

**Officers:**

Hedvig Hricak, MD, PhD, Dr(hc)

*President*

Mitchell D. Schnall, MD, PhD

*Vice President*

Cheri L. Canon, MD

*Secretary/Treasurer*

**Executive Committee:**

Ronald L. Arenson, MD

Ruth C. Carlos, MD, MS

Reed A. Omary, MD, MS

Etta D. Pisano, MD

Vijay Rao, MD

Neil Rofsky, MD

Steven E. Seltzer, MD

Pamela Woodard, MD

Carolyn C. Meltzer, MD

*(ex officio)*

**Board of Directors:**

Prachi P. Agarwal, MD

Katherine P. Andriole, PhD

Richard A. Barth, MD

John M. Boone, PhD

Miriam A. Bredella, MD

Brian D. Coley, MD,

Patrick M. Colletti, MD

Richard L. Ehman, MD

Sanjiv Sam Gambhir, MD, PhD

Garry E. Gold, MD

Thomas M. Grist, MD

Elizabeth A. Krupinski, PhD

Jason S. Lewis, PhD

Umar Mahmood, MD

Gordon McLennan, MD

Satoshi Minoshima, MD, PhD

Mariam Moshiri, MD

Elizabeth Morris, MD

Erik Paulson, MD

James G. Pipe, PhD

Donald P. Rosen, MD

Bram Stolk, PhD, MBA

Max Wintermark, MD

**Executive Director:**

Renée L. Cruea, MPA

**Written Statement**

Hedvig Hricak, M.D., Ph.D.

Academy for Radiology & Biomedical Imaging Research

202-347-5872 – Email: [rcruea@acadrad.org](mailto:rcruea@acadrad.org)

Subcommittee on Labor, Health and Human Services, Education and Related  
Agencies, House Appropriations Committee  
In Support of FY19 Appropriations for the National Institutes of Health

Mr. Chairman and Members of the Subcommittee, my name is Dr. Hedvig Hricak, and I am privileged to serve as the President of the Academy for Radiology & Biomedical Imaging Research (“the Academy”), formerly known as the Academy of Radiology Research. I am testifying today to thank you for your dedicated support to medical imaging, and to strongly support an increase in funding for the National Institutes of Health to no less than \$39.3 billion, with a proportionate increase for the National Institute of Biomedical Imaging and Bioengineering (NIBIB).

In my “day job” I am the Chair of the Department of Radiology at Memorial Sloan-Kettering Cancer Center in New York City, New York. I also hold a senior position within the Program of Molecular and Pharmacology Therapeutics at the Sloan-Kettering Institute and am a Professor of Radiology at the Weill Medical College of Cornell University as well as a Professor at the Gerstner Sloan Kettering Graduate School of Biomedical Sciences. I have helped develop applications in ultrasound, MR, and CT for gynecological cancers as well as MR and MR spectroscopy for prostate cancer. I continue to investigate diagnostic methods for

cancer detection, staging, and management, including approaches for molecular imaging of cancer.

On behalf of the Academy, I would like to begin by thanking you for your generous support for the National Institutes of Health in the recently passed bipartisan FY18 omnibus appropriations bill. This money will contribute to the important work of improving our biomedical research infrastructure while also ensuring that the United States remains the leader in medical innovation and technology.

As this subcommittee knows well, funding for NIH is spread throughout the country. Approximately 84 percent of the amount appropriated is used for peer-reviewed intramural grants to researchers at universities, hospitals, and institutes in all 50 states. Another nine percent funds very high-end research and patient care on the NIH campus. Only about seven percent of funding is used for administrative purposes, maximizing the return on the investment. Nowhere is the return on investment more significant than in the growing field of biomedical imaging.

Our requests of this Subcommittee are critically important to the physical and economic health of the nation, and I would like to state them clearly here:

- **Please fund the NIH at not less than \$39.3 billion for FY19.**
- **Please increase NIBIB funding by not less than a proportionate amount.**

Mr. Chairman, medical imaging plays a unique role in the healthcare delivery process, both as an instrumental part of the medical delivery and management ecosystem and as a catalyst for innovation and technological advancement in service of patient care. Imaging performs central and irreplaceable roles in early disease detection, diagnosis, treatment planning and monitoring. Precise and personalized care and treatment plans are often developed based on decisions made through imaging analysis and review. The Subcommittee's investment in NIH and, in NIBIB in particular, helps make this possible. NIBIB's imaging and bioengineering research and development create the vital methodology and tools utilized in so many areas of biomedical research by other institutes, let alone in America's health care delivery system. Imaging research is a significant component of the work of many institutes of the NIH, including the National Cancer Institute, National Institute of Diabetes, Digestive and Kidney Diseases, and the National Institute of Neurological

Disorders and Stroke, among others. NIBIB research itself has led to an impressive number of patents. In a study covering the 14-year period from 2000 to 2013, Battelle et al. found that for every \$100 million of research funding, NIBIB generated 25 patents and more than \$575 million in resulting economic activity and growth.

For nearly every patient – nearly every constituent – who receives a cancer diagnosis, suffers a head injury, or experiences any of thousands of other medical issues, or who cares for family members experiencing such difficulties, the health benefits of imaging research are profoundly felt. Few medical conditions do not already benefit from any of the wide range of clinical imaging modalities, from x-rays to MRI, CT, PET, fluoroscopy, angiography, and ultrasound. Furthermore, scientific discoveries and technological innovations are rapidly expanding the power of biomedical imaging to improve medical care. In the area of cancer, for example, emerging techniques for molecular imaging will play a key role in realizing the dream of molecularly targeted treatment, as, unlike biopsies, they can give a picture of the biological heterogeneity of cancer within and across all tumors in a patient. Moreover, progress is accelerating in the use of computer tools to analyze both anatomical and molecular images and identify mathematically defined features, not perceptible to the human eye, which can predict the presence of cancer, its genetic profile, and how well it is likely to respond to specific treatments.

The Academy is involved in a broad effort to help maximize the efficiency with which medical imaging is applied in research and patient care. In 2015, we were privileged to work with the Office of Science Technology Policy (OSTP) in the White House to help develop the Interagency Working Group on Medical Imaging (IWGMI). The IWGMI was formed to coordinate the Federal investment in medical imaging research and develop a strategic plan for future development. Last year, the Working Group published a roadmap focused on “advancing high-value imaging” through four key objectives:

- Standardizing image acquisition and storage,
- Applying advanced computation and machine learning to medical imaging,
- Accelerating the development and translation of new, high-value imaging techniques,

- Promoting best practices in medical imaging.

The Academy is working closely with allies across academia, government, and industry to develop steps to implement the Working Group’s roadmap. As part of this effort, the Academy has convened leaders in biomedical imaging and bioengineering to work together to develop a “Diagnostic Cockpit” that integrates advanced imaging and other diagnostic tools to improve diagnosis and thereby enhance the precision and efficiency of care delivery. These necessary investments will be made possible by a consistent and robust investment in biomedical imaging research. The sooner we invest, the sooner your constituents benefit.

Mr. Chairman, innovation is what keeps America healthy – both physically and economically – and the NIH is a major contributor to our strength. Since its creation, NIBIB has proven itself to have a significant impact on real people and the American economy.

Thank you again for the opportunity to present this testimony to you on behalf of the Academy. The Academy welcomes the opportunity to work with the Congress in helping to assure that the American people benefit from their investment in research and have access to the best technology to address their imaging needs.

