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EINSTEIN

Albert Einstein College of Medicine

Note: The research projects included in this report are those that were active during the calendar period 2019-2020 and in which a DEPH faculty member played a key role, as indicated parenthetically beside the title of the project.

CHAIRMAN'S INTRODUCTION

It is my privilege to introduce the research report for the Department of Epidemiology and Population Health (DEPH) at Einstein for the 2019-2020 calendar period. The ensuing pages provide a brief introduction to the departmental faculty and their research interests (more detail is available on our website at epi.montefiore.org). COVID-19 notwithstanding, the department has continued its extraordinary success with respect to growing its research portfolio, with the vast majority of our grant funding coming from the National Institutes of Health. The continued success of the department owes as much to the dedication of its staff as to the vigor and collaborative spirit of its faculty. I am deeply grateful to all departmental members for their outstanding contributions to the department during this challenging period.

Thomas E. Rohan, MBBS, PhD, DHSc
Professor and Chairman
January 2021

DEPARTMENTAL MISSION STATEMENT

The mission of the Department of Epidemiology and Population Health is to generate and disseminate knowledge, and to inform policy and practice, in order to improve the health of the individual and society.

OFFICE OF THE CHAIRMAN
MISSION

The Office of the Chairman is responsible for overall administration of the departmental research and educational programs. The Office also hosts and collaborates on a number of ongoing research projects. Current projects are focused on cohort investigations of the roles of genetic/molecular and environmental factors in the etiology and molecular pathogenesis of various cancers (e.g., breast, colon, endometrium, ovary).

FUNDED RESEARCH

Thomas E. Rohan, MBBS, PhD, DHSc

Molecular Markers of Risk of Subsequent Invasive Breast Cancer in Women with Ductal Carcinoma In Situ (*MPI*)
NIH/National Cancer Institute; 9/15/17-7/31/22
The goal of this project is to study molecular markers of risk of progression from DCIS to invasive breast cancer.

Novel Risk Factors for Breast Cancer in Women with Benign Breast Disease (*PI*)
Breast Cancer Research Foundation; 10/1/18-9/30/19
The goal of this project was to conduct feasibility studies of breast cancer risk in relation to both the immune microenvironment and the protein profile of benign breast disease tissue.

TMEM, MENA^{calc}, and MENA^{INV} as Prognostic Markers for Breast Cancer Metastasis in a Multi-Ethnic Population (*PI*)
Breast Cancer Research Foundation; 10/1/19-9/30/20; 10/1/20-9/30/21
The goal of this project is to examine the association between TMEM/Mena^{calc}/Mena^{INV} and risk of distant metastasis in a multi-ethnic cohort of breast cancer patients.

TMEM, Mena^{calc}, and Mena^{INV} as Prognostic and Predictive Markers for Breast Cancer Metastasis (*MPI*)
NIH/National Cancer Institute; 7/1/20-6/30/25
The major goal of this project is to examine the association of markers of dissemination competent tumor cells (Mena^{calc}/Mena^{INV}) and intravasation (TMEM) with risk of distant metastasis.

DIVISION OF
BIOMEDICAL & BIOETHICS RESEARCH TRAINING
MISSION

The Mission of the Division of Biomedical and Bioethics Research Training is to foster the training of clinical researchers and bioethics practitioner-scholars for the Einstein and Montefiore community, and for the larger community of New York City.

The Division offers a range of educational programs. The Certificate Program in Bioethics and the Medical Humanities, ongoing for twenty-six years, trains doctors, lawyers, nurses, scientists, social workers, law and medical students and recent college graduates in a year-long introductory bioethics course. The Master of Science in Bioethics can be completed on a full-time or part-time basis and draws students from the tri-state area. Courses focus on issues that provide more just and satisfactory interactions for patients, families, providers and research participants. The Clinical Research Training Program (CRTP), in association with Einstein's Institute for Clinical and Translational Research (supported by the CTS Award), offers both an MS and a PhD in Clinical Investigation, within Einstein's PhD and MD-PhD (MSTP) Graduate Division programs.

PROGRAMS and FUNDED RESEARCH

Tia Powell, MD, Division Head
Tia Powell is Director of the Montefiore Einstein Center for Bioethics and of the Certificate and Master of Science programs in Bioethics. Her scholarship focuses on bioethics issues related to dementia, end of life care, LGBT issues and public health disasters.
Program in Biomedical Ethics (*Program Director*)
Trachtenberg and Frackman Family Endowment; 7/1/16-open
Dr. Powell is the Trachtenberg Frackman Faculty Scholar, with responsibility for teaching and research in bioethics, organizing an annual lecture at Einstein by a distinguished scholar in the field, and for conducting an annual essay contest for undergraduate students on selected topics in bioethics.

Lauren Flicker, PhD
Lauren Flicker is Associate Director of the Center for Bioethics and of the Einstein Cardozo Master of Science program in Bioethics, and Director of the Certificate Program in Bioethics and Medical Humanities. Her research interests include reproductive ethics, end of life care, and ethics education.

Adira Hulkower, JD, MBE
Adira Hulkower is the chief of the Bioethics Consultation Service for Montefiore Health Systems. She teaches bioethics to medical students, residents, and bioethics students. Her

research interests include safe discharge planning, end of life planning for unbefriended patients, and narrative medicine.

Aileen P. McGinn, PhD

Aileen McGinn is the Director of the Clinical Research Training Program (CRTP), an intensive two-year Master's program designed for those pursuing a career in investigator-initiated, hypothesis-driven clinical research. Her research interests include educational research and investigating hormonal, inflammatory, and metabolic influences on risk of cardiovascular disease.

Ellie Schoenbaum, MD

Ellie Schoenbaum is Director of Medical Student Research in the Office of Medical Education. Her work also focuses on grant writing workshops. She initiated the "Reach for the First R01" course and teaches grant writing to T32 scholars in the Department of Surgery.

DIVISION OF BIOSTATISTICS

MISSION

Biostatistics is the development and application of quantitative methods to address questions arising in medicine, biology, and public health. The goal of the Division of Biostatistics is to advance knowledge in these fields by using mathematics, statistics, and computational approaches in all stages of research to ensure that scientific evidence is gathered, analyzed, and interpreted in a valid and efficient manner. Methodologic research areas include clinical trials, epidemiologic methods, survival analysis, longitudinal data analysis, machine learning algorithms, frailty models, measurement error, and statistical genetics and genomics. Collaborative research activities include studies in cancer, AIDS, aging, cardiovascular disease, neurology, rheumatology, health behaviors, and environmental health.

PROGRAMS and FUNDED RESEARCH

Mimi Y. Kim, ScD, Division Head

An Integrated Analysis of Data from Multi-Center Trials in Lupus (*PI*)
Lupus Foundation of America; 2/1/10-9/30/19
In the past two decades, more than a dozen investigational products for lupus have entered phase II/III clinical trials and have failed. These trials have been burdened by the inherent heterogeneity of the disease and variation in the severity of symptoms. The goal of this project was to use statistical modeling approaches to identify predictors of disease outcomes in lupus patients randomized to the placebo arms of multiple clinical trials, and to use the knowledge gained from the study to design more efficient trials of future investigational agents.

Adverse Pregnancy Outcomes in Women with Systemic Lupus Erythematosus: Improving and Validating Risk Prediction (*MPI*)
NIH/National Institute of Arthritis, Musculoskeletal and Skin Diseases; 9/1/20-8/31/22
The goal of this project is to develop and externally validate an accurate and clinically useful prediction model for adverse pregnancy outcomes in SLE patients.

TNF-alpha Blockade with Certolizumab to Prevent Pregnancy Complications in High-Risk Patients with APS (*Subcontract PI*)
NIH/National Institute of Arthritis, Musculoskeletal and Skin Diseases; 8/15/16-8/31/21
This study is conducting the first trial of a biologic therapy to prevent adverse pregnancy outcomes (APOs) in high-risk antiphospholipid antibody syndrome (APS) pregnancies. Specific aims are to determine whether TNF-α blockade during pregnancy, added to a regimen of heparin and low dose aspirin, (1) reduces the rate of APOs in women with clinical APS and Lupus Anti-Coagulant, and (2) alters angiogenic markers of poor placental vascularization. An open label single stage Phase II trial of certolizumab (a TNF-α inhibitor that does not cross the placenta) is being conducted.

Preventive Approach to Congenital Heart Block with Hydroxychloroquine (PATCH) (*Subcontract PI*)
NIH/National Institute of Child Health and Human Development; 1/1/15-12/31/19
The goal of this project was to determine whether hydroxychloroquine (HCQ) use during pregnancy prevented recurrence of congenital heart block (CHB).

The Manhattan Lupus Surveillance Program (*Subcontract PI*)
NYCDOH/CDC; 6/1/16-5/31/20
The Manhattan Lupus Surveillance Program (MLSP) was a population-based registry comprised of systemic lupus erythematosus (SLE) patients treated in New York County. The primary goal of the MLSP was to capture information that could be used to determine the prevalence of SLE in 2007 and incidence of SLE during 2007-09 among Manhattan residents. Of specific interest were SLE rates among Hispanics and Asians for whom epidemiologic data are very limited.

Translational Center for Molecular Profiling of Preclinical and Established Lupus (COMPEL) (*Subcontract PI*)
NIH/National Center for Advancing Translational Sciences; 9/22/17-8/31/22
The focus of this application is on molecular comparisons and contrasts between clinically asymptomatic and symptomatic autoimmunity to elucidate protective, inciting, and perpetuating events in the pathogenesis of systemic lupus erythematosus.

Jaeun Choi, PhD

Dr. Choi is a biostatistician who works with the Department of Pediatrics and the Institute of Clinical and Translational Research at Montefiore Medical Center/Albert Einstein College of Medicine. Her research interests include statistical methods for causal inference, comparative effectiveness research, survival analysis, correlated response and longitudinal data analysis.

Hillel W. Cohen, DrPH, MPH

Dr. Cohen heads the Biostatistics Core for the Clinical Research Center which is part of the Institute for Clinical and Translational Research (ICTR). He provides consultations for Einstein investigators through the Biostatistical Consultative and Services Support Resource of the ICTR, teaches Biostatistics I and II in the Clinical Research Training Program (CRTP), and leads seminars in biostatistics for faculty, residents, fellows and post-docs. In addition, he provides biostatistical support as a collaborating co-investigator on several clinical research grants.

Melissa Fazzari, PhD

Dr. Fazzari collaborates with investigators in the Department of Obstetrics & Gynecology and Women's Health and the Center for AIDS Research. She also serves as a statistical mentor and course developer for the CRTP and the PhD in Clinical Investigation program. Dr. Fazzari's statistical research interests include: longitudinal and clustered study design and analysis; clinical trials; and machine learning methods to identify subgroups in clinical trials.

Qi Gao, PhD, MS

Dr. Gao is a biostatistician collaborating with investigators in various departments including Pediatrics, Family and Social Medicine, and Epidemiology and Population Health. She is also involved in the Einstein Aging Study, focusing on examining the associations between the aging brain and various risk factors, as well as behavior changes.

Charles B. Hall, PhD

Evolution of Risk Factors for Lung Function Decline in WTC Exposed Firefighters (*Subcontract PI*)

National Institute for Occupational Safety and Health/CDC; 9/1/16-8/31/19

The primary goal of this investigation was to develop risk stratification models to identify WTC-exposed patients who are at risk for progressive decline in lung function and airway reactivity. Dr. Hall was the lead biostatistician for the study.

Incidence, Latency, and Survival of Cancer following World Trade Center Exposure (*MPI*)

National Institute of Occupational Safety and Health/CDC; 9/1/16-8/31/21

Combining follow-up from all three cohorts of World Trade Center (WTC) rescue/recovery workers, this study will update estimates of the effect of WTC-exposure on cancer incidence, study in detail the latency period between exposure and cancer incidence, and study the effect of WTC-exposure and other prognostic factors on survival after cancer diagnosis in this population.

Mortality Among World Trade Center Rescue/Recovery Workers (*MPI*)

National Institute for Occupational Safety and Health/CDC; 7/1/17-6/30/21

Preliminary analyses based on comparisons with the general population showed reduced mortality among WTC rescue and recovery workers, which may be due to selection of healthy workers in the cohorts. In this study, we plan to perform a number of analyses of a combined database comprising three WTC cohorts to address the possible `healthy worker effect' and to investigate whether there is any indication of a possible effect of WTC exposure on mortality of these workers.

Treatment Response of WTC Related Airway Injury *(Subcontract PI)*

National Institute of Occupational Safety and Health/CDC; 7/1/19-6/30/21

Exposure to dust and smoke at the WTC collapse site has caused ongoing loss of lung function and reduced quality of life. The effectiveness of medications in treating accelerated decline in lung function is unclear. This grant will define how effective current treatments are, information essential to direct future therapy.

Ryung S. Kim, PhD

Dr. Kim conducts research on big data (from electronic health records), epidemiological study methods, statistical genomics, and evaluation of community health programs. He is also a biostatistician for the Albert Einstein Cancer Center and for the Harold and Muriel Block Institute for Clinical and Translational Research.

Juan Lin, PhD

Dr. Lin is a biostatistician who collaborates with Albert Einstein Cancer Center investigators and provides statistical support for medical students' research projects. Her research interests are in high dimensional data analysis and in HIV-related cardiovascular disease epidemiology.

Yungtai Lo, PhD

Dr. Lo collaborates with investigators in the Departments of Orthopedics, Pathology, and Rehabilitation Medicine on the design and analysis of clinical trials and epidemiologic studies. His methodological research interests focus on developing methods for determining the number of components in mixture models, applications of mixture models in biomedical research, and two-part models for longitudinal semi-continuous data.

Jee-Young Moon, PhD

Dr. Moon collaborates on projects in the Hispanic Community Health Study (HCHS/SOL) and the Women's Interagency HIV Study (WIHS). Her research interests include statistical methods for microbiome studies, genome-wide association studies, gene x environment interactions, Mendelian randomization, and causal inference.

Wenzhu Mowrey, PhD

Dr. Mowrey collaborates on projects in the areas of radiology, psychiatry, neurology, neurosurgery, neuroscience, rheumatology, allergy/immunology and nephrology. Her statistical methodology interests include analysis of neuroimaging data from all modalities (PET, MRI, fMRI, DTI, EEG, MEG and optical imaging), sparse clustering, dimension reduction of high dimensional data, and survival and longitudinal data analysis.

Abdissa Negassa, PhD

Dr. Negassa collaborates with investigators in the Albert Einstein Cancer Center, in the Division of Cardiology (Department of Medicine) and in the Department of Dentistry. His research interests include tree-based methods, survival analysis, analysis of correlated data, omitted covariates, developing prognostic/predictive models, biomarker discovery, and epidemiological methods. He also collaborates on observational studies based on large databases and clinical trials.

Comparative Effectiveness of Biologic Agents in Ethnic Minorities with Colorectal Cancer (*MPI*)

NIH/National Institute of Aging; 6/1/18-5/31/20

Using a large SEER-Medicare database, this study sought to validate the differential beneficial effect of biologic agents when added to chemotherapy in patients with metastatic cancer.

Kith Pradhan, PhD

Dr. Pradhan is a biostatistician who collaborates with investigators in the Albert Einstein Cancer Center. His main research interests include improving analysis methodologies in nextGen sequencing and high performance computing.

Collaboratory for Atlasing Cell Type Anatomy in the Female and Male Mouse Brain (*Subcontract PI*)

NIH/National Institute of Mental Health; 9/20/17-5/31/22

The proposed work will yield a comprehensive characterization of single cell anatomy for over 80 selected cell types across the entire female and male mouse brain. Furthermore, all microscopy and computational methods will be made freely available to the neuroscience community and we will establish "how-to" manuals to facilitate their use, with the aim of extending the impact of the proposed qBrain atlasing approach beyond the scope of the work carried out by our Collaboratory.

Shankar Viswanathan, DrPH

Dr. Viswanathan collaborates with investigators in the Department of Radiation Oncology and in the Albert Einstein Cancer Center. Dr. Viswanathan's research interests include multivariate survival analysis, longitudinal data analysis, methods for analyzing missing data, and agreement statistics. His applied areas of interest are obesity, injury epidemiology and infectious disease epidemiology.

Cuiling Wang, PhD

Dr. Wang is Director of the Statistical Core for the Einstein Aging Study. She collaborates extensively on aging, cognition, mobility and Parkinson Disease studies with the Department of Neurology and is a biostatistician in the Institute for Clinical and Translational Research. Her research interests include methods for handling missing data, analysis of longitudinal data, mediation analysis, and ROC and survival analysis.

Correction of Bias in Estimating Risk of Alzheimer's Disease and Cognitive and Mobile Decline Using Auxiliary Information (*PI*)
NIH/National Institute of Aging; 9/15/17-5/31/21
The goal of this project is to examine how various auxiliary data can help reduce bias in the estimation of risk of disease and change in longitudinal outcomes from non-random missing data through extensive simulation studies, followed by application to incidence of Alzheimer's disease and the decline of cognitive and mobile performance in aging cohorts.

Statistical Core, The Einstein Aging Study (*Core Director*)
NIH/National Institute of Aging; 9/30/16-5/31/21
The Einstein Aging Study is a prospective cohort study of community dwelling elderly individuals in the Bronx, NY. The Statistical Core is responsible for data management and analysis for all cores and projects of the program project grant.

Tao Wang, MD, PhD

Statistical Analysis of Large Genomic Data Sets (*Site PI*)
NIH/National Human Genome Research Institute; 5/8/20-2/29/24
The goal of this study is to develop novel statistical methods and software tools for analyzing multiple correlated traits using existing summary statistics to address the causal relationships among complex traits, for prioritizing genetic variants sensitive to interaction effects, for estimating the overall contribution of interactions to a phenotype, and for detecting rare genetic variants from whole genome sequencing data.

Li Xia, PhD

Dr. Xia is a biostatistician and bioinformatician collaborating with investigators in the Department of Pediatrics and the Department of Pathology. His research includes statistical methodology development and large-scale data analysis for single cell and bulk level genomics, metagenomics, transcriptomics and multi-omics integration.

Identifying Actionable Microbial Biomarkers for Cancer Therapy Using Big Data Approaches (*Subcontract PI*)
Innovation in Cancer Informatics; 12/15/18-12/15/20
The goal of the study was to identify microbiome determinants of the immune microenvironment that reduced immunotherapy response in many cancers.

Xianhong Xie, PhD

Dr. Xie is a biostatistician who works on the Women's Interagency HIV Study (WIHS). His research interests include methods for analyzing longitudinal data with missing values and measurement errors, survival analysis, image data analysis, and nonparametric smoothing splines.

Xiaonan Xue, PhD

Dr. Xue is the Director of the Biostatistics Shared Resource of the Albert Einstein Cancer Center and is a member of the Institute for Clinical and Translational Research. She collaborates on epidemiologic and clinical studies of cancer, cardiovascular disease, and infectious disease. Dr. Xue's methodologic research interests include survival analysis, longitudinal studies, and cancer screening and diagnosis methods.

Kenny Ye, PhD

Dr. Ye's research focuses on statistical design and analysis in genetics and genomics. He conducts methodological research in statistical modeling and data mining with high dimensional data. He is developing new statistical and computational approaches for novel application to next generation sequencing data in biomedical research. He is also developing novel statistical approaches for quantifying genetic contributions to disease traits.

Structure and Function of Neonatal Social Communication in Genetic Mouse Models of Autism (*Subcontract PI*)
NIH/National Institute on Deafness and Other Communication Disorders; 8/1/17-7/31/22
The goals of this project are to: determine if CNVs result in atypical vocalization structure during the neonatal period and if they are correlated with autism spectrum disorder (ASD)-like behaviors; determine the impact of atypical neonatal vocalization on maternal care; and measure the effect of altered maternal care on the severity of ASD-like behaviors and CNV gene expression and epigenetic modification.

Genetic Contribution of Autism (*Subcontract PI*)
Simons Foundation; 1/1/17-12/31/21
The major goal of this project is to identify the genes involved in autism using sequencing technology and to model the genetic causes of autism.

DIVISION OF EPIDEMIOLOGY

MISSION

The broad aims of the Division of Epidemiology in the Department of Epidemiology & Population Health are to conduct studies in human populations to determine the burden of disease, the behavioral/environmental and molecular etiologic risk factors that underlie disease development and outcomes, as well as actionable targets for screening, prevention, and treatment, and the effectiveness of these interventions.

PROGRAMS and FUNDED RESEARCH

Howard D. Strickler, MD, MPH, Division Head

Next Generation of HPV and Cervical Cancer in HIV+ Women (*MPI*)
NIH/National Cancer Institute; 7/11/18-6/30/23
This study will use recently developed next generation sequencing assays to study for the first time in HIV(+) women: the natural history and role of HPV reactivation in cervical disease, the effects of HPV DNA methylation on precancer risk, and the impact of the cervicovaginal microbiome on risk of HPV infection and its persistence, as well as the development of HPV methylation and the incidence of cervical precancer.

Beta-/Gamma-HPV and Their Relation with Cervical Precancer in HIV+ Women (*PI*)
NIH/National Cancer Institute; 7/1/20-6/30/22
This study will examine β-/γ-HPV natural history and its relation with cervical precancer/cancer in the Women's Interagency HIV Study (WIHS).

Investigations into The Molecular Pathogenesis of Cervical Glandular Neoplasias (*MPI*)
NIH/National Cancer Institute; 7/2/20-6/30/25
This study will determine the natural history of cervical HPV and adenocarcinoma (ADENO) precursors (i.e., samples prior to the diagnosis of ADENO and from

adenocarcinoma in situ (AIS)) with the goal of defining molecular precursors of ADENO. We will measure host and HPV viral methylation changes and HPV viral integration to molecularly define the natural history of ADENO, compare and contrast these findings with the better-known natural history of squamous cell carcinoma, and develop a risk-prediction model for AIS/ADENO precursors using HPV genotypes, HPV viral and host gene epigenetics, and HPV viral integration.

Ilir Agalliu, MD, ScD

Dr. Agalliu's research interests are related primarily to genetic and environmental studies of cancer and his research focuses on investigating the role of environmental, lifestyle, and genetic/molecular factors in prostate cancer etiology, recurrence, progression and mortality. He has been involved in genetic association studies, genotyping projects related to rare mutations, and fine mapping for prostate cancer and other cancers. Dr. Agalliu's research activities involve collaborations with several consortia of the genetic epidemiology of prostate, pancreatic, and breast cancers, as well as Parkinson's disease, and he has taken the lead in molecular epidemiologic studies of oral HPV with risks of head and neck cancer and of esophageal cancer in two large cohort studies.

Genetics of Prostate Cancer in Africa (*Subcontract PI*)
NIH/National Cancer Institute; 9/7/15-8/31/21
The goal of this study is to undertake genetic association studies of prostate cancer etiology and aggressiveness as well as evaluate African ancestral relationships in five regions in Africa.

Philip Castle, PhD, MPH

Cryopen: An Innovative Treatment for Cervical Precancer in Low-Resource Settings (*Subcontract PI*)
NIH/National Cancer Institute; 5/14/15-8/31/19
The major goal of this study of 1,000 women diagnosed with cervical precancer was to demonstrate the efficacy of a next generation, low resource-adapted CryoPen for treatment.

High Resolution Imaging & HPV Oncoprotein Detection for Global Prevention of Cervical Cancer (*Subcontract PI*)
NIH/National Cancer Institute; 9/1/14-8/31/19
The major goals of this study were to validate the use of a portable high-resolution microendoscope for in situ diagnosis of cervical neoplasia in 3,000 women living in El Salvador and to develop an HPV E7-specific ELISA.

Point-of-Care Diagnostic Tools to Improve Global Cancer Control Programs (*Subcontract PI*)
NIH/National Cancer Institute; 9/22/14-8/31/19
The major goal of this study of 10,000 women living in Barretos, Brazil was to demonstrate accurate diagnosis of cervical precancer and cancer using high-resolution microendoscopy.

Development of an LMIC-Adapted Thermocoagulation Prototype for the Treatment of Cervical Pre-Cancer (*Subcontract PI*)
NIH/National Cancer Institute; 1/12/18-12/31/22
The major goal of the study is the development and evaluation of a thermocoagulation prototype for the treatment of cervical precancer for use in lower-resource settings.

Point of Care, Real-Time Metabolomics Test to Diagnose Colorectal Cancers & Polyps in Low- and Middle-Income Countries (*Subcontract PI*)
NIH/National Institute of Biomedical Imaging and Bioengineering; 4/15/17-1/31/19
The project entailed the development and validation of a urine metabolomic test to diagnose colorectal cancer and polyps in high-risk patients such as those with bloody stools, first degree relatives of those diagnosed with colorectal cancer, and colorectal cancer survivors.

Building Research Capacity to Address the Challenge of Non Communicable Disease and Injuries in Rwanda: The GUKORANO Research Center (*MPI*)
NIH/National Cancer Institute; 9/19/17-8/31/19
The primary goal of this proposal was to establish a center of excellence in non-communicable disease and injury in Rwanda.

Self Sampling for HPV Testing in African American Women - Mississippi Delta (*Subcontract PI*)
American Cancer Society; 1/1/17-12/31/19
A cluster-randomization trial compared participation of underserved women living in the Mississippi Delta in two community-based outreach interventions for cervical cancer screening, Pap only or a choice of Pap or self-sampling and HPV testing.

Hillel W. Cohen, DrPH, MPH

Dr. Cohen studies hypertension, diabetes and other risk factors for cardiovascular disease. His work has examined associations of plasma renin activity and sodium intake with cardiovascular outcomes; aspirin resistance; and the impact of an innovative diabetes management program.

David B. Hanna, PhD, MHS

Prediction of Heart Failure in HIV-Infected Individuals (*PI*)
NIH/National Heart, Lung, and Blood Institute; 4/1/17-1/31/21
The goals of this project are to characterize the role of HIV infection in heart failure incidence, to identify risk factors, including major comorbidities, that may lead to greater mortality in optimally treated HIV-infected heart failure patients compared with HIV-uninfected heart failure patients, and to construct models identifying unique HIV-specific phenotypes of heart failure with preserved ejection fraction and heart failure with reduced ejection fraction.

Machine Learning-based Profiles of Atherosclerosis to Predict Disease Outcomes in Older HIV-infected Women and Men (*PI*)
NIH/National Institute on Aging; 8/1/18-4/30/21
The goals of this project are to use machine learning methods to develop novel phenotypes of atherosclerosis in the context of HIV infection, and to determine the utility of these phenotypes by assessing their associations with multiple clinical and functional disease outcomes over time, including traditional "geriatric" outcomes.

Arterial Stiffness, Brain Morphology, Cognition, and Dementia in U.S. Hispanics/Latinos (*Subcontract PI*)
NIH/National Institute on Aging; 2/15/19-11/30/22
This study will examine the relationship of stiffening of the arteries and damage to small vessels in the brain, reduced cognitive function, mild cognitive impairment, and Alzheimer's disease-associated dementias in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL), in order to identify potential targets to lower the risk of cognitive impairment and Alzheimer's disease-associated dementias.

Dean Hosgood, III, PhD, MPH

Molecular Epidemiological Studies of Occupational Carcinogens, Nested within the JANUS Cohort (*PI*)
Global Health Center, Albert Einstein College of Medicine; 1/29/18-1/28/19
The purpose of this study was to develop molecular epidemiological studies among

populations exposed to IARC Group 2A and 2B carcinogens.

Assessing the Relative and Absolute Risk for Site-Specific Cancer Mortality Attributed to Household Air Pollution *(PI)*
NIH/National Cancer Institute; 9/1/20-8/31/23
The major goal of this project is to study pivotal questions relating to the adverse health effects of household air pollution (HAP), including (1) if biomass (i.e., wood) use is associated with lung cancer mortality, and (2) if HAP is associated with increased risk of cancers other than lung cancer. Using 13 cohort studies for a combined sample size of >550,000 subjects, we will be the first to prospectively evaluate cancer site-specific mortality and HAP.

Data management for InterLymph *(PI)*
NIH/National Cancer Institute; 4/27/20-4/26/21
The major goal of this project is to support ongoing research within InterLymph.

Information Technology Support to Extract Interview Tablets and Servers in a Multi-Center Hospital-Based Case-Control Study of AsiaLymph *(PI)*
NIH/National Cancer Institute; 9/25/20-9/24/21
The major goal of this project is to support an ongoing study of hematopoietic malignancies in Asia.

Tablet-based Mobile Health Ultrasound for Point-of-Care Breast Cancer Diagnosis in Nigeria *(Subcontract PI)*
NIH/National Cancer Institute; 7/1/19-6/30/21
The goal of this study is to develop and validate a competency-based mobile health ultrasound-guided breast biopsy-training program for radiologists in low- and middle-income countries.

Point of Care, Real Time Urine Metabolomics Test to Diagnose Colorectal Cancers and Polyps in Low- and Middle-Income Countries *(Subcontract PI)*
NIH/National Cancer Institute; 5/1/20-6/30/23
The research, development, and validation of a urine metabolomic test to diagnose colorectal cancer and polyps in high-risk patients such as those with bloody stools, first degree relatives of those diagnosed with colorectal cancer, and colorectal cancer survivors.

Robert C. Kaplan, PhD

Hispanic Community Health Study – Study of Latinos (Bronx Field Center) *(PI)*
NIH/National Heart, Lung, and Blood Institute; 6/1/14-11/30/25
The scientific aims of the renewal of the HCHS-SOL are to: 1) identify putative causes for diseases and conditions highly prevalent in Hispanics (e.g., diabetes, left ventricular hypertrophy, and gestational diabetes mellitus), 2) describe the transformation of health-related risk and protective factors related to migration, acculturation, and length of time living in the US, and 3) assess the impact of changes in socioeconomic factors, cultural values, risk behaviors, and medical care access on health in Hispanics.

Role of Innate Immunity in HIV Related Vascular Disease: Biomarkers & Mechanisms *(PI)*
NIH/National Heart, Lung, and Blood Institute; 9/15/14-5/31/19
The project provided insights into the observed links of HIV infection and related comorbidities with cardiovascular disease risk, identifying the innate immune system as a novel and modifiable explanatory pathway.

Epidemiology of the Gut Microbiome, Prediabetes and Diabetes in Latinos *(MPI)*
NIH/National Institute on Minority Health and Health Disparities; 7/8/16-2/28/21
This proposal will examine the determinants and outcomes of gut microbiome alterations among Hispanic/Latino adults participating in the Hispanic Community Health Study/Study of Latinos. The overarching hypothesis is that the makeup of the gut microbiome contributes to elevated risk of diabetes mellitus among Hispanics.

Evaluation of HIV-Associated Cardiac Dysfunction in Women (*MPI*)
NIH/National Heart, Lung, and Blood Institute; 4/1/16-3/31/20
This project investigated the mechanisms underlying increased risk of heart failure among adults with HIV, through cardiac magnetic resonance imaging and echocardiographic studies in a long-standing follow-up study of women with and without HIV-1 infection.

Cardiometabolic Outcomes in Multi-Ethnic Physical Activity & Sedentary Behavior Study (COMPASS) (*MPI*)
NIH/National Heart, Lung, and Blood Institute; 12/15/16-11/30/20
This study was conducted in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) and the Framingham Heart Study (FHS) Third Generation and Omni Gen 2 (FHS Gen3/Omni2) cohorts. The principal aims of the study were to: 1) identify physical activity and sedentary behavior patterns associated with conversion to diabetes over up to 12 years in 18 to 80 years old individuals by adding a second accelerometry measure to HCHS/SOL.; 2) identify the relationship of moderate-vigorous physical activity, light physical activity and sedentary behavior with incident cardiovascular events and mortality, in order to define the magnitude of risks and dose-response for duration, intensity and bout length; 3) investigate demographic and psychosocial correlates associated with 6+ year changes in patterns of physical activity and sedentary behavior in Hispanics/Latinos and non-Hispanics/Latinos with pre-diabetes.

Epidemiologic Determinants of Cardiac Structure and Function (ECHO-SOL) (*Subcontract PI*)
NIH/National Heart, Lung and Blood Institute; 9/14/15-5/31/19
The goal of the "ECHOSOL" project was to identify the course of subclinical cardiac dysfunction among Hispanic adults enrolled in the HCHS-SOL cohort.

Persistent Organic Pollutants, Endogenous Hormones and Diabetes in Latinos (*Subcontract PI*)
NIH/National Institute of Environmental Health Sciences; 6/1/16-5/31/20
This study built upon the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) to relate organochlorine pesticides, BFRs, and PCBs with risk of developing diabetes.

Studies of Latinos - Investigation of Neurocognitive Aging (SOL-INCA) (*Subcontract PI*)
NIH/National Institute of Neurological Disorders and Stroke; 9/1/15-4/30/19
The Study of Latinos-Investigation of Neurocognitive Aging (SOL-INCA) study filled major gaps in the neuroepidemiology of Mild Cognitive Impairment/Mild Neurocognitive Disorders (MCI/mNCD) among middle aged and older Latinos. Study aims focused on relationships between shared genetic and CVD risk factors for neurocognitive decline and disorders among Hispanic adults.

Exploring the Role of IL-32 as a Potential Biomarker and Therapeutic Target in Premature Cardio-Vascular Diseases during HIV-Infection (*Subcontract PI*)
NIH/National Institute of Aging; 9/27/16-5/31/21
The primary goal of this study is to investigate the link between IL-32 and gut dysbiosis in HIV infection, using the WIHS cohort study on cardiovascular disease and HIV natural history among women.

Integrated Analysis of CVD Risk in HIV: Gut Microbiota, Immune Function and Metabolites (*PI*)
NIH/National Heart, Lung, and Blood Institute; 1/15/18-12/31/21
This study focuses on the contributions of gut microbiota to host inflammation and immune activation and metabolomics profiles which are closely involved in the development of cardiovascular disease.

Trans-omics Analysis to Unravel Molecular Underpinnings of Heart, Lung and Blood Disorders (*PI*)
NIH/National Heart, Lung, and Blood Institute; 5/1/18-4/30/20
This project leveraged resources from the Hispanic Community Health Study/Study of Latinos, Atherosclerosis Risk in Communities, and other cohorts, including existing whole genome sequencing (WGS) data, metabolomics profiles, multiple disease and biometric traits, and multi-ethnic populations. The aim was to integrate genetic, metabolomic, epigenetic, phenotypic, and other data to understand the etiology of heart and vascular diseases.

CHARGE Consortium: Gene Discovery for CVD and Aging Phenotypes (*Subcontract PI*)
NIH/National Heart, Lung, and Blood Institute; 7/15/18-6/30/22
This study will provide support for collaboration of the Hispanic Community Health Study/Study of Latinos (SOL) cohort with the CHARGE consortium. Expertise will be provided on the design of the SOL genotype and phenotype data resources, and enhance participation of the SOL group in writing and analyzing data for CHARGE consortium publications.

Erin Lewis, MD, MPH
Dr. Lewis' interests focus on clinical translational investigations - primarily in the fields of trauma and critical care surgery - with studies in observational, outcomes, comparative effectiveness and injury prevention research intersecting with systems biology approaches to genome/phenome interactions..

Brandilyn A. Peters-Samuelson, PhD
The Lung Microbiome, Peripheral Immunity, and Lung Cancer Recurrence (*PI*)
AACR-AstraZeneca Immuno-oncology Research Fellowships; 7/1/19-6/30/21
The overall objectives of this project are to relate the lung microbiome to recurrence-free survival and peripheral immune gene expression in non-small cell lung cancer patients, and to identify lung bacterial biomarkers which can improve the performance of a lung cancer recurrence prediction model.

Qibin Qi, PhD
HIV Infection, Metabolites and Subclinical Atherosclerosis (*PI*)
NIH/National Heart, Lung, and Blood Institute; 8/15/15-5/31/19
The primary goal of this study was to examine the relationships between HIV infection, circulating metabolites (e.g., amino acids, lipid classes and acylcarnitines) and cardiometabolic risk, applying newly developed metabolomics approaches.

Integrated Analysis of CVD in HIV: Gut Microbiota, Immune Function and Metabolites (*MPI*)
NIH/National Heart, Lung, and Blood Institute; 1/15/18-12/31/21
The primary goal of this study is to examine the contributions of gut microbiota to host inflammation, immune activation, and metabolomics profiles, and the implications for the development of cardiovascular disease (CVD) among HIV-infected individuals.

Dietary Patterns and Risk of Cardiovascular Disease (*MPI*)
NIH/National Heart, Lung, and Blood Institute; 4/1/18-3/31/22
The primary goal of this study is to evaluate three different dietary patterns (the Healthy US-Style Eating Pattern, the Healthy Mediterranean-Style Eating Pattern, and the Healthy Vegetarian Eating Pattern) and their relationships with CVD in diverse US populations, with particular focus on potential racial/ethnic differences.

Metabolic Signatures Underlying Cardiac Function for Heart Failure in Multi-Ethnic Populations (*Subcontract PI*)
NIH/National Heart, Lung, and Blood Institute; 4/1/18-3/31/22
This study will be carried out in 7,000 participants selected from the Atherosclerosis Risk in Communities study and the Hispanic Community Health Study/Study of Latinos, including approximately equal numbers of European Americans, African Americans, and US Hispanics, and proposes to perform comprehensive metabolomics profiling on the selected participants and leverage existing metabolomics and whole genome sequence data.

Food-Based Biomarkers, Diet Quality, and Cardiometabolic Health (*Subcontract PI*)
NIH/National Institute of Diabetes and Digestive and Kidney Diseases; 4/1/19-3/31/24
The main goal of this project is to identify and validate novel urinary biomarkers for dietary intake using metabolomics approaches. Further, this project will examine the association between newly identified food biomarkers and cardiovascular disease risk in the Nurses' Health Studies and Hispanic Community Health Study.

Metabolomics Signatures Underlying Diet, Lifestyle and Gut Microbiota for Diabetes (*PI*)
NIH/National Institute of Diabetes and Digestive and Kidney Diseases; 3/26/19-2/28/23
The main goal of this project is to identify metabolomics signatures for type 2 diabetes (T2D) risk and examine how diet, lifestyle and gut microbiota influence metabolomics profiles associated with T2D. In particular, we propose to perform high-throughput metabolomics profiling of plasma from 1000 pairs of T2D incident cases and matched controls in the Hispanic Community Health Study of Latinos to identify novel metabolomics signatures associated with incident T2D in US Hispanics/Latinos.

Zheng Wang, PhD
Dr. Wang's research focuses on the human microbiome and the functional content associated with microbiota-metabolite-host interactions. His current research interests include the gut microbiome, microbial genomics, and integrative omics such as metagenomics and metabolomics in relation to human chronic diseases including obesity, diabetes, cardiovascular diseases, and HIV infection.

Sylvia Wassertheil-Smoller, PhD, FAHA
Hispanic Community Health Study – Study of Latinos (Bronx Field Center) (*Co-PI*)
NIH/National Heart, Lung, and Blood Institute; 6/1/14-11/30/25
The scientific aims of the renewal of the HCHS-SOL are to: 1) identify putative causes and protective factors for diseases and conditions highly prevalent in Hispanics (e.g., diabetes, left ventricular hypertrophy, and gestational diabetes mellitus), 2) describe the transformation of health-related risk and protective factors related to migration, acculturation, and length of time living in the US, and 3) assess the impact of changes in socioeconomic factors, cultural values, risk behaviors, and medical care access on health in Hispanics.

Women's Health Initiative (WHI) Extension 3 and 4: 2015-2020, 2020-2027
The Women's Health Initiative Regional Field Center Program (WHI) (*Subcontract PI*)
NIH/National Heart, Lung, and Blood Institute – University of Buffalo; 10/1/15-9/30/27
WHI, initiated in 1993, consists of a set of multi-center Clinical Trials and an Observational Study to address the health problems of post-menopausal women. This extension study uses the WHI cohort, which now has 26 years of follow-up, to launch the next generation of critically important cardiovascular, aging, and cancer research projects that target older women.
H. Pylori Protein-Specific Antibodies and Colorectal Cancer Risk (*Subcontract PI*)
NIH/National Cancer Institute; 5/1/15-4/30/19
The aim of this collaborative nested case-control study (including over 4,000 cases from 10 cohort studies spanning the U.S.) was to test the association of H. pylori infection with risk of colorectal cancer.

Mayris P. Webber, DrPH, MPH
Maintenance and Extension of a Cohort of Career Firefighters as a Non-WTC Exposed Comparison for the FDNY Firefighter Cohort (*PI*)
National Institute of Occupational Safety and Health/CDC; 9/1/16-8/31/21
This project seeks to address the James L. Zadroga 9/11 Health & Compensation Act research mandate to answer critical questions about physical and mental health conditions in FDNY firefighters related to the WTC terrorist attacks by establishing a comparison cohort of firefighters who did not respond to the WTC attacks.

Rachel Zeig-Owens, DrPH, MPH
Detection and Incidence of Thyroid Cancer among Three Cohorts of WTC-Exposed Rescue and Recovery Workers (*PI*)
National Institute of Occupational Safety and Health/CDC; 7/1/18-6/30/21
This project is investigating the method of detection of thyroid cancer among WTC-exposed rescue/recovery workers and a non-WTC-exposed reference population to determine the rate of thyroid cancer cases diagnosed incidentally and to identify reasons for the elevated risk of thyroid cancer among WTC-exposed populations.
Myeloma Precursor Disease Among WTC Responders (*MPI*)
National Institute of Occupational Safety and Health/CDC; 7/1/20-6/30/21
This project is investigating the association between World Trade Center exposure and precursor disease for multiple myeloma and monoclonal gammopathy of undetermined significance (MGUS) among WTC Health Program rescue/recovery workers.

DIVISION OF
HEALTH BEHAVIOR RESEARCH & IMPLEMENTATION SCIENCE
MISSION
Health behaviors, lifestyle, environment, policy, and other social-ecological factors play critical roles in disease prevention and control. Access to evidence-based interventions

and high quality health information and care can provide a foundation for eliminating health disparities. Our mission is to:

1. **Advance understanding of behavioral, nutritional, and environmental factors, as well as policies that affect physical health and psychosocial well-being.**
2. **Increase dissemination and implementation of effective approaches for improving care at the local and global level, with emphasis on promoting health equity.**

PROGRAMS and FUNDED RESEARCH

Judith Wylie-Rosett, EdD, RD, Division Head
New York Regional Center for Diabetes Translational Research (CDTR) (*MPI*)
NIH/National Institute of Diabetes and Digestive and Kidney Diseases; 9/20/16-7/31/21
The CDTR is designed to expand the resources to support diabetes translational research related to the prevention and control of diabetes and its complications. The CDTR services are provided by four cores that include: a) Translational Intervention Methodology Core, b) Life Course Methodology Core, c) Population Health and Health Systems Core, and d) Latino Network for Diabetes Translation Research: A National Resource Core.
Testing the Efficacy of a Technology-Assisted Weight Management Intervention within Patient-Centered Medical Homes: The GEM (Goals for Eating and Moving) Study (*Subcontract PI*)
NIH/National Institute of Diabetes and Digestive and Kidney Diseases; 9/20/16-8/31/21
The GEM intervention is based on the 5As approach and promotes weight loss, behavior change, and participation in intensive programs such as the MOVE! program from the Veteran's Affairs (VA) and the Diabetes Prevention Program (DPP), offered at Montefiore Medical Group (MMG) Centers. The study is evaluating the efficacy of the GEM intervention in a cluster randomized controlled 12-month trial, which is being conducted using 16 primary care teams at two urban healthcare systems with Medical Home models of care (VA and MMG) to compare the GEM intervention (intervention arm) with Enhanced Usual Care (educational materials; control arm).
Financial Incentive Strategies for Weight Loss in Obese Patients Living in Socioeconomically Disadvantaged Neighborhoods (*Subcontract PI*)
NIH/National Center on Minority Health and Health Disparities; 2/13/17-6/30/21
The goals of this three-arm randomized controlled trial are to compare: 1) goal-directed financial incentives plus enhanced usual care, comprising provision of a food diary, wearable fitness tracker, exercise and nutrition education materials, and referral information for intensive weight loss programs; versus; 2) outcome-based financial incentives plus enhanced usual care; versus 3) enhanced usual care alone. The study will assess the impact of financial incentives for weight loss on sustained weight loss, use of evidenced-based therapy, and quality of life.
Measure Development to Accelerate Translation of Evidence Based Guidelines into Practice (*Subcontract PI*)
NIH/National Center for Advancing Translational Sciences; 8/17/17-6/30/21
This mixed-methods study will combine data analytics, survey techniques using a two-stage Delphi process, and qualitative in-depth interviews to delineate and prioritize elements of care structure and processes (e.g., decision support) hypothesized to be associated with improved CVD-related outcomes. The research team will develop and validate a measurement tool for identifying gaps in care structures and processes that are amenable to change.

HealthCorp School Wellness (*PI*)
HealthCorp, Inc. 11/15/18-6/30/19
The goals of this project were to update and administer research instruments during the 2018-2019 school year, and advise on the development of evaluation tools to measure HC effectiveness in primary schools and homeless shelters.

Adebola A. Adedimeji, PhD, MPH, MBA

Dr. Adedimeji's research interests are focused on the social and behavioral epidemiology of HIV/AIDS, cancers, population health, and how these interact to determine health outcomes among disadvantaged population groups, including adolescents, women, ethnic minorities living in low and middle income countries and among communities in transition (migrants crossing international borders). Dr. Adedimeji also has programmatic interests in strengthening health systems, operations research, intervention design/implementation, and monitoring and evaluation. He is contributing to collaborative funded research within and outside the United States as principal investigator, co-principal investigator and investigator on various grants including the Central Africa International Epidemiologic Database to Evaluate AIDS, HIV/HPV Cancer Prevention, Treatment & Pathogenesis: The Einstein-Rwanda Consortium, the Women's Interagency HIV Study (WIHS), and Cervical Cancer Screening for HIV-infected and Uninfected Women in Cameroon.

Enhancing HIV Research Training Capacity in University of Rwanda's Research Office (*MPI*)
NIH/Fogarty International Center; 6/1/17-5/31/20
This grant proposed to develop the University of Rwanda's dedicated research office to contribute directly to the country's vision of developing strong biomedical research to inform public policy as well as attain the goal of becoming a regional hub for excellence in public health.

Einstein/Rwanda/DRC Consortium for Research in HIV/HPV/Malignancies (*MPI*)
NIH/National Cancer Institute; 9/1/20-8/31/25
HPV-associated cancers are significant causes of morbidity and mortality and are not decreasing with the use of antiretroviral therapy, as has been seen with other HIV-associated malignancies. As WHO strives to eliminate cervical cancer globally, and African nations reach out to MSM populations to engage them in care, developing a regional hub for translational research in HPV/HIV-associated cancers in Rwanda and DRC will be a key resource in understanding how to mitigate the impact of HIV and HPV on the health of Africans.

Carmen R. Isasi, MD, PhD

Hispanic Community Health Study – Study of Latinos (Bronx Field Center) (*Co-PI*)
NIH/National Heart, Lung, and Blood Institute; 6/01/14-11/30/25
The goals of the renewal of the HCHS-SOL are to continue to follow a cohort of 16,000+ Hispanic adults, aged 18-74, participating in a prospective observational study of cardiovascular disease (CVD), respiratory diseases and other chronic conditions.

MRI Measures of Cerebrovascular Injury and Alzheimer's Disease Atrophy in a Study of Latinos (*Subcontract PI*)
NIH/National Institute of Aging; 7/15/17-6/30/22
By leveraging the HCHS/SOL cohort, this study will examine the impact of disparities in vascular risk factors on brain health utilizing cutting edge MRI techniques.

Life Course Methodology Core (LCMC). New York Regional Center for Diabetes Translation Research (*Core Director*)
NIH/National Institute of Diabetes and Digestive and Kidney Diseases; 9/20/16-7/31/21
The LCMC goals are to support new methodologies for the translation of diabetes prevention interventions across the life span.

Preconceptional Health of Latinas and its Association with Child Adiposity (*Subcontract PI*)
NIH/National Institute of Diabetes and Digestive and Kidney Diseases; 9/18/18-6/30/23
This study will identify preconception and other maternal factors that predict obesity in early childhood in a sample of Latino mother/child dyads.

Social Stress, Epigenetics and Cardio-Metabolic Health Among Latinos (*Subcontract PI*)
NIH/National Institute of Minority and Health Disparities; 5/3/19-12/31/23
This project will examine the association between social stress across the life course and DNA methylation. Findings from this project will allow us to elucidate important epigenetic pathways that may help explain how stress and resilience influence cardiovascular disease risk.

Non-Alcoholic Fatty Liver Disease and Cardiovascular Disease in Hispanics/Latinos. (*Subcontract PI*)
NIH/National Heart, Lung, and Blood Institute; 9/1/19-8/31/23
This study will evaluate environmental and/or genetic influences of non-alcoholic fatty liver disease and CVD, assess their interrelationship, and provide information to improve the heart and liver health of this vulnerable population.

Cardiovascular Health of HCHS/SOL Sexual and Gender Minorities in the Hispanic Community Health Study/Study of Latinos (SGM HCHS/SOL) (*Subcontract PI*)
NIH/National Heart, Lung, and Blood Institute; 3/4/20-2/28/25
The goal of this study is to examine relationships between sexual/gender minority stress, coping, social support, and heart disease, a leading cause of morbidity and mortality among Hispanic/Latinos in the U.S.

Study of Latinos Investigation of Neurocognitive Aging 2 (*Subcontract PI*)
NIH/National Institute of Aging; 5/1/20-4/30/22
The SOL-INCA2 approach blends the NIA-AA research framework on Alzheimer's disease biomarkers and NIA Health Disparities Research Framework to discover if and when cardiovascular disease begins contributing to cognitive impairment and dementia to ultimately reduce Latino Alzheimer's disease and related dementia disparities.

Comparing Patient-Reported Impact of COVID-19 Shelter-in-Place Policies and Access to Containment and Mitigation Strategies, Overall and in Vulnerable Populations (*Site PI*)
PCORI; 10/1/20-9/30/22
This project will compare the impact of policy maker COVID-19 shelter-in-place decisions in different states, counties, and health systems across the US, and will focus particularly on the impact in communities that are most vulnerable.

David W. Lounsbury, PhD

Examining Multilevel System Dynamics Affecting HIV Community Viral Load (*Subcontract PI*)
NIH/National Institute of Mental Health; 5/1/15-7/31/20
The goal of this project was to design and test materials and procedures to promote dissemination and implementation of a system dynamics modeling intervention intended

to foster multi-stakeholder action planning to reduce community HIV viral load.

Modeling to Inform the Future of Food in Your Neighborhood (*Subcontract PI*)
Foundation for Food & Agriculture Research; 4/1/18-3/31/22
To maximize understanding of interdependent relationships within our food systems, participatory system dynamics modeling methods will be used. The research team will work with experts including local community groups in Cleveland, OH, working in food systems to obtain guidance on model development, refinement, and dissemination. Resultant models will then be used to examine supply and demand dynamics triggered by food system tipping points, with attention to mechanisms of interaction and adaptation among people and places in low-resource neighborhoods. Building on this work, we will develop an integrated data platform to empirically evaluate the collective impact of food system tipping points on the neighborhood food retail environment; residential food norms, dietary behaviors, and health risk; and neighborhood economic development.

Modeling to Learn (*PI*)
VA Palo Alto Health Care System; 9/2/18-9/2/19
The goal of this project was to train new participatory system dynamics facilitators in support of the launch of a national VA program entitled Modeling to Learn (MTL), which had "live," "video" and "facilitate" versions.

Participatory Systems Dynamics vs. Audit and Feedback: A Cluster Randomized Trial of Mechanisms of Implementation Change to Expand Reach of Evidence-Based Addiction and Mental Health Care (*Subcontract PI*)
VA Palo Alto Health Care System; 9/1/20-8/31/24
NIH/National Institute on Drug Abuse; 2/1/19-12/31/23
The goals of this project are to improve deliverance of evidence-based psychotherapy and evidence-based pharmacology within the VA health care system.

Bronx Community Health Network Program Evaluation and Quality Improvement Services (*PI*)
Bronx Community Health Network Project; 7/1/20-8/31/21
This project supports Bronx Community Health Network's (BCHN) health initiatives by analyzing and compiling data from multiple systems and presenting the analysis in a comprehensive format.

Provider-Targeted Communications Strategies to Reduce Stigma and Promote PrEP Uptake (*PI*)
NIH/National Institute of Mental Health; 7/1/20-4/30/21
Einstein Center for AIDS Research (CFAR) Supplement; 7/1/20-4/30/21
To identify factors that are critical to effective message frames, which are the "how" of health communications to change behavior, analyses of data from an ongoing online cohort of MSM of color will be undertaken and systems thinking methods will be used to inform the design of several stigma-reducing message frames. These message frames will be vetted by MSM of color and potential PrEP providers, in partnership with local community organizations and medical education institutions. Results from message testing will be featured in a "community hackathon" aimed at integrating the messages into novel technology-enabled communications tools for providers and users to facilitate PrEP uptake.

Optimizing Study Design to Test a Community-Level Intervention to Reduce Intersectional Stigma and Increase HIV Testing and Prevention Among African-American/Black MSM (*Site PI*)
NIH/National Institute of Mental Health; 7/9/19-5/31/22
This study responds to the identified need for design and testing of interventions to reduce intersectional stigmas related to HIV that reduce uptake of and access to HIV testing and biomedical prevention, particularly among African-American/Black gay, bisexual and other MSM.

Alyson B. Moadel-Robblee, PhD

Bronx Oncology Living Daily (BOLD Living) Program (*Program Director*)
www.einsteinmed.org/cancercenter/support
Susan G. Komen NYC Grant; 4/1/19-6/31/20
NYC DOHMH; 7/1/20-6/30/21
Leukemia & Lymphoma Society (LLS); 10/1/20-3/31/22
lululemon's Here-to-Be Grant; 10/1/20-9/30/21
The *BOLD Living Program* was developed in 2008 in response to a psychosocial needs assessment of Bronx cancer patients and family members towards developing a patient-centered, culturally-informed, and evaluable psycho- and integrative oncology service program. With the support of Komen, NYC DOHMH, LLS and other philanthropic/ foundation funding, the BOLD Living Program provides free wellness workshops and peer navigation services designed to enhance the physical, emotional, and spiritual well-being of those affected by cancer, with ongoing evaluation conducted to ensure the program is meeting aims. The *BOLD Buddies Program* and the *BOLD Brothers/Sisters Program,* offering patient navigation and peer mentors for cancer patients and their teenage/young adult children helping to care for them, were developed to promote quality of life, medical adherence, and to reduce cancer disparities. A pre-med and mental health counseling internship program as well as initiatives to address provider wellness and burnout are integral to Dr. Moadel's psycho-oncology clinical and research efforts towards advancing the training and well-being of future and current health care professionals.

Psychosocial Oncology Program (PSOP) (*Program Director*)
Montefiore-Einstein Center for Cancer Care; 2006-ongoing
The PSOP is a clinical service program that offers no-cost counseling and support to anyone affected by cancer in the Bronx and surrounding areas. Services are delivered by mental health counseling graduate students (interns) under the supervision of Dr. Moadel-Robblee. Training for oncology and palliative care fellows is also provided to address communication skills and stress management during the first or second year of fellowship. Self-care groups for other oncology staff are also offered. Research conducted within the PSOP is aimed at identifying the psychosocial needs of the diverse oncology community and addressing them through culturally-aligned interventions towards improving quality of life, adherence, patient/provider communication and health outcomes among cancer patients, family members, and providers. Major areas of focus include cancer-related quality of life, oncology staff burnout, parental cancer, and mind-body therapies (e.g., yoga/meditation).

Yasmin Mossavar-Rahmani, PhD, RD

Multicultural Healthy Diet (MHD) to Reduce Cognitive Decline & Alzheimer's Disease Risk (*PI*)
NIH/National Institute on Aging; 9/15/17-4/30/22
This pilot study is designed to investigate whether an anti-inflammatory dietary pattern can be adapted for a multicultural middle aged (40-65 yr), middle income cohort in Bronx, New York and whether it improves cognition compared to consuming a usual diet. The primary objectives are: 1) Show that the MHD can be adapted to a diverse middle-aged cohort in the Bronx. 2) Test whether an MHD intervention in a multi-ethnic urban setting can benefit cognitive function in a middle-aged population. 3) Identify components of

the MHD diet that are associated with stable or improved measures of cognition. The secondary objective of this pilot is to provide a necessary foundation for understanding how lifestyle interventions (such as the MHD) during midlife impact clinical endpoints at older ages.

Cardiometabolic Outcomes in Multi-Ethnic Physical Activity & Sedentary Behavior Study (COMPASS) (*MPI*)

NIH/National Heart, Lung, and Blood Institute; 12/15/16-11/30/21

This study is being conducted in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) and the Framingham Heart Study (FHS) Third Generation and Omni Gen 2 (FHS Gen3/Omni2) cohorts. The principal aims of the study are: 1) To identify physical activity and sedentary behavior patterns associated with conversion to diabetes over up to 12 years in 18 to 80 years old individuals by adding a second accelerometry measure to HCHS/SOL. 2) To identify the relationship of moderate-vigorous physical activity, light physical activity and sedentary behavior with incident cardiovascular events and mortality, in order to define the magnitude of risks and dose-response for duration, intensity and bout length. 3) To investigate demographic and psychosocial correlates associated with 6+ year changes in patterns of physical activity and sedentary behavior in Hispanics/Latinos and non-Hispanics/Latinos with pre-diabetes.

Bruce D. Rapkin, PhD

Reshaping Women's Cancer Prevention, Diagnosis and Treatment Initiation via an Innovative, Collaborative, Sustainable Community Academic Care Delivery Model (*Site PI*)

Merck Foundation; 1/1/17-12/31/21

The major goal of this project is to improve the coordination of care for low income patients of federally qualified health centers when they are diagnosed with cancer. The study uses a stepped wedge design, phasing in a novel care coordination intervention at 18 inner city clinics. Optimization of intervention implementation at each clinic will be achieved using comprehensive dynamic trial methodology. Outcomes include improved delivery of care according to guidelines, patient adherence, retention and quality of life.

Delivery System Reform Incentive Program for Domain 4 Projects, CBO Engagement Strategy and a Plan to Do Study Act/Rapid Cycle Evaluation Curriculum (*Subcontract PI*)

Montefiore Hudson Valley Collaborative; 3/1/16-3/31/20

This project was focused on establishing preventive health services in Montefiore's Hudson Valley Collaborative (MHVC). MHVC is a seven county initiative designed to improve quality of care and health outcomes for Medicaid patients.

Promoting Asthma Guidelines and Management through Technology-Based Intervention and Care Coordination (PRAGMATIC) (*Site PI*)

NIH/National Heart, Lung, and Blood Institute; 7/1/16-4/30/21

The goal of this project is to test the impact of an intervention consisting of multi-level strategies on healthcare provider adoption of asthma management guidelines and clinical outcomes.

Access to and Value of Treatment Innovation Study (*Subcontract PI*)

Leukemia and Lymphoma Society; 6/1/18-12/31/20

The goal of this study was to examine patient and provider perceptions of the value of chemotherapy and its impact on patients' financial well-being.

Einstein-Rockefeller-CUNY Center for AIDS Research (*Co-PI*)

NIH/National Institute of Allergy and Infectious Disease; 5/1/17-4/30/22

The ERC-CFAR will stimulate, coordinate, and support an integrated multi-disciplinary research agenda to achieve its mission, to arrest the AIDS epidemic, through improving utilization of current treatments and developing new therapies for prevention; improving treatment outcomes among infected individuals; and eradication of HIV reservoirs.

Core Support for Cancer Center (*Program Co-Lead*)

NIH/National Cancer Institute; 7/1/19-6/30/24

With its clinical partner, the Montefiore Health System, and its community outreach and engagement capabilities, the Albert Einstein Cancer Center seeks to understand the basis for, and ameliorate cancer disparities that affect the 1.4M, largely minority, population of the Bronx, the Center's catchment area.

Minority-Based Community Oncology Program (*MPI*)

NIH/National Cancer Institute; 8/1/19-8/31/25

This project seeks to advance the prevention, diagnosis, treatment, and management of early and advanced cancer. Our goals are to: 1) accrue at least 80 subjects to trials sponsored by the NCORP research bases, 2) provide scientific and administrative leadership to the ECOG-ACRIN, NRG and Alliance research bases; 3) expand our capacity for cancer care delivery research (CCDR) to include at least 3 active CCDR protocols; 4) train and mentor young investigators in all areas of NCORP research; and 5) contribute expertise in novel methodology to address cancer health disparities, including patient engagement, trial design and outcomes measurement.

Healing Communities Study (formerly called CHASE) (*Subcontract PI*)

NIH/National Institute on Drug Abuse; 4/17/19-3/31/23

The goal of this study is for community engagement and outreach to ensure coordination, communication and opportunities for shared decision making to support implementation of CHASE in the selected communities - 15 NYS counties.

Engaging Cancer Patients in Informed Decision Making Through the "What Matters to Me" Tool (*Co-PI*)

CancerCare; 4/1/20-9/30/21

This project is testing the feasibility and benefits of CancerCare's What Matters to Me tool, an easy and efficient way for patients to communicate their personal quality-of-life priorities to providers in advance of making cancer treatment decisions.

CJ Segal-Isaacson, EdD, RD

Dr. Segal-Isaacson taught a food-based nutrition education course for undergraduate medical trainees. The specific aims of this CHEF course at Einstein were to increase participating medical students' skills in preparing healthy, minimally processed fresh foods and to achieve proficiency with the basic cooking techniques of steaming, braising, sautéing and baking. Students also developed several recipes that may nutritionally ameliorate a particular medical disease or condition (irritable bowel syndrome, diabetes, etc.) or its symptoms.

OTHER NOTABLE FACULTY

Eran Bellin, MD, VP Clinical IT Research and Development

Dr. Bellin is VP of Clinical IT Research and Development at Montefiore Information Technology. For 20 years, he led the development of Clinical Looking Glass, a user-friendly self-documenting software system that allows clinicians and administrators to define patient cohorts and track outcomes across time. This novel software supports quality improvement projects, house staff education, and IRB approved research, setting new standards for transparency and medical care management by objectives. In 2014, commercial development rights were sold to Streamline Health. Dr. Bellin's ongoing research involves the application of new computer-based epidemiologic analytic techniques to observational data in electronic medical records to inform population health policies, interventions, and evaluation.

Paul R. Marantz, MD, MPH

Education and Training Program in Patient-Centered Outcomes Research (*PI*)
Agency for Healthcare Research and Quality; 6/5/14-5/31/20
This project developed a new, multifaceted education and training program in patient-centered outcomes research (PCOR) set in the medically underserved community of the Bronx.

Clinical and Translational Science Award (CTSA) (*PI, KL2 and TL1*)
NIH/National Center for Advancing Translational Science; 3/22/18-2/28/23
A national consortium of medical research institutions, funded through Clinical and Translational Science Awards (CTSAs), works together and share a common vision to improve the way that biomedical research is conducted across the country, reduce the time it takes for laboratory discoveries to become treatments for patients, engage communities in clinical research efforts, and train the next generation of clinical and translational researchers. This grant supports the Harold and Muriel Block Institute for Clinical and Translational Research (ICTR) at Einstein and Montefiore; the KL2 component supports a career development program for clinical/translational investigators, and the TL1 component supports our PhD in Clinical Investigation.

The Center of Excellence in Promoting LHS Operations and Research at Einstein/Montefiore (EXPLORE) (*MPI*)
Agency for Healthcare Research and Quality; 9/30/18-9/29/23
This project leverages the educational and research support resources of Einstein's Institute for Clinical and Translational Research (ICTR), the home of our Clinical and Translational Science Award (CTSA), including didactic components of its Master's in Clinical Research, the informatics infrastructure of the Center for Health Data Innovations, and the resources of Montefiore's Network Performance Group (responsible for quality of care, operational excellence, and patient safety at Montefiore Health System), to create a novel K12 career development program in learning health systems (LHS) research.

Education Connecting Laboratory Investigation and Population Science at Einstein (*MPI*)
Burroughs Wellcome Fund; 2/1/13-6/30/22
This project supports the development and implementation of an innovative predoctoral PhD program to provide interdisciplinary cross-training in laboratory sciences and population sciences. It continues to support, in coordination with the CTSA TL1, Einstein's PhD in Clinical Investigation (PCI).

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