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Albert Einstein College of Medicine

***Note:** The research projects included in this report are those that were active during the calendar period 2015-2016 and in which a DEPH faculty member played a key role, as indicated parenthetically beside the title of the project.*

CHAIRMAN'S INTRODUCTION

I am delighted to introduce this report, which summarizes research undertaken by faculty in the Department of Epidemiology and Population Health (DEPH) at Einstein in 2015 and 2016. (More information about the department is available on our website <http://epi.montefiore.org>) During this period, we have both consolidated ongoing projects and ventured into exciting, new research territory. The extraordinary productivity of the faculty, ably supported by departmental staff, is a testament to their commitment to the missions of the department and the College of Medicine.

Thomas E. Rohan, MBBS, PhD, DHSc
Professor and Chairman
February 2017

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 studies of the etiology and prevention of cancer. 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 Benign Breast Tissue and Breast Cancer Risk (PI)
NIH/National Cancer Institute; 7/15/10-5/31/16

The goal of this project was to study the association between microRNA expression in benign breast disease tissue and risk of subsequent breast cancer.

Molecular Profiling of Ductal Carcinoma In Situ and Risk of Subsequent Invasive Breast Cancer, and Analysis of Risk Factors for Breast Cancer in Two Cohort Studies (PI)
Breast Cancer Research Foundation; 10/1/14-9/30/15

The goals of this project were to assess the feasibility of conducting a multi-center study of molecular changes related to risk of progression from ductal carcinoma in situ of the breast to subsequent invasive breast cancer, and to conduct analyses of risk factors related to breast cancer risk in two cohort studies.

MicroRNA expression profiling of breast cancer tissue and risk of distant metastasis (PI)
Breast Cancer Research Foundation; 10/1/15-9/30/16

The goal of this project was to study the association between miRNA expression in breast cancer tissue and risk of developing distant metastasis.

MicroRNA expression profiling of breast cancer tissue and risk of distant metastasis (PI)

Breast Cancer Research Foundation; 10/1/16-9/30/17

The goal of this project is to study the association between miRNA expression in breast cancer tissue and risk of developing distant metastasis.

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.

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. Dr. Powell is just completing work on an Institute of Medicine workgroup on community programs that address the social determinants of health. Dr. Powell took a sabbatical from July through December of 2016 while working on a book on dementia.

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 open to medical students throughout the United States and Canada. An award is given for the best essay on the physician-patient relationship.

Lauren Flicker, JD, MBE

Lauren Flicker is Assistant Director 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.

Ruth Macklin, PhD

Program in Biomedical Ethics (*Program Director*)

Trachtenberg and Frackman Family Endowment; 11/1/90-6/30/16

Dr. Ruth Macklin was 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 open to medical students throughout the United States and Canada. An award is given for the best essay on the physician-patient relationship.

Training Program in Research Ethics in the Americas (*Program Director*)

NIH/Fogarty International Center; 9/30/00-6/30/16

Dr. Macklin was the Director of this program from its inception until she retired from Einstein in June 2016. It was a training program in international research ethics, designed to educate individuals from developing countries who conduct research in the biomedical and social and behavioral sciences. The aim was to contribute to capacity building in research ethics in Latin America and foster ongoing collaborations in the Americas. The program was designed as a full collaboration between the Program Director in New York and the Co-director in Buenos Aires, Argentina. Trainees were from Latin American countries. Trainees spent three months in Buenos Aires and continued for the remainder of their training year taking distance-learning courses and implementing a required practicum in their home institutions. The program included an annual intensive course open to anyone free of charge, and a distance-learning course required for the trainees and open to others throughout the region.

Aileen P. McGinn, PhD

Dr. McGinn is the Director of the Clinical Research Training Program (CRTP), an intensive two-year 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

Dr. 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 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; 2/1/10-9/30/17

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.

LFA-RAPID Evaluation of Activity in Lupus System (LFA-REAL) (Subcontract PI)

Lupus Foundation of America; 9/1/14-8/31/15

Current tools and instruments for assessing the disease status of patients with systemic lupus erythematosus have major limitations including the need for specialized training to use them correctly and difficulty in interpreting results. The goal of the LFA-REAL project was to develop and validate a new lupus disease activity measure that will be more efficient, accurate, and simple to use in both the clinical research and clinical practice settings.

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; 6/1/16-5/31/17

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.

Jaemun 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, FAHA

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.

Qi Gao, PhD

Dr. Gao is a biostatistician collaborating with investigators in Department of Pediatrics and Department of Family and Social Medicine. Her research interests include program evaluation, longitudinal data analysis, and analysis of correlated responses.

Charles B. Hall, PhD

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

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

This study uses innovative statistical methods to examine temporal patterns in the association between the effects of rescue/recovery work at the World Trade Center (WTC) by FDNY firefighters on the incidence of physician-diagnosed chronic rhinosinusitis (CRS) and on self-reported persistent rhinosinusitis symptoms. Specifically, we will use 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

The goal of this randomized intervention study is to assess causality between 24-h systolic BP and reductions in mobility, associated with white matter hyperintensity in older people. The study will determine the impact of reducing the 24-h systolic BP to a goal of <125 mmHg (intensive BP control) vs. a goal of <140 mmHg (standard BP control). Dr. Hall is a consulting statistician for the study.

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 is a biostatistician who works with Albert Einstein Cancer Center investigators. His expertise is in epidemiological study methods, big data analysis (of microarrays in genomics, electronic health records, social media, or GIS), causal inference, and monitoring and evaluation of community health programs.

Juan Lin, PhD

Dr. Lin is a biostatistician who collaborates with Albert Einstein Cancer Center investigators. Her research interests are in high dimensional data analysis and in cancer 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 focuses 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 is a biostatistician who collaborates with Albert Einstein Cancer Center investigators. He is also a collaborating biostatistician with the Division of Cardiology and the Clinical Cardiovascular Research Unit, Department of Medicine. 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.

Kith Pradhan, PhD

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

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.

Detecting Early Disease Using Variability in Markers Under Informative Censoring (PI)
NIH/National Institute of Aging; 9/30/13-6/30/16

The goal of this project was to develop time-dependent ROC approaches that utilize the heterogeneous variance in markers and take non-random censoring into account for detecting early disease.

Statistical Core, The Einstein Aging Study (Core Director)

NIH/National Institute of Aging; 9/1/16-8/31/21

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 is to identify and validate biomarkers of PD due to mutations in the glucocerebrosidase 1 (GBA1) gene (GBA-PD). We propose 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 presents 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; 12/11/15-11/30/17

Using existing GWAS data of a consortium of case-control studies on lung cancer, this study will develop a novel Mendelian randomization approach to examine the causal relationship between obesity and lung cancer risk.

Statistical Method for Identifying Genetic Modifiers of Conotruncal Heart Defects (PI)

NIH/National Heart, Lung, and Blood Institute; 8/1/13-4/30/16

The main goal was to develop novel statistical methodology for testing genetic association using a novel three-stage polynomial logistic regression model, which takes genetic heterogeneity among disease subtypes into account. The investigators planned to apply the proposed methodology to investigate genetic associations of structural cardiovascular malformations in 22q11DS children.

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); 7/1/13-6/30/17

In this study, patients will be 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 integrates this cancer screening care management with depression care management. The goal of this project is 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 focus 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 in disease traits.

An Integrative Analysis of Structural Variation for the 1000 Genomes Project (Subcontract PI)

NIH/National Human Genome Research Institute; 7/1/13-7/1/17

The goal of this study is 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 is to investigate gene expression patterns in the brain that are associated with the development of autism.

Understanding Genetic Basis of Autism (*Subcontract PI*)

Simons Foundation; 6/1/05-12/31/16

The goal of this project was to identify genes involved in Autism using sequencing technology and to model the genetics causes of autism.

Yiting Yu, PhD

Meta-Analytical Online Repository of Gene Expression Profiles of MDS Stem Cells (*PI*)

Department of Defense; 6/1/12-5/30/15

The major goal of this project was the development of a database of gene expression profiles from MDS marrow CD34+ stem cells and healthy controls. The project also involved construction of a website with an easily searchable interface.

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

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 is 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); 3/1/14-8/31/17

This project builds upon earlier work on the in depth assessment of patients' personal criteria for evaluating their own quality of life. This study will develop more streamlined measures of appraisal for use in wide-scale surveys and clinical trials.

Minority-Based Community Oncology Research Program (*PI*)

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.

Expanded HIV Testing Program (Subcontract PI)

NYS AIDS Institute/CDC; 1/1/14-12/31/16

The goal of this grant was to conduct a comprehensive dynamic trial to improve HIV testing in emergency departments throughout New York State.

Evaluating the Impact on Patient Engagement and Outcomes of the American College of Pathologists' See Test & Treat Cancer Screening Program (PI)

Robert Wood Johnson Foundation; 5/1/14-4/30/15

College of American Pathologists

This project supported an evaluability assessment (EA) of the College of American Pathologists (CAP) Foundation's See Test & Treat Program.

Access to and Value of Treatment Innovation in Blood Cancers (Subcontract PI)

Leukemia and Lymphoma Society; 6/1/16-11/30/18

This grant examines 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 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), Cervical Cancer Screening for HIV-infected and Uninfected Women in Cameroon.

David W. Lounsbury, PhD

Improving Post-Treatment Resources for Latina Breast Cancer Survivors (Subcontract PI)

American Cancer Society; 7/1/12-6/30/17

This project will develop a program and resources to support sustained annual breast cancer screening among Latina breast cancer survivors. System dynamics modeling will be 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 will compare 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 will be 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; 5/1/15-1/31/18

This 4-year case study will use systems science methodologies, including social network analysis (SNA), mixed methods ethnography, and participatory and computational system dynamics modeling (SDM), to examine factors that affect efforts to reduce the HIV epidemic through the promotion of Test & Treat (T&T). The study will be conducted in metropolitan Hartford, CT, a typical small urban area marked by three decades of persistent high rates of HIV, despite ongoing interventions and supportive community and research collaborations to mitigate the epidemic.

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 will complement 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 is a study to evaluate 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.

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

HPV & Cervix Neoplasia in a Large, Long Term HIV+ Cohort (PI)

NIH/National Cancer Institute; 6/22/10-4/30/16

This large prospective study based in the Women's Interagency HIV Study (WIHS) examined: (i) the impact of menopause and aging on HPV/SIL in HIV+ and HIV- women; (ii) the levels of CD4+ and CD8+ T-cells by differentiation phenotype to determine the specific T-cell deficits that drive the HIV-HPV/SIL relationship; (iii) local immune cell levels in CIN-1 biopsies that predict progression to CIN-2+ versus regression, and whether following treatment the lesions rapidly recur; (iv) HLA/KIR and other immunogenetic risk factors for cervical pre-cancer.

Molecular Methods to Improve Cervical Cancer Screening in HIV+ Women (PI)

NIH/National Cancer Institute; 5/1/13-3/31/17

This study will determine the sensitivity / specificity / positive predictive value / negative predictive value for the detection of cervical cancer and pre-cancer in HIV+ women related to promising, commercially available molecular assays that have previously been found to perform well in HIV- women.

Role of the Sex Hormone and Insulin/IGF Axes in Endometrial Cancer Recurrence (PI)

NIH/National Cancer Institute; 8/5/09-5/31/15

This study investigated the prognostic value of both serologic and tissue levels of sex hormones and insulin/IGF axis components in relation to endometrial cancer recurrence. The study was conducted in a large (N=4,500), prospective cohort study of endometrial cancer patients (GOG-0210).

Illir Agalliu, MD, ScD

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.

Insulin/IGF-axis and Aggressive Prostate Cancer (PI)

American Cancer Society; 7/1/11-6/30/16

This study investigated the role of serum levels of insulin, total and free IGF-1, IGF-2, and IGFBP-3, tissue expression levels of insulin receptor (IR), IGF-1 receptor (IGF-1R), and P-IR/IGF-1R, as well as tissue expression levels of IGF-1, IGF-2, and IGFBP-3 proteins in aggressive prostate cancer, and examined associations between these serum and tissue markers with short-term prostate cancer recurrence/progression.

LRRK2 Mutations and Cancers (Co-PI)

Michael J. Fox Foundation; 5/1/12-4/30/15

The goal of this study was to better understand the association between *LRRK2* mutations and non-skin cancers through meta-analysis of previously collected data at different sites. The goal was also to implement standardized measures for cancer collection across centers and better understand the biology of the presumed *LRRK2*-related effect through the determination of cancers in family history of first and second degree relatives of *LRRK2* carriers.

Jeannette M. Beasley, PhD, MPH, RD

Evidence for Establishing Optimum Protein Intake in Older Adults (PI)

NIH/National Institute of Aging; 9/30/10-1/31/15

This study nested within the Women's Health Initiative aimed to refine optimal protein intake among older women by examining associations between biomarker-calibrated protein intake, renal function, and physical function.

Philip Castle, PhD

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 evaluates 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 examines cervical cancer screening and management strategies and builds 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 involves the research and development of a pump-free, lateral flow, point-of-care, HPV DNA test.

Cryopen: An Innovative Treatment to 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 the treatment.

High Resolution Imaging & HPV Oncoprotein Detection for Global Prevention of Cervical (Subcontract PI)

NIH/National Cancer Institute; 9/1/14-8/31/19

The major goals of this study 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 a HPV E7-specific ELISA.

Point-of-Care Diagnostic Tools to Improve Global Cancer Control Programs (Subcontract PI)

NIH/National Cancer Institute; 9/22/14-8/31/17

The major goal of this study of 10,000 women living in Barretos, Brazil is demonstrate accurate diagnosis of cervical precancer and cancer using high-resolution microendoscopy (HRME).

Comprehensive Cancer Center Core Support (Subcontract PI)

NIH/National Cancer Institute; 4/1/15-3/31/16

The major goal of this pilot project was to compare in a randomized clinical trial the participation of under-screened Brazilian women in Pap screening, self-collection and HPV testing, or a choice of either for cervical cancer screening.

Hillel W. Cohen, DrPH, MPH, FAHA

Dr. Cohen studies hypertension and other risk factors for cardiovascular disease. Recent work has examined associations of plasma renin activity and sodium intake with cardiovascular outcomes. He is also a Fellow of the American Heart Association in the Council for High Blood Pressure Research, and Co-Executive Editor of the American Journal of Hypertension

David B. Hanna, PhD, MHS

Dr. Hanna's current research examines HIV treatment and care outcomes, cardiovascular disease in HIV infection, and geographic health disparities, based on data from large cohort studies and population-based databases. His methodological interests include the use of causal inference techniques to answer questions of clinical and policy relevance, and public health surveillance data to complement research from cohort studies.

Gloria Y. F. Ho, PhD, MPH

Serum Levels of EGFR-Signaling-Network Activators/Inhibitor and Risk of Lung Cancer (PI)

NIH/National Cancer Institute; 9/1/10-8/31/15

This case-control study nested within the Women's Health Initiative examined whether plasma levels of 6 activators/inhibitors of the EGFR-signaling-network, namely IGF-I, HGF, NGF, insulin, IL-6, and IGFBP-3, are associated with risk of lung cancer, and whether the associations vary depending on smoking status and histological subtype.

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; 8/1/16-7/31/17

This pilot seeks to expand our ongoing epidemiological study of never smoking lung cancer in Thailand, to include smokers and males, as well as additional study centers in Southeast Asia.

Collaborative Efforts on a Hospital-Based Case-Control Study of AsiaLymph and Leukemia Study in Asia (PI)

NIH/National Cancer Institute; 2/16/16-11/15/16

The purpose of this contract was to support an ongoing study of hematopoietic malignancies in Asia.

Feasibility of an Epidemiological Study of Wood Burning and Lung Cancer Risk Among Never Smoking Females in Thailand (PI)

Global Health Center, Albert Einstein College of Medicine; 12/1/13-11/30/16

This pilot was designed to help inform the best design and methods for carrying out a full-scale epidemiological study of never smoking lung cancer in Thailand, which will elucidate the relationship between lung cancer and in-home wood burning, as well as genetic and other environmental risk factors.

The Feasibility of the Mitigation of Biomass Smoke Exposures in Kenyan and Ethiopian Populations (PI)

Global Health Center, Albert Einstein College of Medicine; 11/1/14-11/30/16

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).

Data Integration for a Hospital-Based Case-Control Study for AsiaLymph and Leukemia Study (PI)

NIH/National Cancer Institute; 9/27/14-8/26/15

The purpose of this contract was to coordinate the retrieval, cleaning, and quality control analysis of electronically collected data in hospitals throughout Hong Kong, Taiwan, and China.

Chemoenzymatic Methods for the Detection of Cell Surface Glycans (Subcontract PI)

NIH/National Institute of General Medical Sciences; 1/1/16-7/31/16

The goal of this project was to develop chemoenzymatic methods for the specific labeling of cell-surface higher order glycans using small-molecule biophysical probes.

Robert C. Kaplan, PhD

Hispanic Community Health Study, Bronx Field Center (PI)

NIH/National Heart, Lung, and Blood Institute; 9/30/06-3/31/20

The overall goal of this project is to recruit 4,000 Hispanic/Latino adults 18-74 years of age in Bronx, NY and obtain long-term follow-up on CVD, asthma, COPD, diabetes, cancer, and other health outcomes, as part of the multicenter Hispanic Community Health Study.

CVD and Inflammation Across the Lifespan in HIV Infected Adults and Children (MPI)

NIH/National Heart, Lung, and Blood Institute; 7/22/13-6/30/15

The overarching goal of this proposal was to study how determinants of CVD change with aging among HIV-infected persons. This project extended and built upon the NHLBI HIV-CVD Consortium, which includes 9 R01 investigations on atherosclerotic CVD in adults and children with HIV. Scientific aims involved the identification of risk factors, including standard clinical CVD risk factors such as lipids, blood pressure and diabetes, as well as novel biomarkers of inflammation and hemostasis, that are associated with the presence of subclinical atherosclerosis in patient groups across the lifespan.

Role of Innate Immunity in HIV Related Vascular Disease: Biomarkers & Mechanisms (PI)

NIH/National Heart, Lung, and Blood Institute; 9/15/14-5/31/18

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. Extensively characterized HIV-infected and HIV-uninfected enrollees from the Women's Interagency HIV Study (WIHS) and Multicenter AIDS Cohort Study (MACS) are brought to bear in this interdisciplinary, multi-site investigation.

Epidemiology of the Gut Microbiome, Prediabetes and Diabetes in Latinos (MPI)

NIH/National Institute on Minority Health and Health Disparities; 7/1/16-6/30/21

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; 5/1/16-4/30/20

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 explores whether a diverse primarily immigrant Hispanic/Latino population in the US differs from a mainly mainstream population in terms of the impact of physical activity on onset of diabetes. It 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. This approach not only increases generalizability of our findings to the total US population, but also helps us understand what is unique about Hispanics. An important question is how sedentary time can be harmful even among individuals who are physically active. The principal aims of the proposed 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 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; 9/14/15-5/31/21

The goal of the “ECHOSOL” project is to identify the course of subclinical cardiac dysfunction among Hispanic adults enrolled in the HCHS-SOL cohort.

Genetic Variants of Calcium Channel and Binding Proteins Underlying cIMT in HIV (Subcontract PI)

NIH/National Heart, Lung and Blood Institute; 9/1/15-8/31/16

The major objective of this study was to conduct deep-sequencing and examine genetic variants in 9 genes encoding Ca²⁺ channels (RYR1, RYR2, RYR3, IP3R) and other related proteins (GADD153, CALM1, CALM2, CALM3, CAMKII) in HIV patients that exhibit extreme Carotid Intima-Media Thickness (cIMT) measurements.

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; 9/15/15-4/30/20

The Study of Latinos-Investigation of Neurocognitive Aging (SOL-INCA) study would 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; 9/30/16-5/31/21

The primary goal 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.

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 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 Infections (PI)

Feldstein Medical Foundation; 4/27/16-4/26/17

The primary goal of this study is 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.

Gut Microbiome, C1q/Tumor Necrosis, Factor-Alpha Related Proteins and Cardiometabolic Disease in HIV Infected Women (Project Lead)

NIH/ National Institute of Allergy and Infectious Diseases; 1/1/16-12/31/16

The primary goal of this study is to examine interrelationships between gut microbiome patterns, circulating levels of C1q/tumor necrosis factor-alpha related proteins, and cardiometabolic disease in HIV infected women.

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 investigates 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; 5/15/07-11/30/17

This prospective study examines 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 (Co-PI)

Canadian Institutes of Health Research; 7/1/07-3/31/17

This study investigates the relationship between social and psychosocial circumstances, genetic polymorphisms in tobacco/alcohol metabolizing genes, and HPV infection, on risk of head & neck cancer in Canada using a lifecourse approach.

Developing a HPV-Mediated DNA Methylation Panel in Oropharyngeal Squamous Cell Carcinoma (MPI)

NIH/National Institute of Dental and Craniofacial Research; 9/18/13-8/31/16

This study tested a novel host DNA methylation panel for HPV-associated oropharyngeal squamous cell carcinoma and tested the epigenetic events that may regulate key effector proteins.

Penile, Anal and Oral HPV Among Inner City Adolescent Men (MPI)

NIH/National Institute of Allergy and Infectious Diseases; 12/1/14-11/30/15

This was a supplement to recruit and follow adolescent males and partners of our prospective study of adolescent women receiving the HPV vaccine.

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 is 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 head & neck and anal cancers.

Sylvia Wassertheil-Smoller, PhD, FAHA

Women's Health Initiative (WHI) Extension 2: 2010-2015 and 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; 10/1/10-9/30/15

These extension studies aim 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. The rich resources of data and specimens are being made widely available to the investigator community and for training young investigators.

The NINDS Stroke Genetics Network (SiGN) Study: A Genome-Wide Association Study of Ischemic Stroke (MPI)

NIH/National Institute of Neurological Disorders and Stroke; 7/1/10-6/30/15

The NINDS SiGN Study was established as a consortium with 22 sites in the U.S. and in Europe with the overall goal of discovering ischemic stroke susceptibility genes and, ultimately, enabling the exploitation of these discoveries to reduce the burden of stroke.

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 infection with H. pylori and the 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 is to further our understanding of the association between World Trade Center exposure and cancer risk.

Post-9/11 Incidence of Systemic Autoimmune Diseases in the FDNY Cohort (PI)

NIH/National Institute of Occupational Safety and Health; 7/1/13-6/30/15

The goal of this research was to calculate the incidence of selected systemic autoimmune diseases (SAID) in 21,786 World Trade Center-exposed and unexposed firefighters and emergency medical service workers and to estimate their association with intense WTC exposure.

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.

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

Comprehensive Family Weight Management Study (PI)

NIH/National Institute of Diabetes and Digestive and Kidney Diseases; 5/1/08-8/31/15

The study evaluated a comprehensive family weight management program in a large municipal Bronx hospital primary care program of 7-12 year-old Bronx children who have a standardized BMI > 85th percentile. The multidimensional intervention framework focused on the family and addressed the community environment. In a two arm randomized controlled clinical trial, children and their families were assigned to an Experimental (Standard of Care + Enhanced Program Intensification) Intervention or a

Control (Standard of Care alone) Intervention. Two-year weight changes were used to determine the sustainability of the intervention effects. Intervention cost-effectiveness was determined from the institutional perspective.

Wellness Program Implementation: School & Student Toolkits (PI)

NIH/National Institute of Diabetes and Digestive and Kidney Diseases; 9/1/13-7/31/18
This study will evaluate a participatory implementation model to address barriers to school-based programming related to obesity-related health recommendations. Barriers will be addressed at both the school and student level. Outcomes will include the impact of wellness programming on student health behaviors in relation to their school environment, and will use 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; 9/20/16-6/30/21
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).

Diet Quality and CVD Risk Factors in a Family Based Weight Management Study (Subcontract PI)

NIH/National Heart, Lung, and Blood Institute; 8/2/10-6/30/16
The goals of this study were to evaluate the effects of a family-based weight management intervention on biomarkers of nutrient intake and metabolism (RBC fatty acid profiles, plasma carotenoids, vitamins A, E, K and dihydrovitamin K) as objective indicators of diet quality. The biomarker changes of parent and child dyads were compared to estimate spillover effects.

Carmen R. Isasi, MD, PhD

Hispanic Community Children's Health: Study of Latino Youth (SOL-Youth) (Subcontract PI)

NIH/National Heart, Lung, and Blood Institute; 4/1/11-11/30/16
This was a multicenter study that examined a wide range of socio-cultural factors and biological markers associated with obesity and cardiometabolic risk in a sample of 1,600 Latino boys and girls aged 8-16 years old from 4 field centers (Bronx, Chicago, Miami, and San Diego).

Gut Microbiome, Obesity, and Cardiometabolic Risk in Children (PI)

Einstein Clinical and Translational Science Award (CTSA); 11/10/14-4/30/15

This was a feasibility study to examine gut microbiome composition in minority children and its relation to obesity and cardiometabolic risk factors.

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; 9/20/16-7/30/21

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 is a large national consortium of 9 CDRNs that will examine the relationship of antibiotic prescribing in the first 2 years of life with excess weight gain and childhood obesity through mid-childhood. The study will obtain all data from electronic medical records of the 42 institutions (nodes) that will contribute patient data to the study.

Alyson B. Moadel-Robblee, PhD

Bronx Oncology Living Daily (BOLD Living) Program (Program Director)

Susan G. Komen Patient Navigation Grant; 5/1/15-4/30/17

Avon Foundation Safety Net Grant; 1/1/15-12/31/17

Lewin Fund for Women's Cancers; 2/1/15-1/31/17

Yankees Community Benefits Fund; 9/1/15-8/31/17

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, Lewin and Yankees funding (above), 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 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

Study of Latinos: Nutrition & Physical Activity Assessment Study (SOLNAS) (PI)

NIH/National Heart, Lung, and Blood Institute; 4/25/10-3/30/16

This study was conducted in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL), an NIH-NHLBI funded study of Hispanics/Latinos in the Bronx, Chicago, Miami and San Diego. The principal aims of the study were: 1) To compare energy and protein data from the 24 hr dietary recall to the gold standard biomarkers Doubly Labeled Water (DLW) for energy, and urinary nitrogen for protein; to compare physical activity energy expenditure data from study questionnaires to the Actical (an accelerometer for measuring physical activity), DLW and indirect calorimetry. 2) To contrast measurement error properties of: (i) the 24 hr dietary recall; (ii) the 24 hr dietary recall with the addition of the Food Propensity Questionnaire (FPQ) (iii) SOL Physical Activity Questionnaire; (iv) the Tufts University Puerto Rican/Dominican Food Frequency Questionnaire (Bronx only); 3) To use the fitted measurement error model to produce calibrated intake and physical activity measures in the full HCHS/SOL cohort for use in analyses of clinical outcomes.

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 explores whether a diverse primarily immigrant Hispanic/Latino population in the US differs from a mainly mainstream population in terms of the impact of physical activity on onset of diabetes. It 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. This approach not only increases generalizability of our findings to the total US population, but also helps us understand what is unique about Hispanics. An important question is how sedentary time can be harmful even among individuals who are physically active. The principal aims of the proposed 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 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 for 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 15 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 (NCATS); 9/26/13-4/30/18

A national consortium of medical research institutions, funded through Clinical and Translational Science Awards (CTSAs), is working together and shares 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. There are currently 62 institutions funded under the CTSA. This grant supports 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 (AHRQ); 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. The project represents a partnership between Albert Einstein College of Medicine and Montefiore Medical Center (a community-oriented academic medical center and primary-care focused healthcare delivery system).

Strengthening Behavioral and Social Science in Medical School Education (*MPI*)

Office of Behavioral and Social Science Research (OBSSR, administered by NICHD); 5/19/11-4/30/16

The major goal of this project is to enhance, in collaboration with the Warren Alpert Medical School of Brown University, medical students' learning of population health.

Education Connecting Laboratory Investigation and Population Science at Einstein (eCLIPSE) (*Co-PI*)

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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Yolanda Cassidy, Administrator

Elizabeth Abbate, Office Coordinator

Celeste Broquadio, Assistant to the Chairman

Maureen DeLouise, Office Coordinator

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Carlo S. Garcia, Senior Developer/DBA

Jeffrey Geizhals, Bioinformatics Analyst

Victor Kamensky, Statistical Programmer

Minerva Manickchand, Project Coordinator

Martin Packer, Bioinformatics Analyst

Noel Relucio, Systems/Network Administrator

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Mindy Ginsberg, BA, Resource Director

**Has a non-primary appointment and/or is part-time in the Department. For a listing of all faculty, see DEPH website.*



Albert Einstein College of Medicine

Montefiore

DEPARTMENT OF EPIDEMIOLOGY AND POPULATION HEALTH

The Albert Einstein College of Medicine and Montefiore Health System

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