Department of
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The Department of Medicine Newsletter is published three times per year.

To submit an article or provide information contact:

Alex Mayer at 401 444-5127
e-mail amayer@Lifespan.org

Dan Bryant at 401 444-6893
e-mail dbryant@Lifespan.org.

CHAIRMAN'S MESSAGE

Louis Rice, MD

The mechanisms by which research efforts are supported in academic medical centers are a mystery to many people, including the researchers themselves at times. This is probably because in most centers (including ours) research is funded through a variety of different mechanisms. The most obvious mechanism is through the submission of research applications by faculty to (a) public funding organizations such as the National Institutes of Health, the National Science Foundation, the Department of Defense, the Department of Veterans Affairs, (b) private funding sources such as foundations like the American Heart Association and the American Cancer Society and finally (c) . industry to support scientific investigations into new medicines, diagnostic devices or therapeutic interventions. These grants are generally awarded for a period of years and cover a portion of the salary of the investigators and some amount of money for equipment and supplies. For clinical studies, materials required for working with patients are also included. The grants also include an additional amount of money (referred to as indirect costs) that go to the institution in which the research is conducted (most industry-sponsored grants do not include this element support). This additional "indirect" money is designed to provide for the support services and infrastructure required to ensure that the grants can be safely and reliably completed

In an ideal world, all research would be fully funded by these sources and research would pay for itself at no cost to the academic department or medical center.

> Unfortunately, such an ideal world does not exist, and much research must be paid for by other sources.

After all, the pay lines for many types of NIH grants are between 10 and 20%, meaning that more than four out of five grant proposals are not funded. Moreover, it takes some time to reach the point where an investigator is competitive for funding at NIH (the average age for an investigator receiving a first independent full NIH grant is over 40 years), so the costs associated with supporting that researcher until that time must be paid. Some research support can be obtained for development from federal sources, including NIH T32 training grants to institutions and K grants to investigators or Career Development Awards for VA investigators, but these are also quite competitive, and the NIH K grants do not pay for the full amount for an investigator's time that must be protected for research. So where does the support for the rest of research done at academic medical centers come from?

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Funny you should ask....Much of the money that supports research done at academic medical centers comes from clinical income generated by the hospitals and physician groups. Money from the hospitals often takes the form of transfers to medical school partners, while physician groups often pay an academic assessment (frequently referred to as a "Dean's Tax") that represents a percentage of their clinical income. Highly successful medical centers in areas of growing population can therefore invest substantially in the research enterprise, often resulting in substantial increases in funding from NIH and other sources. Highly successful research then becomes an attraction for philanthropic contributions, which further support the research operation. This academic assessment funding can thus serve as "seed funding" in the truest sense of the term. Well-supported research enhances the ability to attract outside funding, as well as talented investigators. The relevant point is that research does not pay for itself but can reap many benefits in terms of enriching the intellectual environment, attracting patients to enroll in clinical trials, attracting top-notch personnel and improving the reputation of the medical center.

When Dr. Ed Wing was establishing the University Medicine Foundation in the late 1990's he created a structure in which the academic needs of the Department of Medicine could be supported through the clinical income generated by the physicians in the Foundation. This fund, known as the Academic Enrichment Fund (AEF) allows the Chair of the Department to support young researchers, provide bridge funding to growing divisions, support focused teaching efforts and fund important research initiatives. In fact, support from the AEF was instrumental in the successful pursuit of two large COBRE grants awarded to the Department last summer (in antimicrobial resistance/drug discovery and opiate addiction). Again, "seed funding" led to valuable external NIH support.

Great Academic Medical Centers are led by visionary Deans. We are extraordinarily fortunate here at Brown to be led by Jack Elias, whose five-year tenure has been marked by a dramatic increase in research, a significant increase in philanthropy (which will translate into important endowed Chairs) and a partnership with the physicians' practices that has made it clear that Brown is committed to outstanding clinical practices as well. In short, he has been a "transformative" Dean. Six of the academic practice foundation (Brown Medicine, Brown Dermatology, Brown Emergency Medicine, Brown Neurology, Brown Urology and University Surgical Associates) are now in partnership with Brown, forming Brown Physicians, Inc. (BPI), the largest independent academic multi-specialty practice in the state.

> We are currently in the process of bringing these Foundations closer together to facilitate more seamless patient care, outstanding research and first-class medical education for the next generation of physicians. It is our hope that one day BPI will be the practice for all the Brown-affiliated full-time academic practitioners in the state.

In forming BPI, we all agreed that it was important that we institute an academic assessment, whereby we provide funds for the Dean of the Medical School to support research within our practices.

This next step in the development of our evolution brings us in line with most other academic faculty groups in the country and has a greater potential than we could ever realize on our own. By agreement among all parties, the funds will be used to support research efforts in the Departments that contribute to the fund. One half of the money contributed by each Foundation will be directly returned to that Foundation to support research that is agreed upon by the Chair and the Dean. The remainder of the money will be pooled and made available to researchers from all the contributing Foundations and will be awarded on a competitive basis after evaluation by the Dean and the BPI Research Committee. Evaluation of the proposals submitted by the different Foundations will occur over the next month and funding will be committed for a year. Amounts will vary, but in general awards will be restricted to $50,000 to allow a substantial number of awards. As the fund grows over the years, there will no doubt be a further refinement of the process by which the funds are disbursed.

Those whose work lies primarily in a combination of clinical practice and/or teaching may ask how this new academic assessment will affect them in their professional work. I reply by pointing out that a healthy academic department permits the growth in depth and breadth of clinical capacity, the ability to recruit and retain clinician-investigators whose expertise will help all of us better care for our patients and teach our learners. The physicians of BPI and many other physicians who are on Brown Faculty and work in the academic affiliates remain committed to insuring that Brown remains among the best Medical Schools in the world. The partnership between Brown and BPI is a major and natural next step towards realizing that goal.

Two Brown professors elected AAAS fellows

Dr. Sharon Rounds and **George Karniadakis** were elected as fellows of the American Association for the Advancement of Science (AAAS), the world's largest scientific society. A formal recognition ceremony was held in February at the 2019 AAAS Annual Meeting in Washington, D.C. Karniadakis and Rounds are part of a class of 416 distinguished researchers elected in this year's class of fellows.

Dr. Rounds is a professor of medicine and of pathology and laboratory medicine and Associate Dean for Clinical Affairs at Brown's Warren Alpert Medical School, as well as a pulmonary and critical care physician at the Providence V.A. Medical Center. AAAS cited her "distinguished contributions to the field of pulmonary/critical care/sleep medicine, particularly for the role of the pulmonary endothelium in the pathogenesis of acute lung injury and pulmonary hypertension."

Rounds has been continuously supported by research grants from the National Institutes of Health and the Department of Veterans Affairs since 1981. She is co-principal investigator of the CardioPulmonary Vascular Biology Center for Biomedical Research Excellence and also serves as director of the Advance-CTR Pilot Projects program, both of which aim to catalyze innovative research by providing seed funding for young investigators.

George Karniadakis, a professor of applied mathematics, was recognized "for many outstanding contributions to applied mathematics in multiple areas, including computational fluid dynamics, multiscale modeling, spectral methods, and stochastic and fractional partial differential equations," according to the AAAS.

Karniadakis' computational models have led to a better understanding of changes in blood flow associated with disorders like sickle cell anemia and malaria, as well as a new understanding of the spleen's role in determining the shape of red blood cells.

McGarry Named Division Director

Kelly McGarry, MD was appointed Interim Director for the Division of General Internal Medicine in October of 2018. Dr. McGarry joined the Division of General Medicine at Brown in 1996, becoming the Associate Program Director for the GIM/Primary Care program in 1998 and then Program Director for GIM/Primary Care in 2007. She has received numerous teaching awards from medical students and residents. Her scholarly areas of interest include primary care and medical education, care of vulnerable populations, including the LGBT community, and women's health. She values the connection to patients and her learners and finds joy and fulfillment in helping students and residents grow professionally and personally. In April, she will also become Governor of the ACP, RI Chapter.

Internal Medicine Resident Research Recognized at National Conferences

In October, nine Internal Medicine Residents presented research at the *American College of Gastroenterology's Annual Scientific Meeting*. Three of these residents were honored with the "Outstanding Poster Presenter" award, recognizing their abilities as clinical investigators and scientific communicators.

Over 2,600 posters were presented at this year's conference, with only 8% of those being recognized with this award.

The winners from the Internal Medicine Residency Program at Rhode Island Hospital and The Miriam Hospital were : **Erick Argueta, MD, Chiazotam Ekekezie, MD and Bryce Perler, MD.**

During Poster Rounds at the conference, all poster presenters were able to give a succinct and informative two minute briefing or "elevator pitch" on their research, followed by one minute of Q&A with expert faculty judges. Judges then selected one or more "Outstanding Poster Presenters" who were best able to communicate their key findings, the significance of their data, as well as to articulate the potential impact of their work for clinicians and patients.

In February, **Brian McCauley, MD** was recognized with the Stephen Abrahamson Award for Innovation at the Keck School of Medicine's *Innovations in Medical Education* conference. His project, "Using Mobile Device Technology and Spaced Education Adaptive Algorithms to Teach ECG Interpretation", was honored in the "Outstanding Innovations" category (abstracts with results) during the closing ceremony of the conference. His co-authors on the project were **Esseim Sharma, MD (Cardiology Fellow) and Antony Chu, MD (of the Cardiovascular Institute).**

National recognition/ awards/leadership roles for CVI faculty

Brian Abbott, MD received the Clinical Faculty Advisory Committee Award in Dean's Excellence in Teaching

J. Dawn Abbott, MD received the Clinical Elective Award in Dean's Excellence in Teaching

Eirini Apostolidou, MD received an Office of Medical Education Letter of Recognition for teaching efforts and dedication in pre-clerkship medical curriculum, The Warren Alpert Medical School, Brown University

Herbert Aronow, MD is an Inductee of the International Andreas Gruentzig Society and received the Miriam Hospital C.A.R.E. (Compassion, Accountability, Respect, Excellence) Award for Enhancing Patient Experience

Karen Aspry, MD received the President's Service Award from the Northeast Lipid Associate of the NLA

Gaurav Choudhary, MD received the ICARE Award from the Providence VA Medical Center

Nikhil Panda, MD received the Emerging Early Career Leader Award from Medtronics Inc.

Athena Poppas, MD voted Rhode Island Monthly Magazine Top Doctors

Christopher Song, MD received Miriam Hospital C.A.R.E. (Compassion, Accountability, Respect, Excellence) Certificate of Recognition and Office of Medical Education Letter of Recognition, The Warren Alpert Medical School, Brown University

Philip Stockwell, MD received a Certificate of Recognition for Exemplary Teaching, The Warren Alpert Medical School, Brown University

UPDATES FROM THE CARDIVASCULAR INSTITUTE

Glenn Radice, MD joins CVI

Dr. Radice's laboratory is focused on understanding the molecular, biochemical and cellular basis for how heart muscle cells sense and respond to mechanical force. Previous work has established that the cell surface adhesion receptor, N-cadherin, is critical for maintaining mechanical and electrical coupling between heart muscles cells. Our current research emphasis is to identify how N-cadherin together with the underlying cytoskeleton transmits force into the cell and activates signaling events that control myocyte proliferation. Manipulation of this signaling pathway using small molecule inhibitors, for example, may represent a novel therapeutic strategy to stimulate myocytes to undergo cell division and repair the injured heart. Finally, these studies will provide a molecular framework to better understand the etiology of arrhythmogenic cardiomyopathy, a disease caused primarily by mutations in genes encoding cell adhesion molecules.

New funding:

Dr. Gaurav Choudhary's grant, supported by VA, Basic Laboratory Research and Development ,entitled "Role of Skeletal Muscle Mitochondrial Supercomplexes in Exercise Intolerance".

Gideon Koren, MD has an NIH/NHLBI grant entitled "Scarring and Arrhythmia in Infarcted Aged Hearts: Role of Senescent Fibroblasts."

Glenn Radice, MD has an NIH/NHLBI grant entitled "Mechanotransduction in Heart Development and Regeneration."

J Dawn Abbott, MD has a clinical research study entitled " A Phase 3, Multicenter, Double-Blind, Randomized, Placebo-Controlled, Parallel- Group Study to Investigate the Efficacy and Safety of CSL112 in Subjects with Acute Coronary Syndrome" with CSL Behring, LLC.

Peter Soukas, MD has a clinical research study entitled "Retrospective and Prospective International EkoSonic Registry of the Treatment and Clinical Outcomes of Patients with Pulmonary Embolism (KNOCOUT PE) with EKOS Corporation.

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Updates from the Division of Hospital Medicine at The Miriam Hospital

Members of the division continue to advance their academic and clinical activities:

Drs Brad Collins, Arkadiy Finn and Kwame Dapaah-Afriyie served as Abstract Reviewers for the 2019 Society of Hospital Medicine Annual meeting which is being held on Maryland in March of 2019.

Dr Dapaah-Afriyie has been nominated as a member of the ABIM beta testing team for the 2019 Hospital Medicine module.

TMH started a quarterly MD recognition program last year . Drs Jill O'Brien and Karl Herman were the first and second recipients of this award.

VA Cardiopulmonary Research Center of Excellence Renewed

The National Institute for General Medical Sciences of the National Institutes of Health awarded the CardioPulmonary Vascular Biology Center of Biomedical Research Excellence, a renewal grant of $10 million July 20, 2018, through the Ocean State Research Institute, or OSRI.

Known as the CPVB COBRE, the center is located at the Providence VA Medical Center and led by principal investigators, Drs. Sharon Rounds and Elizabeth Harrington, and the program administrator, Susan McNamara.

"We look forward to expanding ourGlenn team of outstanding investigators and the scope of our research in vascular biology," said Rounds. "This kind of interdisciplinary, cooperative research is important because the heart and lungs function interdependently, and many Veterans suffer from conditions affecting these organs, as do many others in the general population."

"The CPVB COBRE sparked a remarkable coalescence of cross-disciplinary scholars and researchers in vascular biology," said Dr. Jack Elias, dean of Medicine and Biological Sciences at Brown University's Warren Alpert Medical School. "We look forward to accelerated growth in vascular biology research now that the NIH is funding this important inter-institutional collaboration for another five years."

The phase II award will fund new and continuing initiatives for five years, and supports mentored investigators Dr. Alan Morrison at the Providence VAMC; Dr. Hongwei Yao, Dr. Yang Zhou and Dr. Jessica Plavicki at Brown University; and Dr. Sean Monaghan at Rhode Island Hospital. The grant also supports pilot project research grants in the area of vascular biology in addition to two research cores: 1) Administrative, and 2) Cell Isolation and Organ Function.

"The renewal of the COBRE grant by NIH is acknowledgement of the outstanding cardiac, pulmonary and vascular research being conducted here," said Dr. Robert Swift, president of OSRI. "We're very proud of our investigators and research staff based at the Providence VA Medical Center, the Alpert Medical School at Brown University and its affiliated hospitals."

OSRI is a non-profit corporation affiliated with the Providence VA Medical Center. Its mission is to promote and conduct research and education activities to improve the health and lives of Veterans.

NIH Awards $4M Grant for HIV Study

Bharat Ramratnam, MD, Vice Chairman for Research in Medicine and Chief Science Officer of Lifespan, will serve as Co-Principal Investigator for a recently awarded $4.07 Million grant from the National Institutes of Health. The study, "Next-generation extracellular vesicle biologics to target central nervous system and peripheral reservoirs of HIV" is being conducted with Co-PI Kenneth Witwer, Ph.D. of Johns Hopkins Medicine.

> This project will investigate a validated extracellular vesicle delivery system in a well-established animal model of HIV infection and disease.

Extracellular vesicles are small pieces of cells that, much like retroviruses, can transmit proteins, lipids, and other factors between cells in a cell-specific fashion.

Antiretroviral therapies have been largely effectively at suppressing HIV replication, people living with HIV still experience higher than expected rates of health problems ranging from heart disease to neurocognitive disorders. Redoubled efforts are needed to achieve better long-term control of HIV, including therapies that are highly specific to cells that may be infected with HIV.

The goal of these studies is to use sEVTAs to reactivate latent retroviruses in the CNS and the periphery. The project will also provide much-needed information about EV delivery, distribution, and efficacy in primates that can be harnessed in development of a variety of therapies for HIV infection and disease.

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Department of
Medicine
Office of the Chairman of Medicine
Rhode Island Hospital
593 Eddy Street
Providence, RI 02903

www.brownmedicine.org

Faculty Appointments Aug 1, 2018 to Jan 31, 2019

Miriam Hospital:

Peter Barth, MD, Assistant Professor, Clinician Educator, Hematology/Oncology

Ruth Guyer, PhD, Clinical Assistant Professor, Geriatrics

Jon Lambrecht, MD, Clinical Assistant Professor, Cardiology

Steven Lampert, MD, Clinical Assistant Professor, Cardiology

Denyse Lutchmansingh, MD, Clinical Assistant Professor, Pulmonary & Critical Care

Christopher Luttman, MD, FACC, Clinical Assistant Professor, Cardiology

Gregory Rachu, MD, Assistant Professor, Clinician Educator, Geriatrics

Donald Rice, Jr., MD, Clinical Assistant Professor, Infectious Disease

Newport Hospital:

Stephanie Maryeski, MD, MPH, Clinical Assistant Professor, General Internal Medicine

Eric Radler, MD, Clinical Assistant Professor, General Internal Medicine

Rhode Island Hospital:

Erica Brown, MD, Assistant Professor, Clinician Educator, General Internal Medicine

Suzanne Chan, MD, PhD, Assistant Professor, Clinician Educator, Gastroenterology

Pamela Egan, MD, Assistant Professor, Clinician Educator, Hematology/Oncology

Sophia Fircanis Rizk, MD, Clinical Assistant Professor, Hematology/Oncology

Vidya Gopinath, MD, Assistant Professor, Clinician Educator, General Internal Medicine

Audrey Kupchan, MD, Clinical Assistant Professor, General Internal Medicine

Ashish Misri, MD, Clinical Assistant Professor, General Internal Medicine

Matthew Murphy, MD, MPH, Assistant Professor, Clinician Educator, General Internal Medicine

Subhash Paudel, MD, Clinical Assistant Pr ofessor, General Internal Medicine

Sheridan Reiger, MD, Assistant Professor, Clinician Educator, General Internal Medicine

Alexei Shimanovsky, MD, Assistant Professor, Clinician Educator, Hematology/Oncology

Other:

Vanessa Britto, MD, MSc., Assistant Professor, Clinician Educator, General Internal Medicine

Sayeda Sayeed, MD, Clinical Assistant Professor, Rheumatology

Ali Akhtar, MD, Clinical Assistant Professor, General Internal Medicine

Rajnish Bansal, MD, Clinical Assistant Professor, General Internal Medicine

Kurush Setna, MD, Clinical Assistant Professor, General Internal Medicine

Lisa Noyes-Duguay, MD, Clinical Assistant Professor, General Internal Medicine