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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 2017-2018 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 with great pleasure that I introduce this research report for the Department of Epidemiology and Population Health (DEPH). The report summarizes the innovative epidemiologic and prevention research undertaken by departmental members during the 2017-2018 calendar period. (More information about the department is available on our website https://epi.montefiore.org) The success of the department is due in no small measure to the extraordinary teamwork that exists between our faculty and staff.

Thomas E. Rohan, MBBS, PhD, DHSc
Professor and Chairman
January 2019

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
   MicroRNA Expression Profiling of Breast Cancer Tissue and Risk of Distant Metastasis (*PI*)
   Breast Cancer Research Foundation; 10/1/16-9/30/17; 10/1/17-9/30/18
   The goal of this project was to study the association between miRNA expression in breast cancer tissue and risk of developing distant metastasis.
   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 is to conduct feasibility studies of breast cancer risk in relation to both the immune microenvironment and the protein profile of formalin-fixed paraffin-embedded benign breast disease tissue.
   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.

Olivier D. Loudig, PhD
   The laboratory of Dr. Loudig focuses on identification of early biological markers of breast cancer development by analyzing nucleic acids recovered from archived non-invasive, pre-invasive or benign breast specimens, for which the clinical history

is known. His laboratory is currently working on the development of a robust RNA-sequencing protocol to examine mRNA expression profiles of archived breast specimens. In addition, his laboratory recently developed procedures to analyze the miRNA content of circulating exosomes (in the serum of normal or breast cancer patients), in order to identify circulating miRNA biomarkers.
   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.

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 more than twenty 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 (MBE) 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, JD, MBE
   Lauren Flicker is Associate Director of the Center for Bioethics and of the Einstein Cardozo Master of Science 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 research focuses on medical education, with an emphasis on medical student publishing and outcomes of medical students in Einstein's Clinical Research Training Program.

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, classification and regression trees, frailty models, measurement error, and statistical genetics. 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

In addition to being Head of the Division of Biostatistics in DEPH, Dr. Kim is Director of the Biostatistics, Epidemiology, and Research Design resource of the Institute for Clinical and Translational Research. Dr. Kim's research interests include clinical trials methodology; effects of misclassification and measurement error; interval-censored survival data, and multivariate survival data.

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 is to use statistical modeling approaches to identify predictors of disease outcomes in lupus patients randomized to the placebo arms of multiple clinical trials. The knowledge gained from this study will be used to design more efficient trials of future investigational agents.

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; 8/15/16-7/31/19
This study proposed to conduct 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) will be 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 is to determine whether hydroxychloroquine (HCQ) use during pregnancy prevents recurrence of congenital heart block (CHB). Aim 1 is to complete Stage II of an open label Phase II trial of HCQ in pregnant women who have had a previous CHB child. Aim 2 addresses the ophthalmologic safety of HCQ exposure during pregnancy.

The Manhattan Lupus Surveillance Program (*Subcontract PI*)
NYCDOH/CDC; 6/1/16-5/31/20
The Manhattan Lupus Surveillance Program (MLSP) is a population-based registry comprised of systemic lupus erythematosus (SLE) patients treated in New York County. The primary goal of the MLSP is to capture information that can be used to determine the prevalence of SLE in 2007 and incidence of SLE during 2007-09 among Manhattan residents. Of specific interest are 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 and Gynecology and the Center for AIDS Research. She also serves as a statistical mentor and course developer for the Clinical Research Training Program (CRTP) and the PhD in Clinical Investigation (PCI) program. Dr. Fazzari's statistical research interests include: meta-analysis of rare events; longitudinal and clustered study design and analysis; clinical trials; and high dimensional data modeling.

Qi Gao, PhD, MS

Dr. Gao is a biostatistician collaborating with investigators in the Department of Pediatrics and in the Department of Family and Social Medicine, as well as with faculty in DEPH. Her research interests include longitudinal data analysis, analysis of correlated responses, and correcting bias due to missing data in aging studies.

Charles B. Hall, PhD

For How Long is WTC Exposure Associated with Chronic Rhinosinusitis (*PI*)

National Institute for Occupational Safety and Health/CDC; 7/1/14-6/30/17

This study used innovative statistical methods to examine temporal patterns in the association between rescue/recovery work at the World Trade Center (WTC) by FDNY firefighters and the incidence of physician-diagnosed chronic rhinosinusitis (CRS) and on self-reported persistent rhinosinusitis symptoms. Specifically, we used parametric survival models with change points to determine whether the exposure-response relationship persists for years after exposure or becomes attenuated after some time.

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

National Institute of Occupational Safety and Health/CDC; 9/1/16-8/31/20

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. This research will add to the understanding of long-term consequences of WTC-exposure, inform surveillance efforts in future environmental disasters, will stimulate further research into environmental risk factors for cancer in this and other cohorts, and will stimulate future work that would maximize survival of cancer patients among WTC-exposed workers.

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 is to develop risk stratification models to identify WTC-exposed patients who are at risk for progressive decline in lung function and airway reactivity. The identification of subpopulations at high risk of these adverse pulmonary outcomes will allow for more intensive monitoring and early treatment to be directed toward high risk individuals while avoiding costly intensive screening of individuals at low risk for severe disease. Dr. Hall is the lead biostatistician for the study.

Intensive Blood Pressure Reduction to Lessen Functional Decline (*Subcontract PI*)

NIH/National Institute on Aging; 9/1/13-11/30/17

This randomized clinical trial examined the impact of intensive (goal of <125mmHg SBP) vs. standard (goal of <140mmHg SBP) hypertension therapy on white matter hyperintensity lesions, mobility, and cognition in a study population of elderly volunteers. Dr. Hall was a consulting statistician for the study.

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. 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.

Moonseong Heo, PhD

Dr. Heo collaborates with faculty in the Division of General Internal Medicine at Montefiore Medical Center and in the Center for AIDS Research. His research interests include mixed-effects modeling, design of randomized clinical trials, sample size determinations, meta-analysis, and the epidemiology of obesity.

Ryung S. Kim, PhD

Dr. Kim conducts research on big data (of 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 Medicine, Pathology, and Orthopedics on the design and analysis of clinical trials and epidemiologic studies. He also serves as a statistical mentor to Fellows in the Clinical Research Training Program. 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.

Wenzhu Mowrey, PhD

Dr. Mowrey collaborates on projects on aging, Alzheimer's disease, epilepsy, Rett syndrome, rheumatology, and infectious diseases. 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, survival and longitudinal data analysis.

Abdissa Negassa, PhD

Dr. Negassa collaborates with investigators in the Albert Einstein Cancer Center and in the Division of Cardiology. 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 seeks 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 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 to extend 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; 9/15/17-5/31/19
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 this program project.

Evaluation of Glucocerebrosidase Pathway Biomarkers in Parkinson Disease (*Subcontract PI*)
NIH/National Institute of Neurological Disorders and Stroke; 9/1/16-8/31/18
The goal of this project was to identify and validate biomarkers of PD due to mutations in the glucocerebrosidase1 (GBA1) gene (GBA-PD). We proposed to characterize focused biochemical measures of the GCase pathway, including central and peripheral assessments of GCase, levels of GCase lipid substrates and α-synuclein and their relation to clinical outcomes and decline. This study presented an opportunity to characterize the progression of markers in GBA-PD over time and identify markers of target engagement for clinical trials of new PD therapies, some of which are currently in development.

Tao Wang, MD, PhD

Develop and Apply a Novel Genome-Wide Mendelian Randomization Method to Examine Relationship Between Obesity & Lung Cancer (*MPI*)
NIH/National Cancer Institute; 12/11/15-11/30/18
Using existing GWAS data of a consortium of case-control studies of lung cancer, this study developed a novel Mendelian randomization approach to examine the causal relationship between obesity and lung cancer risk.

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.

Collaborative Care to Reduce Depression and Increase Cancer Screening Among Low-Income Urban Women (*Subcontract PI*)
Patient-Centered Outcomes Research Institute (PCORI); 7/1/13-6/30/18
In this study, patients were randomized to two study arms: an evidence-based cancer care management arm to improve cervical, breast, and colon cancer screening and a collaborative care arm that integrated this cancer screening care management with depression care management. The goal of this project was to inform how providers at Community Health Centers deliver care and encourage uptake of cancer screening services among depressed women ages 50-64.

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 contribution to disease traits.

An Integrative Analysis of Structural Variation for the 1000 Genomes Project (*Subcontract PI*)
NIH/National Human Genomes Research Institute; 9/20/13-8/31/17
The goal of this study was to identify structural variations for the 1000 Genome Project.

Cell Adhesion Molecules in Autism (*Subcontract PI*)
NIH/National Institute of Mental Health; 4/1/12-3/31/17
The goal of this project was to investigate gene expression patterns in the brain that are associated with the development of autism.

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

DIVISION OF
COMMUNITY COLLABORATION & IMPLEMENTATION SCIENCE

MISSION

The primary emphasis of the division is on the dissemination and implementation of effective approaches to reduce barriers and improve standard of care. The division has conducted several projects to promote evidence-based practice through collaborative research. This Division is among the first in academic medicine that is focused on the science and practice of community implementation.

PROGRAMS and FUNDED RESEARCH

Bruce D. Rapkin, PhD, Division Head

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 is 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.

Dynamics of Trust, Health Information Seeking and Access in Bronx Communities (*Cancer Center Supplement – Project Lead*)
NIH/National Cancer Institute; 7/1/16-6/30/17
The goal of this project was to examine communication issues related to several initiatives and priorities in our clinical cancer program concerning emergency room use, cancer screening among patients with chronic diagnoses, and cancer caregivers.

Development of Practical Outcome Measures to Account for Individual Differences and Temporal Changes in Quality of Life Appraisal (*PI*)
Patient-Centered Outcomes Research Institute (PCORI); 3/1/14-11/31/17
This project built upon earlier work on the in depth assessment of patients' personal criteria for evaluating their own quality of life. This study developed more streamlined measures of appraisal for use in wide-scale surveys and clinical trials.

Minority-Based Community Oncology Research Program (*MPI*)
NIH/National Cancer Institute (NCORP); 8/1/14-7/31/19
The overall goals of the Montefiore Medical Center (MMC) minority-based NCORP community site are to advance the diagnosis, prevention, and management of early and advanced cancer by participating in NCORP as a minority/underserved community site.

Access to and Value of Treatment Innovation in Blood Cancers (*Subcontract PI*)
Leukemia and Lymphoma Society; 6/1/16-11/30/18
This grant examined patients' experience of financial hardship and how that affects treatment decisions.

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 Rwanda-Einstein 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 proposes 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.

David W. Lounsbury, PhD

Improving Post-Treatment Resources for Latina Breast Cancer Survivors (*Subcontract PI*)
American Cancer Society; 7/1/12-6/30/18
This project developed a program and resources to support sustained annual breast cancer screening among Latina breast cancer survivors. System dynamics modeling was used to simulate effects of the program over an extended time horizon.

SBIRT Implementation for Adolescents in Urban Federally Qualified Health Centers (*Subcontract PI*)
NIH/National Institute on Drug Abuse; 1/1/14-6/30/17
This study compared the utility of two implementation strategies designed to engage adolescents in evidence-based primary care practices to identify and treat risky behaviors, including smoking and alcohol use. System dynamics modeling was used to guide a participatory implementation planning process and to assess implementation effectiveness, including cost effectiveness, across nine primary care intervention sites in Baltimore, MD.

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 is 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.

Participatory System Dynamics Modeling to Simulate HIV Test-and-Treat

Improvements (*Subcontract PI*)
NIH/National Institute of Mental Health; 7/15/16-6/30/18
This project complemented the on-going NIMH parent study (Multilevel System Dynamics Affecting HIV Community Viral Load) by providing additional resources for stakeholder engagement in the process of developing and validating system dynamics modeling tools to foster community-wide strategic planning to inform improvements in HIV prevention and engagement in care.

Participatory System Dynamics for Evidence-based Addiction and Mental Health Care (*Subcontract PI*)
NIH/National Institute on Drug Abuse; 8/1/16-7/31/18
This study evaluated the effectiveness of using participatory system dynamics modeling as a strategy for improving the local implementation of evidence-based psychotherapy and evidence-based pharmacotherapy in the outpatient mental health system.

Participatory System Dynamics Platform: Timely Access to Evidence-Based Outpatient Mental Health Care (*PI*)
VA Palo Alto Health Care System; 4/1/17-3/31/18
This study evaluated the effectiveness of using participatory system dynamics modeling as a strategy for improving the local implementation of evidence-based psychotherapy and pharmacotherapy in the outpatient mental health system.

Modeling to Inform the Future of Food in Your Neighborhood (*Subcontract PI*)
Foundation for Food & Agriculture Research; 4/1/18-3/31/21
To maximize understanding of interdependent relationships within our food systems, participatory system dynamics modeling (PSDM) methods will be used to examine four research aims over a 40-month study timeframe. 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 (i.e., "agents," like producers and consumers) and places (i.e., "structures," like new food business development and emergency food assistance) 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 is to train new participatory system dynamics (Team PSD) facilitators in support of the launch of a national VA program entitled, Modeling to Learn (MTL), which has "live," "video" and "facilitate" versions.

DIVISION OF **EPIDEMIOLOGY**

MISSION

Epidemiology plays a major role in elucidating disease etiology, determining the distribution of disease and its risk factors in the population, and in bringing about changes in approaches to disease treatment and prevention. Our mission is the design and implementation of translational research in three areas/phases: translation of basic science discoveries to clinical investigation; translation of clinical discoveries to population-based research; translation of population-based research findings to health services delivery and health policy. Members of the Division study molecular and genetic variables, as well as environmental and lifestyle variables, in their efforts to determine the factors that increase or decrease disease risk. The major areas of research include cancer, cardiovascular disease, diabetes, nutrition and obesity, women's health, adolescent health, infectious diseases including HIV and HPV, epidemiologic research methods, as well as research aimed at elucidating and ultimately helping to reduce racial/ethnic and sex disparities in disease burden and health care access.

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 project will for the first time use next-generation HPV DNA sequencing to conduct precision HPV genomic analysis to determine whether a given HPV type detected at two or more time points is the same exact viral infection versus different HPVs of the same type. These data will be used to comprehensively study: type-specific differences in HPV persistence and their relation with precancer; the occurrence of HPV reactivation and how often reactivated HPV persists and leads to precancer; the impact of immune status on each of these steps in HPV natural history; and whether HIV impacts precancer risk beyond its effects on HPV.

   Molecular Methods to Improve Cervical Cancer Screening in HIV+ Women (*PI*)
   NIH/National Cancer Institute; 5/1/13-3/31/18
   HIV(+) women have elevated incidence of cervical pre-cancer and cancer, and at each clinical visit nearly a third (25%-35%) have abnormal Pap tests. However, most of these abnormal Pap tests do not reflect clinically relevant disease. This study assessed the sensitivity, specificity, positive and negative predictive values of several promising molecular methods for cervical cancer screening, as well as their cost effectiveness, in HIV(+) women.

Ilir Agalliu, MD, ScD

   Dr. Agalliu's research interests are related 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, and Parkinson's disease, and he has taken the lead

in molecular epidemiologic studies of oral human papillomaviruses (HPV) with risks of head and neck cancer as well as esophageal cancer in two large cohort studies.

Genetics of Prostate Cancer in Africa (*Subcontract PI*)
NIH/National Cancer Institute; 9/7/15-8/31/20
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.

Understanding Genetic Heterogeneity in Parkinson Disease and Parkinsonism (*Subcontract PI*)
Bigglesworth Foundation: 7/1/17-6/30/18
The role of this grant was to better understand genetic determinants and heterogeneity in Parkinson disease (PD) and examine shared susceptibility to PD and cancer.

Philip Castle, PhD, MPH

Optimizing for Cervical Cancer Prevention for HIV-Infected Women in Low-Resource Settings (*PI*)
Prevent Cancer Foundation; 10/1/15-9/30/17
This study evaluated use of a smart phone-based digital colposcope in a Rwanda cohort of 7,200 HIV-infected women.

Cervical Cancer Screening Strategies in HIV-Infected Women Living in Cameroon (*Project Lead*)
NIH/National Cancer Institute; 10/1/15-9/30/17
This pilot study in 800 HIV-infected and 400 HIV-uninfected women living in Limbé, Cameroon examined cervical cancer screening and management strategies and built research and health service delivery capacities there.

Lateral Flow HPV Test for Cervical Cancer Screening in Low-Resource Settings (*Subcontract PI*)
NIH/National Institute of Biomedical Imaging and Bioengineering; 7/1/16-6/30/17
This study involved the research and development of a pump-free, lateral flow, point-of-care, HPV DNA test.

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 is 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 are to 1) validate the use of a portable high-resolution microendoscope (HRME) for in situ diagnosis of cervical neoplasia in 3,000 women living in El Salvador and 2) 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 is to demonstrate accurate diagnosis of cervical precancer and cancer using high-resolution microendoscopy (HRME).

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 will entail 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 is 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 to compare 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 goal of this project is to characterize the role of HIV infection in heart failure incidence, based on data from the largest HIV care provider in the Bronx, NY. We will 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 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; 8/1/18-4/30/20
This project will use machine learning methods to develop phenotypes of atherosclerosis unique to HIV-infected women and men. In turn, it will determine the utility of these phenotypes by assessing their associations with multiple clinical and functional disease outcomes over time, including traditional "geriatric" outcomes.

Dean Hosgood, III, PhD, MPH

A Multi-Center Study of Lung Cancer Risk Factors in Southeast Asia (*PI*)
Global Health Center, Albert Einstein College of Medicine; 8/1/16-7/31/18
This pilot study sought to expand an ongoing epidemiological study of never smoking

lung cancer in Thailand, to include smokers and males, as well as additional study centers in Southeast Asia.

The Feasibility of the Mitigation of Biomass Smoke Exposures in Kenyan and Ethiopian Populations (*PI*)
Global Health Center, Albert Einstein College of Medicine; 11/1/14-11/30/17
The purpose of this study was to evaluate the potential reduction of environmental exposures and health effects associated with changing a home's heating and cooking source to a stove that burns clean fuels (i.e., ethanol).

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 is to develop molecular epidemiological studies among populations exposed to IARC Group 2A and 2B carcinogens.

Intercontinental Biomass Exposure Reduction Study (IBERS) *(PI)*
Global Health Center, Albert Einstein College of Medicine; 3/15/17-3/14/18
The purpose of this study was to assess our research team's ability to conduct a community-based stove intervention study that focused on environmental health literacy.

Use of Technology to Collect Data in a Multi-Center, Multi-Country Hospital-Based Case-Control Study of Hematopoietic Diseases in Asia. *(PI)*
NIH/National Cancer Institute; 4/12/17-4/11/18
The purpose of this project was to support an ongoing study of hematopoietic malignancies in Asia.

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 were 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 will provide 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. This will be done by identifying mechanisms linking innate immunity with CVD in the setting of chronic, treated HIV infection; developing novel serum biomarkers for monocyte/macrophage-related inflammation and coagulation that may stratify CVD risk in the HIV-infected population; and using global sequencing of RNAs to define HIV- and CVD-associated gain and/or loss of function of specific signaling pathways.

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 will investigate 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 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. We will examine the influence of bout length and intensity of physical activity to define the dose-response relationships affecting diabetes risk. 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.

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 is 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
Several studies have shown significant associations of diabetes with persistent organic pollutants (POPs), including organochlorine pesticides, polychlorinated biphenyls (PCBs), and brominated flame retardants (BFRs). The biologic pathways by which these exposures could increase risk of diabetes have not been elucidated, although there is evidence that inflammatory and endocrine mechanisms may be involved. The proposed study will build 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 will fill major gaps in the neuroepidemiology of Mild Cognitive Impairment/Mild Neurocognitive Disorders (MCI/mNCD) among middle aged and older Latinos. Study aims focus 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
Cardiovascular disease (CVD) has become a major concern of people living with HIV. 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 CVD.

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 will leverage resources from the Hispanic Community Health Study - Study of Latinos (HCHS-SOL), Atherosclerosis Risk in Communities (ARIC), and other cohorts including existing whole genome sequencing (WGS) data, metabolomics profiles, multiple disease and biometric traits, and multi-ethnic populations. The aim is 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 publication.

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 is 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.

Gut Microbiota, Metabolites and Diabetes in HIV Infection (*PI*)
Feldstein Medical Foundation; 4/27/16-4/26/17
The primary goal of this study was to examine associations between gut microbiota and related metabolites (e.g., choline, trimethylamine N-oxide [TMAO], and betaine; bile acids; short chain fatty acids) and diabetes in women with HIV infection.

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 7000 participants selected from the Atherosclerosis Risk in Communities (ARIC) study and the Hispanic Community Health Study/Study of Latinos (HCHS/SOL), 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.

Nicolas F. Schlecht, PhD, MSc

Beta & Gamma Oral HPV Infection in HIV Positive Individuals (*MPI*)
NIH/National Institute of Dental and Craniofacial Research; 9/1/16-8/31/18
This grant investigated the natural history and risk factors for beta- and gamma-HPV infections in the oral cavity among HIV-positive and HIV-negative individuals.

Cervical, Anal and Oral HPV Among Inner City Adolescents (*MPI*)
NIH/National Institute of Allergy and Infectious Diseases; 5/15/07-2/6/2018
This prospective study examined the prevalence, incidence and persistence of anogenital and oral HPV following prophylactic vaccination for HPV in sexually active adolescent women.

The LifeCourse Approach to Study the Etiology of Head and Neck Cancer: HeNCe Life Study (*MPI*)
Canadian Institutes of Health Research; 7/1/07-3/31/17
This study investigated the relationship between social and psychosocial circumstances, genetic polymorphisms in tobacco/alcohol metabolizing genes, and HPV infection, and risk of head & neck cancer in Canada using a lifecourse approach.

Oral HPV Infection and Persistence in HIV Positive and HIV Negative Individuals (*Subcontract PI*)
NIH/National Cancer Institute; 8/1/15-7/31/18
This was a multicenter SPORE supplement to determine and compare the incidence, prevalence and persistence of oral alpha-HPV infection among HIV-positive and HIV-negative individuals.

Biomarkers of HPV Infection and Risk of Two Increasing Cancers (*Subcontract PI*)
NIH/National Cancer Institute; 9/1/15-8/31/19
This is a Cohort Consortium grant with investigators at IARC and NCI to evaluate the role of HPV serology in predicting risk of head & neck and anal cancers.

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 were 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.

Women's Health Initiative (WHI) Extension 3: 2015-2020
The Women's Health Initiative Regional Field Center Program (WHI) (*Subcontract PI*)

NIH/National Heart, Lung, and Blood Institute – University of Buffalo; 10/1/15-9/30/20
This extension study aims to use the WHI cohort to launch the next generation of critically important cardiovascular and cancer research projects that target older women. 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. The WHI serves as a platform for ancillary studies in cardiovascular disease, cancer and other diseases.

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 US) is to test the association of H. pylori infection with risk of colorectal cancer.

Mayris P. Webber, DrPH, MPH

Post-9/11 Cancer Incidence in FDNY Firefighters (*PI***)**
NIH/National Institute of Occupational Safety and Health; 7/1/14-6/30/17
The main objective of this research was to further our understanding of the association between World Trade Center exposure and cancer risk.

Maintenance and Extension of a Cohort of Career Firefighters as a Non-WTC Exposed Comparison for the FDNY Firefighter Cohort (*PI***)**
NIH/National Institute of Occupational Safety and Health; 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)*
NIH/National Institute of Occupational Safety and Health; 7/1/18-6/30/20
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.

DIVISION OF
HEALTH PROMOTION & NUTRITION RESEARCH
MISSION

Behavior and lifestyle play roles in disease prevention and control. Our mission is to advance understanding of how behavior and lifestyle affect indices of physical health, psychosocial wellbeing, and disease. Faculty research in the Division includes assessment of lifestyle and community environment, nutritional determinants of health-related biomarkers, investigation of psychological, behavioral and socio-cultural factors that improve health outcomes, evaluation of coping with acute illness and chronic disease, investigation of the precision of lifestyle assessment instruments, investigation of mind-body interventions in integrative oncology, and assessment of the clinical and cost-effectiveness of behavioral interventions.

PROGRAMS and FUNDED RESEARCH

Judith Wylie-Rosett, EdD, RD, Division Head

Wellness Program Implementation: School & Student Toolkits (*PI*)
NIH/National Institute of Diabetes and Digestive and Kidney Diseases; 9/1/13-10/31/18
This study evaluated a participatory implementation model to address barriers to school-based programming related to obesity-related health recommendations. Barriers were addressed at both the school and student level. Outcomes included the impact of wellness programming on student health behaviors in relation to their school environment, and used simulation modeling to evaluate the process by which wellness programming is adapted and sustained over time.

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 will evaluate the efficacy of the GEM intervention in a cluster randomized controlled 12-month trial, which will be 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 are 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.

Carmen R. Isasi, MD, PhD

Hispanic Community Health Study – Study of Latinos (Bronx Field Center) (*Co-PI*)
NIH/National Heart, Lung, and Blood Institute; 6/1/14-11/30/25
The scientific aims of the renewal of the HCHS-SOL were 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.

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, the study will examine the impact of disparities in vascular risk factors on brain health utilizing cutting edge MRI techniques within a large, understudied population of diverse Latinos spanning the age range of risk for stroke and dementia. We will also characterize the biological substrates of stroke, MRI and Alzheimer's disease among the various racial admixtures in this deeply phenotyped cohort.

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.

PCORnet Obesity Observational Study: Short- and Long-Term Effects of Antibiotics on Childhood Growth (*Subcontract PI*)
Patient-Centered Outcomes Research Institute (PCORI); 2/1/16-1/31/18
This project was a large national consortium of 9 CDRNs that examined the relationship of antibiotic prescribing in the first 2 years of life with excess weight gain and childhood obesity through mid-childhood.

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.

Alyson B. Moadel-Robblee, PhD

Bronx Oncology Living Daily (BOLD Living) Program (*Program Director*)
www.einstein.yu.edu/cancercenter/support
Susan G. Komen NYC Grant: 4/1/18-3/31/19
Avon Foundation Safety Net Grant; 1/1/18-12/31/18
Sharyn N. Lewin Foundation for Gynecologic Oncology Research Grant; 1/1/18-12/31/18
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 Integrative Oncology Program. With the support of Komen, Avon 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. Workshop themes focus on health promotion, mind-body therapies, and creative arts, with new topics and refinements made regularly in response to participant feedback. 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.

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, a licensed health psychologist. 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. We propose this study in a middle-aged population because early indicators of cognitive aging may manifest long before old age and because lifestyle factors, such as diet, may have their largest impact during this age period. The primary objectives are: 1) Show that the MHD can be adapted to a diverse middle-aged cohort in the Bronx. Evaluate pre- and post-intervention serum biomarkers indicative of an MHD diet pattern and self-reported intake of food groups to compare study arms. 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; 12/15/16-11/30/20

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. We will examine the influence of bout length and intensity of physical activity to define the dose-response relationships affecting diabetes risk. 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.

CJ Segal-Isaacson, EdD, RD

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

Clinical and Translational Science Award (CTSA) (*Program Leader*)
NIH/National Center for Advancing Translational Science; 9/26/13-4/30/18
A national consortium of medical research institutions, funded through Clinical and Translational Science Awards (CTSAs), worked together and shared 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 supported the Harold and Muriel Block Institute for Clinical and Translational Research (ICTR) at Einstein and Montefiore.

Education and Training Program in Patient-Centered Outcomes Research (*PI*)
Agency for Healthcare Research and Quality; 6/5/14-5/31/19
This project will develop a new, multifaceted education and training program in patient-centered outcomes research (PCOR) set in the medically underserved community of the Bronx.

Education Connecting Laboratory Investigation and Population Science at Einstein (eCLIPSE) (*MPI*)
Burroughs Wellcome Fund; 2/1/13-6/30/19
The major goal of this project is to develop and implement an innovative predoctoral PhD program to provide interdisciplinary cross-training in laboratory sciences and population sciences.

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