2016 Award for Distinguished Public Service

Aloysius Helminck

ALOYSIUS HELMINCK received the 2016 Award for Distinguished Public Service at the 122nd Annual Meeting of the AMS in Seattle, Washington, in January 2016 “for his dynamic and public-spirited leadership of the Department of Math-

ematics at North Carolina State University, and for his work, both in his department and at the national level, to increase the diversity of the mathematical research community.”

Citation

Aloysius “Loek” Helminck was head of the department of mathematics at North Carolina State University from 2005 until 2015. In that decade, he set an example for what strong departmental leadership can accomplish. The department is an excellent citizen at all levels, including running one of the largest REU programs in the nation, supporting mathematics achievement in the community through MAA contests and a local contest

of their own, community enrichment activities, as well as a Math Circle.

The department has been recognized by the AMS through its Award for Exemplary Achievement (2010) and its Award for Programs That Make a Difference (2011). However, Helminck’s leadership of multiple programs, both local and national, fostering the goal of diversity in the mathematical community, calls for individual recognition.

Helminck directed the department’s REU program as well as a supplementary component, the REU+, designed to facilitate, both financially and intellectually, REU participation by promising minority students. He also directed the Research Scholars Program in Mathematics, which provides scholarship funding at North Carolina State University for promising mathematics students, both undergraduate and graduate. The department has graduated African American PhDs at exceptional rates under Helminck’s leadership—more than one in eight of all African American PhDs in mathematics since 2000.

Helminck is also codirector of the National Alliance for Doctoral Studies in the Mathematical Sciences and director of the National Alliance for Building Faculty Diversity in the Mathematical Sciences. The first program encourages promising minority undergraduates to continue to graduate study. With conferences, mentoring, and other activities, it has involved over 1,500 undergraduates, and it facilitates several dozen applications to PhD and master’s programs each year. The second program provides new minority mathematics PhDs with supportive postdoctoral experiences at any of seven participating universities. It is currently sponsoring fourteen postdoctoral mathematicians.

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Alongside these multiple projects, he maintains his scholarly activities. He has published nearly fifty research papers related to algebraic groups, especially symmetric spaces, and has directed twenty-two theses, including seventeen since becoming department head. The range, extent, and impact of his efforts richly merit recognition with the Distinguished Public Service Award.

Biographical Sketch

Aloysius (Loek) Helminck was born in Rotterdam, The Netherlands, and received his BS and MS in mathematics and physics from the University of Utrecht, The Netherlands. His graduate study was supported through a research position at the Centrum Wiskunde en Informatica (CWI) in Amsterdam, and he received his PhD in 1985 under the supervision of T. A. Springer at the University of Utrecht. After a postdoctoral fellowship at the University of Michigan, he joined the faculty at North Carolina State University (NCSU) in 1987. He was head of his department from 2005 to 2015. His professional interests include algebraic groups, symmetric spaces, representation theory, symbolic computation, and integrable systems. He graduated twenty-two PhD students, and he is a fellow of the American Mathematical Society.

During Helminck's headship the department of mathematics at NCSU flourished. Under his leadership the department won prestigious national awards, doubled its federal research funding, and improved by many measures. Fundamental to his leadership is his desire to enable the success of those around him. To begin, he worked to improve the environment for students and faculty at NCSU, but he quickly realized that he could play a role helping others more broadly. He designed and instituted many programs to improve access and success for all. For example, he started an REU program at NCSU which has had great success attracting women and those from underrepresented groups (more than 50 percent female and 25 percent minority participants). This has been one of the largest REU programs in the nation, serving almost 400 students since 2005. He also developed and obtained funding for research experiences for early graduate students which contributed to a tremendous increase in the retention rate of PhD students.

To attract more underrepresented students to NCSU, Helminck developed relationships with departments of mathematics at many regional historically black colleges and universities (HBCUs). As he became aware of inequities in the educational system, he started creative initiatives to help at many levels. With his colleagues at HBCUs he created new pathways for talented, but underprepared, underrepresented students to participate in his REU program. With the goal of increasing the number of minority faculty at research universities, Helminck was instrumental in creating a

postdoctoral program called the National Alliance for Building Faculty Diversity in the Mathematical Sciences. This program affords talented new PhDs an opportunity as a research postdoc at one of seven universities and time at any of the NSF Mathematical Institutes.

In addition to this postdoc alliance, Helminck has helped re-envision and expand the Alliance for Doctoral Studies in the Mathematical Sciences, which aims to increase the number of minority students who attend graduate programs in the mathematical sciences. He has been involved in many national and local diversity and mentoring efforts. He has served on committees of the AMS, AWM, and SIAM.

Response from Aloysius Helminck

I am deeply honored to receive the American Mathematical Society 2016 Award for Distinguished Public Service. I would like to thank those who nominated me and the selection committee for this recognition. I have a deep commitment to helping others. It is especially gratifying to do this in the context of mathematics: to help my department excel in their mission of research and teaching; to help my students become successful mathematicians; to help others around the country, especially those from underrepresented groups, realize their potential place in the mathematics community and help pave the path to let them get there.

I am grateful for the opportunities I have had to develop programs which help enable others. Of course nothing can be accomplished alone, and I am fortunate to have had the support from many in the community for my initiatives. There are now at least three different diversity alliances with which I am affiliated. Alliances are exactly what we need, as we must work together and trust each other to succeed. I would like to thank all of my allies in all of these alliances and in my department. Together we are building a strong network of diverse mathematicians. Most importantly, I would like to thank all the students and postdocs that I have had the good fortune to work with over the years. Their successes are my greatest reward.

Just as mathematics itself has diversified with many new fields, we now know that good mathematicians will come from all sorts of backgrounds. Mathematics is pervasive in the modern world. We must learn to recognize and nurture talent and potential everywhere, especially that which may look very different from our own. I invite my colleagues in the research community to think broadly about our efforts to diversify the mathematics community.

About the Award

The Award for Distinguished Public Service is presented every two years to a research mathematician who has made a distinguished contribution to the mathematics profession during the

preceding five years. The purpose of the award is to encourage and recognize those individuals who contribute their time to public service activities in support of mathematics. The award carries a cash prize of US\$4,000.

The Award for Distinguished Public Service is made by the AMS Council, acting on the recommendation of the selection committee. For the 2016 award, the members of the selection committee were the following individuals.

- John H. Ewing
- Richard M. Hain
- Roger E. Howe (Chair)
- William McCallum
- Sylvia M. Wiegand

The complete list of recipients of the Award for Distinguished Service follows.

1990	Kenneth M. Hoffman
1992	Harvey B. Keynes
1993	I. M. Singer
1995	D. J. Lewis
1997	No Award Made
1998	Kenneth C. Millett
2000	Paul J. Sally Jr.
2002	Margaret H. Wright
2004	Richard A. Tapia
2006	Roger Howe
2008	Herbert Clemens
2010	Carlos Castillo-Chavez
2012	William McCallum
2014	Philip Kutzko
2016	Aloysius Helminck

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