

## **University Professors 2003-2007**

*In recognition of their sustained excellence in  
teaching effectiveness, professional activity and service.*

**Nachimuthu Manickam, Professor of Mathematics—Page 2**

**Ellen J. Maycock, Professor of Mathematics—Page 4**

**Barbara J. Steinson, Professor of History—Page 6**

**Nachimuthu Manickam**, Professor of Mathematics, joined the faculty in 1986 as Assistant Professor of Mathematics; he was promoted to Associate Professor in 1995 and to Professor in 2002, and he has already earned recognition for excellence in teaching and service to the department and profession as the Ian Rolland Professor of Mathematics beginning in 2001. He received his Bachelor of Science in 1976 in Mathematics from the Center for Advanced Study in Mathematics of Panjab University in Chandigarh, India. At the same institution, he later earned his Master of Science in Math: First Class in 1977 and his Master of Philosophy in Math: First Class with distinction in 1978. In 1986, he completed his Ph.D. in Mathematics at The Ohio State University.

He has taught a wide range of courses in the mathematics department (particularly calculus and discrete mathematics); he also taught the introduction to computer programming. Ever interested in improving his teaching, he has gained Q, S, and W certification and has taught a first-year seminar, "Problem Solving." He is currently developing a further specialty in statistics by taking additional graduate-level courses during his sabbatical this year.

Students write of his love for teaching, his commitment to reaching students at all levels and his tough and challenging courses in which they learn and thrive. One writes: "The first and foremost quality attributable to Prof. Manickam is his remarkable ability to explain complex material to students in an understandable way... he uses the foundation he has created to challenge and stretch the abilities of all his students regardless of academic capabilities."

He is currently in the midst of a term of service as chair of the Department of Mathematics. His University service also includes four years as a member of the Committee on Faculty, two terms on the Public Occasions Committee, and terms on the International Education Committee, the Committee on Faculty Review Committee (which he chaired one year), the Resource Allocation Subcommittee, and the Committee on Management of Academic Operations which he has also chaired. Within Division III, he has served on the Long-range Planning Committee. He has taught in the project-based first-year seminars of the Science Research Fellows program.

He is an internationally respected authority in the area of graph theory ("uniform central graphs"). He has consistently produced work that has been published in leading mathematics journals, and has produced other articles or contributions to major conference proceedings. He has worked on a number of different cutting edge topics, not just one, and he has solved problems cleverly that have both theoretical and real world value. The subject of his recent research is terrain navigation, including "quickest path algorithms for robot navigation." In pursuit of this work he has been a Visiting Scientist at Oak Ridge National Laboratory. This work was also supported by a faculty fellowship which he recently completed.

His professional colleagues write of his research, "[He] has made important contributions to the understanding of visibility graphs, terrain model acquisition, uniform central graphs and the quickest path problem." Another writes, "He is an accomplished

mathematician in the area of combinatorics. ... He extended [an] algorithm for terrain model acquisition designed for a two-robot team to a team consisting of an arbitrary number of robots. In particular, he proposed the visibility graph method that would provide a near optimal performance for a team of four robots. Furthermore, he showed a universal limitation that there does not exist an algorithm that guarantees a linear speedup for more than four robots in terms of the sensor time.” Another concludes, “These results are significant in that they have the potential of yielding efficient algorithmic solutions to this problem.”

He has supervised many undergraduates in completing research projects. He frequently publishes with his research student collaborators as co-authors, and he has successfully encouraged his students to make presentations at the Argonne Symposium for Undergraduate Research and the Butler University Undergraduate Research Conferences.

**Ellen Johnston Maycock**, Professor of Mathematics, joined the faculty as an Assistant Professor of Mathematics in 1988, was promoted to Associate Professor in 1993 and to Professor in 2001. She earned her Bachelor of Arts in Mathematics and Economics from Wellesley College in 1972; she earned her Master of Science in 1974 and her Ph.D. in 1986 in Mathematics from Purdue University.

With her Mathematics colleague Mark Kannowski, she designed and developed “Calculus with Review” the novel Math 135, 136 course which has provided an alternative route to gaining mastery in calculus for many DePauw students. In addition, she has taught other courses in calculus, geometry, analysis and algebra. She has also taught a seminar in the Honor Scholar Program.

Her teaching has been widely praised by faculty colleagues and students, who note that she uses a wide range of methods, including, “computer labs, discovery activities, problem sets, cooperative learning activities, class discussions, personal reflection and research projects.” One of her students writes, “Many of the concepts taught in our Analysis class were more abstract or formal than we were accustomed to learning in previous math classes. [She] was able to integrate various teaching methods and styles (technology, lectures, discussions, problem sets, etc.) into a coherent semester that allowed all of us to grasp the connections between the formalism and the applications of the material. She was aware of the different learning styles of each of us and did her best to teach and explain in enough ways that we all could experience the satisfaction of that ‘Ah-hah!’ moment.”

She received a grant from NSF under the Undergraduate Faculty Enhancement Program to support a series of workshops entitled, “Exploring Undergraduate Algebra and Geometry with Technology.” These workshops drew mathematics faculty members from around the country to DePauw.

When DePauw received a grant from the Mellon Foundation for work in adding technology to enhance instruction and learning, she received one of the earliest grants for course improvements. She later directed workshops for faculty colleagues on the uses of MATHEMATICA in instruction.

She has frequently offered workshops at professional conferences on her ideas for a laboratory approach to teaching group theory.

As evidence of her commitment to DePauw’s general education programs, she has gained her S, Q and W certifications. She also developed an upper-level mathematics offering as a W-course. She served a term as Associate Faculty Development Coordinator for the Writing Program, and was co-organizer of the W workshops held in 1999, 2000, and 2001.

Among her committee duties, she served on the Management of Academic Operations Committee and the Student Life and Academic Atmosphere Committee (SLAAC), which she chaired for a year. While chair of SLAAC she worked to develop improved policies

and procedures for important matters of student-faculty relationships. She also served on the President's Task Force on Compensation, and the committee which developed the guidelines for reviewing and recommending tenure track positions.

She has also provided significant professional service to mathematicians and teachers of mathematics. One of her colleagues writes, "[She] has also been a catalyst for getting mathematicians together who are concerned with the way we teach abstract algebra. She has spoken at many conferences about her work and her concerns, many times as an invited speaker."

In addition to several articles, her publications include two books, *Laboratory Experiences in Group Theory*, in the series *Classroom Resource Materials* in 1996 and, *Innovations in Teaching Abstract Algebra*, edited by Allen C. Hibbard and Ellen J. Maycock in 2002. She recently published "Technology in the Upper-Level Curriculum" in the *Journal of Online Mathematics and its Applications of the Mathematical Association of America*. Of her work a colleague writes, "Her book is wonderful. [She] knows well that one captures the imagination of students when tedious calculations and note-taking are removed from the classroom, and students explore ideas through creative methods: using technology, manipulating shapes by hand, recording patterns, making conjectures, or talking with partners. Her methods are pedagogically sound . . . ." A colleague at another institution wrote, "[Her] manual is an excellent resource for instructors of abstract algebra. Although the subject matter of this course is inherently abstract, the abstraction is the result of pulling together the common features of many concrete examples. Studying these concrete examples, students can develop an ability to recognize patterns, formulate and test conjectures, and begin to develop an intuition for abstraction. It is these skills that [her] manual is designed to foster." Another writes, "using the laboratory manual has completely changed, for the better, the nature of my abstract algebra course."

She presently serves as a member of the Editorial Boards of the *Mathematical Association of America* for the *Notes and Spectrum Series*. She is also a member of the *Committee on the Profession of the American Mathematical Society*.

**Barbara J. Steinson**, Professor of History, joined the faculty as Assistant Professor of History in 1978. She was promoted to Associate Professor in 1984 and Professor in 1992, and has served two terms as department chair. She graduated from Grinnell College in 1970 with a Bachelor of Arts in American Studies and earned her Master of Arts in 1971 and Ph.D. in 1977 in History from the University of Michigan. She served as a Visiting Professor of History at the University of Aberdeen in spring 2002.

Her areas of expertise, reflected both in a rich record of scholarly activity and an ever-expanding teaching repertory, include the range of U.S. women's history; twentieth-century America; women, war and peace; violence and non-violence; oral history and autobiography; legal history; rural history; the 1960's; and women's social and political movements. Students praise her command of her subject, her dedication to and excitement about teaching, her openness to their ideas and interpretations, and her innovative classroom techniques to stimulate learning and "make the academic material personally meaningful." She engages students directly with both primary sources and historiographical debates, pressing them to think critically and struggle with conflicts to develop their own interpretations. One student calls her class "a wonderful environment for students to openly discuss their ideas and to learn in a supportive, enthusiastic environment." "You can really get the feel of the decade," another writes. A third says, "She broke down stereotypes to make me view historical events and times from a different viewpoint." Colleagues agree that she is an "outstanding teacher" as well as a "superb researcher and writer," "indefatigable," "exemplary," "a crucial member of our community." One of the earliest to teach in women's studies at DePauw, and instrumental to its establishment, she remains a mainstay of the program and an inspiration to her colleagues.

In addition to her work as Assistant to the President during a time of growth, challenge, and change, she has been part of a wide range of curricular initiatives and has served on many committees to build and support the University's academic mission, including the Committee on Academic Policy and Planning (CAPP) and (CAPP's Winter Term Subcommittee), the Public Occasions Committee, the Hartman Center Advisory Board, the Compton Center Advisory Committee, the Conflict Resolution Committee, the Latin American Studies Committee (co-chair), the Asian Studies Planning Committee (co-chair), Pub Board, and the University Priorities Committee. She has held every officer role in Division IV; has served on the Advisory Board for the GLCA-recognized Scotland program; and (as part of 25 years of service) has chaired or co-chaired the Women's Studies Committee four times. Of the qualities she brings to this quantity of service one colleague writes, "She is intense, intelligent and knowledgeable about DePauw University .... Even with her many committee experiences, she remains a positive voice for DePauw faculty during a time when I have seen many faculty become cynical." Another writes, "Barbara has been an important mentor, teacher, and friend to many faculty members and students over the years. She has been a steady, productive scholar even during years when the demands of family life and teaching would appear to make scholarship impossible, and she has contributed to the health and evolution of DePauw as an institution." Yet another writes, "Having come to experience the pervasiveness of her moral and ethical courage, and the depth and seriousness with which

she approaches academic life ... I feel fortunate that I am a colleague of hers, and that she has chosen education as a career.”

Professional colleagues recognize her for landmark work in several areas of U.S. Women’s History. Her first book, *American Women’s Activism in World War I*, appeared in 1982; she is currently preparing a revised and expanded second edition under contract to University of Illinois Press. In the words of one reviewer, this work “exemplifies the best and finest historical scholarship [and] is extraordinarily well-researched in manuscript sources... [Steinson] was among the first in our field to move away from the notable woman approach to women’s history... her articles and book on that subject are still required reading for students and scholars of twentieth-century United States history.” Another calls it “very persuasive in showing how the ideology of ‘nurturant motherhood’ could be used for different, even opposing objectives...equally important is the manner in which she shows both the liberating and confining consequences of this ideology.” Another concludes, “Her book sets the standard for the study of women and gender in peace activism and developing paradigms that dominated that field for more than a decade [and] remains as the only study that compares women’s pro and anti war work and one of the most inclusive studies of white middle-class women’s political activity in that period.” Finally, an eminent Americanist remarks simply that the book “has held up over the years” and that the revised edition “will attract a new generation of readers, and will stand on its own as an important contribution to women’s historiography as well as to the history of the United States in the 20th century.”

Her current project on Rural Women in Indiana has been supported by a major grant from the Indiana Historical Society for development of a book-length manuscript, as well as being awarded a DePauw Faculty Fellowship. The painstaking archival work involved has already borne fruit in several conference presentations and articles regarded as definitive in this new and developing field; since women’s historians have neglected twentieth-century rural women, while rural historians have often overlooked women, this is (in the words of a scholarly colleague) “scholarship that is desperately needed and sought ... it will be eagerly read,” not least because of her “superb writing skills.”

An impressive variety of shorter work between the two books, including encyclopedia entries that are mini-essays, conference papers and articles, essays in three encyclopedias, and twenty-three book reviews on topics ranging from the history of birth control in America to Hoosier Homemakers to Mae West, attests to the wide breadth of her intellectual interests and the esteem in which she is held by colleagues in her field. She is co-president of the Rural Women’s Studies Association, which DePauw currently hosts, has been president and Vice President of the Indiana Association of Historians, and serves on the editorial boards of *Peace and Change* and of the *Indiana Magazine of History*. Finally, as part of the Preparing Future Faculty program at Indiana University, she communicates to the next generation of graduate students her passion for the classroom and her commitment to the liberal arts college career: the balancing act of teaching, scholarship, and service she has done so well for a quarter of a century.