

NIH Announces Two New H3Africa Awards

The National Institutes of Health (NIH) awarded two new grants as part of the Human Heredity and Health in Africa (H3Africa) program. The program is funded by the NIH's Common Fund in partnership with Britain's Wellcome Trust. The grants total more than \$300,000 and are issued as part of the Ethical, Legal and Social Implications (ELSI) component of H3Africa. The studies are aimed at determining what the populations of Nigeria and Ethiopia understand about genomics. As announced in the NIH press release (available at www.genome.gov/27558535), the new grants are awarded to:

- Institute of Human Virology, Nigeria, \$162,000

Principal Investigator: Clement Adebayo Adebamowo, MD, ScD

Dr. Adebamowo and his colleagues will conduct interviews with community

leaders and focus groups in rural and urban populations to gauge how concepts on heritability and genomics are understood in local languages. They will assess the participants' perception and satisfaction with the informed consent form currently in use, and compare it to a new consent form the researchers will develop. The new form will include language that they hope will better explain genomics terms based on feedback they receive from the interviews and focus groups. The researchers plan to test this on participants enrolling in a diabetes study. The Nigeria project could impact how consent forms for genomics-related projects are written, especially for populations unfamiliar with the concepts of heritability and genomics.

- Addis Ababa University, Ethiopia, \$161,151

Principal Investigator: Getnet Tadele, PhD

Dr. Tadele and his colleagues are assessing young people's (ages 15–24) understanding of how genes and the environment interact to cause podoconiosis, an infectious condition prevalent in northern Ethiopia. The disease is caused when people with certain genetic variants are exposed to volcanic soil. An estimated one-fifth of Ethiopians carry the genetic variants that result in the debilitating disease. Researchers will then develop educational strategies and a resource to improve the understanding of these concepts in African communities.

These awards are supported by NIH grants IU01HG007654-01 and IU01HG007628-01.

NIH Awards \$1.5 Million for Stem Cell Research at Albany Medical College

The National Institutes of Health (NIH) awarded a five-year, \$1.5 million grant to Katherine MacNamara, PhD, for research aimed at understanding the role of stem cells in the immune system. The award is supported by the NIH's National Institute of General Medical Sciences under Award Number R01GM105949. Dr. MacNamara

is an assistant professor in the Center for Immunology and Microbial Disease at Albany Medical College.

Dr. MacNamara's laboratory is specifically focused on examining the role of hematopoietic stem cells (HSCs) in response to infection. Using a mouse model of the tick-borne illness, ehrlichiosis, she has dis-

covered that interferon gamma has a key role in modulating HSC function. Mice deficient in interferon gamma are not able to control this infection. Dr. MacNamara's long-term goal is to determine how stem cell action may be manipulated to bolster the body's defenses against infection.

Five New NIAMS Advisory Council Members Appointed

Five new members have been named as advisory council members for the National Institute of Arthritis and Musculoskeletal Diseases (NIAMS), a part of the National Institutes of Health (NIH). Council members are selected from the lay and scientific communities. Members have expertise in the mission areas of NIAMS and serve to make recommendations on research proposals and advise the Institute on matters of policy. As announced by the NIH, the following five council members were appointed (www.nih.gov/news/health/aug2014/niams-26.htm):

Gary A. Koretzky, MD, PhD

Dr. Koretzky is dean of the Weill Cornell Graduate School of Medical Sciences and senior associate dean for research at Weill Cornell Medical College, New York City. His research focuses on T cells, a subset of white blood cells involved with fighting infection and destroying cancer cells. Dr. Koretzky studies how certain biochemical events activate T cells, and he has identified several proteins that

play a role in stimulating the cellular response.

Grace K. Pavlath, PhD

Dr. Pavlath is a professor in the Department of Pharmacology at the Emory University School of Medicine, Atlanta. Dr. Pavlath's research centers on the cellular and molecular mechanisms that regulate the function of satellite cells, stem cells found in skeletal muscle that are critical for muscle growth and repair.

Dr. Pavlath is a member of the Scientific Advisory Committee of the Muscular Dystrophy Association.

Christy Sandborg, MD

Dr. Sandborg is a professor of pediatrics in the Division of Pediatric Rheumatology at the Stanford University School of Medicine, Stanford, Calif. Dr. Sandborg's focus for the past decade has been on providing research and training opportunities to nurture and challenge next generation pediatric rheumatologists and subspecialists. Her research involves designing new models of care and health

care delivery for children with complex chronic illnesses.

Alexander Silver, MBA

Dr. Silver is a co-founding partner of P2 Capital Partners LLC in New York City. Mr. Silver also is founder and chairman of the Jackson Gabriel Silver Foundation, a non-profit organization dedicated to finding treatments and cures for epidermolysis bullosa, a rare blistering skin disease. Mr. Silver's foundation has backed a number of research projects in the United States and the United Kingdom.

Gwendolyn Powell Todd, EdD

Dr. Todd is a professional leader, educator, and advocate for patients with cicatricial alopecia, a rare disorder in which hair follicles are replaced with scar tissue. She applies leadership, teaching, and coaching expertise in business, education, healthcare, and community service environments. Dr. Powell Todd has worked with for-profit and non-profit organizations, and has served as chairperson of the Administrative Council of Oklahoma Teaching Hospitals. She is also a speech and language pathologist.

NIH Announces New Vaccine Adjuvant Discovery Contracts

The National Institutes of Health (NIH) has announced seven research contracts awarded by its National Institute of Allergy and Infectious Diseases (NIAID). The funding supports research aimed at discovering and characterizing new adjuvants to enhance vaccines. Currently, alum, AS04 and AS03 are the only adjuvants approved for use to enhance vaccines for human use by the U.S. Food and Drug Administration. Investigators will expand the scope of adjuvant research initiated in prior NIAID adjuvant discovery contracts by working to identify any new compound involved in the activation of the adaptive immune system. Additional information about the funding is available at www.nih.gov/news/health/sep2014/niaid-29.htm.

The following institutions received the new contracts:

- University of California, San Diego, La Jolla
Dennis Carson, MD, principal investigator
- Boston Children's Hospital
Ofer Levy, MD, PhD, principal investigator
- Vaxine PTY LTD, South Australia, Australia
Nikolai Petrovsky, PhD, principal investigator
- Corixa Corporation (now part of GlaxoSmithKline), Hamilton, Montana

- Jay Evans, PhD, principal investigator
- Duke University, Durham, North Carolina
Herman Staats, PhD, principal investigator
- Oregon Health & Science University, Portland
Jay Nelson, PhD, principal investigator
- University of Kansas, Lawrence
Sunil David, MD, PhD, principal investigator

NIH Announces Grants for Advanced DNA Sequencing Technology

The National Institutes of Health (NIH) announced total funding of \$14.5 million to eight research teams as part of the Advanced DNA Sequencing Technology program of the National Human Genome Research Institute (NHGRI), a part of NIH. This is the last group of awards for the program, which began in 2004. The grants total more than \$4.5 million in the first year and will be awarded over two to four years as funds become available. As announced by the NIH in a press release (available at www.nih.gov/news/health/aug2014/nhgri-04a.htm), the new grants are awarded to:

- University of California Santa Cruz, \$2.29 million over three years

Principal Investigator: Mark Akesson, PhD

Investigators plan to sequence single DNA molecules by using a nanopore device comprised of a sensor that touches, examines and identifies each nucleotide, or DNA building block, in a DNA strand as an enzyme motor moves it through the pore. The scientists will focus on DNA "resequencing" – examining the DNA nucleotides over and over – because of the difficulty in accurately reading each strand initially.

- Illumina, Inc., San Diego, CA, \$592,000 over two years

Principal Investigator: Boyan Boyanov, PhD

Dr. Boyanov and his team aim to create a hybrid protein solid-state nanopore array system that can enable scientists to sequence DNA on a large scale. Their goal is to improve the robustness of nanopore platforms by combining computer chip fabrication methods with biological nanopores to enable high-throughput sequencing. The latter refers to a very high rate of sequencing DNA by sequencing large numbers of DNA samples in parallel.

- University of Pennsylvania, Philadelphia, \$880,000 over two years

Principal Investigator: Marija Drndic, PhD

Investigators plan to develop a synthetic nanopore from graphene - an extremely conductive material consisting of a lattice of atoms, one atom thick - that will enable the detection of individual DNA bases without the need to slow down the DNA molecule as it passes through a pore. Researchers hope to directly identify DNA bases by measuring unique differences in current flowing through the graphene.

- Caerus Molecular Diagnostics, Inc., Mountain View, CA, \$701,000 over three years

Principal Investigator: Javier Farinas, PhD

Researchers commonly use a system to identify DNA bases that entails making many copies of DNA and detecting a light signal from the DNA. Dr. Farinas and his co-workers plan to test a technology that uses an engineered enzyme switch to convert the product of a single molecule DNA sequencing reaction into many copies of a reporter molecule that are easily detected. The method promises to more accurately identify DNA bases.

- The Scripps Research Institute, La Jolla, CA, \$4.4 million over four years

Principal Investigator: M. Reza Ghadiri, PhD

Investigators plan to produce protein nanopore arrays in order to sequence tens of thousands of DNA molecules in parallel, with the eventual goal of sequencing a human genome in as little as 10 minutes. They will explore three separate approaches, including arrays of lipid bilayers containing nanopores, protein pores individually embedded in synthetic films, and nanopores made of DNA that are distributed on DNA scaffolds.

- Eve Biomedical, Inc., Mountain View, CA, \$500,000 over two years

Principal Investigator: Theofilos Kotseroglou, PhD

Researchers will study a system to sequence DNA using an enzyme (polymerase) on a carbon nanotube, in an array format. Carbon nanotubes are long, thin cylindrical tubes that are highly conductive. When an enzyme is anchored on a tube, the enzyme's motion - while interacting with a DNA sample - changes the conductivity on the nanotube, and enables bases of the sample DNA to be identified.

- University of Washington, Seattle, \$1.7 million over three years

Principal Investigator: Jay Shendure, MD, PhD

Dr. Shendure and his colleagues plan to develop new molecular biology techniques to efficiently and cost-effectively stitch together genomes across long distances. They hope this will help improve the quality of genomes that are generated by new DNA sequencing technologies.

- University of California, San Diego, \$3.7 million over four years

Principal Investigators: Kun Zhang, PhD and Xiaohua Huang, PhD

This team plans to develop a system using microfluidics that will enable accurate genome sequencing of a single mammalian cell. Investigators will separate and sequence single chromosomal DNA strands, and then with the help of novel technology to make many copies of genomes, they will create DNA sequence libraries for DNA sequencing of single cells.

\$2 Million Awarded for Glioblastoma Research Project

The American Brain Tumor Association, in conjunction with the Brain Tumor Funder's Collaborative, announced a \$2 million research grant to investigate the biology of glioblastoma. The award was given to a global research consortium led by the European Organization for Research and

Treatment of Cancer (EORTC) and the Brain Tumor Center at the University Hospital in Zurich.

The project will be managed by Michael Weller, MD, of the University Hospital Zurich and Patrick Yung Wen, MD of the Dana Farber Cancer Institute, in

support of the EORTC. Investigators will examine the shared characteristics of more than 300 patients who have survived with glioblastoma for more than five years. Researchers aim to better understand the biology of glioblastoma in order to improve treatments for the disease.

NIH Awards Research Funding to Address Multiple Chronic Conditions

The National Institutes of Health (NIH) has announced funding for three new research projects through its Health Care Systems (HCS) Research Collaboratory. Established by the NIH in 2012, the HCS Research Collaboratory engages a number of partnering health care systems nationwide. There are currently five large-scale clinical trials supported by the Collaboratory. Funding for the program is managed through the NIH Common Fund

and the Collaboratory Coordinating Center is at Duke University.

The recently announced awards total up to \$19.4 million over five years and will support research aimed at improving outcomes for patients affected with multiple chronic conditions. Researchers aim to identify methods to reduce unnecessary hospitalizations and other negative outcomes, such as adverse drug reactions, declining functional status, and mortality

in patients treated for multiple chronic conditions.

Additional information regarding the program, along with the following award descriptions, is available at www.nih.gov/news/health/aug2014/nccam-20.htm. As announced by the NIH, the following projects received awards.

- PROVEN: Pragmatic Trial of Video Education in Nursing Homes, Brown

University, Providence, Rhode Island; Dr. Vincent Mor.

This trial will evaluate video education as a tool for decision-making for the patient, family, and health care team about advanced care planning in nursing homes, where residents typically have multiple chronic conditions. The videos will be tested to see how they help patients and staff address difficult decisions about resuscitation, use of ventilators in the last stages of illness, and similar important care issues. The study will be conducted in partnership with two large nursing home systems – Genesis and UHS-Pruitt. This project will be primarily overseen by the National Institute on Aging and secondarily by the National Institute of Nursing Research.

- Improving Chronic Disease Management with PIECES (ICD-PIECES), University of Texas Southwestern Medical Center, Dallas; Dr. Miguel Vazquez.

This trial will implement a collaborative model between primary and subspecialty care, enhanced with a medical information tool called PIECES, in patients with multiple chronic conditions (diabetes mellitus, chronic kidney disease, and hypertension). The study will be conducted in partnership with four health care systems – Parkland Health and Hospital System, Texas Health and Resources System, VA North Texas Health Care System, and ProHealth Physicians, Inc. This project will be primarily overseen by the National Institute of Diabetes and Digestive and Kidney Diseases and

secondarily by the National Heart, Lung, and Blood Institute.

- A Policy Relevant U.S. Trauma Care System Pragmatic Trial for PTSD and Comorbidity, University of Washington, Seattle; Dr. Douglas Zatzick.

This trial focuses on patients who are being treated for acute physical injuries and who also have conditions such as post-traumatic stress disorder, alcohol and drug use problems, depression, chronic pain, and other medical conditions. The trial will be conducted in partnership with 20 Level I trauma centers across the United States. This project will be primarily overseen by the National Institute of Mental Health and secondarily by the National Institute on Alcohol Abuse and Alcoholism.

NIH Announces Funding for Centers for Collaborative Research in Fragile X

The National Institutes of Health (NIH) announced funding of \$35 million over the next five years to support the Centers for Collaborative Research in Fragile X program. The funds will support three research teams investigating Fragile X-associated disorders. The projects are aimed at developing a better understanding of the disorders in order to develop effective treatments. NIH Institutes supporting this initiative include the Eunice Kennedy Shriver National Institute of Child Health and Human Development, the National Institute of Mental Health and the National Institute of Neurological Disorders and Stroke. Additional details are available at www.nih.gov/news/health/sep2014/nichd-23.htm.

As announced by the NIH, grants were awarded to research teams led by the following investigators:

- Kimberly M. Huber, PhD, University of Texas Southwestern Medical Center, Dallas

(Grant number 1U54 HD082008-01)

Many people with Fragile X syndrome are sensitive to sensory stimuli, especially noise. Dr. Huber's team will study brain circuits in mouse models and people to try to determine the causes of heightened sensitivity to sound. This information may lead to more targeted therapies.

- Joel D. Richter, PhD, University of Massachusetts Medical School, Worcester

(Grant number 1U54 HD082013-01)

In collaboration with Gary J. Bassell, PhD (Emory University, Atlanta) and Eric Klann, PhD (New York University), Dr. Richter's research group will study three molecules that appear to play important underlying roles in Fragile X syndrome. The team will examine these molecules as possible targets for future drug development.

- Stephen T. Warren, PhD, Emory University

(Grant number 1U54 NS091859-01)

Not all individuals who have FMR1 gene mutations experience the same symptoms, and researchers are still trying to find out why. Dr. Warren's team will sequence the genomes of patients with FMR1 gene mutations to identify whether additional genes may affect an individual's likelihood of developing certain health problems associated with FMR1 mutations. They will focus on epilepsy in boys with Fragile X syndrome and on FXTAS (which tends to be seen in older men) and FXPOI (which is seen only in girls and women).

BBRF Announces 2014 Outstanding Achievement Prizes

The Brain & Behavior Research Foundation (BBRF) announced awardees of its 2014 Outstanding Achievement Prizes. The five annual awards recognize individuals for exceptional contributions to research leadership and mental health research. Complete details of each award are available at [https://](https://bbrfoundation.org/news-releases/brain-behavior-research-foundation-honors-eight-scientists-for-outstanding)

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The 2014 Lieber Prize for Outstanding Achievement in Schizophrenia Research

The Lieber Prize, which carries a cash award of \$50,000, has been given annually

since 1987. The award recognizes “a research scientist who has made distinguished contributions to the understanding of schizophrenia”.

The 2014 Lieber Prize was awarded to David Braff, MD, University of California San Diego School of Medicine, and Patrick

F. Sullivan, MD, FRANZCP, Karolinska Institutet and University of North Carolina.

Sidney R. Baer, Jr. Prize for Innovative and Promising Schizophrenia Research

Baer Prize recipients are selected by the current year's Lieber Prize for Schizophrenia Research winner. The award carries a \$40,000 prize intended to support the recipient's work in schizophrenia.

The 2014 Baer Prize awardees are Gregory A. Light, PhD, University of California, San Diego and Stephan Ripke, MD, Psychiatric Genomics Consortium (PGC), Charité Universitätsmedizin Berlin.

Goldman-Rakic Prize for Outstanding Achievement in Cognitive Neuroscience

The Goldman-Rakic Prize is given annually to recognize outstanding research in cognitive neuroscience and carries a \$40,000 cash award.

The 2014 Goldman-Rakic Prize was awarded to Richard L. Haganir, PhD, Johns Hopkins University School of Medicine and Johns Hopkins Medicine Brain Science Institute.

Colvin Prize for Outstanding Achievement in Mood Disorders Research

The Colvin Prize recognizes "an outstanding scientist carrying out work on the causes, pathophysiology, treatment, or prevention of affective disorders. The scientist to be recognized is one who gives

particular promise for advancing our understanding of affective illness or its basic brain mechanisms that will lead to new treatment approaches". The prize carries an award of \$50,000.

The 2014 Colvin Prize was awarded to Wayne C. Drevets, MD, Janssen Research & Development, of Johnson & Johnson, Inc.

Ruane Prize for Outstanding Achievement in Child and Adolescent Psychiatric Research

The Ruane Prize is awarded for outstanding research in child and adolescent psychiatry and carries a \$50,000 cash award.

The 2014 Ruane Prize was awarded to Anita Thapar MD, PhD, Cardiff University School of Medicine.