

Two Decades of Progress Measured by Big Steps and Driven by Persistence¹

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The year 2015 marked the 20th anniversary for the Academy of Radiology Research (hereafter, the Academy), commemorating 2 decades of success, learning, and growth for the organization and the broad imaging community we serve. As leaders of the Academy, we would like to share a brief history and invite you to join us in the role of advocate, educator, and mentor in the field of imaging research. If you are one of the many supporters of the Academy, we thank you for your partnership, and we look forward to continuing to collaborate with you in the years to come.

For those of you who are not familiar, the Academy acts as a collective voice at many policy and advocacy tables in Washington, DC, carrying the message of the importance of support for medical imaging research to Capitol Hill, various federal agencies, and the National Institutes of Health (NIH). The Academy creates a bridge to more than 100 member patient advocacy groups that share our interest in imaging research. We work to keep imaging research as part of the dialog with policy makers. A complete list of Academy membership is available on our website (www.acadrad.org).

In the early 1980s, the NIH consisted mainly of disease-oriented institutes, such as the National Cancer Institute, National Institute of Mental Health, and National Heart, Lung, and Blood Institute. In an attempt to create a home for imaging science at the NIH, the Conjoint Committee on Diagnostic Radiology was created under the auspices of the American College of Radiology, the Association of University Radiologists, and the Society of Chairmen of Academic Radiology Departments. Its primary function was to serve as an interface between the Diagnostic Branch of the National Cancer Institute and the academic diagnostic radiology community.

Although the Conjoint Committee on Diagnostic Radiology had some success,

it became increasingly apparent that for imaging science to be truly represented at the NIH, a separate and distinct institute that was not related to a specific disease or organ system was required.

The reason for this distinction was that to get funding, the majority of imaging grants were required to address the relevance of the research to a clinical disease, like cancer, or an organ, such as the heart or lung. This resulted in the institutes being so clinically oriented that fundamental imaging science was not represented at the NIH. Biomedical engineering experienced similar challenges with distinction, while also representing a large population of specialists; therefore, it was logical to combine both of these disciplines into one institute that would be untethered from a specific organ or disease. It also was pointed out to the leadership of the NIH and Congress that fundamental imaging modalities, such as computed tomography and magnetic resonance imaging, were developed outside of the United States and that a focus on developing similar technologies here should be a priority.

The Academy was established in 1995 and was supported by a founding membership of 19 professional imaging societies, including broad-based societies such as the American College of Radiology (or ACR), the Radiological Society of North America (RSNA), the Society of Chairs of Academic Radiology Departments (or SCARD), and the American Roentgen Ray Society (or ARRS), with the purpose of advocating for the establishment of a dedicated home for imaging research at the NIH (1). Although each society had a different focus for their own constituency, they saw value in the coalescence of their support for research through the Academy. The Academy leaders recruited Edward C. Nagy, who had previously served as the Chief of Staff for Congressman Tim Valentine of North Carolina, to be the Executive

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Director. Mr Nagy, who served as Executive Director from 1995 to 2006, was a tireless advocate of the cause. He has since been posthumously honored by the National Institute of Biomedical Imaging and Bioengineering (NIBIB) through several named symposia and new investigator award mechanisms. The initial Academy Executive Committee consisted of luminaries, such as Charles Putman, MD (Duke University, Durham, NC); Stanley Baum, MD (University of Pennsylvania, Philadelphia, Pa); Douglas C. Maynard, MD (Wake Forest University, Winston-Salem, NC); and Leonard Holman, MD (Harvard University, Cambridge, Mass). For 5 years, the Academy drafted legislation and lobbied, identified, and maintained Congressional champions for our cause. On December 29, 2000, the Academy was successful in its efforts, and the NIBIB was signed into law by President Bill Clinton (2). This was the last piece of legislation he signed into law before leaving office. With this signature, the NIBIB was mandated. The language in the new law specified that the NIH must create a new and distinctive 24th institute, with the prime responsibility of funding research projects for medical imaging and a wide range of bioengineering projects.

The establishment of the NIBIB was a daunting task at the outset, and it continued to be a challenge, as the new NIBIB had little to no support outside of the imaging community and it came on the heels of a doubling in the NIH budget from 1990 to 2000. In spite of these challenges, and in credit to our partners and the original members, 15 years later the NIBIB is thriving as a hub of scientific innovation and collaboration under the leadership of Roderic I. Pettigrew, PhD, MD, and is delivering an astonishing 24.9 patents per every \$100 million in research and development, as compared with the 5.9 patents per \$100 million in research and design across the NIH at large (3). The Battelle report (4) was commissioned by the Academy as a continuation of our own patent analysis, and it has become a valuable advocacy tool for science policy supporting imaging as a positive outlier of technology development. This analysis illuminates the value of NIBIB-supported research

investment as a driver of discovery that results in patents and stimulates industry and the economy at large. Flat funding is a defacto cut because of inflation; prior to the increased funding in fiscal year 2016, real NIH spending had declined by approximately 25%. Although advocacy efforts for funding often have few tangible benefits, the fiscal year 2016 omnibus spending package (5) includes a vital federal investment of \$32 billion for medical research conducted and supported by the NIH and \$346.8 million (a 6% funding increase) allocated to the NIBIB. These funds represent a substantial increase over the flat funding in the prior decade. (The lone exception was the one-time American Recovery and Reinvestment Act of 2009, which was a welcome boost for the NIBIB.) Our advocacy efforts over the past several years have contributed to a supportive environment in which lawmakers are willing to take bipartisan measures to invest in innovative science.

Since 1995, the Academy has remained true to its original mission of fostering support for imaging research at the federal level. Although efforts in support of imaging research at the NIBIB are sustained, over time, our scope broadened to support all institutes and centers at the NIH with large imaging portfolios, reflecting the foundational role of imaging and imaging research. The Academy develops and maintains relationships with these institutes and centers and continues to create and investigate new opportunities to collaborate. Tours of those institutes and centers for patient advocacy groups and Congressional staff, scientific symposiums, and annual meetings with directors are just a few ways we bring our audience (policy makers and their staff) to the hub of scientific innovation.

In 2008, the Academy created a new division, the Coalition for Imaging and Bioengineering Research (CIBR), as a way to bring together more stakeholders who are invested in imaging research. The addition of the CIBR has enabled both our membership and our perspective to diversify and grow, and we now consist of 102 patient advocacy organizations, 49 academic radiology departments, 27 imaging societies, and 14 industry partners.

All imaging societies and academic departments who are members of the Academy are automatically members of CIBR. We invite all academic radiology departments to join the Academy, and we actively recruit patient advocacy groups who have an interest in imaging research. We further identify industry partners who are interested in our collaborative events to join the CIBR. This diverse membership empowers and enlightens our collective voice on behalf of imaging research, allowing it to resonate more broadly. Collaboration with patient advocacy groups enables us to tell the story about imaging in a way that resonates with our audience and engages them. Simultaneously, the Academy formed an Academy of Radiology Research Academic Council (hereafter, the Council), composed of top academic radiology departments in the United States who support our mission. The Council builds awareness of improvements in patient care made possible by the cutting edge imaging research being performed at premiere institutions in the United States.

The Council advocates for imaging expertise on NIH study sections and advisory councils and participates in educational events with patient advocacy groups and industry partners to show the effect that imaging has on patient care. Such events also inform policy makers and the public on the stages of imaging innovation, including early stage research in academic centers, development and validation of the technology, use in clinical trials, and how patient care is affected. The Council actively educates policy makers and members of Congress through these educational events and by actively participating in our grassroots efforts, such as sending letters to Congress in support of NIH funding. Several early career investigators from member departments compete for travel awards to attend events in Washington, DC, each spring. These events include visits with NIH directors and program staff, in which the investigators display their research posters in the representative's office, and participation in our largest advocacy event of the year, the Academy CIBR Medical Technology Showcase. The Academy and CIBR host an annual

Medical Technology Showcase in the Senate. This is an educational and advocacy event that engages all of our members in one collective collaboration featuring display areas that present various cutting edge imaging technologies. Each display is designed and presented by a patient, an industry partner, and an academic researcher. During this event, participants have conducted more than 170 collaborative visits to Capitol Hill. The goal of these meetings is to establish and maintain contact with elected representatives, keep them informed about research in radiology departments, and explain how that research benefits the local community, patients, and economy.

To broaden our outreach within our community and to engage current and future leaders, the Academy created two distinct groups. The first group comprises recipients of the Distinguished Investigators Award, which is a prestigious honor recognizing individuals for their accomplishments in the field of medical imaging. Nominations are made by chairs and vice chairs of radiology departments, and members become part of the Council of Distinguished Investigators. The second group comprises early career investigators who are interested in advocacy. Each year, the Academic Council awards travel stipends to a select group of individuals who are nominated by chairs and vice chairs of member departments. Awardees attend and participate in the annual showcase event in Washington, DC; meet with NIH leaders; attend meetings on Capitol Hill; and display a research poster depicting research in their department. Awardees become members of the Council of Early Career Investigators in Imaging (or CECI²). These two groups of recognized leaders participate in Academy advocacy initiatives and are in the process of creating a network to connect like-minded researchers with one another and with patient advocacy groups. The ripple effects of collaboration are never ending.

In 2014, the Academy presented its first gold medal as a meaningful way to recognize the most influential advocates for imaging research in our field. The inaugural recipient was the Director of the NIBIB, Roderic I. Pettigrew, PhD, MD.

In 2015, Stanley Baum, MD, a founding member, former Academy President, and continued supporter of the Academy, received this honor. In 2016, the award has been given to Douglas C. Maynard, MD. This award recognizes consistent and dedicated service to the imaging research community.

A recent monumental Academy success is The Interagency Working Group on Medical Imaging (or IWGMI) in the White House Office of Science and Technology Policy. Three years of Academy efforts to establish a home for imaging research collaboration under the National Science and Technology Council Committee on Science culminated in this active working group. IWGMI is charged with coordinating efforts in imaging research across federal agencies and disciplines. Lead by co-chair Roderic I. Pettigrew, PhD, MD, we look forward to supporting this working group as they foster multidisciplinary leadership and capitalize on technologic change in the imaging research space.

In support of all of these efforts, the Academy continues to engage the radiology community via its grassroots advocacy efforts, which include staffing an advocacy booth at the RSNA Annual Meeting. The advocacy booth at the 2015 RSNA Annual Meeting resulted in more than 3000 letters sent to congress in support of the NIH funding increases just prior to the fiscal year 2016 omnibus spending package (5), which included the vital investment of \$32 billion for NIH research and a 5% targeted funding increase for the NIBIB.

Although our most compelling message will always be articulating the value and effect of imaging on patient care, we are continually expanding our scope in new and creative ways to ensure we continuously maintain a diverse group of supporters in the science policy-making arena. As the political environment changes, so too does the audience to whom we must speak; thus, our messaging also must adapt.

A progressive and innovative perspective has been required to reach our goals, stay aligned with our mission, and remain effective. Like the technology for which we advocate, we as an organization must

seek new pathways, utilize new methods, react to challenging variables beyond our control, and most importantly, appreciate and serve the interests of the imaging community. In the world of advocacy, staying aware of relevant issues, such as the political environment and potential sources of funding, and identifying value for policy makers from one end of the spectrum to the next will drive the impact of the Academy.

With excitement and gratitude, we look forward to continued collaborations and new initiatives that will usher in another successful decade of advocacy and education on behalf of the imaging community. Funds for imaging research awarded to academic radiology departments continue to increase annually at a time when the profession is facing substantial challenges in many areas. For example, between 2014 and 2015, there was a 5% increase in NIH funding to diagnostic radiology; this funding graph is available at www.acadrad.org. Efforts by the Academy remain vital, and we invite new members who are interested in making a difference, be they a society, an academic department, or an individual member of this advocacy community, to join us.

For more information about the Academy, please visit us at www.acadrad.org.

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