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Scientific Review Committees /Back Cover
From the President of Health Resources in Action

Back in 1957, representatives from the Massachusetts Department of Public Health, the United Way, and The Boston Foundation saw the need for new ways of funding medical research and addressing emerging public health issues to promote better health on the community level. That vision led to the creation of The Medical Foundation, the predecessor of Health Resources in Action. Over the past 58 years the client dollars that we have invested and program services that we have managed have helped train thousands of physician researchers, spurred new discoveries in clinical care and changed the landscape for medical research. Our focus on preventing disease has led to declines in youth smoking rates and improvements in asthma care and enhanced the capacity of communities across the country to implement programs to improve health on the population level.

We are particularly proud of the impact that we have made in both supporting scientist careers and advancing population health. I am delighted to share our 2014 Medical Foundation Division Review with you. This year’s review highlights our clients’ work as well as introduces you to the newest member of our team, Robert Sege, M.D., Ph.D. Dr. Sege joins us as Vice President and director of our Medical Foundation division.

He is a national leader in the field of pediatrics, both as a clinician and as a researcher, and throughout his career, he has worked to link clinical care and population health - a cornerstone of our work. Dr. Sege joins an extraordinary team of scientific and philanthropic professionals who make up our Medical Foundation division.

This annual review describes each program in detail. The broad range of scientific focus and the excellence of the awardees attest to the vital role of private philanthropy in supporting innovative and transformational biomedical research whose breakthroughs will impact human health.

Ray Considine, President/CEO
Our Team

In October 2014, Robert Sege, M.D., Ph.D., became Vice President. Dr. Sege has a background in basic cell biology and clinical research. Through two decades in leadership roles in academic medicine, he fully appreciates the challenges faced by investigators and the potential of private philanthropy to jump start careers as well as fund innovative, out-of-the-box investigations across basic, translational and clinical research. He is an accomplished and widely cited investigator and national and international spokesperson on issues related to child health. Dr. Sege graduated from Yale College, received a Ph.D. in biology from MIT and an M.D. from Harvard Medical School. He completed internship and residency at Boston Children’s Hospital before joining Tufts Medical Center and then Boston Medical Center. (RSege@hria.org)

John Kanki, Ph.D., Scientific Director, works with Dr. Sege to provide scientific oversight and programmatic supervision for all programs in the division. Together with Dr. Sege, he conducts life sciences consulting projects that determine the best research funding strategies and performs grant program assessments to maximize the impact of our clients’ investments in biomedical research. Dr. Kanki graduated from Wesleyan University and received his Ph.D. from the University of California San Diego. He did postdoctoral research at the University of Michigan, Princeton University, and the University of Pennsylvania. Prior to joining HRiA, Dr. Kanki was a Senior Research Scientist for 12 years at the Dana-Farber Cancer Institute. He is an accomplished grant and scientific writer with an extensive publication record. (JKanki@hria.org)

Gay Lockwood, M.S.W., Senior Program Officer
Ms. Lockwood’s expertise is informed by 25 years of solid relationships with academic research institutions and senior scientists. She has launched several grants programs, oversees annual scientific meetings and continues to guide award recipients throughout their funding cycles. She brings organizational, resource and client relations skills from prior positions in both diplomatic and healthcare settings. (GLockwood@hria.org)

Jeanne Brown, Program Officer
Ms. Brown’s experience is in project management, operations management and client relations in both healthcare and academic settings. She specializes in building processes for the delivery of efficient and comprehensive grantmaking services. She brings exceptional skills in planning, budget management and problem solving to the team. (JBrown@hria.org)

Erin Johnstone, Program Officer
Ms. Johnstone joined the division in 2013, bringing a variety of grants management experience in academic research and foundation settings. She manages several grant programs and is particularly interested in using technology to streamline their delivery. She holds a Graduate Certificate in Fundraising Management and brings additional skills in database administration and online application development. (EJohnstone@hria.org)

Linley Nykiel-Bub, Grants Associate
Ms. Nykiel-Bub is an integral part of the division’s workflow, providing operational support for grant programs and life science consulting projects. Her skill with computers and design is key in managing our extensive database and online application system, producing funding announcements and other media and updating division webpages. (LNykiel-Bub@hria.org)

The Medical Foundation, a division of HRiA
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www.tmfgrants.org/tmfservices
Developing the Scientific Workforce

Years of stagnant NIH funding have created substantial challenges, particularly for early-stage investigators. Strategic philanthropic investment can address some of these problems. The Medical Foundation division oversees the annual distribution of $15-$20 million in research awards, much of which focus on the particularly vulnerable early investigators, including postdoctoral fellows and junior faculty. Below are a few of the issues faced by young scientists, as they make the critical transition from mentored trainee to independent investigator:

**Is there a glut of postdoctoral fellows?** Following completion of their Ph.D. work, the next step for most basic research scientists is another mentored training experience, the postdoctoral fellowship. During this time, postdoctoral fellows gain important experience while working in the laboratory of a senior investigator. Meanwhile, the senior scientists gain the use of a highly trained – and relatively low-paid – scientific workforce. As funding and institutional budgets have tightened, most young investigators are facing extended time in postdoctoral positions performing the work of their mentors before they can find their own research faculty positions. To offset this, private funders that support postdoctoral fellows, such as the Charles A. King Trust, help bridge this period by allowing them to begin developing their own independent research programs.

**Aging of the scientific workforce.** NIH currently funds approximately 10% of research proposals. This high level of competition has resulted in NIH review committees following a predictable trend toward safety, which favors more experienced, senior investigators. A 2012 NIH report showed that Ph.D. investigators receiving their first independent awards are now 42 years old and M.D. researchers are 44. Promising young research faculty are often required to sustain their early scientific careers through a combination of private philanthropic funding and institutional support. The success of programs that provide support during the first few years following faculty appointment include the Smith Family Awards Program for Excellence in Biomedical Research. These early stage investments provide opportunities to acquire data and experience to develop competitive federal grant applications. Our most recent evaluation of the Smith Program verified the critical role of philanthropic funding in the career development and future NIH support of these leading young scientists.

**Lack of diversity in the scientific workforce.** Although women now comprise half of all medical and graduate biology students, they continue to be underrepresented in receipt of federal funding. In addition, only about 2% of NIH-funded independent investigators are African-American. The Medical Foundation division staff is exploring how we can use our information and resources to help improve this situation. Next year, we hope to report on new initiatives that will address the need for a more diverse scientific workforce.

With the overarching goal of funding high impact biomedical research, The Medical Foundation division also recognizes the key role of philanthropic investments and its role in shaping the growth and diversity of our future scientific workforce.
Introducing a New Program Launched in 2014:

Taub Foundation Grants Program for Myelodysplastic Syndromes Research

A PROGRAM OF THE HENRY AND MARILYN TAUB FOUNDATION

Advancing translational research to find a cure for MDS

The Henry and Marilyn Taub Foundation is a family foundation located in Bergen County, New Jersey. For over 45 years, the Taub Foundation has been making grants to improve education, advance medical research, and strengthen local communities and Jewish life. The Medical Foundation division was engaged by the Taub Foundation to conduct a scan of the Myelodysplastic Syndromes (MDS) research landscape. Our interviews with senior scientific staff at foundations, the National Heart, Lung and Blood Institute and leading MDS researchers, guided Taub Foundation support towards new therapeutic development specific for MDS.

MDS is a disturbance of normal blood cell development that results in abnormalities in multiple blood cell types. These include red blood cells, platelets and a subset of white blood cells. Although up to 30% of MDS patients go on to develop leukemia, nearly 70% of MDS patients die from the lack of one or more types of essential blood cells.

We found a gap in funding for MDS research. MDS receives far less funding than leukemia, despite its higher mortality rate. Our life sciences consulting report suggested that philanthropic support specifically focused on MDS research could have a major impact. Following this recommendation, the Taub Foundation Grants Program for MDS Research was created. This program specifically focuses on MDS research, exclusive of leukemia. It supports innovative translational research to understand the underlying causes of MDS in order to advance its treatment and prevention. Projects focus on molecular genetics, epigenetics, splicing factors, stem cells, the microenvironment and novel therapeutic targets relevant to MDS.

Dr. John Kanki and Ms. Erin Johnstone successfully launched the Program in 2014. Over 60 innovative and highly competitive submissions were received from independent investigators at all stages of their careers, representing 36 research institutions across the nation. A Committee of seven renowned scientists invited 15 applicants to submit full proposals and awarded four grants, distributing a total of $2,400,000 over three years. An important mission of the Foundation is to expand the MDS research community through the Program’s continued support; this inaugural year marked a critical beginning.
Maintaining Impact through Evaluation

The Medical Foundation division has long been a leader in the development of high-impact grant programs to fit the mission of our clients. Additional factors that determine a program’s impact include the understanding of a disease’s causes and treatment, its funding landscape, and the targeted scientific workforce. Each of these factors change over time. In order for programs to maintain a high level of impact, it is recommended that they periodically step back to evaluate their success. Making program adjustments will continue to maximize their contribution towards therapeutic development and potential cures.

Through our Life Sciences Consulting services, we recently assessed and evaluated the Programs of the Russell Berrie Foundation and the Richard and Susan Smith Family Foundation.

Since 2000, the Russell Berrie Foundation has supported postdoctoral fellows in diabetes research through The Naomi Berrie Fellowship Program at Columbia University. Our evaluation included a survey of past Award Recipients, interviews with deans and investigators, review of Award Recipient research and convening a site visit by a panel of experts in diabetes research. The evaluation helped illuminate the awardee selection process, highlighted Program accomplishments and described its impact in launching productive scientific careers. Importantly, the evaluation informed program design, and recommended ways to monitor and improve program impact.

In 1991, the Smith Family Trustees began the Smith Family Awards Program for Excellence in Biomedical Research to support junior faculty conducting innovative basic research. The short-term goal of the Program is to provide newly independent scientists the opportunity to demonstrate creativity and assist them in the transition to other sources of research funding. The Program’s long-term mission is to fund promising young scientists who will contribute to the advancement of medical research discoveries throughout their careers. To maintain program excellence, the Smith Foundation’s Trustees engaged The Medical Foundation in 1996, 2007 and 2014 to monitor whether the Program has been successfully meeting its purpose. Assessing career advancement, funding success and scientific literature published by Award Recipients, our findings substantiated the Program’s contribution to investigator innovation, independence and to scientific advances that impacted therapeutic development across a multitude of human diseases. Continued program review coupled with instructive evaluation ensure the Trustees’ steadfast commitment to maximize the impact of their Program going forward.

“The evaluations we have engaged The Medical Foundation to conduct over the years have been very helpful to us in validating our program’s outcomes and guiding its evolution.” The Smith Family Foundation

“We were certainly pleased with the evaluation which documented the considerable strengths and accomplishments of the program. We also greatly appreciated The Medical Foundation’s constructive and collaborative approach to making recommendations that are being implemented and will deepen the impact of our Fellowship Program.” The Russell Berrie Foundation
Laser Scanning Confocal Microscopy image of a section of two different muscles from a Drosophila melanogaster larva stained for nuclei (magenta), microtubules (green), and sarcomeres (blue). Courtesy of Torrey Mandigo and Eric Folker, Ph.D. (2014 Hood Award Recipient), Boston College

Hood Foundation Child Health Research Awards Program

A PROGRAM OF THE CHARLES H. HOOD FOUNDATION

Promoting child health through the support of early career investigators in New England

In the late 1880s, Charles Hood introduced pasteurization to his dairy company, significantly improving the health of thousands of New England children. In 1942, the Charles H. Hood Foundation was founded in his memory, with the mission to improve the health and quality of life for children in New England. The Foundation supports promising scientists at the beginning of their careers – offering them help in launching their research careers. In total, the Foundation has distributed over $63 million to New England investigators, many of whom are now leaders in child health research. Under the present direction of Neil Smiley, the Hood Foundation will continue the family tradition of supporting outstanding science to improve the lives of children.

A current 2014 Awardee, Dr. Eric Folker, Assistant Professor of Biology at Boston College, exemplifies the breadth of work supported by the Hood Foundation. Using the fruit fly as a model system, Dr. Folker’s research focuses on the cellular and molecular basis of muscle development and muscle disease in order to identify treatments for childhood muscle illnesses. These include muscular dystrophy, centronuclear myopathy, and other disorders that cause progressive muscle weakness and loss of muscle mass.

Program Officer
Gay Lockwood
GLockwood@hria.org

Award
Two-year awards in the amount of $150,000

Program Eligibility
Investigators within five years of their first faculty appointment

Geographic Eligibility
New England

Research Focus
Clinical, basic science, public health, health services, and epidemiology research relevant to child health

www.tmfgrants.org/Hood
Charles A. King Trust Postdoctoral Fellowship Program

Understanding human disease and improving its treatment through postdoctoral research

The Charles A. King Trust, established in 1936, supports research that focuses on the causes of human disease in order to discover cures or improve therapeutic treatment. To meet this goal, the Charles A. King Trust Postdoctoral Fellowship Program contributes to high impact discovery research by providing vital support that prepares fellows for launching productive academic careers as independent investigators in biomedical research.

Over the past 56 years, this program has supported over 800 postdoctoral fellows, many of whom have gone on to make extraordinary contributions in a wide-range of scientific disciplines, including cancer, AIDS, heart disease, and diabetes.

In 2014, the Program received 170 applications which were read and critiqued by Scientific Review Committees comprised of forty experts across many disease fields. Funding, in the amount of $1,827,000, provided two-year postdoctoral fellowships to 19 young investigators. The awards will support their career development, where their discoveries will contribute to accelerating medical innovations in research, training, and patient care. At the request of the Trustees, The Medical Foundation division will conduct an evaluation of the Program in 2015 in order to measure its past impact and plan for future contributions to medicine and patient care.

In addition to the outstanding commitment of the Charles A. King Trust, fellowship support has been generously provided by The Bushrod H. Campbell and Adah F. Hall Charity Fund, the Charles H. Hood Foundation, The Harold Whitworth Pierce Charitable Trust, the Sara Elizabeth O’Brien Trust, and the Simeon J. Fortin Charitable Foundation.

Postdoctoral fellows work closely with their faculty mentors to further develop their scientific careers. The resources and recognition of the King Trust Fellowship support this close relationship and help launch independent scientific careers.

2014 Award Recipients
Basic Science

- Ozan Aygun, Ph.D.
  Massachusetts Institute of Technology
  Unveiling the Functional Complexity of Heterochromatin by Spatially-Resolved Live-Cell Proteomic Mapping

- Luke Berchowitz, Ph.D.
  David H. Koch Institute for Integrative Cancer Research at MIT
  Translational Control in Germ Cell Development: Mechanisms and Signaling

- Alison Burkart, Ph.D.
  Joslin Diabetes Center
  Dissecting Mechanisms by which Insulin Resistance Impairs Stem Cell Function and Metabolism in Human iPS Cells

- Brian Conlon, Ph.D.
  Northeastern University
  Determining the Mechanism of Persister Formation and Resuscitation in Staphylococcus Aureus

- Stavroula Hatzios, Ph.D.
  Brigham and Women’s Hospital
  Chemoproteomic Studies of Serine Hydrolases active during Vibrio Cholerae Infection

- Katherine McJunkin, Ph.D.
  University of Massachusetts Medical School
  Molecular Mechanisms of microRNA and Argonaute Turnover

- Gulcin Pekkurnaz, Ph.D.
  Boston Children’s Hospital
  O-GlcNAcylation: A Glucose Sensing Pathway for Mitochondria and Energy Homeostasis

- Hyun Cheol Roh, Ph.D.
  Beth Israel Deaconess Medical Center
  Molecular Mechanisms Underlying Beige Adipocyte Dynamics in Response to Thermal Challenges

- Daniel Schmidt, Ph.D.
  Massachusetts Institute of Technology
  Molecular Tools for Precision Control of Cellular Signaling

- Jianlong Sun, Ph.D.
  Boston Children’s Hospital
  Clonal Analysis of Hematopoiesis in Aging

- Piuter Tsvetkov, Ph.D.
  Whitehead Institute for Biomedical Research
  Hsp90 Regulation of Prion-Based Translation: Molecular Mechanisms and Evolutionary Conservation
Thanks to new techniques, Dr. Martin Wühr can now identify and describe the subcellular distribution for thousands of proteins. In contradiction with current models, he is studying how hundreds of proteins injected into the cell find their way into the nucleus. These measurements will allow us to improve our understanding of the properties of the nuclear envelope and shed new light on fundamental principles of cellular organization in health and disease.

Dr. Kathryn Papp is a 2014 King Award Recipient in Clinical and Health Services Research. Her work is focused on Alzheimer’s disease, specifically the study of semantic memory (such as the ability to remember the names of famous faces). Her goal is to determine if declines in language memory are a marker of impending Alzheimer’s in otherwise healthy older adults. The most common cognitive complaint of older patients is word-finding difficulty and, therefore, Dr. Papp’s research may provide relevant outcome measures to be used in disease-modifying drugs and clinical guidelines for doctors working with older populations.
Below: In this image Opa proteins found in Neisseria gonorrhoeae and Neisseria meningitides trigger the engulfment of the bacteria by human host cells. Courtesy of Linda Columbus, Ph.D., 2014 Jeffress Award Recipient, University of Virginia
Lymphatic Education & Research Network Postdoctoral Fellowship Awards Program

Working towards a world without lymphatic disease and lymphedema

Since 1998, the Lymphatic Education & Research Network (LE&RN), formerly the Lymphatic Research Foundation, has envisioned a world without lymphatic disease and lymphedema. LE&RN’s mission is to fight lymphatic disease and lymphedema through education, research and advocacy. In addition, they seek to accelerate the prevention, treatment and cure of the disease while bringing patients and medical professionals together to address the unmet needs surrounding lymphatic disorders.

LE&RN is committed to expanding and strengthening the pool of outstanding young scientists in the field of lymphatic research. In 2014, two-year fellowships were awarded to investigators from Australia and Sweden. Their research will aid in broadening the medical community’s understanding of the lymphatic system and improving therapeutic development to address the millions who suffer from lymphedema and lymphatic disease.

Dr. Katarzyna Koltowska (pictured above) received a 2014 LE&RN award for her work characterizing the molecular interactions responsible for regulating the development of lymphatic vessels. She uses zebrafish embryos to discover a new unstudied gene that regulates the formation of the lymphatic system. Dr. Koltowska hopes that her work will serve as an avenue to find new therapeutic targets and approaches in lymphedema and vascular diseases.

2014 Award Recipients

Maike Frye, Ph.D.
Uppsala University
Functional Characterization of Primary Lymphedema Gene GATA2

Katarzyna Koltowska, Ph.D.
Institute for Molecular Bioscience, The University of Queensland
Characterization of a Novel Modulator of Vegfc/Vegfr3 Signaling during Lymphatic Development

Program Officer
Erin Johnstone
E.Johnstone@hria.org

Award
Two-year fellowships in the amount of $82,000 - $95,000

Program Eligibility
Postdoctoral fellows within their first three years of training

Geographic Eligibility
Worldwide

Research Focus
Clinical and basic science research relevant to the lymphatic system and LE&RN’s mission

www.tmfgrants.org/LERN

Zebrafish facial lymphatic vessels visualized in red, blood vessels and eye in green.
Courtesy of Katarzyna Koltowska, Ph.D., 2014 LE&RN Award Recipient, IMB University of Queensland
Deborah Munroe Noonan Memorial Research Fund

Research to improve the lives of children with disabilities

The Deborah Munroe Noonan Memorial Research Fund, Bank of America, N.A., Trustee, was established in 1947 by Frank M. Noonan in memory of his mother to improve the lives of children who were left crippled by polio. The Fund now supports innovative clinical research or demonstration projects whose results may improve the quality of life for children with disabilities.

Six awards were funded in the 2014 grant cycle, one of which was sponsored by the Elizabeth O’Brien Trust, Bank of America, N.A., Trustee, in the area of childhood and adolescent blindness.

The Noonan Research Fund’s circle of influence is wide. Projects range from access to care, early intervention and other educational, health, and support programs to how new technology can assist in improving the lives of children and youth with special health care needs. Since its inception, 164 projects have been supported by the Noonan Research Fund, greatly impacting the quality of life for the children of Greater Boston.

2014 Award Recipients

- **Alysa Doyle, Ph.D.**
  Massachutes General Hospital
  Feasibility and Effectiveness of Computerized Cognitive Training in Adolescents with Autism Spectrum Disorder

- **JoAnna Leyenaar, M.D., M.P.H.**
  Tufts Medical Center
  *Nothing about me without me*: Incorporating the Perspectives of Families of Children with Medical Complexity in Hospital-to-Home Transitional Care

- **Lotfi Merabet, Ph.D., M.P.H.**
  Massachusetts Eye and Ear Infirmary
  Uncovering the Relationship between Brain Reorganization and Visual Dysfunction in Adolescents with Cortical Visual Impairment (CVI)

- **Esther Son, Ph.D., M.S.W.**
  Brandeis University
  Understanding the Health Care Experiences of Asian Children with Special Health Care Needs on Health Care Access, Service Utilization, and Quality of Care

- **Angela Walter, Ph.D.**
  Boston University School of Public Health
  Impact of Case Management on Early Childhood Mental Health, Health Care Costs and Quality of Life

- **Marji Warfield, Ph.D.**
  Brandeis University
  Making Healthy Connections: What are the Long-Term Benefits?

**Dr. Angela Walter** (pictured at left) is examining the impact of case management on costs and health outcomes for children and youth with mental illness. Children and youth with mental health conditions face challenges in accessing mental health services. Poor access may lead to diminished quality of care, health outcomes, and high health care costs. Dr. Walter’s team at the Boston University School of Public Health will explore factors that influence patient and family engagement and retention in mental health care among Black/African American, Latino, and White families. This research has the potential to provide the field with an actionable set of health service utilization and policy recommendations.
The Robert E. Leet and Clara Guthrie Patterson Trust was created in 1980 to support research “relating to human diseases, their causes and relief.” The Patterson Trust Awards Program in Clinical Research provides support to early-stage physician scientists and clinical researchers in Connecticut and New Jersey. In 2014, the Program advanced clinical research by offering mentored K23 and K08 Award Recipients additional resources to further explore, extend and promote their research activities. The funded clinical research included both patient-oriented research and translational laboratory research.

Sheela Shenoi, M.D., M.P.H., Assistant Professor at Yale School of Medicine, illustrates the tremendous talent of this year’s award winners. Despite improvements in access to HIV medications and improved HIV testing, delayed HIV diagnosis and late presentation to care remain prevalent in impoverished areas in South Africa, often leading to death. Dr. Shenoi will determine the barriers that HIV infected patients face initiating antiretroviral therapy and will pilot interventions to accelerate treatment onset for the millions still in need.

Harold S. Geneen Charitable Trust Awards Program for Coronary Heart Disease Research

Supporting translational heart disease research

The Harold S. Geneen Charitable Trust Awards Program for Coronary Heart Disease Research supports research in the prevention and control of coronary and cirrhotic failure. In accordance with Mr. Geneen’s directives, the 2014 Program established support for smaller academic or research institutions within the New England or New York areas by funding high-impact, innovative translational cardiology research. Working in conjunction with the Trustees, The Medical Foundation division identified two outstanding investigators for two-year awards in the amount of $250,000 each.
Smith Family Awards Program for Excellence in Biomedical Research

A PROGRAM OF THE RICHARD AND SUSAN SMITH FAMILY FOUNDATION

Supporting biomedical innovation and discovery by early-stage investigators

For the past 23 years, the Smith Family Foundation has been supporting groundbreaking medical research through the Smith Family Awards Program for Excellence in Biomedical Research. Its mission is to launch the careers of junior faculty studying health-related basic science with the ultimate goal of achieving medical breakthroughs. Since its founding in 1992, the Program has funded 143 investigators for a total investment of $26.9 million.

The Smith Family Foundation hosted its annual poster session in May 2014 for its current and past Awardees. Thirty-two scientists showcased their projects and had the opportunity to meet with other scientists from many different fields.

Dr. Neil Ganem, Assistant Professor of Pharmacology and Medicine at B.U. School of Medicine and a 2014 Award Recipient, has focused his research on the basic biology of cancer cells. Unlike normal human cells that always have 23 pairs of chromosomes and stop dividing or die when they have abnormal chromosome numbers, cancer cells tolerate an abnormal number of chromosomes. An abnormal number of chromosomes in cancer cells is associated with tumor progression, resistance to chemotherapy, and cancer relapse. Dr. Ganem has discovered a new molecular pathway, called the Hippo pathway, which may prevent chromosomal instability in normal human cells. Understanding this pathway has the potential to uncover new therapeutic avenues to selectively kill chromosomally unstable cancer cells.

A human cell (shown in multiple colors) undergoing an abnormal multipolar cell division. Courtesy of Neil Ganem, Ph.D., 2014 Smith Award Recipient, Boston University School of Medicine

2014 Award Recipients

Neil Ganem, Ph.D.
Boston University School of Medicine
Maintenance of Genome Stability by the Hippo Tumor Suppressor Pathway

Ya-Chieh Hsu, Ph.D.
Harvard University
Investigation of How Cell Types from Diverse Lineages Coordinate Changes and Behaviors during Regeneration

Karla Kaun, Ph.D.
Brown University
Neuro-molecular Mechanisms Underlying Alcoholism

Michael Lee, Ph.D.
University of Massachusetts Medical School
Micro-Environmental Regulation of Network State and Drug Sensitivity in Triple-Negative Breast Cancer

Rebecca Scheck, Ph.D.
Tufts University
Mapping the Uncharted: Encodable Chemistry to Discover the Role of Glycation in Disease

Mario Suva, M.D., Ph.D.
Massachusetts General Hospital
Uncovering the Role of Epigenetic Programs in Glioblastoma

Program Officer
Gay Lockwood
GLockwood@hria.org

Program Eligibility
Investigators within two and a half years of their first independent faculty appointment

Research Focus
Basic biomedical science

Geographic Eligibility
Massachusetts, Yale University and Brown University

Award
Three-year awards in the amount of $300,000

www.tmfgrants.org/Smith
Edward N. and Della L. Thome Memorial Foundation Awards Program in Age-Related Macular Degeneration Research

Fighting the leading cause of blindness in older adults

Established in 2002, the Edward N. and Della L. Thome Memorial Foundation, Bank of America, N.A., Trustee, advances the health of older adults through the support of direct service projects and medical research on diseases and disorders affecting older Americans. The Trust’s Awards Program in age-related macular degeneration research addresses the major cause of blindness in older adults.

In 2014, awards in the amount of $500,000 each were made to six scientists from a pool of 111 preliminary applications from across the United States. After review, twenty-two investigators were invited to submit full proposals. Using this mechanism, the Thome Foundation was able to select truly extraordinary scientific proposals in the field of age-related macular degeneration.

Typical of these awardees is Dr. Joseph Carroll, Professor of Ophthalmology at the Medical College of Wisconsin. Dr. Carroll and his colleagues will generate high resolution images of the retinas of patients and volunteers in order to identify patients at the greatest risk for progressive vision loss and to monitor their response to treatment.

2014 Award Recipients

Radha Ayyagari, Ph.D.
University of California, San Diego
Insights into AMD Derived from the Genetic Mechanisms in Late Onset Retinal Macular Degeneration (L-ORMD)

Joseph Carroll, Ph.D.
Medical College of Wisconsin
Improving Therapeutic Strategies in Age-Related Macular Degeneration Using Adaptive Optics Retinal Imaging

Richard Kramer, Ph.D.
University of California, Berkeley
Mechanism of Re-animation of the Blind Retina by Synthetic Photoswitch Compounds

Goldis Malek, Ph.D.
Duke University
Targeting the Signaling Pathway of a Lipid Activated Nuclear Receptor for the Treatment of Early Dry Age-related Macular Degeneration (AMD)

Richard Semba, M.D., M.P.H.
Johns Hopkins University
Identifying the Roles of ARMS2 and HTRA1 in the Pathogenesis of Age-Related Macular Degeneration Using Functional Proteomics

Donald Zack, M.D., Ph.D.
Johns Hopkins University School of Medicine
Development of a Small Molecule Only Protocol for the Directed Differentiation of RPE from hPSC for the Treatment of AMD

Top of page: Adaptive optics image of the cone photoreceptor mosaic overlying drusen in a man with AMD. With this imaging technique it is possible to resolve cones even when they are damaged. Courtesy of Joseph Carroll, Ph.D., 2014 Thome AMD Award Recipient, Medical College of Wisconsin

A Program Sponsored by
U.S. TRUST
Bank of America Private Wealth Management

www.tmfgrants.org/ThomeAMD
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On the Cover: The Oocyte-to-Embyro Transition — Fertilization initiates the remarkable conversion of quiescent, developing oocytes into actively dividing embryos. A micrograph of a two cell stage frog embryo overlays a micrograph of a frog ovary containing oocytes at different developmental stages. Images courtesy of Martin Wühr, Ph.D., 2014 King Award Recipient, Harvard Medical School.