National Association of Mathematicians

Newsletter

Volume XLIII   Number 1   Spring   2012

Contents

Mathematical Light

New PhD's @ JMM 2012

On January 6, new doctoral recipients in mathematics enlightened the NAM community with their research at NAM's *Granville-Brown-Haynes Session* at the Joint Mathematics Meetings (JMM).

Left to right: Terrence Blackman (Medgar Evers College CUNY), Kendall Williams (United States Military Academy), Torina Lewis (Bethune-Cookman University), Lois Simon (Howard University), Dennis Dean (Harvard Medical School), and Rhonda Ellis (Norfolk State University).

The National Association of Mathematicians (NAM)

publishes the NAM Newsletter four times per year.

From the Editor

I grew up in the inner city of Evansville, Indiana. It was not until I became a mathematician that I had learned that the first black in the world to earn a PhD in mathematics, Elbert Frank Cox, grew up in my 'hood. I find myself working in the same great halls of Howard University where he spent his career. As I sit through departmental meetings, my eyes wander often and then settle on Cox's picture that hangs on the wall (see right). I am honored to have walked in his path from Evansville to Howard, and I am delighted that I have caught a glimpse of his mathematical light.

After Sylvia Bozeman gave a fantastic presentation at the recent NAM banquet, the audience burst into applause and asked for more. Her presentation slides can be found on NAM's webpage and on page 3, she shares her expertise on creating mathematicians. As amplified in the Georgetown report, her efforts are sorely needed (page 5). Mathematical outreach is expressed in various ways. We can share the mathematics of operations research with the community (page 6) while Paulus Gerdes and Ahmed Djebbar share a history of mathematics in Africa (page 7). Trachette Jackson's beacon in mathematics has been honored with a Simons Fellowship which will further support her research endeavors (page 8). Students who excel in

mathematics will be able to take advantage of two new scholarships named in honor of Gerald Chachere and Thyrsa Svager (page 8). We acknowledge the noble efforts of the REGISTRY and the Math Institutes to broaden participation in mathematics (page 9). Engagement in mathematicians is encouraged via the David Blackwell Memorial Conference and the NAM Speakers Bureau (page 10). At the Joint Mathematics Meetings 2012, NAM hosted many events (page 11). Much work must be done to move NAM forward so I ask NAM members to be pensive when considering taking an official role in NAM (page 12).

At Cox's dedication ceremony, Gina Moore sang a song eloquently that encouraged everyone, just as Cox did, to "carry your candle, run to the darkness, seek out the hopeless, confused and torn. Hold out your candle for all to see. Take your candle, and go light your world."

Enjoy!

Talitha Washington and Elbert Frank Cox

Growing Mathematicians and Scientists

Sylvia Bozeman

Sylvia Bozeman

In her historical account of the sciences at Spelman College, Dr. Etta Falconer paints a vivid picture of the situation in the 1970's with stand-alone departments only in mathematics and biology, and a chemistry course which served as the home economics and physical education majors. She points out the uninviting science building, little visibility of science in the College's publications, few science graduates, and little discussion on the campus of any role for women in the sciences. Dr. Falconer wrote, "As a result of the lack of college emphasis on science in 1971, only 10 percent of the students were seeking science majors and less than 9 percent of degrees awarded were in the sciences." Under the initial leadership of Dr. Shirley McBay, and later with Dr. Falconer, the faculty at Spelman College developed a vision and a plan for what could be accomplished to increase the participation of African American women in the sciences. The vision of these pioneering African American female mathematicians created a more welcoming environment; new pathways into science with additional majors, departments, and courses of study; and a nurturing environment with exposure to role models and mentors.

I am presenting the evolution of mathematics and science at Spelman College as a case study; one that illustrates the power of a vision and a plan. Even more so, I hope to identify some challenges that are common to students from underrepresented populations as they contemplate the study of mathematics, and show how this college and its faculty met those challenges.

Beginning with the formation of a Division of Natural Sciences chaired by Dr. McBay, the college

- **Identified the challenges and obstacles** faced by its population of African American women; and
- **Found, through exploration, some common strategies** that would address the challenges and overcome the obstacles. Through an arduous yet rewarding process, the college was able to create a place where African American women were inspired to choose majors and pursue careers in science, engineering and mathematics (SEM).

In 2009, Congressman Rubén Hinojosa (left), Sylvia Bozeman (center), Carlos Castillo-Chavez (right), and David Bressoud (not pictured) presented at the MAA Congressional briefing on the need to increase the participation of underrepresented minorities in SEM.

Mathematical Challenges

The academic program in the Mathematics Department has remained traditional in its requirement of proof-oriented courses for all mathematics majors. The department also provided a significant array of service courses for the more than 30% of the students who eventually majored in SEM areas in addition to the general education requirements of other students. As such, the mathematics curriculum has evolved to include applications, uses of technology, and a commitment to preparation for graduate education.

There are many challenges that may affect adversely the desires of the students and their interests in pursuing careers in mathematics. Current challenges in mathematical achievement at the collegiate level include the decline in algebra skills among high school graduates as well as the often inappropriate dependency on calculators. Although quite visible to faculty, these challenges seem to have less impact on the students' *desire* to study mathematics.

In order to capture and cultivate mathematical interest, we must understand the not-so-visible challenges that confront students — especially those students from groups currently underrepresented in the mathematics community. The challenges of students that the faculty and administration had to address at Spelman College in the 1970's and 1980's included:

- Low visibility of role models in mathematics (among people of colors and among women);
- No sense of belonging in science and mathematics (often related to the lack of role models);
- Lack of nurturing environments and supportive communities for SEM studies, with little expression of confidence in the abilities of students;
- Lack of self-confidence; and
- Financial needs that required students to work.

Also, the college had to create and develop an infrastructure to support a strong academic program in the sciences and mathematics.

Strategies

To overcome these challenges, the college structured a variety of special programs aimed at student recruitment, retention, and enrichment in SEM areas. Many programs required collaboration across all departments in the science division — a strategy which proved advantageous in uniting newer, smaller, and older departments in common efforts. Eventually, some common strategies emerged and

became standard parts of subsequent creations as the faculty learned "what works."

In the recent *NAM Cox-Talbot Lecture* at the Joint Mathematics Meetings 2012, I presented some of these strategies as **"six lessons learned"** which cultivated mathematicians and scientists among Spelman women. Although some of these innovative strategies proved to be effective across all SEM areas, they are, in particular, essential for growing mathematicians.

1. **Summer Pre-Freshman Programs.** Many students needed a pre-freshman summer experience to help make the transition to college. This experience introduced the students to campus, to good study skills, and to a cohort of other math and science students. It also helped them find their place in a college environment and it strengthened their commitment to the SEM disciplines.

2. **Recruitment of majors.** Students who exhibited a good background, interest, or potential in mathematics were invited by faculty (especially in calculus classes) and encouraged by other majors to consider a major in mathematics. This personal invitation encouraged students to continue their studies in mathematics. We also found that math majors who work for the department were good ambassadors and they recruited on their own.

3. **Space for creating a community.** For many years the *Spelman Mathematics Laboratory* has employed upper-level students to provide free tutorial services for students in lower-level mathematics courses. The lab also serves as a space where the math majors 'feel ownership' and where they gather to help each other. Working for the mathematics department also gives them a stronger sense of connection to the department and its faculty.

4. **Faculty advising and mentoring.** Instead of having academic advising offices, faculty advising is a college-wide expectation. Moreover, some additional mentoring is effective in helping students to learn about careers in industry and academia. Mentoring was therefore built into each new funded program.

5. **Scholars programs.** The establishment of scholars programs increased a sense of community among the better students. These scholarships addressed financial need which limited off-campus employment. Scholarship programs were designed to give each participant a work assignment under faculty supervision that introduced the student to research. This included reading papers which lead to research projects. We continue that strategy in 2011-12 with the identification of scholars in a new *Math Research and Mentoring Program* (Math RaMP) under the leadership of Dr. Tasha Inniss.

6. **Undergraduate research.** Many students don't really know what it is like to be a mathematician. Most have not known mathematicians in their earlier lives with whom they were able to discuss career options. An early introduction to the activities of a mathematician—research, technical writing, and conference presentations—gives students an opportunity to 'feel like a mathematician'. This, in some ways, can make up for the absence of role models and earlier relationships. Research on campus during the academic year was supplemented by assistance with the identification of summer REUs on- or off-campus, an annual day for research presentations on campus, and travel funds for students to present their work at conferences.

The Results

The 1970's plan of Spelman College was a targeted approach to addressing the low numbers of women in the sciences. These six aforementioned strategies were among the principal ones found to be effective in recruiting students to mathematics and other SEM disciplines, retaining them, and inspiring many of them to enroll in graduate programs. By 1991, more than 6% of the graduates were earning degrees in mathematics (while the rate nationwide was at 1.6%). The 2004 commencement included 27% of the graduates as SEM majors. Over the period from 2000-2004, an average of 30 students each year earned bachelor's degrees in mathematics (approximately 6.6% of the college's graduates), while 6 or 7 of these also earned a second bachelor's degree in engineering through a partnering institution.

The 1990's produced many mathematics majors who earned graduate degrees in pure mathematics, applied mathematics, mathematics education, statistics, or engineering. Many of these went on to earn doctorate degrees. Of the 16 graduates whose whereabouts I can identify among the 32 class of 1993 mathematics graduates, 14 have earned graduate degrees, including 4 doctoral degrees in pure mathematics, applied mathematics, or engineering. In 2009 at least 5 former math majors earned the doctorate degree in mathematics, statistics, or engineering. In 2008, the National Science Foundation (NSF) named Spelman

In 2002 the Albro-Falconer-Manley Science Center at Spelman College was dedicated. The biology, chemistry, physics, mathematics, and computer sciences departments are also housed in the center. The building supports collaboration and cross-disciplinary research and teaching among science faculty.

Tanya Moore, Leona Harris, and Kimberly Weems presented Sylvia Bozeman the Dr. Etta Z. Falconer Award for Mentoring and Commitment to Diversity at the Infinite Possibilities Conference 2007.

College as the number two baccalaureate-origin institution for African American doctoral degree recipients in science, mathematics, and engineering.

Conclusion

In 2005, the Spelman College Department of Mathematics hosted the *Infinite Possibilities Conference*, the first-ever national gathering designed to celebrate, promote, support and encourage underrepresented minority women mathematicians. Spelman alumnae Drs. Tanya Moore (C'95) and Leona Harris (C'95) co-chaired this event. The steering committee consisting primarily of Spelman mathematics alumnae, and Dr. Nagambal Shah provided faculty support. When asked why this conference was needed, Moore said, "Women throughout history have battled for the opportunity to develop their minds and showcase their talents to their fullest potential in society without prejudice. I believe that future generations of women need to see more positive, successful role models that look like them. As they become mathematicians and scientists, participating in quality educational programs will enable them to realize their potential so that they may add value to the areas of science and mathematics."[3]

Many of us have probably heard the familiar saying in some form, "If you fail to plan then you are planning to fail." Although the faculty at Spelman College had no plans to fail, they could not have imagined the success their efforts would bring in time. Likewise, as we all plan and work toward growing a new generation of mathematicians within the African American, Hispanic, and Native American populations in the US, we cannot imagine what our efforts will one day produce.

References

[1] A Story of Success: The Sciences at Spelman College, by Etta Z. Falconer. *SAGE: A Scholarly Journal on Black Women,* Vol. VI, No. 2 (Fall 1989), The Sage Women's Educational Press, Inc., 1990, 36-38. (Issue edited by Ronald Mickens)

[2] Role of HBCUs as Baccalaureate-Origin Institutions of Black S&E Doctorate Recipients. *InfoBrief*, National Science Foundation, NSF 08-319 (August 2008).

[3] Experiences in Attracting Women to Mathematics at Spelman College, by Sylvia T. Bozeman and Colm Mulcahy. (Based on MAA MathFest talk, August 2005).

Historical Note

Spelman College is a four-year private liberal arts Historically Black College for women in Atlanta, Georgia with 2100 students. Early mathematics faculty who are credited with building the Spelman College mathematics program prior to the 1970's include Dr. Georgia Caldwell Smith (the 4th African American woman to earn the doctorate in mathematics), Dr. Shirley McBay (12th) , Dr. Etta Falconer (16th) and Dr. Gladys Glass (19th?).

Sylvia Bozeman is a Professor in the Department of Mathematics at Spelman College. She is a lifetime member of NAM. She can be reached at sbozeman@spelman.edu.

A STEM Report from Georgetown University

In October of 2011, the Center on Education and the Workforce at Georgetown University released a report on science, technology, engineering, and mathematics (STEM). This report found that, even though 14% of African American students declare a major in the STEM fields, only 5% graduate with a degree in the STEM fields while just 2% continue to work in a job related to the STEM fields. They assert that this may be caused by a "lack of mentors, lack of peer support, discriminations, and unwelcoming classroom climates."

The report goes on to say that, even though African Americans make up 12% of the total workforce and Latinos make up 16%, African Americans and Latinos each make up 6% of the STEM workforce. In STEM occupations, Asians earn an average of $7,000 more than whites, and more than twice the salary earned by African Americans

and Latino workers. As listed on the report's web site, "STEM occupations are critical to our continued economic competitiveness because of their direct ties to innovation, economic growth, and productivity, even though they will only be 5% of all jobs in the U.S. economy by 2018."

GEORGETOWN UNIVERSITY
Center
on Education
and the Workforce

The STEM report has received major media coverage in the *New York Times*, *Washington Post*, *U.S. News and World Report*, *Inside Higher Ed*, and *The Chronicle of Higher Education*. For more information, the report is available online at http://cew.georgetown.edu/STEM. Hard copies can be obtained by contacting the Center at cewgeorgetown@georgetown.edu.
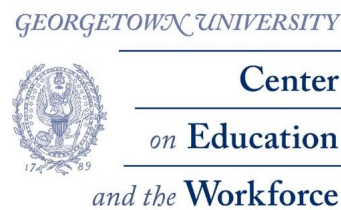
Community-Based Operations Research

Michael P. Johnson and Lee Stenson

Operations research (OR), also known as 'management science' (MS) and 'decision modeling,' is a discipline devoted to (1) the representation of real-world physical and social phenomena and systems through mathematics, and (2) the design of prescriptions and guidelines to achieve a variety of operational and policy goals through improved decision-making. OR has its roots in applied mathematics, engineering, and the physical sciences. Despite its common association with many private-sector problems, OR also has a long history of significant public-sector applications. Recent improvements in computing resources have enabled OR to make significant impacts in business analytics, financial planning, production analysis, quality control, profit optimization, and system testing and evaluation. Public-sector problems have played a special role in the theory and practice of OR. The new edited volume, *Community-Based Operations Research: Decision Modeling for Local Impact and Diverse Populations* (M. Johnson, Ed., 2011), features many novel public-sector applications.

To motivate the topics covered in this book, we review some military applications of operations research, which, along with production and logistics, form the foundation of operations research. Since World War II, the U.S. military has used OR methods to find better solutions to difficult problems in material and troop transport, weapons design, operational tactics, and evaluations of the effectiveness of various campaigns.

Pioneers such as Philip Morse, George B. Dantzig and Bernard O. Koopman are well-known in the profession for having developed many models and methods that are used currently. Less-known, however, is Ernest Wilkins Jr., an African American mathematician, operations research analyst, and physicist who contributed to the famous *Manhattan Project* that developed the first atomic bomb.

As an example of the type of problems encountered by the United Kingdom, the U.S., and other allies during WWII, we encourage the reader to learn about the problem of an aerial search for a surface (ocean) target as developed by Phillip Morse in his classic work *Methods of Operations Research* (Morse and Kimball, 1951).

Even in a modern era of high speed computers, the work of pioneers, such as Koopman, live on in day-to-day operations in certain places which only a few people know about. As a prime example, the Search and Rescue (SAR) manual used by the U.S. Coast Guard is based on the search patterns and search theory developed by Koopman in his classic text *Search & Screening* (1980).

Since the early 1950s, OR has become an essential component of planning, analysis and operations for private companies, government, the non-profit sector, and the military. It is a staple of business school curricula and the foundation of departments of industrial engineering and operations research. OR also provides important methods and applications to diverse fields in engineering, geography, and planning. Examples of the many key textbooks in this area include Winston and Venkataraman (2004) as well as Hillier and Lieberman (2009). Recently, this field has broadened its reach to encompass 'business analytics', or the process of data acquisition and analysis for improved decision-making (see, e.g., Davenport, Harris, and Morrison, 2010).

There are many applications of OR to public-sector problems, including energy, public safety transportation, health care (Pollock, Rothkopf ,and Barnett, 1994), and urban services (Larson and Odoni, 2007). However, little research has been done to apply OR to the problems encountered at the local (community) level, where problems related to education, crime, health, and public services have their greatest impact on residents. Not surprisingly, this is also where solutions to long-standing problems can appear most difficult. For example: How can we design school assignments to balance the needs of parents, students, and administrators? How can we identify persons 'at risk' for criminal offending before the intervention of the criminal justice system? What configurations of public parks will ensure access to recreation to support the health of individuals and neighborhoods?

'Community-based operations research' (COBR) is used to refer to multiple methods and applications from the decision sciences which are designed specifically to address provision of goods and services. It can also be used to prescribe social policy actions for which stakeholders are defined as localized (either in a spatial or social sense); or for individuals who are considered disadvantaged or underserved; or even for those whose issues of equity or social influence are important considerations.

The text *Community-Based Operations Research: Decision Modeling for Local Impact and Diverse Populations* (http://www.springer.com/business+%26+management/operations+research/book/978-1-4614-0805-5) draws together research topics of interest to communities which, in many cases, do not have a voice in matters that effect their equity and/or financial well-being. The authors of the various chapters are as diverse as the topics contained in the text; some work in academia, while others are active duty military personnel.

Michael Johnson

Lee Stenson

It seems that the greatest common factor of the authors of this text is a desire to improve conditions for local communities by providing a voice that utilizes the dynamic, omni-directional structure of operations research methods to develop strategies that are equitable for all persons.

The first two chapters of the book present history, theory, and contemporary applications of CBOR. The second chapter includes two case studies of CBOR applications to food security and affordable housing. The remaining eleven chapters develop the theory of CBOR in equity and operations management for community-based organizations by illustrating its applications in facility location and spatial analysis, minorities and disadvantaged groups, and service delivery. OR/MS methods used in the book include mathematical programming, stochastic processes, decision theory, computer simulation, and geographic information systems.

Specific applications of interest include public health (identification of areas at increased risk for lead exposure), public transportation (design of pricing policies for low-income riders), public recreation (design of public parks for urban and lower-income communities), personal services (hair care for women of color), and public safety (identification individuals and communities of increased risk for criminal offending).

We hope that this book will help teachers identify and share novel applications of operations research with their students. This, in turn, will encourage young people to pursue careers in science, technology, engineering, and mathematics. In addition, we hope that researchers continue developing novel applications of OR to benefit disadvantaged communities so that practitioners and residents find new ways to address the challenges they face in building strong communities.

References

Davenport, T.H., Harris, Jeanne G. and Robert Morison. 2010. *Analytics at Work: Smarter Decisions, Better Results*. Cambridge, MA: Harvard Business Review Press.

Hillier, Frederick S. and Gerald J. Lieberman. 2009. *Introduction to Operations Research, 9th Edition*. New York: McGraw-Hill Science/Engineering/Math.

Koopman, Bernard O. 1980. *Search and Screening. General Principles with Historical Applications*. Oxford: Pergamon Press.

Larson, Richard C. and Amadeo R. Odoni. 2007. *Urban Operations Research, 2nd. Edition*. Charlestown, MA: Dynamic Ideas

Morse, Philip M. and George E. Kimball. 1951. *Methods of Operations Research*. Cambridge, MA: Technology Press. Reprinted in 2003 by Dover Publications.

Pollock, S.M., Rothkopf, Michael H. and Arnold Barnett (Eds.). 1994. *Handbooks in Operations Research and Management Science, Vol. 6: Operations Research and the Public Sector*. Amsterdam: North-Holland.

Winston, W.L., and M. Venkataraman. 2003. *Introduction to Mathematical Programming: Operations Research, Volume 1, 4th Edition*. Pacific Grove, CA: Brooks/Cole.

Michael Johnson is an Associate Professor in the Department of Public Policy and Public Affairs and the Director of the Public Policy PhD Program at University of Massachusetts Boston. He can be reached at michael.johnson@umb.edu. Lee Stenson is an Operations Research Analyst and Lieutenant Commander at the U.S. Coast Guard in Washington, DC. He can be reached at Lee.B.Stenson@uscg.mil.

New Book on the History of Mathematics in Africa

In October of 2011, Paulus Gerdes and Ahmed Djebbar published a two-volume book entitled "History of Mathematics in Africa: AMUCHMA 25 Years". The book reproduces the thirty-seven newsletters published by AMUCHMA (African Mathematical Union Commission on the History of Mathematics in Africa) since its birth in 1986. The book celebrates the 25 years of AMUCHMA by giving a vivid picture of the activities that took place, including the studies done by the organization, queries, sources, professional meetings, lectures, dissertations written by members, and other publications.

The book contains Prefaces written by Professor Saliou Touré (President of the African Mathematical Union), Professors Craig Fraser and Elena Ausejo (Chair and Secretary of the International Commission for the History of Mathematics), and Professor Eberhard Knobloch (President of the International Academy of the History of Science). Professors Aderemi Kuku (President from 1986 to 1995 and Honorary President of the African Mathematical Union) and Jean-Pierre Ezin (Commissioner for Human Resources, Sciences and Technology of the African Union) wrote the Afterwords.

Saliou Touré stated, "I hope that this book will rapidly become reference material for use by teachers and students of the history of mathematics and all those interested in Africa's many contributions to the advancement of science in general and mathematics in particular."

For more information, see:

Ahmed Diebbar is the Secretary of AMUCHMA, former Minister of Education and Science of Algeria, and Professor Emeritus at the Université de Lille 1 in France. He can be reached at Ahmed.Djebbar@wanadoo.fr. Paulus Gerdes is the Chairman of AMUCHMA, former President of the Universidade Pedagógica in Mozambique, and Vice-President of the African Academy of Sciences. He can be reached at paulus.gerdes@gmail.com.

Dr. Trachette Jackson Awarded a Simons Fellowship

Dr. Trachette Jackson, Professor of Mathematics at the University of Michigan, has been awarded a Simons Fellowship for the 2012-2013 academic year. The Simons Foundation Division for Mathematics and the Physical Sciences provides funds to faculty for up to a semester long research leave from classroom teaching and administrative obligations.

As quoted on the web site, the goal of the Simons Fellows Program is to make it easier to take such leaves, or to extend sabbatical leaves by an extra half year. The program provides salary replacement for up to 50% of the Fellow's current academic year salary and up to $10,000 for expenses related to the leave.

Awards are based on the applicant's scientific accomplishment in the five-year period preceding the application, and on a judgment of the potential scientific impact of the leave period. Grants awarded in 2011 were restricted to those wishing to extend a 1-semester sabbatical leave to a full academic year. This is the inaugural year of the Simons Fellows Program in Mathematics and Theoretical Physics; the program awarded 77 fellowships in all.

Trachette Jackson

Another call for applications to this program will be made in the fall of 2012.

A complete list of the 2012 Simons Fellows in Mathematics can be found at:

https://simonsfoundation.org/mathematics

Announcing Two Scholarships: Chachere and Svager

The Gerald Chachere Award for Excellence in Mathematics

The Howard University Department of Mathematics is pleased to announce the creation of an endowed scholarship fund *The Gerald Chachere Award for Excellence in Mathematics.* This award honors the one of Howard's former faculty members, the late Dr. Gerald Raphael Chachere.

Gerald Chachere

Fundraising for the award was launched at Howard University in the summer of 2011 by Dr. Fern Hunt along with Howard mathematics faculty as well as friends of Chachere. Thus far, $13,150 has been donated. A campaign to increase this fund to at least $21,000 has begun. We invite members of the mathematical community to contribute generously to the fund.

Chachere earned a doctorate in mathematics from the University of California, Berkeley in 1977. That same year, he became a faculty member at Howard University. He passed away on December 14, 2001 when he was an Associate Professor of Mathematics at Howard. His research interest was numerical analysis.

To donate to the fund, please write your check to "The Gerald Chachere Award for Excellence in Mathematics (Howard University)" and send it to:

Dr. Crepin Mahop (Attn: Chachere Award)
Department of Mathematics
Howard University
Washington, DC 20059

For more information, please email Dr. Crepin Mahop, Director of Undergraduate Studies in Mathematics at Howard University, at cmahop@howard.edu.

Thyrsa Frazier Svager Scholarship

The Dayton Foundation established a *Thyrsa Frazier Svager Scholarship* that provides a $2,000 scholarship for African American females majoring in mathematics who attend either Central State University, Wilberforce University, Wright State University, the University of Dayton, Howard University or Spelman College. Aleksander Svager established the scholarship in memory of his wife, Thyrsa Frazier Svager, former provost and executive vice president of Central State University.

Aleksander Svager and Thyrsa Frazier Svager

In 1965, Svager earned a PhD in mathematics from The Ohio State University. She was the 10th African American woman to earn a PhD in mathematics. As a senior at Antioch College (1950-51), Thyrsa Svager obtained a very high score on the Graduate Record Exam (GRE). At the time of her professional retirement in 1993, no other Antioch student had made a score as high as hers. For more about Svager, see the article *Spotlight on a Mathematician: Thyrsa Frazier* by Johnny Houston that was printed in *NAM Newsletter* 43.2, summer of 2000.

For more information about the scholarship, contact Elizabeth Horner at ehorner@daytonfoundation.org or see www.daytonfoundation.org.

Editor's Note

When Coretta Scott contemplated marriage she sent a letter to her former Antioch classmate, Thyrsa Svager, asking for advice. Svager encouraged her to marry the extraordinary man she had met in Boston, Martin Luther King.

The REGISTRY

Paul S. Ruiz

The *National Registry of Diverse & Strategic Faculty*, known as the REGISTRY, connects prospective and current faculty members from underrepresented groups with institutions that seek highly qualified candidates for open faculty positions. As the premier database of diverse and strategic faculty candidates supported by Texas Tech University, The REGISTRY provides a diverse and qualified pool of faculty candidates to colleges and universities around the country.

The REGISTRY provides an online database for candidates from underrepresented groups to enter their relevant educational and employment information, as well as the ability to search job postings listed by subscribing institutions and create Job Alerts notifying candidates of new jobs posted in their area of expertise. There is **no charge** to candidates for this service. Once a candidate's information is uploaded, subscribing institutions can contact directly those candidates in whom they are further interested.

Institutions pay an annual subscription fee online for the ability to post unlimited open faculty positions, search the candidate database, and create Candidate Alerts. Subscriptions run throughout the academic year (September – July).

Advertisements are placed in *The Chronicle of Higher Education* and similar publications inviting current and prospective faculty members from underrepresented groups interested in open faculty positions at the subscribing institutions to participate in The REGISTRY. Also, The REGISTRY contacts current female and minority faculty members directly at colleges and universities across the country, PhD candidates, minority graduate student associations, and college/university graduate student offices. As of mid-November 2011, the website boasted over 850 candidates and 100 subscribing institutions.

To become a part of *The National Registry of Diverse & Strategic Faculty*, see www.theregistry.ttu.edu.

Historical Note

In the summer of 1985, the National Minority Faculty Identification Program was inaugurated by Southwestern University in Georgetown, Texas. This served as a bridge between minority faculty candidates seeking employment and institutions of higher education. In July 2010, the Program was transferred to the Division of Institutional Diversity, Equity & Community Engagement at Texas Tech University.

Paul S. Ruiz is the Assistant Director in the Division of Institutional Diversity, Equity & Community Engagement at Texas Tech University. He can be reached at (806) 742-2369 or by email at theregistry@ttu.edu.

Math Institutes Promote Diversity

There are eight NSF funded Mathematical Sciences Institutes that have a wide rage of exciting, cutting-edge programs. They are:

1. AIM (American Institute of Mathematics)
   http://www.aimath.org
2. IAS (Institute for Advanced Study)
   http://www.math.ias.edu
3. ICERM (Institute for Computational and Experimental Research in Mathematics)
   http://icerm.brown.edu/
4. IMA (Institute for Mathematics and its Applications)
   http://www.ima.umn.edu
5. IPAM (Institute for Pure and Applied Mathematics)
   http://www.ipam.ucla.edu
6. MBI (Mathematical Biosciences Institute)
   http://www.mbi.osu.edu
7. MSRI (Mathematical Sciences Research Institute)
   http://www.msri.org
8. SAMSI (Statistical and Applied Mathematical Sciences Institute)
   http://www.samsi.info

The institutes formed a Diversity Committee to lead efforts in broadening participation in mathematics. The members are Alejandro Adem (PIMS), David Auckly (MSRI), Georgia Benkart (AWM), Helen Chamberlin (MBI), Mel Currie (NSA), Chantal David (CRM), Pierre Gremaud (SAMSI), Leslie Hogben (AIM), Barbara Lee Keyfitz (Fields), Brenda Latka (DIMACS), Suzanne Lenhart (NiMBioS), Janis Oldham (IAS/PCMI), Jill Pipher (ICERM), Christian Ratsch (IPAM), Nell Sedransk (NISS), and Cheri Shakiban (IMA).

Over the years, the institutes have sponsored workshops that promoted diversity such as the *Infinite Possibilities Conference Short Course, Blackwell Tapia, Spring Opportunities, Careers for Women, Careers for Minorities,* and *Modern Math*. On each institute's website, there are many opportunities to engage in mathematics. At the institutes, participants range from undergraduate students to faculty to high school teachers and funding is often provided for the participants. For more information, see

http://www.mathinstitutes.org/diversity.php#

Among the institutes, *there is definitely an exciting program for everyone!*
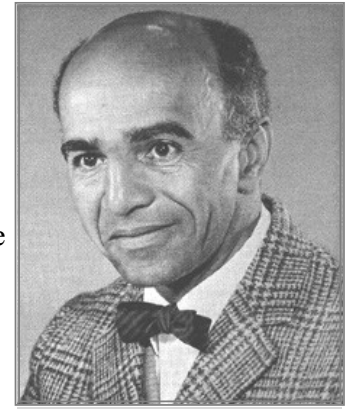
David Blackwell Memorial Conference

On April 19 and 20, 2012, the Department of Mathematics at Howard University in Washington, DC will host the *David Blackwell Memorial Conference.* Dr. David Blackwell, a mathematician and statistician, made phenomenal contributions to probability theory, statistics, and game theory. He was the first black scholar to be admitted to the National Academy of Sciences. He passed away on July 8, 2010 at the age of 91. Even though he encountered difficulties which African Americans experience in society in general and the mathematical community in particular, he prevailed to become one of the greatest African American mathematicians.

This two-day conference will bring together leading mathematicians, statisticians, and research scientists to recognize Blackwell's myriad contributions to multiple areas in mathematics. The conference will begin with a series of talks on the morning of Thursday, April 19. On Thursday evening, there will be a graduate student poster session. Talks will continue on Friday, and there will be a banquet on Friday evening.

The invited speakers include Peter Bickel (University of California, Berkeley), George Bonney (Howard University), Lawrence D. Brown (University of Pennsylvania), Carlos Castillo-Chavez (Arizona State University), Thomas M. Cover (Stanford University), Nathaniel Dean (Texas State University/National Association of Mathematicians), James Donaldson (Howard University), Nancy L. Geller (National Institute of Health), Donald A. Martin (University of California, Los Angeles), William Massey (Princeton University), Isaac Meilijson (Tel Aviv University), Sastry Pantula (National Science Foundation), Giovanni Parmigiani (Harvard School of Public Health), Steven Shreve (Carnegie Mellon University), Daphne Smith (Alere Health), William Sudderth (University of Minnesota), Richard Tapia (Rice University), Sergio Verdu (Princeton University), and Scott Williams (University at Buffalo, The State University of New York).

David Harold Blackwell

Blackwell was born on April 24, 1919 in Centralia, Illinois. He entered the University of Illinois in 1935 at the age of 16, and then went on to earn a bachelor's degree in mathematics in 1938. Continuing at the University of Illinois, he obtained his Master's degree in 1939 and his PhD in 1941 at the age of 22. He is the seventh African American to earn a PhD degree in mathematics. He came to Howard University in 1944 and, in just three years, he was appointed to full professor and head of the Mathematics Department. When Blackwell came to Howard, he joined a powerful department that included the first, second, and third African Americans who earned a PhD in mathematics. They were Elbert Frank Cox (PhD in 1925, Cornell University), Dudley Woodard (PhD in 1928, University of Pennsylvania) and William S. Claytor (PhD in 1933, University of Pennsylvania). Later, in 1976, Howard University established the first PhD program in mathematics at a Historically Black College and University.

This significant event, organized by the Department of Mathematics at Howard University in collaboration with the University of California, Berkeley, Carnegie Mellon University, and the American Statistical Association, celebrates Blackwell's legacy as well as the advances he made in mathematics and statistics. Funding for the *David Blackwell Memorial Conference* is generously provided through grants from the National Science Foundation and the Army Research Office.

For registration, poster submission and housing information see:

https://sites.google.com/site/conferenceblackwell

For further information, contact Talitha Washington via email at talitha.washington@howard.edu.

NAM Speakers Bureau

The dissemination of mathematics is important to our nation's culture. With the advent of television shows such as *Numb3rs* and policies such as Obama's initiatives in the STEM fields, it is important that our nation learn as much about mathematics as possible. Moreover, the lack visible underrepresented minorities showcasing intellectual talent is detrimental to our mathematical community, in particular, and our nation, in general.

To remedy this situation, the National Association of Mathematicians (NAM) has a speakers bureau service that features prominent members of NAM. We are in the process of updating this bureau. The featured speakers will be featured on NAM's website so that schools and organizations may contact the speaker about giving a presentation. The speakers will work directly with requests and NAM will feature the speakers on NAM's website at no cost.

If you would like to participate, please email requests to editor@nam-newsletter.org. Please send your name, curriculum vitae, photo, website address, and titles of presentations that you can give along with corresponding abstracts.

# NAM at the 2012 Joint Mathematics Meetings

Granville-Brown-Haynes Session of Presentations by Recent Doctoral Recipients in the Mathematical Sciences presenters included (left, going counterclockwise) Drs. Lois Simon (Howard University), Terrence Blackman (Medgar Evers College CUNY), Dennis Dean (Harvard Medical School), Rhonda Ellis (Norfolk State University), Kendall Williams (United States Military Academy), and Torina Lewis (Bethune-Cookman University).
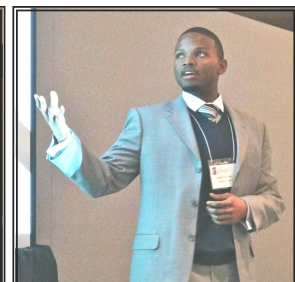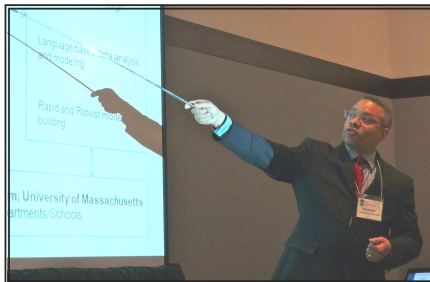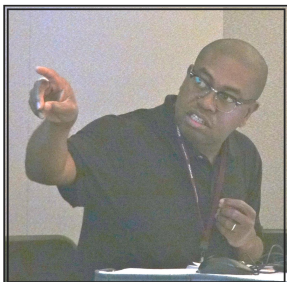
NAM Cox-Talbot Invited Address (left) was given by Dr. Sylvia Bozeman (Spelman College). Dr. Nathaniel Dean, NAM President, awarded her with NAM's Lifetime Achievement Award. See page 3.

NAM Claytor-Woodard Lecture (right) was given by Dr. Aderemi Kuku (Grambling State University). His presentation was entitled "Profinite (Continuous) Equivariant Higher Algebraic K-theory for the Action of Algebraic Groups."
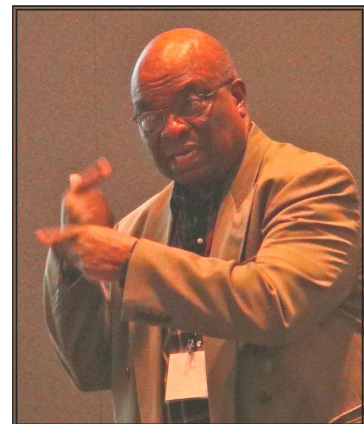
Panel Discussion (below) on "Themes on the Undergraduate Preparation of Contemporary Mathematics Graduate Students" included Drs. Edray Goins (Purdue University), Leslie Hogben (Iowa State University), Philip Kutzko (The University of Iowa), and Abdul-Aziz Yakubu (Howard University) with moderator Duane Cooper (Morehouse College).
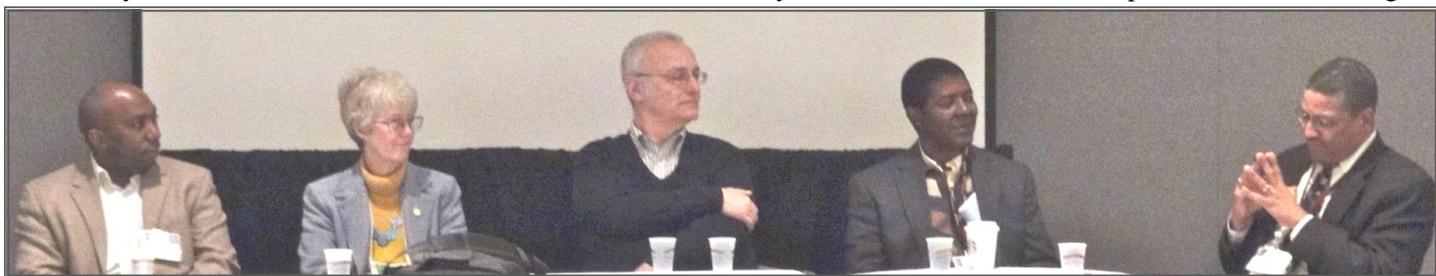
NAM @ JMM 2012 facilitated research, mentoring, teaching, and most of all, connections.
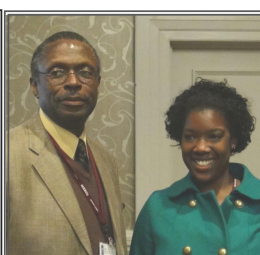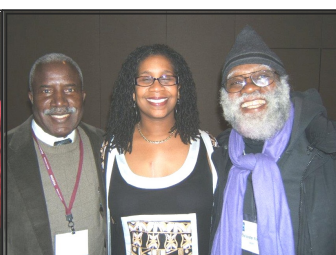
NAM Elections 2012

Donald Outing

The National Association of Mathematicians (NAM) is now accepting nominations for the following positions on the NAM Board of Directors: Vice President, Region B representative, and Majority Institution Representative. Elections will occur in the fall of 2012 and the persons elected shall be duly installed in January of 2013 at the NAM meeting that is held at the Joint Mathematics Meeting.

Board positions elected by NAM members hold their term of office for a period of three (3) years. To maintain continuity, elections are staggered via a three-year cycle. For the next three years, the election schedule is as follows.

– 2012 Member R-B, Member M-I, Vice President
– 2013 Member R-C, Member C-C, Secretary-Treasurer
– 2014 Member R-A, Member O-A, President

Member R-A represents region A (Southeast/West), Member R-B represents region B (Mid-Atlantic), Member R-C represents region C (Midwest/Southwest), Member C-C represents community colleges, and Member O-A represents mathematicians outside of academia.

There are two board-appointed positions: the Editor and Executive Secretary. The Editor of NAM is appointed by the board for a period of three years. Talitha Washington has been the Editor since January of 2010. The Executive Secretary is selected by the Board and serves for a period of five years. Her/his selection must be the unanimous choice of the existing Board. Leon Woodson has been the Executive Secretary since January of 1999.

Nominations

Board nominations for Member R-B, Member M-I, Vice President must be sent to the NAM Newsletter at editor@nam-newsletter.org by **June 1**, 2012.

Nominations must contain a current vita that includes their data such as name, email address, school, position, degree, and date of last degree. Nominees may submit a statement of not more than 200 words. The statement, along with biographical information, will appear in the summer edition of the NAM Newsletter as well as on the NAM webpage.

To be a confirmed candidate, each nominee must submit acknowledgement and acceptance of their nomination. In addition, the nominee must have held membership in NAM in good standing at least two years prior to the current fiscal year.

Ballots

Paper ballots will be made available in the fall edition of the NAM Newsletter as well as on the NAM webpage.

Under normal circumstances, the election is supervised by the Chair of the Legislation-Nomination Committee (Member Majority-Institution) Donald Outing. However, since Outing's position is up for election, the Vice-Chairperson of this committee (Executive Secretary), Leon Woodson, will supervise the elections.

The ballots must be submitted by **October 31**, 2012 to Leon Woodson.

NAM Board's Standing Committees

To carry out NAM's objectives, there are standing committees of the Board.

Committee	Chairperson	Vice-Chairperson
Executive	President	Executive Secretary
Membership	Member C-C	Member M-I
Programs	Vice President	Member R-C
Finance	Sec.-Treasurer	Member O-A
Publications-Publicity	Editor	Member R-B
Legislation-Nomination	Member M-I	Executive Secretary
Services-Special Projects	Member O-A	Member R-A
Region A Activity	Member R-A	Sec.-Treasurer
Region B Activity	Member R-B	Vice President
Region C Activity	Member R-C	Member C-C
Awards-Recognitions	Executive Secretary	President

It is the hope that each board member accepts her/his tasks and duties so that NAM may move forward as an organization, and serve the mathematics community properly. Given the current state of mathematics for underrepresented groups, NAM remains a necessary and vital force that assists and supports underrepresented groups in the mathematical sciences.

Questions about the NAM's elections and terms can be sent to NAM Board Member M-I Donald Outing via email at donald.outing@usma.edu.

Editor's Note

The current by-laws which NAM adheres to are written in Johnny Houston's book "The History of The National Association of Mathematicians (NAM) The First Thirty (30) Years: 1969-1999" on pages 161-176. Tuwaner Hudson Lamar is leading an effort to make minor grammatical revisions. Copies of the by-laws are available upon request to NAM members. Inquiries can be sent to the editor.

NAM Calendar

Conferences & Workshops

The **Underrepresented Students in Topology and Algebra Research Symposium (USTARS)** will be held on **April 13-15**, 2012 at the University of Iowa, Iowa City, Iowa. See: www.mathalliance.org/ustars.asp

The **David Blackwell Memorial Conference** will be held on **April 19-20**, 2012 at Howard University, Washington, DC. See: http://sites.google.com/site/conferenceblackwell/

The **NAM Teaching and Faculty Research Conference** will be held on **April 21**, 2012 at Morgan State University, Baltimore, Maryland in April of 2012. For more information, email Dr. Leon Woodson at leon.woodson@morgan.edu

The **Society for Industrial and Applied Mathematics Annual Meeting** will be held **July 9-13**, 2012 in Minneapolis, Minnesota. See: http://www.siam.org/meetings/an12/

The **Society for Mathematical Biology Annual Meeting and Conference** will be held **July 25-28**, 2012 in Knoxville, Tennessee. See: http://nimbios.org/SMB2012/

Project NExT (New Experiences in Teaching) is a professional development program for new and recent Ph.D.'s in mathematics. Applications are due **April 13**, 2012. Project NExT is a program of the Mathematical Association of America (MAA) and thus far, it has 1,324 Fellows. See: http://archives.math.utk.edu/projnext/.

Math SPIRAL 2012, an undergraduate research program, will be held **May 28-July 2** at the University of Maryland, College Park. Participation is limited to students at the affiliates. See: http://www.spiral.math.umd.edu/

CAARMS 18 (Conference for African American Researchers in Mathematical Sciences) will be held **June 27-30**, 2012 at Princeton University, Princeton, NJ. See: http://www.caarms.net

The NSF/CBMS 2012 **Unitary Representations of Reductive Groups** conference will be held **July 16-20** at the University of Massachusetts Boston. The principal lecturer is Dr. David Vogan (Massachusetts Institute of Technology). This conference is organized by Dr. Alfred Noël. See: http://www.math.umb.edu/~anoel/cbms/

MAA MathFest 2012, will be held **August 2-4** in Madison, Wisconsin. The **NAM David Blackwell Lecture** will be given by Carlos Castillo-Chavez (Arizona State University), the James R Leitzel Lecture will be given by Sylvia Bozeman (Spelman College), and the AWM-MAA Etta Z. Falconer Lecture will be given by Karen King (National Council of Teachers of Mathematics). See: http://www.maa.org/mathfest/

NAM MATHFest XXII will be held at Morgan State University on **November 1-3**, 2012. For more information, email Dr. Leon Woodson at leon.woodson@morgan.edu.

The **2012 Field of Dreams Conference** will be held **November 2-4**, 2012 at the Arizona State University campus in Tempe, Arizona. See: http://www.mathalliance.org

The **Blackwell-Tapia Conference** will be held **November 9-10**, 2012 at the Institute for Computational and Experimental Research in Mathematics (ICERM) at Providence, RI. See: http://icerm.brown.edu/blackwell-tapia-2012

Job Openings

Additional job openings may be found on the *NAM Newsletter* webpage at:

http://nam-newsletter.org

Advertisements should be submitted electronically to the editor at nam_newsletter@yahoo.com. Any format is accepted. Details on deadlines and the cost to advertise may be found on the website.

Mercer University

Visiting Assistant Professor

The Department of Mathematics at Mercer University invites applications for a two year, non-tenure track, **Visiting Assistant Professor of Mathematics**. The position begins in August 2012 and is open to applicants with specialties in any area of the mathematical sciences. Duties include teaching approximately 21 semester hours of courses per year plus departmental duties as assigned by the Chair and college duties as assigned by the Dean.
A Ph.D. in mathematics from an accredited university/college is required. The successful candidate will show potential for excellence in teaching mathematics at a liberal arts college.

Interested applicants will need to complete the brief online application at https://www.mercerjobs.com and attach a letter of application, current vita and a statement of teaching philosophy. Unofficial transcripts of all graduate work and three confidential letters of recommendation should be sent to:

Dr. Kedrick Hartfield, Chair
Department of Mathematics
Mercer University
1400 Coleman Avenue
Macon, GA 31207

AA/EOE/ADA

University of Utah

Joint Position: Professor and Director of Center

The University of Utah invites applications for a new joint position as **Assistant, Associate, or Full Professor in the Department of Mathematics** and as the **Associate Director of the Center for Science and Mathematics Education**. Successful applicants should have experience, interest, and a demonstrated excellence in mathematics education, in conducting outreach programs, broadly interpreted, and in mathematics research. The successful candidate will develop and maintain a balance of education, outreach, and research activities, including directing existing teacher preparation and mathematics education grants.

For more details see www.math.utah.edu/positions. Application includes: cover letter, CV, research statement, and teaching statement. In addition, we will solicit 8-10 letters, two of which should address the candidate's teach-ing and outreach capabilities. Preferred starting date is August 2012.

Applicants must apply through www.mathjobs.org. Applications will be accepted until the position is filled, and will be reviewed when they are complete. The University of Utah is an Equal Opportunity/ Affirmative Action strongly encouraged to apply. Veterans preference. Reasonable accommodations provided. For additional information: http://www.regulations.utah.edu/ humanResources/5-106.html. The University of Utah values candidates who have experience working in settings with students from diverse backgrounds, and possess a strong commitment to improving access to higher education for historically underrepresented students.

NAM Board of Directors

President, Dr. Nathaniel Dean
Texas State University San Marcos
nd17@txstate.edu
http://www.txstate.edu/math/

Vice President, Dr. Dawn Lott
Delaware State University
dlott@desu.edu
www.3lottdaughters.com/dlott/index.html

Secretary/Treasurer, Dr. Roselyn Williams
Florida A&M University
Roselyn.williams@mail.famu.edu

Executive Director, Dr. Leon Woodson
Morgan State University
leon.woodson@morgan.edu

Member Region-A, Dr. Duane Cooper
Morehouse College
dcooper@morehouse.edu
http://www.morehouse.edu/facstaff/dcooper/

Member Region-B, Dr. William Hawkins
University of District of Columbia and MAA
whawkins@udc.edu
http://www.maa.org/summa/archive/HAWKINSW.HTM

Member Region-C, Dr. Mary S. Hawkins
Prairie View A&M University
MaryHawkins@pvamu.edu

Majority Institution Member, Dr. Donald A. Outing
United States Military Academy
donald.outing@usma.com
http://www.dean.usma.edu/departments/math/people/Outing/

Member Outside-Academia, Dr. Tuwaner Hudson Lamar
Morehouse College
lamarth@hotmail.com

Community College Member, Jacqueline Brannon Giles
Houston Community College System-Central College
jbgiles@yahoo.com

Editor, Dr. Talitha M. Washington
Howard University
nam_newsletter@yahoo.com
http://talithawashington.com

Ex-Officio President Emeritus, Dr. John W. Alexander
Miami Dade College
jalexan2@mdc.edu

Ex-Officio President Emeritus, Dr. Rogers J. Newman
Southern University
rnewman@subrvm.subr.edu

Executive Secretary Emeritus, Dr. Johnny Houston
Elizabeth City State University
jlhouston602@gmail.com

Region A: Southwest/West		Region B: Mid-Atlantic		Region C: Midwest/Southwest	
Alabama	Virgin Islands	Delware	New York	Arknasas	Ohio
Georgia	Peurto Rico	District of Columbia	North Carolina	Louisiana	Mississippi
South Carolina	California	Kentucky	Pennsylvania	Missouri	Tennessee
Florida	Montana	Maryland	Virginia	Oklahoma	Texas
Any State not in B or C		New Jersey	West Virginia	Illinois	

NATIONAL ASSOCIATION OF MATHEMATICIANS
MEMBERSHIP AND DONATION FORM

MEMBERSHIP IS FOR CALENDAR YEAR: JANUARY 1 to DECEMBER 31 of _____

TITLE _____ NAME _____

ADDRESS _____

INSTITUTION/EMPLOYER _____

TELEPHONE: HOME (_____) _____ OFFICE (_____) _____

FAX: (_____) _____ E-MAIL ADDRESS _____

SELECT APPROPRIATE MEMBERSHIP TYPE

[ ] STUDENT: $30   [ ] INDIVIDUAL: $50   [ ] LIFE: $500   [ ] INSTITUTIONAL: $150

REGULAR DONATION $ _____

DONATION TO THE PERPETUAL FUND $ _____

PLEASE RETURN COMPLETED FORM AND MEMBERSHIP DUES TO:

Dr. Roselyn E. Williams, Secretary-Treasurer

National Association of Mathematicians
P.O. Box 5766
Tallahassee, Florida 32314-5766

Office Phone: (850) 412-5236
Email: Roselyn.Williams@famu.edu
Web page: http://www.nam-math.org

INDIVIDUALS AND STUDENTS

Please complete below if you did not send NAM this information within the past three years. List all degrees you currently hold. Circle the correct degree.

B.S. or B.A.: Area _____ Institution _____

M.S. or M.A.: Area _____ Institution _____

Ph.D. or Ed.D.: Area _____ Institution _____

Other: Area _____

[ ] Institutional Representative (for NAM)

[ ] Area or State Representative _____

[ ] Committee Member (specify interest): Interest _____

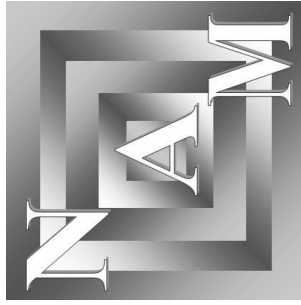[ ] Need additional information about the organizational structure of NAM

ETHNICITY (optional)

[ ] African American   [ ] Hispanic American   [ ] White   [ ] Other

Spring 2012

Dr. Talitha M. Washington
NAM Newsletter
Howard University
College of Arts and Sciences
Department of Mathematics
2441 6th Street, NW
Washington, DC 20059

ADDRESS SERVICE REQUESTED