Division of Intramural Research

NAEHS Council Update

June 2023

DIR RECRUITMENTS

Chief of the Center for Climate Change and Health Research
NIEHS is recruiting a Senior Investigator to serve as Chief of a new Center for Climate Change and Health Research (CCCHR) at NIEHS in the Division of Intramural Research (DIR). The CCCHR is a new trans-NIH center focused on advancing our understanding of the impact of climate change on human health. The goals of the CCCHR are to: 1) create a central hub that will facilitate research on the health impacts of climate change; 2) build a cadre of IRP scientists interested in Climate Change and Health (CCH) research and foster cross-cutting and convergent research partnerships; and 3) support the research and career development of both junior and experienced scientists interested in CCH research. The successful candidate will bring dynamic vision and leadership to the CCCHR while serving as a catalyst for innovation for climate change research across the NIH Intramural Research Program. The candidate will be responsible for overseeing the center's research operations, building partnerships with other NIH Institutes, Centers, and Offices, and providing scientific leadership to IRP investigators with joint appointments to the CCCHR. Applicants conducting research focused on understanding the biological mechanisms underlying the effects of climate change on health are encouraged to apply. The ideal candidate will be tenure-eligible based on an outstanding academic record of achievement, leadership capabilities, and broad interests in CCH research. The successful candidate for this position will also maintain an active independent research program. Dr. Paul Wade, Senior Investigator and Chief of the Epigenetics and Stem Cell Biology Laboratory serve as chair of the search committee which launched May 24, 2023.

Tenure-Track Investigator in the Immunity, Inflammation and Disease Laboratory
NIEHS is recruiting a Tenure-Track Investigator to study fundamental mechanisms by which immune and inflammatory responses are triggered and regulated in the lung and other organs and contribute to disease, with a particular focus on asthma, host defense/innate immunity, lung fibrosis, and cardiovascular disease. In addition to building upon current strengths, areas of special interest for future growth of IIDL include: (i) immunometabolism (programming of the immune response by changes in cellular metabolic pathways); (ii) mucosal immunity (lung, gut, other) including the heterogeneity, ontogeny, and/or function of immune, epithelial, and stromal tissue-resident cells; and (iii) systems biology of the immune response. However, we enthusiastically welcome applications from outstanding scientists in all fields of immunology. The successful candidate is expected to lead an innovative, independent research program exploring the mechanism of immune responses that enhances our understanding of the effects of the environment on human health. Applicants should have a Ph.D., M.D. and/or equivalent doctoral degree with at least 3 years of postdoctoral research experience in their field and an outstanding publication record. The emphasis will be on identifying an exceptional scientist with an innovative and productive research program. Dr. Anant Parekh, Senior Investigator and Chief of the Signal Transduction Laboratory serve as chair of the search committee which launched February 27, 2023.

Medical Director of the Clinical Research Unit

NIEHS is inviting applications for a Senior Clinician in the Clinical Research Branch (CRB), Division of Intramural Research (DIR) at the NIEHS campus in Research Triangle Park, NC to serve as Medical Director of the Clinical Research Unit (CRU) and Director of Clinical Operations for the NIEHS Personalized Environment and Genes Study (PEGS), a large cohort of over 19,000 participants, initiated in 2002 to study interaction between genes, the environment and health. PEGS offers outstanding research opportunities to intramural scientists and extramural collaborators interested in personalized environmental medicine. While it is expected that the successful candidate will be able to collaborate broadly on projects utilizing the CRU and/or PEGS cohort, resources will also be made available for conducting self-initiated research projects. The successful candidate will require evidence of strong leadership skills and significant experience in patient-oriented research, defined as research that requires direct interaction with human subjects. The individual will have a track record of national presentations and publications in respected journals in their field. Research areas may include understanding the mechanisms of human disease, genotype-phenotype studies, therapeutic interventions, and/or clinical trials. Applicants should have an M.D. or equivalent doctoral degree and must possess a current, active, full and unrestricted license to practice medicine in the United States and be eligible to be credentialed for patient care by the NIH Clinical Center. Dr. Michael Fessler, Chief of the Immunity, Inflammation and Disease Laboratory serves as chair of the search committee which was launched on May 25, 2021.

Chief of the Administrative and Research Services Branch

The search process has been initiated for an outstanding administrative leader to serve as Lead Administrative Officer and Chief of the Administrative and Research Services Branch (ARSB). ARSB performs program planning and resource management activities to support the intramural research programs and scientists at NIEHS. The position was vacated by J'Ingrid Mathis on July 17, 2022, when she assumed her new leadership role as the Associate Director for Management and Executive Officer at NIEHS. An advisory committee chaired by Dr. Jerrel Yakel, Chief of the Neurobiology Laboratory, DIR was formed to facilitate identification of a small pool of outstanding candidates to advance to interviews.

Recruitment of NIH Earl Stadtman Investigator Finalists

In addition to targeted recruitment, DIR is actively seeking outstanding scientists through the central NIH Stadtman recruitment mechanism. DIR Principal Investigators will serve on most of the 26 Stadtman subcommittees in 2022-23 representing a range of disciplines central to the NIEHS mission. Three outstanding Stadtman finalists have been selected for interviews in 2023. DIR scientist will also serve on Stadtman committees for 2023-2024.

DIR STAFF UPDATES

Chief of the Epigenetics and Stem Cell Biology Laboratory

Dr. Paul Wade was appointed Chief of the Epigenetics and Stem Cell Biology Laboratory (ESCBL) in DIR on March 15, 2023. He was previously on the faculty in Department of Pathology and Laboratory Medicine at Emory University School of Medicine prior to his recruitment to NIEHS in 2004 as the head of the Eukaryotic Transcriptional Regulation group. Dr. Wade was awarded tenure at NIEHS in 2009 and became Deputy Chief of the Laboratory of Molecular Carcinogenesis in 2013. Dr. Wade has previously served as Acting Deputy Scientific Director and was serving as Acting Chief of ESCBL prior to his appointment. Dr. Wade's research program is focused on elucidating how transcription factors penetrate the chromatin barrier to form new enhancers. His group also investigates how environmental factors, including diet, influence disease risk through modulation of the epigenome.

New Tenure-Track Investigators

Dr. Julieta Lischinsky from the Neuroscience Institute at New York University Grossman School of Medicine has accepted an offer to join the Neurobiology Laboratory as an Earl Stadtman Tenure Track Investigator. Dr. Lischinsky will initiate an independent program focused on developing and applying innovative neuroscience approaches to elucidate how social sensory information is encoded and impacts behavior across developmental stages and how these mechanisms are disrupted during early life adversity and in psychiatric conditions, such as autism spectrum disorder (ASD). She has also been selected as a member of the NIH Distinguished Scholars Program. Dr. Lischinsky plans to start at NIEHS in October 2023.

Dr. Rajula Elango from Harvard Medical School has accepted an offer to join the Genome Integrity and Structural Biology Laboratory as a tenure-track investigator. Dr. Elango will initiate an independent research program focused on studying DNA damage and repair pathways and how environmental stressors impact these processes starting in December 2023.

DIR COMMITMENT TO DIVERSITY, EQUITY, INCLUSION AND ACCESSIBILITY

NIH Distinguished Scholars Program

Dr. Julieta Lischinsky who will be joining DIR as an Earl Stadtman Tenure Track Investigator in the Neurobiology Laboratory in Fall 2023 was selected to participate in the NIH Distinguished Scholars Program based on her demonstrated commitment to lowering barriers to participation in science for individual traditionally underrepresented in science. Dr. Lischinsky joins four DIR Tenure-Track Investigators previously selected to the DSP: Drs. Joe Rodriguez (ESCBL), Benedict Anchang (BCBB), Jason Watts (ESCBL) and Carlos Guardia (RDBL) as well as Dr. Dondrae Coble (CMB Chief) who is a Senior Scientist member of the DSP cohort.

DIR Diversity, Equity, Inclusion and Accessibility (DEIA) Working Group

A voluntary working group of more than 50 members including administrative, scientific and scientific support employees, trainees, and contractors representing all DIR Laboratories and Branches has been organized and is co-chaired by Dr. Raja Jothi, Senior Investigator in ESCBL and Dr. Steven Tuyishime, Assistant Scientific Director. This working group has been charged with proposing recommendations to the Scientific Director to improve and enhance diversity, equity, inclusion, and accessibility throughout the DIR workforce. Initial recommendations were provided to the Scientific Director and DIR Council in late 2022 and an action plan is currently being developed to prioritize and implement new policies and programs in 2023.

The working group is divided into four thematic subgroups each with two co-leaders:

Subgroup 1: Recruitment and Retention (Joe Rodriguez and Yesenia Rodriguez)
Subgroup 2: Career Development (Jackson Hoffman and Vince Guerrero)
Subgroup 3: Performance, Evaluation, and Recognition (Justin Kosak and Francesco DeMayo)
Subgroup 4: Outreach and Engagement (Anne Marie Jukic and Steve Tuyishime)

SCIENTIFIC UPDATE BY A DIR PRINCIPAL INVESTIGATOR

Racial and Ethnic Disparities in Phthalate Exposure and Preterm Birth: A Pooled Study of 16 US Cohorts

Kelly K. Ferguson, Ph.D., M.P.H., Senior Investigator
Perinatal and Early Life Epidemiology Group
Epidemiology Branch
DIR, NIEHS

BACKGROUND: Phthalate exposures are ubiquitous during pregnancy and may contribute to racial and ethnic disparities in preterm birth.

OBJECTIVES: We investigated race and ethnicity in the relationship between biomarkers of phthalate exposure and preterm birth by examining: 1) how hypothetical reductions in racial and ethnic disparities in phthalate metabolites might reduce the probability of preterm birth, and 2) exposure-response models stratified by race and ethnicity.

METHODS: We pooled individual-level data on 6,045 pregnancies from 16 US cohorts. We investigated covariate-adjusted differences in nine urinary phthalate metabolite concentrations by race and ethnicity (non-Hispanic White [White, 43%], non-Hispanic Black [Black, 13%], Hispanic/Latina [38%], and Asian/Pacific Islander [3%]). Using g-computation, we estimated changes in the probability of preterm birth under hypothetical interventions to eliminate disparities in levels of urinary phthalate metabolites by proportionally lowering average concentrations in Black and Hispanic/Latina participants to be approximately equal to the averages in White participants. We also used race and ethnicity-stratified logistic regression to characterize associations between phthalate metabolites and preterm birth.

RESULTS: Compared to White participants, adjusted mean phthalate metabolite concentrations were consistently higher among Black and Hispanic/Latina participants by 23%-148% and 4%-94%, respectively. Asian/Pacific Islander participants had metabolite levels that were similar to those of White participants. Hypothetical interventions to reduce disparities in metabolite mixtures were associated with lower probabilities of preterm birth for Black (13% relative reduction, 95% CI: -34%, 8.6%) and Hispanic/Latina (9% relative reduction, 95% CI: -19%, 0.8%) participants. Odds ratios for preterm birth in association with phthalate metabolites demonstrated heterogeneity by race and ethnicity for 2 individual metabolites (mono-n-butyl and mono-isobutyl phthalate), with larger positive magnitude associations observed among Black or Hispanic/Latina participants.

CONCLUSIONS: Phthalate metabolite concentrations differed substantially by race and ethnicity. Our results show hypothetical interventions to reduce population-level racial and ethnic disparities in biomarkers of phthalate exposure could potentially reduce the probability of preterm birth.

INTERNATIONAL ACTIVITIES IN DIR FOR FY 2022

Collaborative Research Projects

Dr. John Cidlowski (Signal Transduction Laboratory) collaborated with Drs. Jenny Fiedler and Marcella Hermosa at the University of Chile in Santiago, Chile to study the physiology and pathophysiology of glucocorticoids. This collaboration was supported in part by 1ZIAES090057.

Drs. Donald Cook and Hideki Nakano (Immunity, Inflammation and Disease Laboratory) collaborated with Ana-Maria Lennon- Duménil at the Institut Curie in Paris, France on shape-sensing mechanisms for dendritic cell migration in homeostasis. This collaboration was supported in part by 1ZIAES102025.

Dr. Anton Jetten (Immunity, Inflammation and Disease Laboratory) collaborated with Dr. Thomas Mercher at the Institut de Recherche Saint Louis and Université de Paris, Paris, France on the role of GLIS2 in pediatric acute megakaryoblastic leukemia. Dr. Jetten also collaborated with Dr. Vincent Guen at the Institut de Génétique et Développement de Rennes, Rennes, France on GLIS2 signaling regulates mammogenesis and claudin-low breast tumorigenesis and Dr. Pilar Santisteban, Instituto de Investigaciones Biomédicas "Alberto Sols", Universidad Autónoma de Madrid (UAM), Madrid, Spain on the regulation of gene transcription in the thyroid by GLIS3. Dr. Jetten also collaborated with Dr. Robert Tuckey at the University of Western Australia, Perth, Australia on vitamin D3 metabolites and their interaction with nuclear receptors and with Dr. Gilbert Vassart, Institut de Recherche Interdisciplinaire, Université Libre de Bruxelles, Brussels, Belgium on the role of GLIS3 in intestinal stem cells. These collaborations were supported in part by ZIAES101585, and 1ZIAES101586.

Dr. Kelly Ferguson (Epidemiology Branch) collaborated with Dr. Vincent Jaddoe at the Erasmus Medical Center in Rotterdam, The Netherlands on The Generation R Cohort as a NIEHS Resource. This collaboration was supported in part by 1ZIAES101575.

Drs. Patricia Jensen and Nicholas Plummer (Neurobiology Laboratory) collaborated with Dr. Luciane H. Gargaglioni Batalhão at São Paulo State University-UNESP/FCAV, Jaboticabal, Brazil to study the role of locus coeruleus noradrenergic neurons in developmental regulation of breathing patterns and thermoregulation. This collaboration was supported in part by 1ZIAES102805.

Dr. Raja Jothi (Epigenetics and Stem Cell Biology Laboratory) collaborated with Dr. Pengyi Yang at the University of Sydney, Australia on multiomics studies of pluripotency. This collaboration was supported in part by 1ZIAES102625.

Dr. Anne Marie Jukic collaborated with scientists at Natural Cycles Inc. in Geneva, Switzerland to study menstrual cycles and ovulation. This collaboration was supported in part by 1ZIAES103333.

Dr. Geoffrey Mueller (Genome Integrity and Structural Biology Laboratory) collaborated with Dr. Fatima Fereirra at the Paris Lodron University of Salzburg, Salzburg, Austria on a study characterizing the Bet v 1 and BM4 antibodies. This collaboration was supported in part by 1ZIAES102906.

Dr. Lisa Rider (Clinical Research Branch) collaborated with Dr. Adriana Sallum at Pediatric Rheumatology Unit, Children's Institute, School of Medicine, University of Sao Paolo, Brazil, to study environmental risk factors for juvenile dermatomyositis. She also collaborated with Dr. Janine Lamb at the University of Manchester, Manchester, UK, on Myositis genetics by GWAS and Immunochip. Dr. Rider also collaborated with Dr. Rie Karasawa at St. Marianna University School of Medicine, Kawasaki, Japan on anti-endothelial autoantibodies in juvenile dermatomyositis and with Dr. Ingrid Lundberg at the Karolinska Institute in Stockholm, Sweden on developing Myositis classification criteria. She also collaborated with Dr. Lorenzo Cavagna at the Fondazione I.R.C.C.S. Policlinico San Matteo, Pavia, Italy, on classification criteria of antisynthetase syndrome. Dr. Rider also collaborated with Dr. Sarah Tansley at University of Bath, U.K. and Dr. Lucy Wedderburn at the University College of London, U.K. on discovery of Myositis autoantibodies in juvenile myositis and with Dr. Helga Sanner at Oslo University, Norway on prospective evaluation of early-life modifiable environmental factors and genetic risk in juvenile idiopathic arthritis. These collaborations were supported in part by 1ZIAES101074.

Dr. Dale Sandler (Chief, Epidemiology Branch) collaborated with Dr. Anthony Swerdlow at the Institute of Cancer Research, London, UK, Dr. Hazel Nichols at the University of North Carolina at Chapel Hill, and investigators participating in the NCI Cohort Consortium, to identify contributors to breast cancer risk among premenopausal women. This collaboration was supported in part by 1ZIAES044005.

Dr. Stephen Shears (Signal Transduction Laboratory) collaborated with Dr. Henning Jessen at Centre for Integrative Biological Signalling Studies, University of Freiburg, Freiburg, Germany on understanding inositol phosphate signalling dynamics. This collaboration was supported in part by 1ZIAES80046.

Dr. Robin Stanley (Signal Transduction Laboratory) collaborated with Dr. Alan Warren at the University of Cambridge, Cambridge, UK, on structural studies of eukaryotic ribosome assembly. This collaboration was supported in part by 1ZIAES103247.

Dr. Clarice Weinberg (Biostatistics and Computational Biology Branch) collaborated with Dr. Liv Kvalvik at the University of Bergen, Norway on pregnancy complications and cardiovascular disease in women. She also collaborates with Drs. Anthony Swerdlow and Minouk Schoemaker and other members of the Premenopausal Breast Cancer Collaborative Group. These collaborations were supported in part by 1ZIAES040007 and 1ZIAES040006.

Dr. Carmen Williams (Reproductive and Developmental Biology Laboratory) collaborated with Dr. Wei Xie at Tsinghua University, Beijing, China and Dr. Richard Schultz at the University of California, Davis on a project to study the regulation of murine zygotic genome activation. Dr. Williams also collaborated with Dr. Johnny Kim at the Max Planck Institute for Heart and Lung Research in Bad Nauheim, Germany on the role of DUXBL in exit from totipotency. These collaborations were supported in part by 1ZIAES102985.

Dr. Darryl Zeldin (Scientific Director and Senior Investigator in the Immunity, Inflammation and Disease Laboratory) and Dr. Matthew Edin collaborated with Dr. Tim Warner and Dr. Jane Mitchell at the William Harvey Research Institute, Queen Mary University of

London, London, UK, to measure eicosanoids in mice and humans with cyclooxygenase deficiency. Dr. Zeldin also collaborated with Dr. Jacques Behmoaras at Imperial College London, London, UK, to study the role of eicosanoids in type 2 diabetes and non-alcoholic fatty liver disease. Additionally, Dr. Zeldin collaborated with Dr. Guodong Zhang at National University of Singapore in Queenstown, Singapore to understand the role of sEH in cardiomyopathy. Finally, Dr. Zeldin collaborated with Dr. John Seubert at the University of Alberta, Edmonton, Canada to study the role of sEH in cardiac physiology. These collaborations were supported in part by 1ZIAES025034.

International Meetings Organized

Dr. Francesco DeMayo (Chief, Reproductive and Developmental Biology Laboratory) organized the annual meeting for the Society of Reproductive Investigations in Brisbane, Australia that was held March 21-25, 2023.

Dr. Lisa Rider (Clinical Research Branch) organized the annual meeting of the International Myositis Assessment and Clinical Studies Group. The meeting was held virtually on November 2, 2022.

Dr. Humphrey Yao (Reproductive and Developmental Biology Laboratory) organized the 9th International Symposium on the Biology of Vertebrate Sex Determination that was held in Kona, Hawaii on April 17-21, 2023.

Dr. Darryl Zeldin (Scientific Director and Senior Investigator in the Immunity, Inflammation and Disease Laboratory) organized the 19th International Winter Eicosanoid Conference that will be held in Baltimore, MD on October 15-17, 2023. He also organized the Bioactive Lipids in Cancer, Inflammation and Related Diseases meeting that was held in New Orleans, LA on October 30-November 2, 2022.

Work with International, Multinational or Regional Foreign Organizations

Dr. Kelly Ferguson (Epidemiology Branch) served as a committee member for International Society of Environmental Epidemiology (ISEE). This work was supported in part by 1ZIAES101575.

Dr. Geoffrey Mueller (Genome Integrity and Structural Biology Laboratory) served as a member of the World Health Organization / International Union of Immunological Societies (WHO/IUIS) Allergen Nomenclature Sub-Committee. This multi-national organization consists of experts from 5 continents and aims to maintain a consistent list of existing and new allergens with references to the exact sequences and publications. This activity was supported in part by 1ZIAES102906.

Dr. Lisa Rider (Clinical Research Branch) served as a member of the International Myositis Genetics Consortium (MYOGEN) that defines genetic risk and protective factors for myositis and of the International Myositis Assessment and Clinical Study (IMACS) Group which seeks to standardize the conduct and reporting of myositis clinical studies and engage in collaborative myositis research studies. These efforts were supported in part by 1ZIAES101074 and 1ZIAES101081.

Dr. Dale Sandler (Chief, Epidemiology Branch) is one of 4 investigators leading the Premenopausal Breast Cancer Collaborative Group. Other PIs are Hazel Nichols (University of North Carolina), and Anthony Swerdlow and Minouk Schoemaker (The Institute of Cancer Research, London, UK). This is an international consortium of more than twenty prospective cohort studies investigating factors associated with risk for breast cancer diagnosed among women under age 50. This work is supported in part by 1ZIAES044005.

Dr. Humphrey Yao (Reproductive and Developmental Biology Laboratory) served as the elected Director for the Society for the Study of Reproduction.

Foreign Delegations Hosted

No Activities to Report

International Capacity Building

No Activities to Report