCI-designated Cancer Centers in California. We seek collaborations with other partnerships working with Hispanic communities.

The Chicago Cancer Health Equity Collaborative (ChicagoCHEC)

https://chicagochec.org

Partnership Institutions:
ISUPS 1: Northeastern Illinois University (NEIU), ***ISUPS 2:*** University of Illinois at Chicago (UIC), ***Cancer Center:*** The Robert H. Lurie Comprehensive Cancer Center of Northwestern University (NU-LCC)

Research Team:
MPIs: Melissa Simon, MD, MPH (NU), Joseph Feinglass, PhD (NU), Marian Fitzgibbon, PhD (UIC), John Stewart, MD (UIC), Christina Ciecierski, PhD (NEIU), Lidia Filus, PhD (NEIU)

Core Co-Leaders: **Outreach Core (OC):** Aida Giachello, PhD (NU), June McKoy, MD, JD, MPH, MBA (NU), Karriem Watson DHSc, MS, MPH (UIC), Lisa Tussing-Humphreys PhD, MS, RD (UIC), Jeanine Ntihirageza, PhD (NEIU), Tracy Luedke, PhD (NEIU) **Research Education Core (REC):** Betina Yanez, PhD (NU), Jonathan Moreira, MD (NU), Paul Grippo, PhD (UIC), Gregory Calip, PhD (UIC), Nabil Kahouadji PhD (NEIU), Jing Su, PhD (NEIU) **Planning and Evaluation Core (PEC):** Adam Murphy, MD, MPH (NU), Brian Hitsman, PhD (NU), Kristi Holmes, PhD (NU) Yamile Molina, PhD (UIC), Timothy Johnson, PhD (UIC), Joseph Hibdon, PhD (NEIU), Beverly Gonzalez, PhD (NEIU)

Program Managers: Magdalena Nava, MPH (NU), Beverly Chukwudzie MBA, MPH (UIC), Joeli Brinkman, PhD (NEIU)

Overview of Partnership:
ChicagoCHEC is a comprehensive partnership to advance cancer health equity bringing together the synergistic strengths of the University of Illinois at Chicago (UIC), Northeastern Illinois University (NEIU), and the Robert H. Lurie Comprehensive Cancer Center of Northwestern University (NU-LCC). Launched in 2015, ChicagoCHEC, with its diverse team of faculty, students, and partners, and connectivity to Chicago's underserved communities, is dedicated to advancing cancer health equity through rigorous and innovative science, education, and engagement of Chicago's underserved communities. This is reflected in the following goals: Aim 1. To strengthen a transformational alliance between UIC, NEIU, and the NU-LCC in pursuit of cancer health equity in Chicago; Aim 2. To initiate, conduct, and support innovative bench, translational, clinical, and prevention and control focused cancer research, with emphasis on cancer health disparities; Aim 3. To develop and implement cancer-related education and outreach activities generated with the engagement of underserved communities across Chicago; Aim 4. To coordinate research education and mentoring opportunities to recruit, retain, and advance a pipeline of underrepresented students in cancer research careers and to develop early career faculty who will forge independent cancer research careers; and Aim 5. To conduct ongoing rigorous evaluation of ChicagoCHEC activities.

Accomplishments and/or Discoveries:
Since the launch of ChicagoCHEC in 2015, there has been rapid growth in collaborative infrastructure built across the three partnering institutions; enhanced cancer research engagement, capacity, and education; extensive community outreach and engagement; and encouraging advancement of ChicagoCHEC faculty and students. ChicagoCHEC projects and programs provided research experiences to 155 students, provided cancer research and leadership opportunities for 57 faculty (21 have been promoted/received tenure), and directly resulted in 109 peer-reviewed publications, 53 extramural grants submitted, and 32 grants awarded and 4 NCI supplements. Among ChicagoCHEC's publications are 12 peer-reviewed publications in a special issue of *Progress in Community Health Partnerships* and 7 cancer relevant policy briefs published in *Translational Behavioral Medicine*. The alignment of the IRBs across the three institutions with an IRB Authorization Agreement (IAA) in 2016 reduced projects' IRB approval times overall and a partnership wide operations manual was published in 2018.

Impact/Outcomes of the Partnership:
Since 2015, ChicagoCHEC has planned and participated in 120 community events in Chicago, reaching 18,800+ individuals. The Annual Community Forum is the partnership's largest dissemination and outreach event to present to communities of interest. Our community partners have co-authored 18 peer-reviewed publications with ChicagoCHEC

investigators. The virtual community and professional development events are recorded on the ChicagoCHEC YouTube and Facebook pages. ChicagoCHEC Twitter, LinkedIn, and Instagram webpages are other social media avenues to provide outreach and to disseminate cancer research to communities of interest.

ChicagoCHEC has successfully graduated six cohorts from our Summer Fellows Program. The program has trained over 100 students from diverse backgrounds in the STEM pipeline. Six fellows have further engaged in the semester-long LEaP one-on-one mentoring experience.

Accomplishments based on ChicagoCHEC's efforts to mentor early career faculty (ECF) are: (1) promotion (tenure) of underrepresented faculty and faculty conducting cancer disparities research, including 11 at NEIU, 3 at NU-LCC, 3 at UIC, and an endowed chair/professorship; and (2) career development awards granted to ChicagoCHEC ESIs, including a K01, K12, and an NCI CURE Diversity Research Supplement. One example of a successful ECF trajectory is an ECF from NEIU. This ECF started with CHEC as a Co-lead for the Research Education Core from 2016-2018. Next he joined the MiGuia Full project team which was funded under the Catalyst Grant Project from 2015-2020. He conducted his own research with a Diversity Supplement from 2018-2020. He then became an R01 Co-Investigator with Melissa Simon in March 2020 and submitted an R21 as the primary investigator. Another example is a ECF from NU who was Pilot Project PI and then promoted to Full Project PI and Research Education Core Co-Lead.

Sustainability:
Over the past 4 years, ChicagoCHEC has secured resources amounting to $690,000 from the NU-LCC in the form of a new Center for Health Equity Transformation (directed by Dr. Simon), deeply discounted rates for access to NU-LCC's 16 Shared Resource Cores/Facilities, salary support for grants administrators, manuscript publication fees, national meeting travel, Research Education Core programming, and arrangements for the Outreach Core's Annual Community Forum, Community Steering Committee, and outreach events. ChicagoCHEC has also received a total of $416,000 from UIC institutional funds to support community events, student programming, and faculty salary and development.

Additional commitments to our partnership include 1) Faculty course releases, administrative office space, parking, and establishment of the NEIU Center of Health. 2) A new award (U54MD01253, Winn) to establish the Center for Health Equity Research at UIC. 3) Successful competition and new NIMHD T37 award to support minority health disparities research training at NU (T37MD014248, Simon) and successful renewal of T32 cancer education and career development program at UIC (T32CA057699, Fitzgibbon) to bolster a minority-focused cancer research education pipeline.

Shared Resources:
The ChicagoCHEC partnership helps NU researchers work with UIC and NEIU scholars in various departments. Likewise, UIC and NEIU faculty benefit from NU's expertise in clinical oncology and research across the cancer care continuum. NU has also provided access to patients, tissues, animal facilities, clinical information, institutes, and data sets not readily accessible at UIC and NEIU and state-of-the-art core facilities, technologies, and equipment. At UIC, community engagement efforts have further improved trial accrual in the CHEC projects. The achievements at NEIU include developing the Master of Public Health Program; the creation of a concentration in Cancer Health Disparities; launching courses in cancer health policy, health disparities, and mathematical modeling in cancer risk assessment and launching the NEIU Center of Health with its mission to utilize a holistic approach to elevate awareness and build the health capacity of the NEIU Community.

Areas of Collaboration:
ChicagoCHEC is actively participating in building a standardized evaluation plan with other CPACHE partnerships. In addition, the ChicagoCHEC Outreach core participated in 76 events that were conducted by Community Health Educators (CHEs) in alignment with the National Outreach Network (NON) over the past 5 years.

TUFCCC/HC Regional Comprehensive Cancer Health Disparity Partnership (2018-2023)

SPEECH
Synergistic Partnership for Enhancing Equity in Cancer Health

http://www.speechregionalpartnership.org/

Partnership Institutions:
ISUPS: Hunter College; **Cancer Center**: Temple University/Fox Chase Cancer Center

Research Team:
Contact PI: Grace Ma, PhD (TUFCCC), Olorunseun Ogunwobi, MD, PhD (HC); ***MPIs:*** Jean-Pierre Issa, MD (TUFCCC), Joel Erblich, PhD, MPH (HC); ***Admin Core Co-leaders*:** Grace X. Ma, PhD (TUFCCC), Olorunseun Ogunwobi, MD, PhD (HC), ***Program Managers:*** Yin Tan, MD, MPH and Aisha Bhimla, PhD (TUFCCC); Janerie Rodriguez (HC); ***PEC Co-leaders*:** Marsha Zibalese-Crawford, PhD, MSW (TUFCCC); Sarah-Jane Dodd, PhD (HC); ***COC* Co-Leaders:** Yin Tan, MD, MPH (TUFCCC), Ming-chin Yeh, PhD (HC), Marilyn Fraser, MD (CBO Leader); ***REC Co-Leaders*:** Carolyn Fang, PhD (TUFCCC), Olorunseun Ogunwobi, MD, PhD (HC); ***Shared Resource Core Co-Leaders:*** Eric Ross, PhD (TUFCCC), Konstantinos Krampis, PhD (HC); **Full Project 1 Co-Leaders:** Grace Ma, PhD (TUFCCC), Sarit Golub, PhD (HC), Chibuzo Enemchukwu, MD (URM ESI); **Full Project 2 Co-Leaders:** Camille Ragin, PhD (TUFCCC), Joel Erblich, PhD (HC); **Pilot Project Co-Leaders**: Carmen Sapienza, PhD and Jean-Pierre Issa, MD (TUFCCC), Frida Kleiman, PhD (HC)

Overview of Partnership:
The U54 TUFCCC/HC Regional Comprehensive Cancer Health Disparities Partnership spans the east coast of PA, NJ and New York City (PNN), uses multidisciplinary approaches (basic/translational, clinical and population sciences) to reducing cancer health disparities that adversely affect Black/African, Asian Pacific and Latinx American communities throughout the PNN region. More than 80 multidisciplinary investigators are involved across both institutions collaboratively working on 5 Cores and 3 Research Projects. 37 trainee investigator awardees have also been working with mentors on TUFCCC/HC internally-supported pre-pilot and pilot studies. The overall goals of the TUFCCC/HC partnership are to: **1)** Develop a sustainable collaborative cancer health disparity research infrastructure between the partnering institutions, **2)** Provide cancer research education and career development opportunities to support a pipeline of diverse undergraduate, graduate students and early-stage investigators, and **3)** Collaboratively engage the community in enhancing cancer research, education and outreach/engagement in underserved racial/ethnic minority populations.

Accomplishments and/or Discoveries:
A total of *additional $36,400,985* in research grant funds were received by U54 investigators. A total of 40 publications in scientific journals with12 were led by trainees. 135 trainees were trained and mentored through our U54 programs. Trainees were supported by up to $440,000 pre- pilot and pilot research grant awards to 37 trainees on cancer disparity research. We organized more than 20 training events with community partners, trained 18 community health educators based in community partner organizations, and co-organized and co-delivered 38 cancer education and prevention workshops to underserved African, Asian-Pacific and Hispanic-American community members.

Impact/Outcomes of the Partnership:
Trainee Highlights/Success Stories: Christina Zambrano, BA, led a peer-reviewed publication as first author, received GMaP Travel Scholarship Award to 2019 AACR Annual Meeting, and was accepted to medical school in 2020. Cicely Johnson, PhD, received support through Diversity Supplement Award grant to our U54 grant.

Research Projects:
- Full project 1 suggested that a higher knowledge on hepatitis B (HBV), a higher treatment motivation score, and a lower depression score were associated with a higher likelihood of medication adherence to treatment among high-risk underserved Asian Pacific American HBV patients.
- Preliminary analyses of Full project 2 indicated that African American smokers are majority poor metabolizers of tobacco smoking.

- Pilot project found that DNA methylation profiles of normal colon mucosa of cancer patients differs substantially from those of patients without cancer, the epigenome of normal colon mucosa of the population of African American cancer patients is more dramatically disrupted than that of Caucasian cancer patients and that the overall more severe epigenome disruption in African American patients is due to a higher frequency of patients who display an “outlier methylation phenotype”.

Sustainability:
We have received additional $36,400,985 funds beyond NCI supported U54 parent grant from various founding agencies. The Partnership institutions also provided $250,000 matching funds to support start funds or pre-pilot and pilot funds to junior researchers. The community outreach core has been using CBPR and train-the-trainer approaches to engaging community leaders and institutionalizing cancer programs into CBO partners’ programs.

Shared Resources:
We developed software platforms that provide an easily accessible genomic data analysis solution, along with the required bioinformatics training material for both biomedical researchers and clinical investigators. We have distributed pre-configured, ready to use software systems that fully abstracts the complexity of bioinformatics operations, and enables analysis of genomic data generated in-house or outsourced to NGS sequencing providers, without any prior expertise in the field. These resources are (1) miCloud, BioDocklets , and (2) Visual Omics Explorer, Microbiome Explorer.

Areas of Collaboration:
The TUFCCC/HC Partnership MPI: Dr. Jean-Pierre Issa is the contact PI of NCI funded P50 Epigenetics and Cancer SPORE Grant. The U54 Contact PIs, Drs. Grace Ma and Olorunseun Ogunwobi both serve on the Internal Advisory Board for this program and will help guide the career development and advancement component of this program.

UMB-DF/HCC Partnership to Advance Cancer Health Equity

https://umb-dfhcc.org

Partnership Institutions:
University of Massachusetts Boston and Dana-Farber/ Harvard Cancer Center

Research Team:
Adán Colón-Carmona, PhD, Jill Macoska, PhD (UMass Boston) and K. "Vish" Viswanath, PhD and Gregory Abel, MD, MPH (DF/HCC)

Overview of Partnership:
Our Partnership focuses on activities and research that will bridge the divides in cancer disparities science, research education, and outreach through innovative research, training, and practice, serving as models for translation at the state and national level.

Accomplishments and/or Discoveries:
The Outreach Core pivoted quickly to develop a dashboard on COVID-19 at the request of community partners to translate COVID-19 scientific information for use by English, Spanish, and Portuguese-speaking community partners and community members. It can be accessed here

1) Receipt of a P50 Cancer Moonshot Grant by Dr. Karen Emmons, former Partnership PI and Harvard Chan School Professor of Social and Behavioral Sciences, to establish the Implementation Science Center for Cancer Control and Equity
2) Project investigator, Changmeng Cai's recent paper published in Nature Genetics titled "*Chromatin binding of FOXA1 is promoted by LSD1-mediated demethylation in prostate cancer* " (PMC7541538)
3) Receipt of $8.5M in federal funding for cancer research at UMass Boston, representing approximately 30% of all NIH funding to UMass Boston during the 2015–2020 period

Impact/Outcomes of the Partnership:
The outcomes of 38 joint cross-institutional projects and funded 74 different investigators are summarized in Table A:

Table A: Accomplishments *(2016 – 2021)*	
Early-stage Investigators (ESI)	32 funded (14 UMass Boston, 18 DF/HCC), 53% of whom are faculty of color; 14% of whom are from underrepresented groups
Career Advancement	25 investigators received faculty appointments, tenure, or promotion (12 UMass Boston, 13 DF/HCC), 54% of whom are faculty of color; 18% of whom are from underrepresented groups
Training	155 trainees from the undergraduate to postdoctoral level, 65% of whom are from underrepresented/underserved groups in STEM
Cancer Outreach*	18 NCI NON Screen-to-Save sessions delivered, reaching 218 participants
Grants	44 grants funded (19 direct, 25 indirect) totaling $26,733,776
Publications	114 manuscripts (43 direct, 71 indirect)
Patents	5 patents (direct)

Sustainability:

- Establishment and management of the Center for Translational Health Communication Science (CTraHCS) at DF/HCC and the Center for Personalized Cancer Therapy (CPCT) at UMB, and Collaboration with the DF/HCC's Center for Cancer Equity and Engagement (CCEE).
- Participation in, or collaboration with, > 60 community-based events or health-focused activities
- Receipt of an NSF ADVANCE Catalyst grant (Adán Colón-Carmona, MPI) to conduct an institutional self-assessment of inequities among STEM faculty at UMB, and of two NCI-funded training grants, SPARC and YES for CURE, for student training.

Shared Resources:

The Genomics Core offers single cell, ATAC, RNA, and exome sequencing services to PACHE Partnership investigators.

Areas of Collaboration:

The UMB-DF/HCC Partnership invites collaboration with other PACHE Partnerships and encourages their participation in open scientific events. These include 2 recent symposia, one featuring a state-of-the-art science by NOVARTIS leader Dr. James "Jay" Bradner, and another featuring Dr. Eliseo Perez-Stable, Director of the National Institute on Minority Health and Health Disparities, who addressed "Challenges in Innovations in Diversifying the Workforce"

Recordings of the symposia can be found on the Partnership website.

University of Puerto Rico/MD Anderson Cancer Center: Partnership for Excellence in Cancer Research (Partnership)

University of Puerto Rico/M. D. Anderson Cancer Center
Partnership for Excellence in Cancer Research

https://uprmdacc.upr.edu

Partnership Institutions:
University of Puerto Rico – Medical Sciences Campus (ISUPS) and The University of Texas MD Anderson Cancer Center (CC)

Research Team:
MPIs: Brad Weiner, PhD, Elizabeth Travis, PhD, Ana Ortiz, PhD,
Sharon Giordano, MD, MPH, Reynold Lopez, MD, Cullen Taniguchi, MD, PhD; **Program Managers:** Evelyn Rivera and Sherri De Jesus, MHA, MA; **Core Leaders:** *Administrative Core* - Brad Weiner, PhD, Elizabeth Travis, PhD; *Planning and Evaluation Core* - Brad Weiner, PhD, Cullen Taniguchi, MD, PhD; *Research Education Core* - Reynold Lopez, MD, Elizabeth Travis, PhD; *DATAOmics* - Luis Pericchi, PhD, Xuelin Huang, PhD; and *Outreach Core* - Vivian Colon, PhD, Maria Fernandez, PhD

Overview of Partnership:
To address some of the most profound cancer health disparities in Puerto Rico and Texas, the Partnership has established an **I**nfection-Driven **M**alignancies **P**rogram for **A**dvancing **C**areers and **T**ranslational Sciences (**IMPACT**). The Specific Aims are to: 1) develop a multidisciplinary research portfolio focused on health disparities derived from infection-driven malignancies; 2) increase the number of Hispanic students to produce a critical mass of clinicians, scientists, and physician-scientists, who specialize in cancer research; 3) strengthen sustainable collaborations to develop and promote key community outreach, education, and interventions emphasizing vaccinations against malignancy linked infections, among Hispanic/Latino populations in PR and TX; 4) leverage strategic collaborations with NCI-designated cancer centers to augment the cancer research capacity of the UPR and the UPR Comprehensive Cancer Center (UPRCCC); and 5) provide professional support and development tools through designated cores designed to nurture and optimize the Partnership. Together, the institutions will use research expertise at MDACC to help build UPR capacity, leading the UPRCCC to NCI designation; and 3) help MDACC address cancers that are disproportionately higher in PR and TX Hispanics and use PR expertise in outreach to help increase connection with TX Hispanics.

Accomplishments and/or Discoveries:
Select accomplishments (2016-2021):
- R01 CA232743-01A1**:** Implementation of School Entry Policies for HPV Vaccination (Dr. Vivian Colón). First R01 from the Partnership and for the UPRCCC.
- R25 CA240120: Cancer Prevention and Control Research Training Program. (Ana Ortiz and Guillermo Tortolero). Twenty-five students selected to perform cancer research (population and basic sciences) during the summer.
- R21CA2646 Cross sectional association of the oral microbiota and the inflammasome with oral HPV among HIV+ adults (Josue Perez). 1st grant for ESI.
- One student awarded a GMAP award for "Proteomics analysis in Penile Cancer" and a diversity supplement to the U54. Three additional supplements awards.
- 8 MD/PhD (10 total) graduated; 62 MD/PhD publications
- Huang T, Cheng X, Chahoud J, Sarhan A, Tamboli P, Rao P, Guo M, Manyam G, Zhang L, Xiang Y, Han L, Shang X, Deng P, Luo Y, Lu X, Feng S, **Ferrer MM**, Alan Wang Y, DePinho RA, **Pettaway CA, Lu X**. Effective combinatorial immunotherapy for penile squamous cell carcinoma. *Nat Commun*. 2020 May 1;11(1):2124. doi: 10.1038/s41467-020-15980-9. PMID: 32358507; PMCID: PMC7195486.

Impact/Outcomes of the Partnership:
The following alumni were awarded diversity supplements for their participation in the Partnership.
- Maria del Mar Gonzalez, PhD – Entered as a Postdoc; awarded K22; currently an Assistant Researcher at the UPRCCC.

- Alejandro Villar, MD, PhD – Entered as a Summer Research Experience undergrad; participated in the Semester Research Program; completed BS degree and MD/PhD degree; currently a PGY3 (internal medicine) in the Translational Investigator Program at Stanford University.

Sustainability:
The Partnership has a close collaboration with the UPRCCC to build research capacity and support researchers in seeking external funding (e.g., DOD, NSF, NIH, Puerto Rico Sciences and Technology Research Trust).

Shared Resources:
The Research Education Core is currently developing educational modules for cancer-related infectious diseases for sharing.

Areas of Collaboration:
Planning and Evaluation Core personnel participate in an NCI special interest group for training evaluation and have been involved in developing standardized evaluations for all PACHE Partnerships. The first COBRE, focusing on cancer prevention and health disparities, will be submitted by January 27, 2022.

PACHE Program Partnership Descriptions

P20

P20 PACHE Partnerships

- Cherokee Nation/OSU and SCC Collaborative Partnership for Cancer Research
- Drug Development and Capacity Building: A UCR/CoH-CCC Partnership
- Howard University–Georgetown University Collaborative Partnership in Cancer Research (HU-GU PCR)
- Langston University-UNTHSC Partnership for Cancer Research and Education
- The Southeast Partnership for Improving Research and Training in Cancer Health Disparities–SPIRIT–CHD
- UHAND (University of Houston/MD Anderson) Program to Reduce Cancer Disparities

Cherokee Nation/OSU and SCC Collaborative Partnership for Cancer Research

Partnership Institutions:
ISUPS: Cherokee Nation
Cancer Center: Stephenson Cancer Center (University of Oklahoma Health)

Research Team:
Cherokee Nation PI: Sohail Khan
Stephenson Cancer Center PI: Mark Doescher
OSU Lead: Kenneth Sewell
Research Project 1 Lead: Ashley Comiford
Research Project 2 Co-Leads: Amanda Janitz, Sydney Martinez
C-REP Leads: Sara Vesely, Sohail Khan, Elizabeth Payne, Janel Johnson

Overview of Partnership:
State the overall goals, objectives, and target population(s) of the Partnership. Describe the mutual benefits that the partnering institutions derive from the Partnership, including ways both institutions support each other in developing stronger cancer programs.

Cancer disparities continue to affect the tribal nations within Oklahoma disproportionately. The overall mission of the proposed Cherokee Nation/Oklahoma State University (OSU) and Stephenson Cancer Center (SCC) Collaborative for Cancer Research is to develop durable research capacity within the context of an American Indian (AI) tribal nation to address cancer disparities. To achieve this goal, the four Specific Aims of the Collaborative are:

1) **to strengthen administrative infrastructure**, including a joint Internal Advisory Committee that ensures integration of cancer research education and outreach and pilot research activities among Cherokee Nation, OSU, and the SCC;
2) **to conduct innovative pilot research** in tobacco use and cancer risk capable of seeding large-scale research projects performed by AI researchers within the Cherokee Nation setting;
3) **to educate the next generation of cancer researchers** to engage meaningfully with Cherokee Nation in the context of this research, focusing on early-stage investigators (ESIs), graduate, professional, and undergraduate students; and
4) **to evaluate activities of the partnership,** including monitoring progress of pilot research projects and the cancer research education program (C-REP). This evaluation will inform future, jointly executed efforts to reduce AI cancer disparities.

The Collaborative provides a crucial opportunity to solidify the foundation for tribal capacity in cancer disparities research. The addition of OSU strengthens the Collaborative by its remarkable success in the education of AI early-stage investigators (ESIs) and students in scientific fields. Moreover, Cherokee Nation and OSU have completed the first tribally affiliated medical school in the US. The Collaborative therefore provides an unprecedented environment in which a tribe, a university, and a research-intensive cancer center will work synergistically to reduce the unacceptable burden of cancer that continues to affect AI people

Accomplishments and/or Discoveries:
Given that we have completed only the initial planning year thus far, it is too soon to report on publications, etc. However, we would like to point out that our research team recently authored two manuscripts led by current ESIs using data from our previous P20 collaboration:

1) Cole, A. B., Comiford, A. L., Dvorak, J. D., Ding, K., Spicer, P. G., Wagener, T., Garrett, B., Rhoades, D. A., & Doescher, M. P. (under review). Characteristics associated with the desire to quit all tobacco products among American Indian smokeless tobacco users.
2) Garrett, B., Comiford, A.L., Dvorak, J.D., Ding, K., Cole, A.B., Wagener, T., Rhoades, D.A., & Doescher, M.P. (In preparation). E-cigarette use and depression among American Indian adults who smoke. Target journal: Journal of Studies on Alcohol and Drugs. Moreover, P20 ESIs and co-investigators have jointly submitted and received funding for a RADx-UP supplement that is helping Cherokee Nation address the COVID-19 pandemic:RAD-X UP

NARCH Supplement: A Cherokee Nation Community-Driven Program for Testing and Contact Tracing (Cherokee PROTECT) (S06GM127983-03S1, Khan PI)

Additionally, the following grants developed by the P20 team this year are under review currently:

1) Cherokee NARCH 11 (S06G142119; Khan, PI)
2) Cherokee NARCH 12 (S06GM14612; Khan, PI)
3) Cherokee Nation - Stephenson Cancer Center HPV Vaccination Alliance (R01CA269001; Doescher, PI)
4) Stephenson Cancer Center-Cherokee Nation Comprehensive Cancer Control Partnership (P30CA225520-pending Supplement; Mannel, PI; Doescher, PD).

Impact/Outcomes of the Partnership:

As noted above, this is our initial planning year, so it is too soon to reflect on outcomes of our research projects. However, we do have initial findings from our C-REP component, which has become a cohesive and efficient collaborative team. During this initial program planning year, the C-REP team took advantage of leading an existing summer undergraduate research program to pilot the C-REP collaboration and program concepts to recruit students participating in Cherokee Nation's Native American Research Centers for Health (NARCH) program into cancer health disparities research using contributed resources from the Stephenson Cancer Center/OUHSC to fund this effort. Four NARCH undergraduate students from the OSU Center for Sovereign Nations focused on cancer health disparities research. One student worked on a smokeless tobacco study among AI persons from the OUHSC Tulsa campus. One student in Oklahoma City worked on a diabetes and smoking cessation project conducted at Cherokee Nation, another worked on cancer health disparities surveillance, and another assisted on our P20 pilot research study focusing on tobacco cessation among cancer survivors. In addition to the four NARCH students, two medical students attending the new OSU College of Osteopathic Medicine at Cherokee Nation worked at OUHSC in Oklahoma City this summer on qualitative projects related to delivering bad news, such as a cancer diagnosis, as well as a NARCH diabetes and smoking study at Cherokee Nation. Another accomplishment was the development of on-site seminars/Lunch and Learns for the NARCH students and mentors for Summer, 2021 (with a zoom link for NARCH students not on the Oklahoma City campus). Seminars include/included a talk related to "Who we are and how we can help with your health-related career" by the executive director of the Association of American Indian Physicians, a career panel of two Native researchers who described their educational and research journeys, and a talk on Institutional Review Boards (IRBs) with emphasis on working with Tribal IRBs presented by Sohail Khan, Director of Health Research and Chair of Cherokee Nation IRB and P20 Cherokee Nation PI. Finally, site visits to conduct data entry and analysis at Cherokee Nation were completed by two students and a site visit and tour of the new OSU COM at Cherokee Nation for interested student is planned.

The P20 C-REP team is developing a manuscript to evaluate cancer-related NARCH work

Furthermore, one student who participated in our past PACHE P20 planning grant is pursuing graduate work in anthropology, and in 2020 achieved a Fulbright award, which indicates the promise of our approach of providing research experiences for students that are conducted in the setting of a Tribal Nation.

Our P20 is also directly involved in increasing skills in cancer registry analysis. Charles Wiggins of the University of New Mexico Tumor Registry is organizing SEER*Stat training sessions for the faculty and key personnel involved with our PACHE P20 project. The SEER*Stat statistical software allows researchers to view individual cancer records and to produce statistics for studying the impact of cancer on populations of interest.

Finally, P20 researchers through the RADx-UP supplement are helping the Tribe create a Cherokee Nation Biorepository to facilitate future work in understanding risk and protective factors for disease, including demographic, clinical, therapeutic, and social, and lifestyle factors that may be associated with altered COVID-19 immunity or disease sequelae in tribal members. Significant work is underway to create lasting infrastructure for a Cherokee Cancer Registry and Repository, starting with COVID-19 patients. Ultimately, we hope this biorepository will expand to include information on patients with cancer, hepatitis, autoimmune diseases and other conditions. This will enable it to serve as an important resource for future research and cancer research education through the PACHE program.

Sustainability:

As noted above, we have been successful in obtaining support from the NIH NARCH mechanism that augments are PACHE P20 work. We also are vigorously pursuing Cancer Center Support grant supplement funding and R01 funding to further support the Stephenson Cancer Center Cherokee Nation partnership. We intend to apply to the Youth Enjoy Science R25 mechanism if it is reissued later this year.

Moreover, we do receive some P20 faculty support through Stephenson Cancer internal funding for grants management and for conducting pilot research. Dr. Doescher has a key role in Oklahoma Shared Clinical and Translational Resources (OSCTR) (U54GM104938, James, PI), which has periodic seed funds for research. To help develop proposals, our P20 accesses the Biostatistics and Research Design Shared Resource of the Stephenson Cancer Center Support Grant (P30CA225520, Mannel, PI).

Shared Resources:
As a P20 planning grant, we do not have shared resources that are intrinsic to the grant. However, we do access to the SCC and the OSCTR Biostatistics and Research Design Shared Resources, and we have the ability to access the tissue bank, mHealth, and other shared resources of these large infrastructure grants.

Areas of Collaboration:
Project Investigator, Dr. Rhoades (enrolled Kiowa) recently became a member of the Steering Committee for the Native American Cancer Prevention (NACP) program (U54CA143924, University of Arizona Cancer Center), (U54CA143925, Northern Arizona University)

Drug Development and Capacity Building: A UCR/CoH-CCC Partnership

Partnership Institutions:
University of California Riverside (UCR)
City of Hope Comprehensive Cancer Center (CoH-CCC)

Research Team:
Ernest Martinez, Ph.D. (MPI, Admin core leader, Project 1 lead, UCR)
Victoria Seewaldt, M.D. (MPI, Admin core Co-leader, Project 1 co-lead, CoH-CCC)
Byron Ford, Ph.D. (CREP core leader, UCR)
Christopher Sistrunk, Ph.D. (CREP core leader, CoH-CCC)
David K. Ann, Ph.D. (CREP core co-leader, CoH-CCC)
Maurizio Pellecchia, Ph.D. (CREP core co-leader, Project 2 lead, UCR)
John J. Perry, Ph.D. (Project 2 co-lead, UCR/CoH-CCC)

Overview of Partnership:
Less than 2% of physicians conducting clinical trials are Latino/Hispanic-American or African-American. The majority of clinical trials participants are European-American. Yet, new drugs are approved and subsequently used in Latino/Hispanic-American or African-American men and women without sufficient testing. The diversity of our SoCal community provides a model of the racial diversity of the U.S. and both UCR and CoH-CCC serve a diverse population.

The overall goal of the UCR-CoH partnership is to cooperatively develop the resources, infrastructure, and training to develop the next generation of clinical and translational researchers that reflect the diversity of our SoCal community, and ultimately, the U.S. The strengths of UCR and CoH are complementary and synergistic: UCR has a strong educational and basic research infrastructure (including a medical School) with diverse student body and Faculty and strong diversity education/training programs, but lacks expertise in clinical cancer research and drug development; on the other hand, CoH is one of the top Institutions in the US recognized for its basic, translational and clinical research, including drug development and good manufacturing facilities, and is one of the top 10 cancer treatment centers in the nation, but does not have a medical school or a large student population. Together, UCR and CoH-CCC aim to develop the collaborations, translational resources, and training programs to enhance diversity in cancer research and reduce disparities in drug development throughout the entire drug development pipeline. Our goal for this joint UCR and CoH-CCC program is to mentor and train a diverse force of cancer biologists and address the disparities in cancer therapeutics and drug development. To achieve this overall goal these are our specific aims: Aim 1: Strengthen UCR's cancer research capacity and develop the resources to increase UCR/CoH-CCC's ability to jointly develop therapeutic agents optimized for Latino/Hispanic- and African-Americans. Aim 2: Increase the capacity of UCR and CoH-CCC to jointly develop drugs that target disparities in survival affecting individuals of color in our SoCal community. Aim 3: Provide the training, opportunity, and mentorship to ensure that the next generation of therapeutic scientists and precision medicine researchers reflect the diversity of our SoCal community.

Accomplishments and/or Discoveries:
<u>Grants in Development or Submitted by PIs and Mentees:</u>
- In development: Martinez & Seewaldt (MPIs, R01); Nikita Wright (mentee, K99/R00). Veronica Jones (Co-I/Mentee, First R01). Lindsay Traviño (mentee, First R01). Loretta Erhunmwunsee (Co-I/mentee, First R01).
- Submitted: Jeff Perry (Project 2 co-lead/mentee) submitted 7 grants: two R01, two R21, R03, DoD-CDMRP, and UCOP.

<u>Research accomplishments:</u>
Project 1: New HMEC cell strains and cell lines to study MYC transformation in breast cancer. Discovery of a new role of MYC acetylation in transformation. Established a new PDX model of luminal B breast cancer from Latina women.
Project 2: Identified fragments for improved inhibition of PIN1. One publication: Liu, Shen, Song, Xu, Perry*, Liao. Biomolecules. 2021; 11(5): 673. PMCID: PMC8145275.

Impact/Outcomes of the Partnership:
Mentorship: This P20 supported the career development of multiple minority undergraduate and graduate students, several postdoctoral fellows and four early-stage investigators at both UCR and CoH. Two T34-MARC minority undergrad students at UCR entered CoH PhD program during the last 2 years.

Models: Established a new PDX model of luminal B breast cancer from Latina women

Sustainability:
The P20 partnership is planning longer terms joint grants (R01s and possible future U54 application).

Areas of Collaboration:
Victoria Seewaldt is MPI on a disparity P20 SPORE in lung cancer. We collaborate with LSU's P20 Disparities SPORE.

Partnership Descriptions – P20

Howard University–Georgetown University Collaborative Partnership in Cancer Research (HU-GU PCR)

Howard-Georgetown
Collaborative Partnership in Cancer Research

Howard University Cancer Center
2041 Georgia Avenue, NW
Washington, D.C. 20060
Phone: (202) 806-2878

Georgetown Lombardi
Comprehensive Cancer Center
3800 Reservoir Road, NW
Washington, D.C. 20057
Phone: (202) 444-4000

Partnership Institutions:
Howard University Cancer Center and Georgetown Lombardi Comprehensive Cancer Center

Research Team:
Lucile L. Adams-Campbell, PhD. (MPI), Teletia R. Taylor, PhD (MPI, C-REP), Carla D. Williams, PhD (MPI), Pamela L. Carter-Nolan, PhD, MPH (C-REP Director), Christopher Loffredo, PhD, (C-REP Co-Director)

Overview of Partnership:
Partnership Goals: The goal of the HU-GU Partnership in Cancer Research (PCR) is to amplify the complementary strengths of the two institutions. The pilot research program generates preliminary data for competitive cancer health disparities grant proposals. The Cancer Research Education Program (C-REP) uses team mentoring to support cancer disparities research career development among students, postdocs, and early-stage investigators with an emphasis on individuals from groups that are historically under-represented in the biomedical research workforce.

Populations Served: The HU-GU PCR focuses on cancer disparities among diverse populations. Current projects focus on liver cancer and breast cancer in African Americans. The research partnership also seeks to engage students who are from backgrounds that are historically underrepresented in the cancer research workforce.

Partnership Benefits: The HU-GU PCR will enhance cancer research capacity at Howard University and increase participation in cancer health disparities research at Georgetown Lombardi Comprehensive Cancer Center.

Accomplishments and/or Discoveries:
Cancer Research Education Program (C-REP): Developed a new 1.5 credit course in Cancer Epidemiology for the Georgetown Master of Science in Epidemiology Program taught by joint Howard and Georgetown faculty. The course is open to enrollment for students from both institutions.

Research Projects: While results are forthcoming, the strength of the partnership was realized as the inter-institutional research teams worked collaboratively to mitigate the impacts of COVID-19 pandemic restrictions on clinical research. Additional research recruitment resources were identified and engaged at both institutions to enhance participant recruitment. The breast cancer project was also successful in outreach to more than 20 community-based cancer survivorship organizations to enhance recruitment of survivors.

Impact/Outcomes of the Partnership:
Data have not yet emerged from the two research projects. However, the three students in the 2020-2021 C-REP have been retained in biomedical science careers.

Sustainability:
The two-year history of the HU-GU PCR has already yielded important pathways for sustainability. The Howard Cancer Center has been awarded the American Cancer Society Diversity in Cancer Research Institutional Research Grant. This new program will provide four years of funding to develop new investigators based at Howard University. The application had strong support from Georgetown faculty who agreed to serve as mentors for early-stage investigators, postdoctoral fellows, and students.

Shared Resources:
No new Partnership resources have been developed to-date.

Areas of Collaboration:
Presently, the HU-GU PRC has no active joint collaborations with other PACHE Partnerships. However, investigators are individually connected to other PACHE programs. Dr. Adams-Campbell is PI of the National Capital Area Minority/Underserved NCORP and a member of the External Advisory Board for the Case Western SPORE Planning Grant. Dr. Williams has been a member of the Chicago Cancer Health Equity Collaborative Program Steering Committee for the past three years. Howard continues its collaborative relationship with the Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins. This collaboration is in the process of submitting a SPORE proposal.

Langston University-UNTHSC Partnership for Cancer Research and Education

https://www.unthsc.edu/cdip/center-for-diversity-and-international-programs/p20-grant/

Partnership Institutions:
1. Langston University (LU), Langston, OK; 2. Center for Cancer Research, University of North Texas Health Science Center (UNTHSC), Fort Worth, TX

Research Team:
LU: Dr. Byron Quinn (PI & Lead, Research Project-1); Dr. Christianna Howard (Lead, Research Project-2); Dr. Teressa Hunter (Lead, Cancer Research Education Core; **UNTHSC:** Dr. Riyaz Basha (PI & Lead, Cancer Research Education Core); Dr. Harlan Jones (Lead, Research Project-1); Dr. Pankaj Chaudhary (Lead, Research Project-2)

Overview of Partnership:
1. Establish an Administrative Core that will be responsible for the overall implementation, management, and evaluation of the success of the various components of the partnership; 2. Promote interdisciplinary and collaborative cancer research involving faculty from UNTHSC and LU, and support two pilot research projects; 3. Develop a Cancer Research Education Program (CREP) that provides students and junior faculty with cancer education, cancer research experiences, experimental design, interprofessional education and health disparities. This partnership has established between a HBCU (LU) and a Cancer Center (UNTHSC) for a collaboration and mutual support. LU's faculty and undergraduate students collaborated with the UNTHSC's faculty with cancer background and established research and outreach activities. LU/UNTHSC partnership has helped us to develop 2 research projects jointly designed/worked by the faculty at both institutions (Core Leads: Drs Jones and Chaudhary at UNTHSC and Drs. Quinn and Howard at LU). CREP has developed 3 courses to offer to LU students (jointly taught by the both institutions). LU students also benefited through summer research, RCR and mentorship training.

Accomplishments and/or Discoveries:
Research projects led by the investigators at both institutions are progressing. Key personnel authored a few publications and participated in presentations.

Publications: 1. Sharma I, Hannay N, Sridhar S, Ahmad S**,** Basha R. (2021). Future perspectives, challenges and directions in chemosensitzing activities to reverse drug resistance in gynecologic cancers. In '*Overcoming Drug Resistance in Gynecologic Cancers*'. Eds Ahmad S and Basha R. Elsevier, pp 339-355; 23,870,637; 2. Donkor M and Jones HP. The proposition of the pulmonary route as an attractive drug delivery approach to treat lung tumors Frontiers in Biomedical Nanotechnology. (2021); 3. Rajendiran S, Maji S, Haddad A, Lotan Y, Nandy RR, Vishwanatha JK, Chaudhary P. MicroRNA-940 as a Potential Serum Biomarker for Prostate Cancer. Front Oncol. Front Oncol. 2021;11: 628094; 4. Gibbs LD, Mansheim K, Maji S, Nandy R, Lewis CM, Vishwanatha JK, Chaudhary P. Clinical Significance of Annexin A2 Expression in Breast Cancer Patients. Cancers (Basel). 2020;13(1):2.

Grants: 1. NIH/NIGMS, Phase II of BUILDing Scholars; Sub-award from University of Texas at El Paso, Sub-award: $ 43,631, Project Period: 11/2020-6/2021 (PI: Dr. Jones).
2. Crump Foundation (JP Morgan Chace Bank), Disparities in Adolescent and Young Adult Cancer Patients: Establishing A Research Core to Improve Patient Outcomes in North Texas, Total Funding: $130,000, Project Period: 11/2020-10/2022 (PI: Dr. Basha).
3. Cancer Prevention and Research Institute of Texas (CPRIT), HSC Scholars in Cancer Research, $3,870,637, Project period: 8/2021-8/2026 (PI: Dr. Vishwanatha, Co-PIs: Drs. Basha and Jones).

Impact/Outcomes of the Partnership:
Courses offered virtually. It helped both the instructors and students to handle the situation during the pandemic.

Sustainability:
This partnership developed the curriculum for 3 courses and recorded the lectures for 2 courses. Both institutions shared the resources and expertise to develop evaluations and the courses offering. These course and evaluations may continue even after the project period. UNTHSC received an award from CPRIT that will support 10 undergraduate students in summer research. LU students can take the advantage of this program to participate in summer research and the resources of National Research Mentoring Network (NRMN).

Shared Resources:
Curriculum, recorded lectures and evaluations of the courses developed through this partnership. Workshop presentations developed for RCR, Mentorship (for students) and Entering Mentoring (for faculty).

Areas of Collaboration:
Collaborated with the UNTHSC's U54 team and NRMN resources. U54 helped to identify instructors for the courses and grants writing. NRMN helped the junior faculty and students to get connected with the researchers/mentors nationwide and provided the networking opportunities.

Partnership Descriptions – P20

The Southeast Partnership for Improving Research and Training in Cancer Health Disparities–SPIRIT–CHD (P20 CA202920)

LSUHSC • MOFFITT SPIRIT-CHD
Southeast Partnership for Improving Research & Training in Cancer Health Disparities

www.spiritchd.com

Partnership Institutions:
Moffitt Cancer Center (MCC), Tampa FL: and Louisiana State University Health Sciences Center (LSUHSC), New Orleans, LA

Research Team:

Our SPIRIT Team:

Name	Role	Institution
Lucio Miele	MPI, Research Core Leader	LSUHSC
Fern Tsien	MPI, CREP Core Co-Leader	LSUHSC
Cathy Meade	MPI, CREP Core	MCC
Doug Cress	MPI, Research Core Leader	MCC
Arnold Zea	CREP Core	LSUHSC
Clement Gwede	CREP Core Co-Leader	MCC
Vani Simmons	CREP Core Co-Leader	MCC
Z'Kera Sims	Program Manager	MCC
Vivekka Suppiah	Program Manager	MCC
Kirsten Bruno	Program Manager	LSUHSC

Overview of Partnership:
Aim 1: Establish a joint Cancer Research Education Program (CREP) focused on training undergraduate and medical school students on topics related to biobanking, precision medicine and cancer health disparities.
Aim 2: Advance translational research on the biological mechanisms of cancer health disparities by trainees including early-stage investigators (ESI) and their mentors focusing on biospecimen-based research and precision medicine.

Accomplishments and/or Discoveries:
Cancer Research Education Program (CREP):
- Four cohorts of trainees successfully completed the summer program: 16 medical students and 26 undergraduate students (n=42 students).
- Refined and implemented a joint web-based didactic curriculum focused on biobanking, precision medicine, and cancer health disparities with the 'flipped classroom and use of varied technologies' as key innovations
- Sims Z et al., (2021). Improving Multi-site Interaction Through Remote Learning Technology: Report from a Training Program to Increase Underrepresented Undergraduate and Medical Students in Health Disparities Research. Journal of Cancer Education. https://doi.org/10.1007/s13187-021-01985-5

Research Core:
- Research Project 1 – Dr. Jovanny Zabaleta (ESI, LSUHSC), identified lipid metabolism as a critical mediator of breast cancer disparities in Latina women.
- Research Project 2 – Dr. Jaileene Perez-Morales (ESI, MCC) identified radiomic features that predict survival outcomes among patients diagnosed in lung cancer screening. Work is focus on expanding cohort to Hispanic and Black patients.
- Research Project 3 – Dr. Ches'Nique Phillips (ESI, LSUHSC) identified microRNAs associated with triple negative breast cancer in African American Women. Work is focusing on expanding the cohort to include more patients.

Impact/Outcomes of the Partnership:

- Dr. Zabaleta (first ESI) was promoted to Associate Professor at LSUHSC and submitted his first R01 (planned resubmission in late 2021-early 2022)
- Drs. Phillips and Perez-Morales received career support from the program regarding resources and training via PACHE, NRMN, and GMaP resources.
- Trained (Engage + Educate + Inspire) 42 underrepresented undergraduate and medical students about biobanking, precision medicine, cancer health disparities, and community engagement via CREP.

Sustainability:

The SPIRIT team is exploring opportunities for future research collaboration. Dr. Zabaleta is revising his R01 for resubmission. CREP Core Leaders are leveraging the CREP are exploring larger training grants.

Shared Resources:

The CREP uses nationally validated scales and other assessments (e.g., knowledge/technology assessments) to evaluate the program, and these may be valuable to other biomedical research training programs. At present the Research Core has not generated sharable resources.

Areas of Collaboration:

An area of productive collaboration has been with the U54 PACHE program (Ponce Health Sciences University (PHSU- Moffitt Cancer Center) and includes ongoing research interactions with investigators, cross-institutional mentoring, and provision of breast cancer samples from the Biobanking Core.

UHAND (University of Houston/MD Anderson) Program to Reduce Cancer Disparities

UHAND
A partnership to address cancer disparities
UNIVERSITY of HOUSTON
THE UNIVERSITY OF TEXAS MD Anderson Cancer Center Making Cancer History®

https://www.uhandpartnership.com

Partnership Institutions:
University of Houston (UH) (ISUPS, Hispanic-Serving Institution) and The University of Texas MD Anderson Cancer Center (MDA) (NCI-Designated Cancer Center)

Research Team:
Lorna McNeill, PhD, MPH (Principal Investigator/MDA), Lorraine Reitzel, PhD (Principal Investigator/UH), Crystal Roberson, MPH (Administrative Core/MDA), Anastasia Rogova, PhD (Administrative Core/UH), Latricia Wallace (Administrative Core/UH), Kayce Solari Williams, PhD (Education Program Co-Director/UH), Shine Chang, PhD (Education Program Co-Director/MDA), Kamisha Escoto, PhD (Education Program/MDA), Arooba Haq (Education Program/UH), Rana Banton (Education Program/MDA), Berta Salazar (Community Outreach/MDA, Terrence Adams (Community Outreach/MDA), Cassandra Harris (Community Outreach/MDA)

Overview of Partnership:
The UHAND program aims to: 1) stimulate collaborative cancer disparities research related to tobacco use, poor diet, and physical inactivity among blacks and Hispanics; 2) support the development of Early Stage Investigators through a rigorous pilot research program; 3) increase the number of underrepresented racial/ethnic minority students and faculty engaged in cancer disparities research by providing them with research training, mentorship and service learning experiences; and 4) develop a robust community outreach program focused on engaging community members in cancer disparities education, research, and clinical trials.

Accomplishments and/or Discoveries:
Since 2017, the UHAND Program has:
- Trained 2 postdoctoral fellows, 6 graduate scholars, and 9 undergraduate scholars
- Awarded 3 Pilot Projects; 3 Administrative Supplements
- Sponsored two cancer health disparities conferences "Eyes Have Not Seen, Ears Have Not Heard: Breakthroughs in Cancer Research" (Fall 2019), and the "Inaugural HEALTH Research Institute conference" (Winter/Spring 2020)
- Published 38 manuscripts and delivered over 100 presentations at local, regional and national conferences

Impact/Outcomes of the Partnership:
An article describing the program and outcomes of the first cohort of UHAND Scholars was published: Haq AA, Reitzel LR, Chen TA, et al. "UHAND"-A National Cancer Institute Funded Partnership to Advance Cancer Health Equity through Scholar Training. Int J Environ Res Public Health. 2021 May 11;18(10):5054. doi: 10.3390/ijerph18105054. PMID: 34064663; PMCID: PMC8151028.

Additional program highlights include:
- 1 Postdoc secured a tenure track faculty position; 1 Postdoc received K99/R00
- 2 ESIs promoted to Associate Professor with tenure; Both PIs and Education Program co-director (UH) promoted in rank
- All 6 undergraduate scholars in Cohort 1 pursued admission into health science graduate (4 scholars) or medical school (2 scholars) programs
- 1 Pilot PI received R03 to demonstrate the ability to collect saliva samples from Hispanic immigrant parent-adolescent dyads to measure cortisol
- Reached >14,000 people through a variety of community outreach activities including activities cancer education classes, community research forums, clinical trials bingo sessions, and other health promotional activities.

Sustainability:
We have successfully leveraged institutional support from UH and MDA to support multiple components of the program, including cost-sharing for salary support and course releases for our Education Program directors and pilot project PIs, space for research and meetings, access to Cancer Center Support Grant (CCSG) Core Grant resources for UHAND Scholars and faculty (e.g., biostatistical support), and funding for a joint UH/MDA cancer disparities pilot project.

Shared Resources:
Our program is uniquely positioned to provide access to two population-based cohorts available for ancillary studies using secondary data or primary data collection for PACHE institutions. Project CHURCH is a cohort of 2,500 African American adults, with several follow-up years and the Mexican-American (Mano a Mano) Cohort, which comprises 26,272 families that have been periodically followed for over a decade.

Areas of Collaboration:
Our program would be interested in developing on-going relationships with previously other PACHE programs to share best practices around evaluation and successful models for leveraging funding to sustain programming beyond the funding period.

CRCHD
Fact Sheets

Center to Reduce Cancer Health Disparities

Overview

The National Cancer Institute (NCI) established the Center to Reduce Cancer Health Disparities (CRCHD) in 2001 to help reduce the unequal burden of cancer in our society.

Mission

To reduce cancer health disparities, CRCHD:

- Strengthens the NCI cancer research portfolio in basic, clinical, translational, and population-based research to address cancer health disparities through collaborations with NCI Divisions, Offices, and Centers.
- Advises on strategic priorities, program direction, and scientific policy to strengthen cancer disparities research, diversity training, women's health, and sexual and gender minority opportunities.
- Leads NCI's efforts in workforce diversity through the training of students and investigators from diverse backgrounds.

Cancer health disparities are adverse differences between certain groups in cancer measures such as incidence, prevalence, morbidity, mortality, survivorship and quality of life after cancer treatment, burden of cancer or related health conditions, screening rates, and stage at diagnosis.

Although disparities are often considered in the context of race/ethnicity, other population groups may experience cancer disparities. These include groups defined by disability, gender and sexual identity, geographic location, income, education, and other characteristics.

The field of cancer health disparities is complex and affected by a multitude of health, biological, environmental, and social factors. To advance understanding of the multifactorial causes of cancer disparities, including biological and non-biological bases of cancer incidence and progression, networking programs facilitate new and ongoing linkages between research, training, and outreach.

Learn More

To learn more about CRCHD, please visit: crchd.cancer.gov

Programs

Continuing Umbrella of Research Experiences (CURE)

CURE is a national research training and career development initiative that focuses on building and sustaining a pipeline of diverse cancer investigators. CURE provides training opportunities for underrepresented students and trainees across the academic continuum in order to diversify the workforce in cancer and cancer health disparities research.

Intramural Continuing Umbrella of Research Experiences (iCURE)

The iCURE program supports mentored research experiences for qualifi ed students and scientists in the multidisciplinary research environment of the NCI campuses in Bethesda, Rockville, and Frederick, MD. iCURE is an extension of the highly successful CURE program.

Partnerships to Advance Cancer Health Equity (PACHE)

PACHE enables institutions serving racial/ethnic and/or underserved communities with cancer health disparities and NCI Cancer Centers to:

- Build research and training capacity at institutions serving underrepresented populations
- Create stable, long-term collaborations between institutions and cancer centers in research, training, career development, and outreach
- Improve effectiveness of research, education, and outreach for underserved populations
- Export successful approaches for addressing disparities

National Outreach Network (NON)

NON seeks to strengthen NCI's ability to develop and disseminate culturally appropriate, evidence-based cancer information that is tailored to the specific needs and expectations of underserved communities, working through NON community health educators located at NCI-designated Cancer Centers. NON's goals are to:

- Enhance NCI's cancer health disparities research efforts through local and regional culturally tailored education/outreach within underserved communities
- Enhance NCI's ability to disseminate culturally appropriate, evidence-based cancer information to underserved communities
- Adapt and test culturally tailored education/outreach activities that address local and regional cancer health disparities issues.

Geographical Management of Cancer Health Disparities Program (GMaP)

GMaP is a regional strategy to build critical "hubs" for the support and effi cient management of cancer health disparities research, training, and outreach. GMaP's goals are to contribute to the science of cancer health disparities and promote the development of the next generation of competitive, underrepresented cancer and cancer health disparities investigators.

The regional GMaP hubs bring together investigators and researchers, particularly those working in cancer health disparities and underrepresented investigators, underrepresented trainees and students, community health educators, and community members to work together to:

- Share information, resources, and tools
- Enhance access to underrepresented investigators and trainees and foster career development linkages
- Strengthen region-based community education and outreach efforts that contribute to achieving GMaP goals

Special Initiatives

Training Navigation

Training navigation facilitates underrepresented scholars' successful entry and advancement through the CURE training pipeline to independent research careers.

NIH NATIONAL CANCER INSTITUTE cancer.gov

CENTER TO REDUCE CANCER HEALTH DISPARITIES

A.L.E.R.T. ACTIVITIES | LINKS | EDUCATION | RESEARCH | TRAINING

Newly Released Funding Opportunities, CUSP2CT Technical Assistance Webinar, YES Webinar Slides

The National Cancer Institute Center to Reduce Cancer Health Disparities is pleased to share twelve—that's right twelve—new or resissued funding opportunities in cancer disparities research, diversity training and research education. Opportunities are available for institutions and individuals.

Without further ado, learn more about these opportunities, key dates and helpful resources, including a webinar recording and an upcoming technical assistance webinar on October 1.

Basic Research in Cancer Health Disparities Program
These funding opportunities encourage grant applications investigating the biological/genetic contributors to cancer health disparities. In addition to expanding knowledge of the biological factors of cancer health disparities, these awards help expand available resources and tools (such as biospecimens, patient-derived models and methods) that are necessary to further conduct basic research in cancer health disparities. Learn more:

- Basic Research in Cancer Health Disparities (R01 Clinical Trial Not Allowed)
  - Upcoming Due Dates: October 5, 2021, February 5, 2022
- Basic Research in Cancer Health Disparities (R21 Clinical Trial Not Allowed)
  - Upcoming Due Dates: October 16, 2021, February 16, 2022
- Basic Research in Cancer Health Disparities (R03 Clinical Trial Not Allowed)
  - Upcoming Due Dates: October 16, 2021, February 16, 2022

Connecting Underrepresented Populations to Clinical Trials (CUSP2CT)
This new program will implement and evaluate multilevel and culturally tailored outreach and education interventions with the primary goal of increasing referral and ultimately, accrual of underrepresented racial/ethnic (R/E) minority populations, to NCI-supported clinical trials. Learn more:

- A Multilevel Approach to Connecting Underrepresented Populations to Clinical Trials (CUSP2CT; U01 Clinical Trial Not Allowed)
  - Due Date: November 19, 2021
- Data, Evaluation and Coordinating Center for: A Multilevel Approach to Connecting Underrepresented Populations to Clinical Trials (CUSP2CT) (U24 Clinical Trial Not Allowed)
  - **Technical Assistance Webinar: On October 1, 2021, from 1:00-3:00 pm ET, the CUSP2CT program will host a Technical Assistance Webinar. Learn more and register.**
  - Due Date: November 19, 2021

Youth Enjoy Science (YES) Program
YES' overarching goal is to support educational activities that encourage individuals from diverse backgrounds, including those from groups underrepresented in the biomedical and behavioral sciences, to pursue further studies or careers in research. Learn more:

- National Cancer Institute Youth Enjoy Science Research Education Program (R25 Clinical Trial Not Allowed)
    - **Application Webinar: Did you miss the webinar on September 13, 2021? Access the slides. Contact Dr. Alison Lin to access the webinar recording.**
    - Upcoming Due Date: October 28, 2021.

Career Development Awards to Promote Diversity (K01, K08 and K22)
NCI encourages cancer researchers to apply for its Career Development Awards to Promote Diversity (K01, K08 and K22). These funding opportunities are designed to enhance the diversity in the NCI-funded cancer research workforce by supporting eligible individuals from diverse backgrounds, including groups that have been shown to be nationally underrepresented in the biomedical, behavioral, social and clinical sciences.

The next due date for each of these opportunities is October 12. Visit the links below for more information on how to apply:

- NCI Mentored Research Scientist Development Award to Promote Diversity (K01 Independent Clinical Trial Not Allowed)
- NCI Mentored Research Scientist Development Award to Promote Diversity (K01 Clinical Trial Required)
- NCI Mentored Clinical Scientist Research Career Development Award to Promote Diversity (K08 - Independent Clinical Trial Not Allowed)
- NCI Mentored Clinical Scientist Research Career Development Award to Promote Diversity (K08 - Clinical Trial Required)
- NCI Transition Career Development Award to Promote Diversity (K22 - Independent Clinical Trial Not Allowed
- NCI Transition Career Development Award to Promote Diversity (K22 - Clinical Trial Required)

You are subscribed to CRCHD Announcements (TBD) from the National Cancer Institute. New information is listed below.

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BASIC RESEARCH IN CANCER HEALTH DISPARITIES (R03/R21/R01)

Overview

These funding opportunities encourage grant applications investigating the biological/genetic contributors to cancer health disparities. In addition to expanding knowledge of the biological factors of cancer health disparities, these awards help expand available resources and tools (such as biospecimens, patient-derived models and methods) that are necessary to further conduct basic research in cancer health disparities.

Research Objectives

Applications should focus on basic mechanistic research to investigate biological factors associated with cancer health disparities, with a particular focus on the interplay of race/ethnicity and/or other social determinants with cancer biology. Proposed studies may include:

- Mechanistic studies of biological factors associated with cancer disparities;
- Development and testing of new methodologies and cancer models; and/or:
- Secondary data analyses.

Access to annotated clinical samples and/or patient-derived models are encouraged, as applicable. Examples of responsive research topics include:

- Genetic/epigenetic cancer susceptibility differences among racial/ethnic populations;
- Causal drivers of early-onset cancer in specific populations;
- Similarities and differences in cancer metabolism among racial/ethnic populations.

Mechanisms of Support

R03, R21 and R01 award mechanisms are supported by this funding opportunity:

- R03 awards are designed to support projects that can be carried out in a short period of time with limited resources.
- R21 awards are designed to support pilot and feasibility studies.
- R01 awards will fund more advanced projects that stem from preliminary studies/data.

Applications will be evaluated for scientific and technical merit by a Special Emphasis Panel using the stated review criteria in the funding opportunity announcement.

AT A GLANCE

Submission Deadlines

R01: October 5, 2021; February 5, 2022; June 5, 2022; October 5, 2022; February 5, 2023; June 5, 2023; October 5, 2023; February 5, 2024; June 5, 2024

R21 and R03: October 16, 2021; February 16, 2022; June 16, 2022; October 16, 2022; February 16, 2023; June 16, 2023; October 16, 2023; February 16, 2024; June 16, 2024

Award Budget

R01 budgets are not limited, but need to be well justified.

R21 budgets are limited to $275,000 direct costs for up to 2 years, with no more than $200,000 in direct costs in any given year.

R03 budgets are limited to $50,000 in direct costs per year for up to two years.

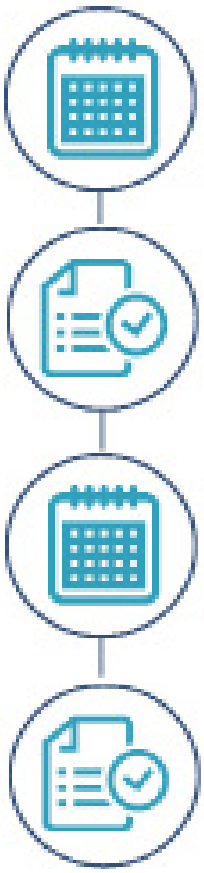
Where Do I Learn More?

Visit the following links for the full text of these funding opportunity announcements. Contact Dr. Tiffany Wallace for more information: Tiffany.Wallace@nih.gov.

- R01: https://grants.nih.gov/grants/guide/pa-files/PAR-21-322.html
- R21: https://grants.nih.gov/grants/guide/pa-files/PAR-21-323.html
- R03: https://grants.nih.gov/grants/guide/pa-files/PAR-21-324.html

Application Timeline for PAR-21-322 (R01), PAR-21-323 (R21) and PAR-21-324 (R03)

Potential applicants are strongly encouraged to contact the Scientific/Research Contact(s) listed in the funding opportunity announcements early in advance to submission. Please refer to the timeline below for key dates in the application process for the two submission periods.



Applications Due

February
June
October

Applications Reviewed

March
July
November

Advisory Council Review

January
May
October

Anticipated Start Date

April
July
December

Frequently Asked Questions (FAQs) for PAR-21-322 (R01), PAR-21-323 (R21) and PAR-21-324 (R03)

Are at least two populations required for investigation?

Cancer disparities are defined as **adverse differences** in cancer incidence, prevalence, mortality, survivorship, and/or burden of cancer, or related health conditions, that exist **among specific populations.** As such, a competitive research design is encouraged. Investigating a cancer site with a documented disparity (e.g. Triple Negative Breast Cancer) without investigating differences among populations is not within the scope of this FOA.

Is preliminary data required?

Preliminary data is not a requirement for the R21 or R03 mechanisms, however it is strongly encouraged.

Preliminary data is required for R01 applications.

Does the research strategy need to be translational?

As this FOA is focused upon basic research, immediate clinically translational potential of the proposed project is not a requirement for the proposed projects.

NCI Youth Enjoy Science Research Education Program (R25)

What is the R25 YES Program?

The NCI Youth Enjoy Science (YES) Research Education Program (R25) provides support for institutions to develop and maintain innovative **early intervention strategies** to attract and engage **underrepresented students and their teachers** in active cancer research environments, and to help prepare students for a career in biomedical research.

Which Institutions are Eligible?

Eligible institutions include:

- Higher education institutions
- Nonprofit and for-profit organizations
- Governments (state, county, city, or township; special district; tribal; etc.)

A full list of eligible institutions is available in the Program Announcement. Foreign institutions are not eligible for this opportunity.

Who are Eligible Participants?

Eligible participants are:

- Grades 6–12 students and teachers
- Undergraduate students and faculty

Students must be:

- From a racial or ethnic group underrepresented in the biomedical, behavioral, clinical, or social sciences, have a disability, or from disadvantaged backgrounds
- U.S. citizens, permanent residents, or non-citizen nationals

Please see the program announcement for additional eligibility criteria.

AT A GLANCE

Application Due Dates: October 28, 2021; September 28, 2022; September 28, 2023

Letter of Intent (LOI): Encouraged one month prior to application due date

Participants: Grades 6–12 and/or undergraduate students from underrepresented racial/ethnic groups, with a disability, or from disadvantaged backgrounds, and/or grade 6–12 teachers and/or undergraduate faculty

Award Budget: Maximum Direct Cost: $500,000/year for up to 5 years, F&A: 8%

Important Application Information

Applications must include:

- All three components listed in the Program Announcement:
  - Research experiences
  - Curriculum or methods development
  - Outreach
- A proposed program that does not overlap with other training programs at the institution (T32, etc.)
- A requirement that all participants commit at least two consecutive years (3 months per year) to the program
- Participant evaluation and tracking

Learn More

NIH Program Announcement: https://grants.nih.gov/grants/guide/rfa-files/RFA-CA-21-020.html.

Prior to applying, principal investigator are strongly encouraged to submit an LOI and to contact:
Alison Lin, Ph.D. at alison.lin@nih.gov or 240-276-6177

crchd.cancer.gov

EXPLORATORY GRANT AWARD TO PROMOTE WORKFORCE DIVERSITY IN BASIC CANCER RESEARCH (R21)

Overview

This Funding Opportunity Announcement (FOA) invites applications from investigators from diverse populations with interest in research projects focused on the basic biology of cancer. This FOA is also designed to improve the diversity of the research workforce by supporting and recruiting eligible investigators from groups that have been shown to be underrepresented.

Mechanisms of Support/Awards

The R21 award mechanism will be supported by this funding opportunity. The total project period for applications using the R21 award mechanism may not exceed 2 years; direct costs are limited to $275,000 over a 2-year period, with no more than $200,000 in direct costs allowed in any single year. Exploratory/developmental grant support is for new projects only; competing renewal (formerly competing continuation) applications will not be accepted.

Research Objectives

Research applications should focus on basic cancer research and cancer health disparities, consistent with the research interests of both the Division of Cancer Biology (DCB) and the Center to Reduce Cancer Health Disparities (CRCHD).

How Does It Work?

The R21 mechanism is intended to encourage new exploratory and developmental research projects. These studies may involve considerable risk but may lead to a breakthrough in a particular area or to the development of novel techniques, agents, methodologies, models, or applications that could have a major impact on a field of biomedical, behavioral, or clinical research.

AT A GLANCE

Submission Deadline: June 15, 2021; November 17, 2021; June 14, 2022; November 17, 2022; June 14, 2023; November 17, 2023

Eligibility: Investigators from diverse backgrounds

Award Budget: $275,000 in direct costs for up to 2 years; no more than $200,000 in direct costs in any given year

Research Topics

Research topics may include, but are not limited to, the following examples:

- Cell transformation, proliferation, or inhibition of cell death
- DNA damage/repair and related molecular, cytogenetic, epigenetic, and chromosomal effects
- Biological and chemical carcinogens and their properties, and mechanisms of oncogenesis and carcinogenesis
- Immune response to tumors and hematopoietic differentiation.

Where Do I Learn More?

For the full text of this PAR, visit: https://grants.nih.gov/grants/guide/pa-files/PAR-21-061.html

crchd.cancer.gov

EXPLORATORY GRANT AWARD TO PROMOTE WORKFORCE DIVERSITY IN BASIC CANCER RESEARCH (R21)

Eligibility Requirements

Any individuals from diverse populations that have been shown to be underrepresented in biomedical, behavioral, clinical, and/or social sciences are eligible. Such candidates include individuals from underrepresented racial and ethnic groups as well as individuals with disabilities with the skills, knowledge, and resources necessary to carry out the proposed research.

Review

All applications will be evaluated for scientific and technical merit by the appropriate Scientific Review Group(s) using the stated review criteria in the FOA. Following initial peer review, recommended applications will receive a second level of review by the National Cancer Advisory Board. Scientific and technical merit of the proposed project as determined by peer review, availability of funds, and relevance of the proposed project to program priorities will be considered in making funding decisions.

Further Assistance

Grants.gov Customer Support
Telephone: 800-518-4726
Email: support@grants.gov

Grants Info
Telephone: 301-435-0714
Email: grantsInfo@od.nih.gov

eRA Commons Help Desk
Telephone: 301-402-7469 or 866-504-9552
Email: commons@od.nih.gov

Grant Writing Tip Sheets
http://grants.nih.gov/grants/grant_tips.htm

Inquiries

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Financial/Grants Management Contact(s)
Carol Perry
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Second Floor, West Tower, 2W410
(240) 276-6282
perryc@mail.nih.gov

crchd.cancer.gov

Continuing Umbrella of Research Experiences

CURE Overview

Continuing Umbrella of Research Experiences (CURE) is a national research training and career development initiative that focuses on building and sustaining a pipeline of diverse cancer investigators.

CURE provides training opportunities for underrepresented students and trainees across the academic continuum in order to diversify the workforce in cancer and cancer health disparities research.

CURE
CONTINUING UMBRELLA OF RESEARCH EXPERIENCES
A program of the National Institutes of Health

CURE supports you through all stages of your education and career — beginning in middle school — ensuring that you have the skills you need to become a successful investigator.

Training and Career Development Funding Opportunities

The CURE program offers students, postdoctoral trainees and early stage investigators training and career development funding opportunities using research supplements, predoctoral fellowships and career development awards. You may be eligible if you are a student or investigator from an underrepresented racial or ethnic group, have a disability, or come from a disadvantaged background. Additional eligibility information is described in the funding announcements.

Learn More

You are encouraged to contact a CRCHD Program Director before applying for funding:

H. Nelson Aguila, DVM (R21)
aguilah@mail.nih.gov

Anthony DiBello, PhD (F31)
anthony.dibello@nih.gov

Samson Y. Gebreab, PhD, MSc (Diversity Supplements)
samson.gebreab@nih.gov

Alison Lin, PhD (Diversity Supplements, R25)
alison.lin@nih.gov

Laritza Rodriguez, MD, PhD (R21)
mauricio.rangel-gomez@nih.gov

Mulualem E. Tilahun, DVM, PhD (K01, K08, K22)
mulualem.tilahun@nih.gov

For more information about CURE: cancer.gov/about-nci/organization/crchd/diversity-training/cure

CURE Funding Opportunities

High School and Undergraduate Training	Purpose
PA-21-071 – Research Supplements to Promote Diversity in Health-Related Research	Improve research workforce diversity by supporting individuals from groups that are underrepresented in cancer and cancer health disparities research.
Predoctoral and Postdoctoral Training	**Purpose**
PA-21-071 – Research Supplements to Promote Diversity in Health-Related Research	Improve research workforce diversity by supporting individuals from groups that are underrepresented in cancer and cancer health disparities research.
PA-21-052 – Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral Fellowships to Promote Diversity in Health-Related Research (F31)	Enhance the diversity of the health-related research workforce by supporting the research training of predoctoral students from underrepresented groups in biomedical, behavioral or clinical sciences.
Postdoctoral and Investigator Training	**Purpose**
PA-21-071 – Research Supplements to Promote Diversity in Health-Related Research	Improve research workforce diversity by supporting individuals from groups that are underrepresented in cancer and cancer health disparities research.
NOT-OD-21-134 – Supplements to Promote Re-Entry into Health-Related Research Careers	Help high-potential individuals re-enter an active biomedical and behavioral research career after absence due to family care or family responsibilities.
PAR-21-295, PAR-21-296 – NCI Mentored Research Scientist Development Award to Promote Diversity (K01)	Provide mentored support to individuals with a research or health professional doctoral degree and who are from underrepresented groups in health-related sciences.
PAR-21-299, PAR-21-300 – NCI Mentored Clinical Scientist Research Career Development Award to Promote Diversity (K08)	Provide intensive, supervised experience in basic, clinical, behavioral, translational or patient-oriented cancer research for health professionals underrepresented in health-related science.
PAR-21-301, PAR-21-302 – NCI Transition Career Development Award to Promote Diversity (K22)	Provide an extended period of protected time and support for individuals who are advanced postdoctoral and/or newly independent research scientists from backgrounds nationally underrepresented in biomedical, behavioral, clinical and/or social sciences.
Investigator Training	**Purpose**
PAR-21-061 – Exploratory Grant Award to Promote Workforce Diversity in Basic Cancer Research (R21)	Improve research workforce diversity by supporting investigators from underrepresented groups to conduct research projects focused on the basic biology of cancer.
Institutional Opportunities	**Purpose**
RFA-CA-21-020 – NCI Youth Enjoy Science (YES) Research Education Program (R25)	Support creation and maintenance of an institutional program to engage underrepresented grades 6–12 and/or undergraduate students, teachers and faculty in cutting-edge cancer research experiences.

Research Supplements to Promote Diversity in Health-Related Research

What Is a Diversity Supplement?

The NCI Research Supplements to Promote Diversity in Health-Related Research (Diversity Supplements) support research training for individuals from underrepresented groups throughout the continuum from high school students to investigators.

What Does a Diversity Supplement Offer?

This award offers several benefits, including:

- Support to advance academic and professional careers in cancer and biomedical research
- Budget that includes salary and fringe benefits for candidates, tuition for students, and limited supplies and travel with justification
- Opportunities to network with peers, mentors, and NCI Program Officers
- A gateway to further NCI and NIH funding opportunities

AT A GLANCE

Submission Periods: October 1 – December 1 and February 1 – March 31, yearly

Parent Grant: Must have at least two years of active status left at the time of supplement application

Candidates: High school students through investigator level individuals from underrepresented racial/ethnic groups, with a disability, or from disadvantaged backgrounds

Award Budget: Varies based on career level

Important Application Information

Principal Investigators (PIs) of parent grants are required to submit the application. Applications must include:

- Candidate qualifications and motivations
- An explanation about how the research project is relevant to the parent project and how it aligns with the candidate's career goals
- A clear description of the role of the mentor(s) and their qualifications
- A candidate-specific career development plan with appropriate benchmarks

Who Is an Eligible Candidate?

Eligible candidates include:

- High school, undergraduate, or graduate students, baccalaureate or master's degree holders, postdoctoral fellows, or investigators
- Individuals from a racial or ethnic group underrepresented in the biomedical, behavioral, clinical, or social sciences; individuals with a disability; or students from a disadvantaged background
- U.S. citizens or permanent residents

Please see the program announcement for additional eligibility criteria.

Learn More

NIH Program Announcement: https://grants.nih.gov/grants/guide/pa-files/PA-21-071.html

Guidelines: https://www.cancer.gov/about-nci/organization/crchd/diversity-training/cure/ds-guidelines.pdf

Prior to submitting an application, PIs, mentors, and candidates are strongly encouraged to contact the program officers at CUREsupplements@nih.gov.

Alison Lin, Ph.D.
(240) 276-6177

Samson Y. Gebreab, Ph.D., M.Sc.
(240) 276-6652

crchd.cancer.gov

Kirschstein-NRSA Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research

What Is the F31 Diversity Predoctoral Fellowship?

The Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research (F31 Diversity Training Fellowship) enhances the diversity of the health-related research workforce by supporting the research training of outstanding predoctoral candidates from underrepresented groups.

What Does the F31 Diversity Predoctoral Fellowship Offer?

This award offers several benefits, including:

- Individualized, mentored research training from outstanding faculty sponsors
- Experience conducting research using state-of-the-art methods, as well as presenting and publishing research findings as first author
- Development of a stronger skillset which makes you more competitive for NIH funding.

Am I Eligible?

You may be eligible if you have a baccalaureate degree and are:

- Currently enrolled in a Ph.D. degree program (or equivalent), a formally combined M.D./Ph.D. program, or other combined professional or clinical and research doctoral program at a domestic institution
- Working on a research project and have a sponsor, high academic performance in the sciences, and commitment to a career as an independent research scientist, physician-scientist, or other clinician-scientist
- From a racial or ethnic group underrepresented in biomedical, behavioral, or clinical sciences or have a disability
- From a disadvantaged financial or educational background
- Are a U.S. citizen or permanent resident.

AT A GLANCE

Submission Deadlines: December 8, April 8, and August 8, yearly

Eligibility: Predoctoral students from an underrepresented racial/ethnic group or with a disability, as well as students enrolled in a dual degree program with both research and clinical training, and those from a disadvantaged background

Award Budget: A $24,816 stipend, 60% of tuition and fees (up to a maximum of $21,000), and an institutional allowance up to about $4,200

How Does It Work?

The F31 Diversity Predoctoral Fellowship award may provide you with:

- Up to 5 years of support towards completing a Ph.D. or up to 6 years of training support for a combined M.D./Ph.D. degree or other combined dual-doctoral degree
- A stipend of $24,816
- 60% of tuition and fees—up to $16,000 for the Ph.D. program or up to $21,000 for the dual degree program
- An institutional allowance of about $4,200 nonfederal, $3,100 federal.

Where Do I Learn More?

For the full text of this Program Announcement, visit: https://grants.nih.gov/grants/guide/pa-files/PA-21-052.html

Prior to submitting an application, potential applicants are strongly encouraged to contact:

Anthony DiBello, Ph.D., Program Director
anthony.dibello@nih.gov | 240-276-6170

crchd.cancer.gov

NCI Mentored Research Scientist Development Award to Promote Diversity (K01)

What is a K01 Award?

The NCI Mentored Research Scientist Development Award to Promote Diversity (K01) is designed to enhance workforce diversity by promoting cancer research career development and mentored training experience to individuals from underrepresented groups.

What Does the K01 Award Offer?

This award offers several benefits, including:

- Three to five years of salary (up to $100,000), training, coursework, mentoring and research support
- Guidance from experienced mentors with a track record of NIH funding
- Increased publication productivity
- A pathway to an independent cancer research career and tenure track position
- Development of a strong skillset to help you be more competitive for NIH funding

AT A GLANCE

Submission Deadlines
February 12, June 12 and October 12, yearly

Resubmission Deadlines
March 12, July 12, and November 12, yearly

Eligibility
Postdoctoral and early stage investigators from an underrepresented racial/ethnic group or with a disability, as well as two to five years of training following completion of a doctoral degree

Award Budget
Up to $100,000 for salary and up to $30,000 in research development support for three to five years

How Does It Work?

The K01 award salary is based on a full-time, 12-month staff appointment:

- You must devote at least nine months to conducting cancer-related research
- You may devote the remaining effort to clinical pursuits, teaching, or other eligible activities
- NCI will provide up to $30,000 annually for career and research development support, which you may use for tuition and fees related to expenses such as: supplies, equipment, technical personnel, travel, and statistical services

Am I Eligible?

You may be eligible for a K01 award if you have a doctoral degree and you:

- Are from a racial or ethnic group underrepresented in biomedical, behavioral, social or clinical sciences, or have a disability
- Have completed at least two years of training following completion of a doctoral degree (but usually not more than five years)
- Are either a U.S. citizen or permanent resident

If you have a clinical doctoral degree, you may consider applying for an NCI Mentored Clinical Scientist Award to Promote Diversity (K08).

Where Do I Learn More?

For the full text of this Program Announcement, visit:

Independent Clinical Trial Not Allowed: https://grants.nih.gov/grants/guide/pa-files/PAR-21-295.html

Clinical Trial Required: https://grants.nih.gov/grants/guide/pa-files/PAR-21-296.html

Prior to submitting an application, potential applicants are strongly encouraged to contact:

Mulualem E. Tilahun, D.V.M., Ph.D., Program Director
mulualem.tilahun@nih.gov | 240-276-7360

crchd.cancer.gov

NCI Mentored Clinical Scientist Research Career Development Award to Promote Diversity (K08)

What is a K08 Award to Promote Diversity?

The K08 award enhances workforce diversity by providing clinical scientists with support and protected time for intensive, supervised research career development experience in the fields of clinical, behavioral, translational or patient-oriented cancer research.

Am I Eligible?

You may be eligible if you:

- Are from a group underrepresented in biomedical, behavioral, social, or clinical sciences. You may be eligible if you are from an underrepresented racial or ethnic group or have a disability.
- Have completed a clinical doctoral degree or a health professional doctoral degree (e.g., MD, DDS, DMD, DO, DC, OD, ND, DVM, PharmD, or PhD in clinical disciplines)
- Have completed two to five years of training following completion of a doctoral degree
- Are either a U.S. citizen or permanent resident by the time of award

AT A GLANCE

Submission Deadlines
February 12, June 12 and October 12, yearly

Resubmission Deadlines
March 12, July 12 and November 12, yearly

Eligibility
Clinical scientists from diverse backgrounds or with a disability, as well as two to five years of training following completion of a clinical doctoral degree

Award Budget
Up to the legislative salary cap, fringe benefits, and $50,000 in research development support for three to five years

What Does the K08 Award Offer?

This award offers several benefits, including:

- Three to five years of salary (up to the legislative salary cap and fringe benefits annually)
- Protected time for clinical research
- Mentorship from experienced investigators
- A pathway to an independent cancer research career

How Does It Work?

The award salary is based on a full-time, 12-month staff appointment.

- You must devote at least nine months to conducting cancer-related research
- You may devote the remaining effort to clinical pursuits, teaching, or other eligible activities
- NCI will provide $50,000 annually for career and research development support

Where Do I Learn More?

Learn more about this and other opportunities at: crchd.cancer.gov

For the full text of this PAR, visit:
No Independent Clinical Trials: https://grants.nih.gov/grants/guide/pa-files/PAR-21-300.html
Clinical Trial Required: https://grants.nih.gov/grants/guide/pa-files/PAR-21-299.html

Prior to submitting an application, potential applicants are strongly encouraged to contact:
Mulualem E. Tilahun, D.V.M, Ph.D., at mulualem.tilahun@nih.gov or (240) 276-7360

NIH NATIONAL CANCER INSTITUTE

Enhancing Diversity in the NCI Intramural Research Community

Intramural Continuing Umbrella of Research Experiences (iCURE)

Prospective Applicants

What Is iCURE?

iCURE is a program that attracts students and scientists into the multidisciplinary environment of the **NCI Intramural Research Program (IRP)** and supports their mentored research experiences.

iCURE is an extension of the NCI **Center to Reduce Cancer Health Disparities' (CRCHD)** highly successful extramural Continuing Umbrella of Research Experiences (CURE) training program. CURE supports the career progress of its scholars toward research independence and fosters diversity in the biomedical research pipeline.

What Does iCURE Offer?

The iCURE program provides:

- **One-year awards** for post-baccalaureate (including post-master's) individuals
- **Two-year awards** for graduate students
- **Three-year awards** for postdoctoral fellows.

iCURE scholars will also enjoy professional and career support such as:

- Opportunities to work closely with world-class researchers in the NCI IRP
- Support from NCI program staff as well as resources on intramural and extramural funding opportunities
- Professional development activities
- Connections to an extensive mentoring network.

Am I Eligible?

Eligible candidates include:

- Post-baccalaureate (including post-master's) individuals, graduate students, and postdoctoral fellows
- Citizens, non-citizen nationals, and legal permanent residents of the United States.

iCURE strongly encourages the participation of individuals from underrepresented populations and is aligned with NCI's interest in diversity.

What Types of Research Experiences Does iCURE Offer?

iCURE scholars will enjoy research opportunities in the NCI IRP, which includes the Center for Cancer Research (CCR) and the Division of Cancer Epidemiology and Genetics (DCEG).

CCR conducts **basic and clinical cancer research** and develops breakthrough discoveries into novel therapeutic interventions for adults and children afflicted with cancer or HIV.

DCEG is a global leader in **cancer epidemiology and genetics research**, and is uniquely positioned to conduct projects that are high risk in nature.

AT A GLANCE

iCURE
Conduct research at the National Cancer Institute.

Candidates
Post-baccalaureate (including post-master's) individuals, graduate students, and postdoctoral fellows

Diversity
iCURE strongly encourages the participation of individuals from underrepresented populations.

Submission Period
Stay tuned for Fall 2021 application period.

Where Do I Learn More?

For more information about iCURE, eligibility, and to learn how to apply, please visit: www.cancer.gov/about-nci/organization/crchd/diversity-training/icure

Prospective candidates are strongly encouraged to contact Dr. Alison Lin, Dr. Jessica Calzola, and Dr. Eric Johnson Chavarria at iCURE@nih.gov.

Becoming an iCURE Scholar

You must submit an application to be considered for an iCURE research experience. Once your application has been submitted, it will be reviewed by iCURE program staff and NCI Principal Investigators (PIs) who are interested in being mentors.

You will complete several interviews during the matching process, both with iCURE staff and PIs. More than one PI may offer to interview you.

The application timeline is:

October 15 - February 5
Applications Accepted

January - February
Application Review

March
First Round Decisions

March – May
Interviews

June
Final Award Decisions

September 1
iCURE Start Date

Frequently Asked Questions (FAQs)

Can I participate in iCURE and continue to conduct research at my current institution?
No, iCURE supports mentored research experiences within the NCI Intramural Research Program on-site in Bethesda, Rockville, and Frederick, Maryland.

When do iCURE research experiences begin?
iCURE cohorts start on September 1.

I have a work permit/student visa, am I eligible for an iCURE award?
No, iCURE can only support citizens, non-citizen nationals, and legal permanent residents of the U.S.

Do iCURE scholars get paid?
Yes, iCURE scholars receive standard stipends from NIH.

Does iCURE pay for relocation or housing expenses?
No, iCURE does not provide relocation or housing costs.

Do I need to identify a mentor with whom I wish to work?
No, you do not need to identify or contact a PI or group when you apply to the iCURE program. iCURE will help you match with a mentor. However, we encourage you to let us know if there is a specific PI or project you are interested in.

Can I Interview with more than one potential mentor?
Yes, you may be offered interviews with more than one PI. Additionally, more than one PI may express interest in you joining their group. You may choose to accept or decline offers.

What if the research group I am interested in isn't listed on the iCURE web page?
Please let us know the group you are interested in and we will follow up.

Do I need to submit written recommendations with my application?
No, you do not need to provide reference letters, only the required information listed on the web page. We will contact references directly for recommendations.

Do I need to submit an official transcript by the application deadline?
No, you may provide an unofficial transcript when you apply. However, you may be asked to provide an official transcript at a later date.

What if I need more time to complete my research than the period of support iCURE offers?
iCURE PIs may choose to continue to support your research past the period of support iCURE provides. You will still be welcome to participate in iCURE activities.

For more detailed information about the application process and program requirements, please visit the iCURE webpage or email iCURE@nih.gov.

The Geographic Management of Cancer Health Disparities Program

The Geographic Management of Cancer Health Disparities Program (GMaP) — consisting of 7 regions and engaging more than 1,200 disparities researchers, diversity trainees, and community health educators — employs a systematic and comprehensive strategy for building region-based "hubs" or networks for the support and efficient management of cancer and cancer health disparities (CHD) research, training, and infrastructure.

How Can GMaP Help You?

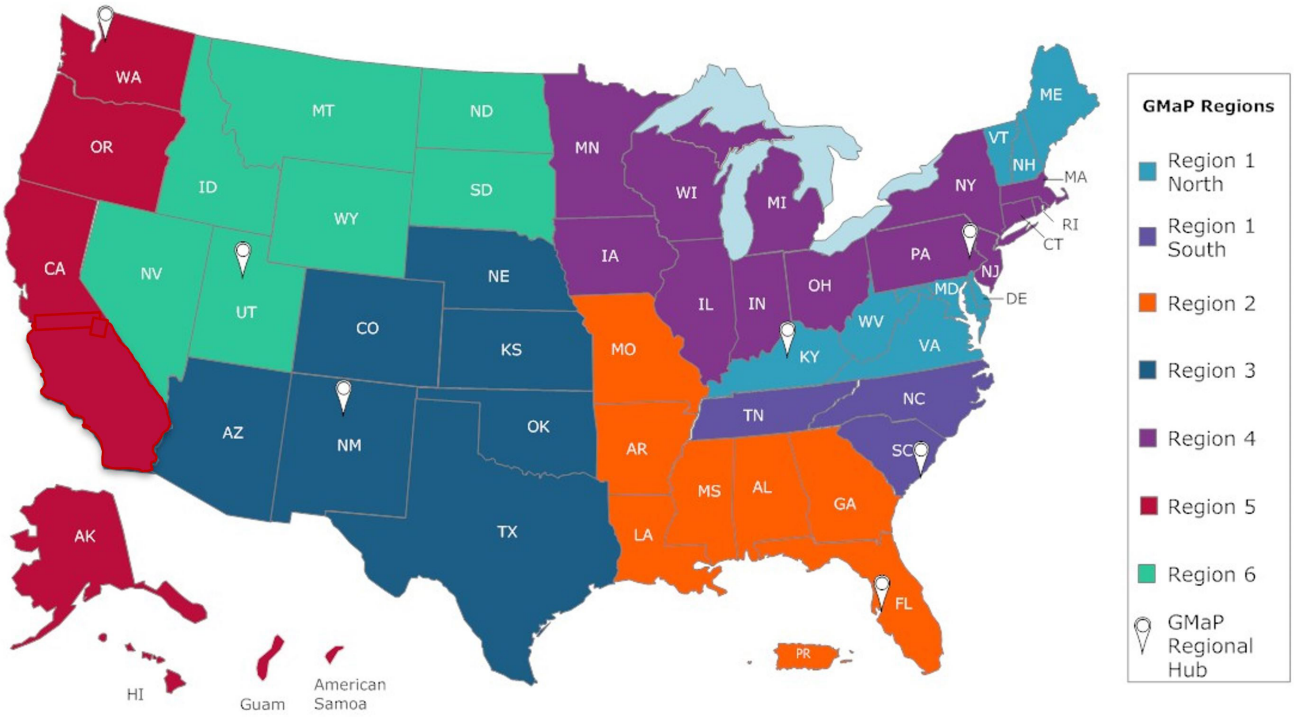
Fostering cooperation and collaboration among researchers, students, and trainees, and community health educators, GMaP seeks to contribute to the science of cancer and CHD research; promote the development of the next generation of competitive, underrepresented cancer and CHD investigators; and enhance access to cancer information and research among underserved communities.

GMaP provides you with enhanced access to career development resources, such as:

- Informational Webinars on Funding Opportunities
- Job Openings
- Networking Opportunities
- Travel/Pilot Project Funding
- Mentoring Connections
- NCI and NIH Updates
- Access to Scientific Resources
- Grant Writing Workshops
- Cancer and Cancer Health Disparities Resources and Tools
- Training Navigation
- Biospecimen/Biobanking

Where Is GMaP?

There are seven regional hubs housed at NCI-Designated Cancer Centers across the United States.



Get Involved!

Contact the Regional Coordinating Director in your region or visit your local GMaP website to find out how GMaP can help you.

1N **Markey Cancer Center – DE, KY, MD, ME, NH, VT, VA, WV, DC**

http://gmapr1.com

Erin J. Oakley | erinjoakley@uky.edu

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Mabinty Conteh | mconteh4@jhmi.edu

Noelle Voges | nev6e@virginia.edu

1S **Hollings Cancer Center – TN, NC, SC**

www.hollingscancercenter.org/about-hollings/commitments/GMaP/index.html

Anissa I. Vines | avines@email.unc.edu

2 **Moffitt Cancer Center & Research Institute – AL, AR, FL, GA, LA, MO, MS, PR**

https://moffitt.org/research-science/partnerships/community/gmap/

Z'Kera Sims | ZKera.Sims@moffitt.org

Vivekka Suppiah | Viveekka.Suppiah@moffitt.org

3 **University of New Mexico Cancer Center – AZ, CO, KS, NE, NM, OK, TX**

http://cancer.unm.edu/gmap-region3/

Miria Kano | MKano@salud.unm.edu

4 **Fox Chase Cancer Center – CT, IA, IL, IN, MA, MI, MN, NJ, NY, OH, PA, RI, WI**

https://www.foxchase.org/gmap_r4

Linda Fleisher | Linda.Fleisher@fccc.edu

Carrie Norbeck | Carrie.Norbeck@fccc.edu

5 **Fred Hutchinson Cancer Research Center – AK, CA, HI, OR, WA, American Samoa, Guam**

www.fredhutch.org/en/labs/science-projects/GMap.html

Sara Cole | Scole2@fredhutch.org

6 **Huntsman Cancer Institute – ID, MT, NV, ND, SD, UT, WY**

https://uofuhealth.utah.edu/huntsman/research-areas/cancer-health-equity/programs/gmap/

Emily Kay | Emily.Kay@hci.utah.edu

For general information about GMaP, contact a Program Director with the NCI Center to Reduce Cancer Health Disparities.

Anil Wali | walia@mail.nih.gov

LeeAnn Bailey | leeann.bailey@nih.gov

www.cancer.gov/about-nci/organization/crchd/inp/gmap

National Cancer Institute

Center to Reduce Cancer Health Disparities

NATIONAL OUTREACH NETWORK (NON)

NON Overview

The National Cancer Institute's (NCI) National Outreach Network is a multidisciplinary program that bridges NCI-supported outreach and community education efforts with cancer health disparities research and training programs across the country. NON conducts outreach and research activities through trained community health educators (CHEs) located at partnering NCI-designated Cancer Center sites, the communities in their catchment areas, and the regional GMaP initiative.

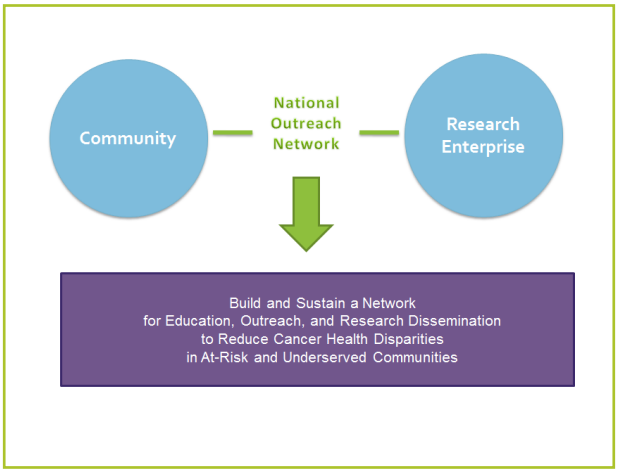
Goals

- Enhance NCI's cancer disparities research efforts through local and regional culturally tailored education/outreach within underserved communities.
- Enhance NCI's ability to disseminate culturally appropriate, evidence-based cancer information to underserved communities.
- Adapt and test culturally tailored education/outreach activites that address local and regional cancer health disparity issues.
- Promote a diverse cancer health disparities workforce.

Objectives

- Integrate NON CHEs within the research and outreach efforts of the cancer centers and the communities in their catchment areas.
- Plan, conduct, and assess CHE-facilitated community education and outreach, aligned with NCI and cancer center research and outreach priorities, within underserved communities.
- Strengthen partnerships/collaborations with key NCI-sponsored academic, research, community, and regional partners to enhance NCI's ability to effectively reach underserved communities with tailored cancer information and foster community engagement in research.

For more information, contact Ms. Sandra San Miguel at sandra.sanmiguel@nih.gov.



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

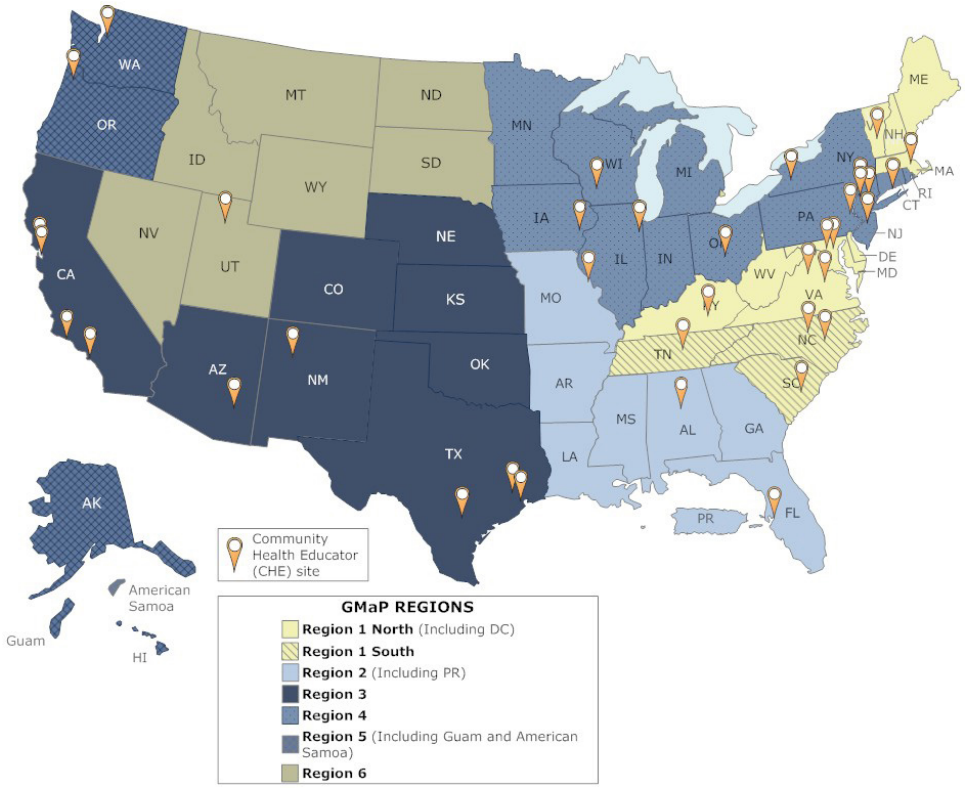
National Institutes of Health

Center to Reduce Cancer Health Disparities

NON COMMUNITY HEALTH EDUCATORS (CHEs)

Community health educators are experienced in communications, comprehensive cancer control, training, program planning, and evaluation, and are embedded into NON's 37 participating NCI-designated Cancer Centers around the U.S. They serve as vital links between NCI, grantee institutions, and communities to identify needs and disseminate culturally tailored cancer information.

Scan this QR code with your mobile device to access NON information online.



NON CHE Outreach Activities

- Identify gaps and barriers to the integration of community education/outreach within the cancer center and propose strategies to resolve them.
- Identify specific ways that CHE-facilitated community education/outreach can enhance the research and outreach efforts of the cancer center grant.
- Adapt/implement CHE-facilitated education/outreach strategies aligned with the cancer center focus and linked by NCI priorities and GMaP regional cancer health disparity issues.
- Identify CHE-facilitated education/outreach resources and strategies for further testing, as appropriate.

NON CHE Community Activities

- Develop and maintain academic and community partnerships to enable access to and delivery of culturally appropriate, evidence-based cancer information and education to underserved communities locally and regionally.
- Collaborate with academic, research, community, and regional NCI partners to develop, implement, and assess disparities-focused education and outreach efforts linked to local, regional, and NCI research priorities.

Center to Reduce Cancer Health Disparities
9609 Medical Center Drive
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Sixth Floor, West Tower
Bethesda, MD 20892
Phone: 240-276-6170
Fax: 240-276-7862
CRCHD.CANCER.GOV

Training Navigation

What Is Training Navigation?

The NCI Center to Reduce Cancer Health Disparities, (CRCHD) training navigation facilitates underrepresented scholars' successful entry, transition and advancement through the Continuing Umbrella of Research Experiences (CURE) training pipeline to independent research careers.

What does training navigation offer?

Training navigation provides information about CURE funding opportunities tailored to your training or career level and helps make connections with CURE Program Directors and the Geographic Management of Cancer Health Disparities Program (GMaP).

Training navigation provides the following career development support for potential and current CURE scholars:

- Assists new potential applicants in successfully entering the CURE training pipeline
- Assists current CURE scholars transitioning through the CURE pipeline to their next independent award
- Supports mid-career and established underrepresented investigators in developing the skills required to obtain R-type awards for career advancement.

How can training navigation help me?

There are many ways that training navigation can support your career development:

- Help identify CURE funding opportunities that you may qualify for
- Introduce you to CURE Program Directors
- Share NIH and NCI resources for competitive application preparation
- Send periodic updates about submission dates and funding opportunities
- Connect you with your GMaP region and its resources, tools, and networking opportunities.

How do I get started?

Contact the CRCHD Training Navigation Team: Dr. Mary Ann Van Duyn (vanduynm@mail.nih.gov) and Victoria Coan (victoria.coan@nih.gov).

What Is the CURE Pipeline?

CURE provides training opportunities across the academic continuum, ensuring that underrepresented students, trainees, and investigators have the skills required to become competitive cancer researchers.

Learn more about CRCHD, CURE, and GMaP: crchd.cancer.gov

Acknowledgments

Acknowledgments

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CENTER TO REDUCE CANCER HEALTH DISPARITIES

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NCI – Center to Reduce Cancer Health Disparities

Chair

Dr. Maria Jamela R. Revilleza

Members

Dr. H. Nelson Aguila
Dr. LeeAnn Bailey
Ms. Dionne Burt
Mr. Brian Davis
Ms. Sandra L. San Miguel
Mr. Fred Snyder
Dr. Mary Ann S. Van Duyn

NCI – Center for Biomedical Informatics and Information Technology

Mr. Daniel Eiskant

NOVA Research Company

Ms. Michelle Murray
Mr. Benjamin Neal
Ms. Kathy Sedgwick

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