

# SOM Office of Research Newsletter

## March 2017

### OFFICE UPDATES

The big change in the office this year was Dr. Terry Magnuson's move to Vice Chancellor of Research for UNC-CH. During his tenure as Vice Dean for Research in the SOM, Terry built a great team to assist him in the maintenance and expansion of our research programs and infrastructure. **Dr. Blossom Damania** was a part of that team before becoming the new SOM Vice Dean for Research July 1, 2016. **Dr. Robert Duronio**, a member of the team since 2010, has been named Associate Dean for Research. With the close association between training, core facilities and research, **Drs. Jean Cook**, Associate Dean for Graduate Education, and **Mike Topal**, Assistant Dean for Core Technologies continue in their roles as integral members of the team.



The OoR works closely with TraCS to enhance translational research opportunities. **Dr. David Peden**, Senior Associate Dean for Translational Research, is the liaison for multiple efforts involving work across departments, schools and institutions. His efforts in 2016 focused on mobile health, precision medicine and the environment.

Information on these and other programs is included on the OoR website:

[www.med.unc.edu/oor](http://www.med.unc.edu/oor). There you can find information on our pilot and bridge funding, assistance with training grant applications, core facilities and more. Additions to the website in 2016 included:

- Calendar of Award Deadlines – mainly focused on career development and limited award applications. Each award can be found in the month the application is due. Limited awards have the UNC deadline in parentheses below the sponsor deadline. If it is a limited award, the final column identifies the UNC office that conducts the review.
- SOM Seminar Calendar – listed by semester and includes the weekly departmental and center research seminars and symposia. Previous semesters are still on the website if you want to peruse the list of previous speakers.

### OTHER SOM LEADERSHIP CHANGES

In 2016, the SOM experienced a variety of notable changes in research leadership. We would like to welcome the following new leaders:

- Dr. Melina Kibbe, MD, Chair of Surgery
- Dr. Nancy Thomas, MD, PhD, Chair of Dermatology
- Dr. Henrik Dohlman, Chair of Pharmacology
- Dr. Mark Zylka, PhD, Director, Neuroscience Center; Dr. Ben Philpot, PhD, Assoc. Director, Neuroscience Center

In addition, Dr. Fernando Pardo Manuel de Villena has served as Interim Chair of Genetics since 7/1/16 while the search is underway for a new Chair.

### OoR Team

**Dr. Blossom Damania**,  
Vice Dean for Research

**Dr. Robert Duronio**,  
Associate Dean,  
Research

**Dr. Jennifer Brennan**,  
Director,  
Office of Research  
**Dr. Dede Corvinus**,  
Associate Director,  
Office of Research

**Dr. David Peden**,  
Sr. Associate Dean ,  
Translational Research

**Dr. Jean Cook**,  
Associate Dean,  
Graduate Education

**Dr. Mike Topal**,  
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## RESEARCH RANKINGS

UNC and the SOM continue to maintain national prominence in NIH funding. For FY16, UNC was ranked 9<sup>th</sup> in the nation, with more than \$412M in NIH awards of which the SOM contributes nearly 70%. The Blue Ridge Institute recently released FY16 rankings for NIH funding for medical schools. UNC SOM increased its ranking from #16 to #15, with a funding increase of more than \$17M. Below are SOM departments ranked in the top 20 for NIH funding according to Blue Ridge.

*All of the SOM basic science departments ranked in the top 10 including:*

- Biochemistry & Biophysics
- Biomedical Engineering
- Cell Biology & Physiology
- Genetics
- Microbiology & Immunology
- Pharmacology

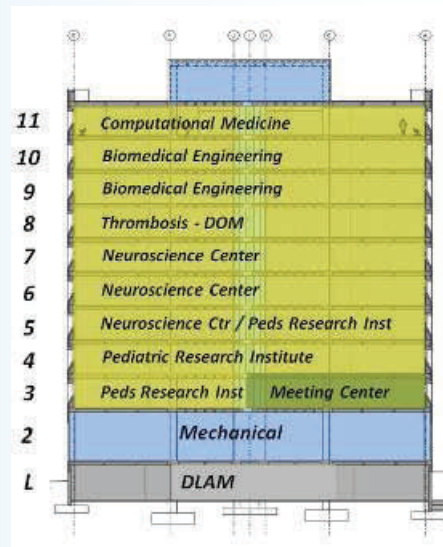
*Clinical departments ranking in the top 20 in the country include:*

- Anesthesiology/Emergency Medicine
- Dermatology
- Family Medicine
- Medicine
- OB/GYN
- Otolaryngology
- Physical Medicine & Rehabilitation
- Psychiatry
- Radiology

## MEJ CONSTRUCTION UPDATE

The construction on Mary Ellen Jones is going well. The current expectation for construction to end is Fall of 2018 and occupancy to begin in Spring of 2019. Most of the deconstruction is done and remodeling is beginning on the top floors. The new exterior will compliment Marsico Hall.

The new exterior for Mary Ellen Jones will allow for a much brighter interior and offer a variety of different size meeting rooms on the 3rd floor. A plaza will connect the west side of MEJ to the Thurston-Bowles building and the walkway over Manning Drive. The layout for wet lab areas is the open, flexible concept similar to Genetic Medicine Building and Marsico Hall. The groups slated to occupy MEJ are shown in the figure to the right.



## TASK FORCE UPDATES

There were five major Task Forces recently convened by the OoR that evaluated various strategic initiatives. Updates and from each are provided below:

Computational Medicine (Chair-Gary Johnson) The OoR has worked with the planning office to provide the Computational Medicine Program with the 11<sup>th</sup> floor of the MEJ building, which will open in early 2019. The program will engender partnerships with campus units to identify new and existing faculty to populate the program space and engage and foster collaborations to enhance UNC strengths in computational medicine.

Brain Initiative (Chair- Bill Snider) This key strategic area was strengthened in 2016 with the appointment of Mark Zylka and Ben Philpot as new Director and Associate Director for the Neuroscience Center. The new leadership will utilize the resources provided by the Dean's office to act on the recommendations of the task force to solidify the existing strengths across campus, partner for new hires in strategic areas, and pursue cutting edge

technologies. The Center will also benefit from space on the 5th, 6th and 7th floor of MEJ. The strength of UNC Neuroscience research is by the success of faculty in the recent round of BRAIN funding (see funding highlights). The OoR recently issued a call for ECBR pilot proposals centered around Alzheimer's Disease research to spur nascent research in this strategic funding area.

Precision Medicine Initiative (Chair- Paul Watkins). After the task force, UNC was poised to collaborate with a consortium of universities (Duke, Wake Forest, MUSC, Georgetown/MedStar, Health Systems of S Carolina) and submitted an application for the NIH Precision Medicine Initiative Cohort program. The program's goal was to build a research cohort of one million or more U.S. volunteers who are engaged as partners in a longitudinal, long-term effort to transform the understanding of factors contributing to individual health and disease. Dave Peden spearheaded the UNC effort. The proposal was well received but ultimately not funded. However, this effort helped to solidify some of the recommendations of the task force and is expected to fuel future submissions related to Precision Medicine. The OoR is looking at ways to coordinate these efforts and a Precision Medicine Symposium is planned for September 2017.

Structural Biology/CryoEM (Chair- Brian Kuhlman). Leslie Parise, a member of the task force, has spearheaded UNC's involvement in a regional collaborative effort with Duke University and the NIEHS to build CryoEM capabilities in the Triangle and continues to pull together support across campus for this critical technology. An NCBC grant was submitted to support the purchase of a Vitrobot cryo-plunge instrument to kick start cryo-EM sample prep. The Biochemistry department, in partnership with Lineberger, has a faculty position advertised for a cryo-EM research faculty.

SOM Space Policy (Chair- Blossom Damania). As a result of recommendations from the Carolina Value Initiative and also the growing needs for space in the SOM due to the increase in the number of faculty hires, the OoR assembled a group of 10 faculty including basic science clinical chairs and center directors to guide the development of metrics for space allocation in the SOM. Led by the Vice Dean for Research, the task force drafted a policy and the final guidelines will be released this spring. UNC lacked a comprehensive, data-driven policy for utilization of research space, making it unique among its peers. The new policy will provide the Dean, Chairs and Center Directors with a valuable tool for determining the most efficient and strategic allocation of research space.

## *OoR PILOT AWARD FUNDING for TRANSLATIONAL RESEARCH*

The OoR has continued the Translational Team Science Awards (TTSA) and initiated a new pilot award mechanism to provide support for innovative, early stage research relevant to NIH priorities – Emerging Challenges in Biomedical Research (ECBR). The expectation for both pilot mechanisms is the development of novel interdisciplinary program project grants and Multiple PI R01s.

TTSA: The TTSA mechanism started in fall 2013 and partnered with NC TraCS funding in 2014. TTSA aims to capitalize on the UNC 'culture of collaboration' by fostering new synergistic interdisciplinary teams of basic science and clinical investigators. To date the OoR has received a total of 134 Concepts and helped fund 19 Phase I projects, 6 of which have gone onto Phase II funding. These pilot projects have facilitated 27 external grant submissions, 15 of which received funding. At least 9 peer-reviewed publications have resulted from TTSA pilots. Please refer to the OoR website for more information on individual projects.

ECBR: In May 2016 the OoR sent out the inaugural ECBR RFP, which has rotating topics aligned with high profile research objectives such as concept clearances from NIH institutes and the Common Fund. The initial targeted research area was 'emergent insect-borne diseases'. Three teams working on the Zika virus received the initial ECBR awards in the amount of \$50K per year each. Teams were multidisciplinary and included studies on the epidemiology, transmission, and diagnostics for the virus as well as fundamental studies of the effects on the adult brain. For more details see the release in Vital Signs. Two out of the three teams have subsequently received external funding and the ECBR pilots dovetailed with considerable press that UNC researchers received 3



as the Zika epidemic reached a peak. UNC faculty and ECBR recipients participated in multiple expert panels and roundtable discussions and are part of a global consortium combating the spread of the virus. A list of UNC SOM Zika experts can be found at the following website:

<http://news.unchealthcare.org/media-resources/zika-experts>

The Winter 2017 ECBR RFP seeks to capture and strengthen UNC expertise in the area of Alzheimer's Disease Research. This is an area targeted by NIH and the 21<sup>st</sup> Century Cures Act passed by Congress in December. Proposals were due February 20 and we anticipate that the pilot awards will position SOM faculty to be competitive for upcoming grant RFAs. The OoR will sponsor a related symposium focused on Alzheimer's research later in the year.

Collaborative Cross Pilot Projects: The OoR is coordinating a new pilot program with the Systems Genetics Core which houses the unique Collaborative Cross panel of inbred mouse strains. To allow broader access to the mice, the Core will provide access to a cohort of 96 surplus CC mice at a substantial discount (\$10 mouse) for select pilot proposals. Applications will be reviewed quarterly starting **February 1 2017**. The RFP is posted on our website-<https://www.med.unc.edu/oor/research/funding>.

## CORE FACILITIES

The Office of Research Technologies continues to advocate with and work to improve our core facilities. **Mike Topal** and **Annabelle Stein**, Director and Associate Director of the Office of Core Technologies, work closely with the 5 members of the Core Facilities Advisory Committee to advise the Vice Dean for Research on strategic core infrastructure investments. Long standing CFAC advisory member **Henrik Dohlman** left the committee this fall to assume the position of Chair of Pharmacology. The CFAC welcomes **John Sondek**, Professor of Pharmacology, who replaced Henrik as CFAC member and advisor for the Biochemistry Cores. Sondek joins **Terry Furey** (Genomics Cores), **Li Qian** (Animal Cores), **Richard Cheney** (Imaging Cores), and **Jon Serody** (Clinical Cores).

On January 1, **Nancy Fisher** joined the ORT team as the Assistant Director for Core Development. In this new role, she will work with Cores to develop successful equipment proposals, foster access to mentoring resources, and help cores to incorporate more rigor and reproducibility into their operations. Nancy continues to serve as Director of the UNC Flow Cytometry Core Facility, a role she has had since 2011, and will use her considerable experience to inform her new role.

iLABS: In order to enhance billing capabilities throughout the UNC Core Facilities, UNC has purchased iLABS software and is working with iLABS to fully integrated the software with the ConnectCarolina financial system. iLABS should greatly improve communication between investigators and core personnel and make it easier for cores to do billing on a regular schedule. This effort was spearheaded by Mike Topal and Annabelle Stein, who coordinated funding support from the OoR, VCR and multiple users to facilitate the initial implementation phase. With support from Patsy Oliver, Associate Dean for Finance and Business, and Andy Johns, Associate Vice Chancellor for Research, Mike and Annabelle are working with UNC IT personnel to facilitate the integration with UNC systems. It will take more than a few years to implement the software across the ~30 core facilities using the new system.

Major equipment update: In March 2016, UNC received an NCBC equipment grant for the new LaVision Ultra II Lightsheet Microscope, which is now located in the Microscopy Services Laboratory in Brinkhous-Bullitt. This new technology enables 3D images of whole mouse tissues or patient biopsies within minutes. Fortuitously, **Dr. Pablo Ariel**, the new Director of the facility, has prior experience with this specific instrument, which facilitated the implementation, training and use of the instrument. It is our constant focus to provide state-of-the-art technology for UNC investigators and our core directors are a great asset in seeking out new technology and garner-

ing grant funding for these purchases.

#### Human Stem Cell Core update:

We are pleased to introduce a new Director for the core - **Dr. Adriana Beltran**. Adriana has been a Research Assistant Professor in the Department of Pharmacology since 2009 where she established human stem cell methods that will be critical for her new role as Core Director. Her prior research was focused on generating human ES and iPS cells to model Cerebral Cavernous Malformation (CCM) disease. She also developed significant expertise in engineering genomes with ZFN, TALENS and CRISPR technologies.

The Human Stem Cell Core is committed to providing labs at UNC with access to derivation and distribution of human ES and iPS cell lines, genome editing based on the latest cutting-edge stem cell technologies, and training in stem cell methodologies. Adriana is very interested in meeting with faculty that are considering using stem cells in their research and getting input from existing users of stem cell technology. She hosted a seminar on March 8 at 12pm in the Lineberger Pagano room to introduce her services and invite input.

## TRAINING

The OoR works closely with the SOM Office of Graduate Education (OGE) and the UNC Office of Postdoctoral Affairs Research to support the strong training environment in the SOM. This strength is evident in the successful graduation rate of our PhD students, who graduate at a higher rate and in less time than the national average.

Student Funding: OGE conducts multiple fellowship workshops for NIH, AHA, and NSF predoctoral fellowships. In the past year UNC students were 50% more likely than their national peers to be awarded these extramural fellowships. As further testament to the competitiveness of UNC trainees, this year's BBSP first-year class boasts the highest number of fellowship winners since the inception of the umbrella program. A bank of successful proposals and advice for sponsors and students is regularly updated at the TIBBS website under the Resources header. <http://tibbs.unc.edu/resources/>

In FY2015 UNC was #5 in the number of NIH institutional training grants (54 awards, \$16M). The OoR is always willing to consult on new and competitive renewal submissions, and we are familiar with the new tables. A new goal for the OoR is to work with the SOM and institutional IT groups to find a way to extract as much as possible of the information needed for the tables from existing databases. If you have ideas about how to make training grant tables easier to produce, please feel free to share suggestions and recommendations.

Student Professional Development: TIBBS is the hub for students and postdocs exploring career options after their training at UNC is complete. Nearly 90 individual professional development events have been offered this year covering a broad spectrum of professional options. Trainees can join one or more peer-led groups to organize and share information. Current Career Cohorts: Academic and Research intensive Careers, Future Science Educators, Science Writing and Communications, Science Policy and Advocacy, and the Science and Business Club. With support from an NIH BEST Award, trainees can also place in a one month internship.

#### Recent OGE activities:

- OGE organized a working group of students, faculty, and staff developed recommendations to improve the UNC culture of inclusion in science training. Many of these recommendations are being implemented already.
- OGE partnered with the Center for Faculty Excellence to provide twice-yearly mentor training to both junior and senior faculty. Contact Anna O'Connell with questions or to sign up for the next session
- A new workshop on Rigor and Reproducibility funded by a supplement to the MSTP T32 was organized by Mohanish Deshmukh and Rob Nicholas and a team of faculty. The pilot in May of 2016 was successful and will be repeated annually.
- OGE published three peer-reviewed articles relevant to biomedical workforce development in 2016.

## SOM FACULTY AWARDS

2016 Oliver Smithies Investigators: There was a great turnout at the November 9<sup>th</sup> seminar honoring the 2016 *Oliver Smithies Investigators*, **Drs. Victor Garcia-Martinez**, Professor of Medicine, and **Karen Mohlke**, Professor of Genetics. This award was established by the SOM Dean's Office to honor of the research achievements of Dr. Oliver Smithies, our 2007 Nobel Laureate. The award recognizes senior faculty members who have made significant research contributions and achieved international recognition for their work. The award includes research funds and membership in the *Oliver Smithies Society*.



**Dr. Garcia-Martinez**, who holds a joint appointment in Microbiology & Immunology, works on HIV and cancer. He is most recognized for his transformative research development of humanized mouse models that have been widely used to address fundamental question in HIV and cancer biology. Drs. Mohlke and Garcia-Martinez join Drs. K. Boggess and Pardo-Manuel as members of the *Oliver Smithies Society*.

**Dr. Mohlke** is a human geneticist investigating the complex genetics underlying the susceptibility to common health conditions such as type-2 diabetes and obesity, as well as variability in cholesterol levels, blood pressure, body size, weight gain, and early growth.



2016 Yang Family Biomedical Scholars: We hope that many of you will joined us on Friday, March 10, 2017 for the presentations by the 2016 *Yang Scholars*, **Drs. Edward Miao**, Associate Professor of Microbiology & Immunology, and **Garret Stuber**, Associate Professor of Psychiatry and Cell Biology & Physiology. This award is made possible through the donation from Lenovo Chairman and CEO Yuanqing Yang. The award recognizes the research achievements of newly tenured faculty and provides grant funding for biomedical research projects and membership in the *Yang Family Society of Biomedical Scholars*.



**Dr. Miao's** internationally renowned research focuses on the innate immune response, to understand how the body's immune response distinguishes between pathogenic and nonpathogenic bacteria.

**Dr. Stuber** has emerged as a leading expert on brain circuitry underlying maladaptive behaviors involving a variety of neurological and neuropsychiatric illnesses. 2015 marked the first set of Yang Scholar awards and recognized Drs.

Jonathan Berg, Associate Professor of Genetics, Maureen Su, Associate Professor of Pediatrics, and Yisong Wan, Associate Professor of Microbiology & Immunology.



### Other Notable Awards and Faculty Recognition (in alphabetical order)

- **Al Baldwin**, Lineberger Associate director of Basic Research and Kenan Distinguished Professor of Biology, received an NCI Outstanding Investigator Award.
- **Wesley Burks, John Buse, Terry Kenakin, Karen Mohlke, Chuck Perou, Diana Perkins, Bryan Roth, Sidney Smith, and Garrett Stuber**, and were listed as Reuters highly cited researchers for 2016.
- **Keith Burridge**, Kenan Distinguished Professor of Cell Biology and Physiology, was inducted to the American Academy of Arts and Sciences.
- **Jill Downen**, Assistant Professor of Biochemistry and Biophysics received the Sidney Kimmel Foundation for Cancer Research Kimmel Scholar Award.
- **Shelley Earp**, Lineberger Professor of Cancer Research, and **Jenny Ting**, William R. Kenan Jr. Professor of Genetics, received the 2016 Hyman L. Battle Distinguished Cancer Research Awards.
- **Ron Falk**, Chair and Nan and Hugh Cullman Eminent Professor of Medicine, received the Edward N. Gibbs Lecture & Award in Nephrology, a lifetime achievement award and was chosen to deliver the National Institutes of Health (NIH) Astute Clinician Lecture.
- **Stephanie Gupton**, Assistant Professor of Cell Biology and Physiology, received the 2016 Jefferson



Pilot Award.

- **Gail Henderson**, Professor of Social Medicine, was appointed as a new member of the NHGRI Advisory Council.
- **Melina Kibbe**, Chair and Zack D. Owens Distinguished Professor of Surgery was elected to the National Academy of Medicine.
- **Chad Pecot**, Assistant Professor of Medicine, received a V Foundation Cancer Research Award.
- **Dave Peden**, Harry S. Andrews Distinguished Professor of Pediatrics, was named the new President of the American Academy of Allergy, Asthma & Immunology (AAAAI) for 2017-18.
- **Chuck Perou**, May Goldman Shaw Distinguished Professor of Medical Oncology, received the Brinker Award for Scientific Distinction in Basic Science from the Komen Foundation, a V Foundation Cancer Research Award, and the Jill Rose Award from the Breast Cancer Research Foundation.
- **Li Qian**, Assistant Professor of Pathology and Laboratory Medicine, received the inaugural Boyalife Science and Science Translational Medicine Award in Stem Cell and Regenerative Medicine.
- Nobel Prize winner **Aziz Sancar**, Sarah Graham Kenan Professor of Biochemistry and Biophysics, was inducted into the National Academy of Medicine, received the O. Max Gardner Award, the North Carolina Award (highest civilian honor), and gave the 2016 Norma Berryhill Distinguished Lecture.
- **Nancy Raab-Traub**, Adjunct Professor of Microbiology and Immunology, was appointed by President Obama to the National Cancer Advisory Board.
- Three SOM faculty received the Office of Postdoctoral Affairs Outstanding Mentor Award: **Gail Henderson**, Professor of Social Medicine; **Aravinda de Silva**, Professor of Microbiology and Immunology; **Stephanie Gupton**, Assistant Professor of Cell Biology and Physiology

The OoR is working with Chairs and Center Directors to improve faculty recognition and increase the nomination of faculty for distinguished awards. Based in part on Post Tenure Review (PTR), which is a formal review conducted for tenured faculty every 5 years, the Dean's office together with the chairs and center directors will identify exceptional faculty for nomination. The Office of Research will work with individual faculty that have been nominated by their Chairs and/or Center Directors to identify the awards that are most relevant to their field and their accomplishments, and help assemble most of the materials needed to make a nomination for these awards. The assembled application will be handed to the Department Chairs or Center Directors who will complete and submit the nomination materials on behalf of the faculty member.

On a related note, the Dean's Office announced that the Genetic Medicine Building Plaza will be home in the coming year to plaques honoring SOM faculty who have been elected into the National Academies or received a Nobel Prize.

## *MAJOR RESEARCH FUNDING & HIGHLIGHTS for 2016*

- *'60 Minutes' Spotlights UNC Lineberger's Use of Artificial Intelligence*

Charlie Rose and a crew from "60 Minutes" traveled to UNC Lineberger in March to speak with UNC Lineberger Director **Norman E. Sharpless** and others to learn about how a cancer center research study that paired UNCseq, which produces volumes of genetic information from a patient's tumor, with IBM's Watson and its ability to quickly pull information from millions of medical papers to generate useful clinical insights and inform treatment. The segment aired on October 9, 2016.

- *Wesley Burks featured in NY Times Magazine Article*

The Dec. 18 issue of the New York Times Magazine featured an article on efforts to engineer a less allergenic peanut. The work of **Wesley Burks, MD**, Executive Dean, UNC School of Medicine and Executive Director, UNC Food Allergy Initiative, was a central focus on the piece.

- *Three UNC School of Medicine faculty awarded PCORI contracts*

The largest of the three contracts, a five-year award totaling nearly \$8 million, was awarded to **Michael Kappelman**, Associate Professor of Pediatrics. It aims to answer one of the most pressing questions parents of children diagnosed with Crohn's disease face: which treatment will be most effective and cause the least side effects? **Kelli Allen, PhD** research professor in the UNC Thurston Arthritis Research Center, was awarded a two-year, \$1.9 million contract for a study aimed at developing and disseminating an evidence-based pain coping skills training (CST) intervention among African Americans with osteoarthritis to reduce disparities in outcomes. **Donna M. Evon, PhD**, assistant professor in the Division of Gastroenterology and Hepatology and the UNC Liver Center, was awarded a three-year, \$2.4 million contract for a study aimed at helping patients with chronic hepatitis C viral infection (HCV) and their providers make more-informed treatment decisions. This study to compare two new all-pill treatments is the first head-to-head study of short-term and longer-term outcomes that were selected by patients with HCV, and will matter most to patients making future decisions about HCV treatment.

- *UNC awarded high-profile NIH grant to research environmental influences on child health*

NIH launched a seven-year initiative called Environmental influences on Child Health Outcomes (ECHO), which will investigate how exposure to environmental factors in early development – from conception through early childhood – can influence the health of children and adolescents. The UNC project, led by Michael O'Shea, chief of neonatal-perinatal medicine, was awarded \$5 million over two years by the NIH, will join several other universities to focus on enrolling more than 50,000 children from diverse racial, geographic, and socioeconomic backgrounds to become part of the ECHO consortium. These studies will analyze existing data, as well as follow children over time to address the early environmental origins of at least one of ECHO's health outcome areas, including upper and lower airway health and development, obesity, and brain and nervous system development. The PI is **Michael O'Shea**, chief of neonatal-perinatal medicine in the Department of Pediatrics.

- *UNC SOM researcher receive four NIH BRAIN Initiative grants*

Three researchers from the UNC SOM (**Flavio Frolich (Psychiatry)**, **Yen-Yu Ian Shih (Neurology, 2 awards)**, **Dinggang Shen (Radiology)**) were granted a total of four awards totaling more than \$6.19 million in the second round of the NIH BRAIN Initiative awards. Just five institutions received four or more grants and UNC was one of them. The studies include research into non-invasive brain stimulation inform treatment of neurological conditions; development of machine learning computational tools to better diagnose Alzheimers disease; building a novel electrode array platform; use of fMRI together with unique UNC DREADDs technology to study neuronal and astrocyte signaling.

- *UNC, NC State to use data to tackle rare diseases through \$11-million national effort*

The National Science Foundation (NSF) recently awarded \$11 million to big data projects and planning activities associated with its Big Data Hubs initiative, including an effort at North Carolina State University (NC State) and the University of North Carolina at Chapel Hill (UNC), to explore the feasibility of building a large data system – the Rare Disease Observatory (RDO) – that will integrate data sets on rare diseases that are currently separate. The project leaders will also investigate how to make these data sets available to a broader set of the rare disease community. This project is led by Rada Chirkova, PhD, associate professor of computer science at NC State, and **Bruce Cairns, MD**, the John Stackhouse Distinguished Professor of Surgery at the UNC School of Medicine, Director of the North Carolina Jaycee Burn Center, and chair of the NC Rare Disease Advisory Council.

- *Nancy Allbritton's work featured in NIH Director's Blog*

**Nancy Allbritton**, Chair of the Department of Biomedical Engineering, was highlighted in the Sept. 22, 2016 NIH Director's blog for her ambitious project to build a miniaturized working duplicate of the colon on a microfabricated chip about the size of a dime. This work will have a big impact on studies of intestinal biology, interactions between pathogens and their human hosts, and regenerative medicine.

- *UNC leads first-of-its-kind, \$21-million study of posttraumatic brain disorders*

The newly launched NIH funded AURORA study, led by **Samuel McLean**, Associate Professor of Anesthesiology and Emergency Medicine, has three overarching goals: to characterize posttraumatic disorders at a fundamental biological level, to determine how these disorders develop, and to develop tools that will help clinicians identify individuals at high risk in the early aftermath of trauma. The project will bring together researchers and physicians from 19 institutions and



employ comprehensive “molecules-to-symptoms” evaluation including genomic, neuroimaging, neurocognitive, behavioral, and symptom assessments for more than 5,000 trauma survivors.

- *Spencer Smith Receives Award from the Human Frontiers Science Program to Build a Novel Brain Imaging System*

**Spencer Smith**, Assistant Professor in the Department of Cell Biology and Physiology, is part of an international team that hopes to create a new imaging system to study individual neurons in high resolution throughout the entire brain of a freely moving vertebrate. Smith’s lab at UNC is building the optics. The program funds high-risk, high-reward international and interdisciplinary projects.

differentiated cell types – the crux of stem cell therapy and regenerative medicine. .

- *UNC joins SPARK, the nation’s largest autism research study.*

SPARK, sponsored by the Simons Foundation Autism Research Initiative (SFARI), is led locally by **Joseph Piven**, Professor of Psychiatry and **Gabriel Dichter**, Associate Professor of Psychiatry. The project will sequence the DNA of 50,000 individuals with autism and mine the data for genetic clues to the condition guide targeted-treatment research based on a patient’s genetic analysis.

- *Jeremy Purvis earns NIH Director’s New Innovator Award*

The New Innovator Award received by **Jeremy Purvis**, Assistant Professor of Genetics, is different from traditional NIH grants. It is designed specifically to support unusually creative investigators with highly innovative research ideas in the early stages of their careers. Purvis’ work uses computer models to design ways to convert human stem cells into functionally differentiated cell types—the crux of stem cell therapy and regenerative medicine.

- *UNC Scientists Named to European Union-Funded Global Zika Research Consortium*

**Aravinda de Silva**, professor of microbiology and immunology, and **Stefan Metz**, a postdoctoral research fellow in de Silva’s lab, make up one of only two U.S. teams to be named to the European Union-funded worldwide initiative. Sponsored by the European Union’s Horizon 2020 Programme, the consortium is investing \$49 million in Zika research across the globe

- *UNC Receives Award for NIH ‘Baby Connectome’ Initiative*

Researchers at the University of North Carolina (UNC) and the University of Minnesota (UMN) have been awarded a \$4 million grant from the National Institutes of Health (NIH) to launch the Baby Connectome Project (BCP). The project will characterize human brain connectivity and map patterns of structural and functional connectivity to important behavioral skills from infancy to early childhood. Additional biological (e.g., genetic markers) and environmental measures (e.g., family demographics) will be collected and examined to provide a more comprehensive picture of the factors that affect brain development. **Weili Lin** (Radiology, BRIC) is the contact principal investigator project. Other co-PIs include **John Gilmore** (Psychiatry), **Joe Piven** (Psychiatry) and **Dinggang Shen** (Radiology).

- *UNC awarded nearly \$23 million to continue national effort to cure HIV*

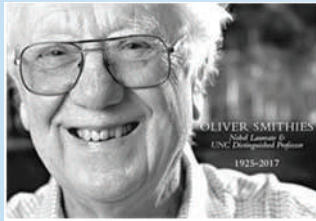
Researchers at UNC will receive nearly \$23 million over the next five years to continue research on their innovative “kick and kill” strategy for eradicating HIV. The National Institutes of Health (NIH) selected the UNC-based Collaboratory of AIDS Researchers for Eradication, or CARE, for refunding after a competitive application process. The multi-institution effort is led by **David Margolis**, Professor of Medicine.

- *Pfizer Acquires Gene Therapy Firm Bamboo for \$150 Million*

**Jude Samulski**, Professor of Pharmacology, is the co-founder and CEO of Bamboo Therapeutics, a Chapel Hill based start up developing gene therapy treatments for neuromuscular conditions and central nervous system disorders that was acquired by Pfizer in August 2016.

## *IN MEMORIAM*

### *OLIVER SMITHIES—UNC NOBEL LAUREATE*



Our distinguished colleague and 2007 Nobel Laureate, Dr. Oliver Smithies, passed away on January 10, 2017 at UNC Hospital after a short illness. Until his passing at the age of 91, Smithies was still at the lab bench seven days a week, pursuing his research with the same enthusiasm that has animated his scientific career for more than 70 years.

“Our dear friend and colleague, Dr. Smithies, was a giant and a wonderful human being. The UNC School of Medicine is much the better for his time with us,” said Dr. William L. Roper, dean and Bondurant Professor, School of Medicine, and chief executive officer of

UNC Health Care. He will be greatly missed by all of us in the SOM. A memorial service for Oliver is scheduled for April 4, 2017.

Please visit this link for the UNC tribute to Dr. Smithies and more information on his distinguished career- <http://www.unc.edu/spotlight/oliver-smithies/>

### *EUGENE ORRINGER—DIRECTOR, UNC MD/PhD PROGRAM*



Dr. Eugene Orringer was well known at the SOM for multiple roles: caregiver, investigator and mentor. In addition to his distinguished role as a hematologist working with sickle cell patients, “Dr. O.” was the founder for our current MD/PhD program and multiple junior faculty training programs now offered through the NC TraCS.

He was responsible for obtaining an NIH training grant to help support the MD/PhD program and then built this program into a nationally recognized training program. As the Executive Associate Dean for Faculty Affairs he was instrumental in securing multiple NIH K12 training grants that have mentored junior faculty through their first grant applications and awards. He will be remembered and greatly missed by his

patients and the scores of trainees and faculty whom he mentored. His innovative training programs are an important legacy for us all.

Please visit this link for the SOM tribute to Dr. Orringer and more information on his distinguished career- <http://news.unchealthcare.org/som-vital-signs/2016/nov-10/eugene-orringer-director-of-unc-school-of-medicine2019s-md-phd-program-has-died>