## National Association of Mathematicians



## Newsletter

Volume XLII

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## It \& Math!



## NAM @ MAA MathFest 2011

Dr. Farrah Jackson Chandler presented the NAM David Blackwell Lecture on "Using e-Mentoring to Prepare the Next Generation of Mathematics Teachers" at MAA MathFest 2011 in Lexington, Kentucky.

From left to right: Bill Hawkins (Mathematical Association of America), Farrah Jackson Chandler (Elizabeth City State University), and Dawn Lott (Delaware State University) .

# The National Association of Mathematicians (NAM) 

publishes the NAM Newsletter four times per year.

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## Newsletter Website

http://faculty.evansville.edu/tw65/NAM.htm
This website has a list of open job and summer positions. It also features past editions of the Newsletter and editions from 41.1 to present are in color.

## From the Edtor

This year, I am enjoying the invigorating power of "The Mecca of Black Education", also known as Howard University. As a visiting professor away from Indiana, I have additional colleagues, will establish new collaborations, and must navigate the wild Washington, DC traffic.

Shortly after arriving to the East Coast, I purchased my ticket to the "Nation's Classic," a football game featuring Howard University and Morehouse College. Being a former member of the Morehouse Marching Band during my undergraduate days in Atlanta, I enjoyed the athleticism of game as well as the rambunctious fan activity. Even so, the best part of the whole day was running into Dr. Johnnetta B. Cole, former president of Spelman College, on the DC Metro. At first I was not sure if it was her - I had not seen her since my graduation day over a decade ago - but once she uttered one word to her friend, I knew it was her. As one of her biggest fans, I introduced myself, and, of course, asked to have a photo taken with her. Our car on the subway, filled with Spelman sisters and Morehouse brothers, was bubbling with energy. There stood Dr. Cole amongst all of these young students, encouraging them, just as she had done for me, to push forward and keep striving for the best.

We are fortunate to have, in our midst, people who

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NAM's Official Webpage http://www.nam-math.org
NAM's History and Goals: The National Association of Mathematicians, Inc., known as NAM was founded in 1969. NAM, a nonprofit professional organization, has always had as its main objectives, the promotion of excellence in the mathematical sciences and the promotion and mathematical development of under-represented minority mathematicians and mathematics students. It also aims to address the issue of the serious shortage of minorities in the workforce of mathematical scientists.
have provided a similar enthusiasm for mathematics with people whom they encounter. Jacqueline Giles encourages NAM to extend, grow, and continue its efficacy (page 3). Dr. Sastry Pantula provides ways that one can thrive at the National Science


Talitha Washington and Johnnetta B. Cole, former President of Spelman College Foundation (page 4). Dr. David Auckly shares the many ways that MSRI promotes mathematics awareness in society (page 5). CAARMS 17 and EDGE programs encouraged its participants to share and excel in mathematics (page 7). Dr. Farrah Jackson Chandler's passion has helped lead students at ECSU to pursue mathematics degrees (page 8). And, very recently, Dr. Richard Tapia was awarded the National Medal of Science from President Barack Obama for his great achievements (page 9).

It is up to us to continue a positive trajectory for those we encounter, whether in the classroom or on the subway. If someone asks what this all is about, feel free to quote President Obama and let them know that "It's math!"

Enjoy!

# Extending The Dimension and Character of the National Association of Mathematicians 



Jacqueline Giles

The National Association of Mathematicians (NAM) emerged out of a need to prepare African-American mathematicians for leadership roles in professional mathematics. The organization was birthed in the 20th century. In the $21^{\text {st }}$ century, the organization has matured, and its focus has broadened just as lessons of advocacy and diplomatic negotiations for change in professional mathematics have taken center stage. Even so, many of the concerns identified at its founding persist.

Students of the history of mathematics who are familiar with the professional lives of mathematicians acknowledge that systemic barriers and other limitations have been a reality. Those barriers and limitations hindered the abilities of African-Americans and others as they attempted to flow through the pipeline to obtain advanced degrees as well as attain positions of leadership in mathematics and science organizations. In recent history - including the present - the voices of AfricanAmerican and other minority mathematicians have too often been absent from the national discourse - even that discourse that affects primarily these groups. Indeed, professional mathematics has lacked diversity in race, gender, and culture among its stakeholders in the past. There is no perfect world, so, even in the $21^{\text {st }}$ century, there can still be barriers and limitations. Now, however, we seek to emphasize more the personal discipline and acumen, coupled with mathematical ability, that must enhance a young person's pursuit of advanced degrees in mathematics. Simultaneously, we seek the examination of postgraduate departmental structures that might better support the development of all students.

The founding and subsequent members of NAM have been men and women who designed programs that: 1) allowed more minorities to present their research papers and to showcase their abilities as active research mathematicians; 2) recognized the need for an exchange of ideas among faculty on issues related to teaching; and 3) supported the development of current and future mathematicians from the underrepresented racial and cultural groups in mathematics. Granted, the uniqueness and existence of NAM remains relevant because the founding members had the courage and vision to make a statement and to create an organization that has addressed issues which others failed to either recognize or resolve. Over the years, NAM has mentored many young mathematicians, helped give young mathematicians a place to present their work, and provided venues for young mathematicians to collaborate comfortably with people of similar
experiences.
Although there is now a generation of young mathematicians who are successfully achieving advanced degrees in mathematics, the percentages of such throughout the general mathematical population are still very small. Indeed, there are still many needs to be addressed. As our society becomes more global, the professional development of any subgroup in mathematics is not separate from the whole. The vision of the National Association of Mathematicians must remain relevant and useful in communities of mathematicians that represent a cross-section of an international community. Now the call for NAM extends beyond the minority community to the entire community. The wisdom gained from collaboration with other mathematicians of the African Diaspora is but one benefit of organizational programming that was originally expected to let young, and sometimes isolated, mathematicians realize that they are not alone. NAM strives to inform them that, while their challenges are common, they can still achieve and lead.

NAM will continue to offer an audience for the illustrious achievements of the next generation. It is also prepared to embrace others who have experienced racial bigotry, gender discrimination, and cultural divides. At this point in history, many recognize that the barriers which divide us stem from our human nature. Those barriers, in the past, were caused by interracial, intercultural and intraracial problems. The maturity to realize that the problems in mathematical preparation at the highest level are due to the common issues that have plagued our society is critical. So we, as NAM, commit to assisting all persons who have a need for a support group. To paraphrase John Donne, we realize that "no race of mathematicians is an island, and no race stands alone." Embracing and mentoring all who love mathematics is our call in the $21^{\text {st }}$ century.

Yes, the National Association of Mathematicians was started by African-American mathematicians, and was assisted by mathematicians in the majority community. Now, in its mature years, NAM recognizes that the experience and wisdom gained from its early challenges have buttressed its members and prepared the organization for service to all who need support and mentors in the $21^{\text {st }}$ century. This recognition calls for an extension of the vision and the dimensions of NAM. We hope that you take up this challenge and join us!

Jacqueline Giles is a Lifetime Member of NAM. She is on the faculty at Houston Community College, Central Campus. Her e-mail address is jbgiles@yahoo.com.

## THRIVE @ NSF

Sastry G. Pantula



I cannot believe that it has been almost a year since I began at the Division of Mathematical Sciences at NSF. Yes, DMS/NSF is a great place to work, and a place where research and diversity both THRIVE! So, consider joining us in a number of ways serve on our panels, be on our Committee of Visitors and Advisory Committees, or on a longer term basis - be a program officer! Help us diversify the workforce and support broadening participation at all levels. Suggestions from you are also always welcome.

My mantra at DMS has been, "THRIVE...not just survive!" THRIVE here is an acronym. I hope that, THematic (core) and multidisciplinary Research is well funded; our research has a high Impact, is very innovative in solving major societal issues, and is highly Visible; and, finally, Educate future researchers, problem solvers and critical thinkers. Statistical, Mathematical and Computational Sciences (SMACS) are the backbone for innovation, drive discoveries in all sciences and a key to economic development and future jobs. SMACS at times are invisible, but have an incredible impact in academic research, in industrial development, and government policy making. Let me take this opportunity to request you to visit http://www8.nationalacademies.org/cp/projectview.aspx? key $=49237$, and provide feedback on Math Sciences 2025 project that is collecting information on our disciplines' potential future impacts.

## Budget @ DMS

Our FY11 budget is expected to be close to $\$ 239 \mathrm{M}$, which unfortunately is much lower than the President's FY11 budget request. It is not clear at this time what our final budget will be in FY12. Currently, we are also look-

ing ahead to plan for budget priorities for FY13. Typically, DMS invests about $70 \%$ of its budget to support disciplinary research, predominantly through individual principal investigator grants. Of this, about $10 \%$ is invested in multidisciplinary activities. About $15 \%$ is invested in workforce related activities, $10 \%$ in math sciences research institutes, and $5 \%$ on other activities. The success rate for research funding is below $30 \%$, but it is a function of our limited budget and the quality and quantity of proposals we receive. Unfortunately, we are unable to fund all excellent proposals adequately, and certainly, cannot fund proposals that were never submitted.

We support frontier core research, through individual investigator and CAREER awards, in all areas of mathematical and statistical sciences, including analysis, topology and geometric analysis, probability, combinatorics, algebra and number theory, computational mathematics/ statistics, mathematical and statistical biology, applied mathematics, theoretical and applied statistics, and foundations, among others. We also encourage interdisciplinary and multidisciplinary research - whether it is with biological, geological, educational, computational sciences or engineering. We also have joint solicitations or funding mechanisms with the Department of Defense on threat reduction (DTRA) and with NIGMS on mathematical and statistical biology. We also support research through our Focused Research Groups (FRG) and Research Networks. Looking ahead, in addition to our core research, we are also interested in research at the intersection of biological and mathematical and physical sciences (BioMaPS), computational and data-enabled science and engineering (CDS\&E), and mathematical and statistical challenges for sustainability, climate and energy. Massive and complex data are here to stay, and provide a diverse set of opportunities for both theoretical and applied areas of mathematical, statistical and computational sciences. If you have a question regarding any of the programs, please do not hesitate to contact our program officers. I encourage you to get to know them at the professional meetings!

We support workforce development in many different ways, including Research Training Groups (RTG), Mentoring Through Critical Transition Points (MCTP), Research Experience for Undergraduates, as well as through unsolicited proposals that are innovative. We strongly encourage applications from a diverse group of students from every institution, not just from a select few, to apply for Math Sciences Post-Doctoral Research Fellowships (MSPRF) and Graduate Research Fellowships. Individual programs also provide support for students and junior faculty
to participate in various research conferences. Students are also supported through individual research grants as well as through many of our other solicitations. We invest in training future problem solvers through integration of research and education.

NSF-supported math sciences research institutes play an important role in core research, multidisciplinary research, and in mentoring students and post-doctoral fellows. Some institutes provide long-term programs on themed areas of research, and others focus on short term workshops on concentrated research areas. We also provide support for US researchers in SMACS to participate in activities at various institutes around the globe. Research abroad experiences for fledgling researchers will have a long term impact and we are interested in fostering such "science across virtual institutes."

A number of our researchers and educators also get direct funding or co-funding from various other directorates at NSF, including SBE, CISE and ENG. Also, funding for curriculum development and mentoring activities is available through our Education and Human Resources (EHR) directorate. I encourage you to take advantage of these opportunities to give a solid foundation in SMACS for STEM majors, including our own majors. Quantitatively and computationally better educated citizenry is important for future innovations in the US.

## Opportunities @ DMS

As I mentioned in the opening paragraph, we are always looking for excellent panelists who have a good eye for quality and appreciation for diversity in all its aspects. Intellectual merit and broader impacts of our research are both very important to us.

DMS consists of a Division Director (DD), a Deputy Division Director (DDD), 25 or so program officers, and about ten staff members. The DD and half of the program officers are rotators. The DDD, the program staff and the other half of the program officers are permanent NSF employees. Typically, the rotating program officers stay for two years, and some may extend their stay for the third year. So, each year, we do a search for new program officers to replace the rotators. For Fall 2011, we have just completed recruiting nine new program officers. We are
very much interested in seeing energetic diverse group of program officers with good communication skills, eye for quality research and willingness to collaborate with program officers across the Foundation. If you are interested in such opportunity, please drop me a note with your CV. Also, our current program officers will be glad to talk to you about these positions and responsibilities.

As a program officer, you play a key role in shaping the direction of future research and education; read the proposals; invite qualified and diverse group of panelists; recommend proposals to be funded; negotiate and manage budgets; manage post-award activities; and play an important role in broadening participation of underrepresented groups in the science and engineering community. You also communicate with many members in the community, attend workshops and conferences, and knock on doors of program officers in other divisions for collaborations and co-funding opportunities. You will also have an opportunity to continue on your own research activities through an Independent Research/Development (IR/D) program. Of course, like at any academic job, good time management skills (and maybe some late nights of research!) are essential. Also, a harmonious workplace is important for me at DMS.

We remain optimistic about our future budgets. Investment in research is a key to innovation, job creation and for economic competitiveness. Research certainly has no political boundaries. As you see in the picture on the previous page (which is a slightly edited version of a picture from Odem's report a decade ago), statistical, mathematical and computational sciences have an impact on all other sciences, and other sciences in turn have an impact on our basic research.

Keep up the good research (whether we are able to fund or not) and keep in touch!

Sastry G. Pantula, a lifetime member of NAM, is the Division Director of the Division of Mathematical Sciences at the National Science Foundation. He is a Professor of Statistics at North Carolina State University and the PastPresident (2010) of the American Statistical Association. He can be reached at spantula@nsf.gov.

## Propagate @ MSRI

## David Auckly and Suzanne Weekes

The Mathematical Sciences Research Institute (MSRI) exists to promote mathematical research. This institute located in Berkeley, California is starting its 30th year. It is now widely regarded as one of the premiere research institutes on the planet. The most important feature of the institute is the wide variety of people who come to the institute to think about and share mathematical ideas. There are two messages that the institute directorate would like help propagating:

## MSRI F

- The institute has activities for people at all levels ranging from senior researchers to four year olds, and we want to invite everyone to apply and participate in our activities.
- The institute is always looking for effective ways to broaden and encourage participation. Ideas can be shared with Dave Auckly via email to auckly@msri.org.

It does not take long to realize that building this mathematical community requires a network of support to encourage and foster interest in mathematics at all levels from every segment of the population. MSRI has been constructing a pipeline to propagate mathematical opportunity broadly, and to increase participation in mathematics.

## Collaboration with the Alliance

One newly constructed segment of this pipeline is the postdoctoral program of the National Alliance for Faculty Diversity in the Mathematical Sciences. This program targets US under-represented minority candidates. The plan is for each postdoctoral fellow to spend two years at one of seven alliance universities and a third year at an NSF funded mathematics institute. Each year there are funds for four such postdoctoral fellows. The first cohort started this fall.

The largest branch of the Alliance focuses on graduates students. The institute is now accepting graduate students from the alliance into the Sumer Graduate Schools. Nominations are accepted starting on November 1. http:// www.msri.org/web/msri/scientific/workshops/summer-graduate-workshops

MSRI will send a representative to the Alliance Field of Dreams conference to promote institute activities. More information about the Alliance can be found at: http://www.mathalliance.org/

## Undergraduate Program (MSRI-UP)

One of the main pumping stations along the pipeline that the institute is constructing is the MSRI Undergraduate Program (MSRI-UP). The objective of MSRI-UP is to identify talented students, especially those from underrepresented groups, and make available to them meaningful research opportunities, skills, and a community peers and mentors to advise, encourage and support them.

Summer 2011 marked the fifth year of this program. Eighteen undergraduates, two professors, one post-doc, and two graduate assistants spent 6 intense weeks in the beautiful hills of Berkeley, California studying mathematics and doing original mathematics research. Prof. Suzanne Weekes of Worcester Polytechnic Institute (WPI) was the on-site director of the 2011 program and Prof. Marcel Blais, also from WPI, was the research director and introduced the students to the rich field of Mathematical Finance.

For the first two weeks of the 2011 program, Prof. Blais delivered to the students what amounted to more than half of an introductory graduate course in financial mathematics, and the students did copious amounts of homework and studied with the help of the graduate assistants, who lived in the UC Berkeley dormitories with the undergraduates. After just week one of this "mathematical hazing", as one student called it, the students already felt bonded to each other and to the MSRIUP staff. Over the weeks, the students quickly learned


Matlab, Latex, and Beamer, made several presentations within the 6 weeks, attended many colloquia, took many trips up and down the Berkeley hills - oh, and, yes, they did some original research! The abstracts of their research papers can be found on the MSRI-UP 2011 website.

The 2011 MSRI-UP's line-up of colloquium speakers included Prof. Talithia Williams of Harvey Mudd College, Prof. Joseph Teran of UCLA, and Nobel Laureate Prof. Myron Scholes. Given that the Black-Scholes model is one of the fundamental approaches to pricing financial derivatives, it was a special treat to spend time with Scholes. Given that the Black-Scholes equation is one of the most fundamental equations when looking at pricing certain financial derivatives and that the students this summer were focused on mathematical finance, it was a particularly special treat to get to listen to and spend time with Scholes.

Weekend trips included spending the day at the Santa Cruz Beach Boardwalk, touring San Francisco, kayaking in Oakland, going to the Monterey Bay Aquarium, and a Fourth of July Oakland A's game. After the 6 weeks of the 2011 MSRI-UP, students left more mathematically sophisticated than when they came in, more determined to go to graduate school than when they arrived, more knowledgeable about applying to graduate school and what to expect once they start, more exhausted than when they showed up, and more exhilarated than ever!

The summer 2012 MSRI-UP program will be led by Prof. Ricardo Cortez. The research director will be Prof. Matthias Beck of San Francisco State University and the research theme will be Enumerative Combinatorics. Applications will be taken starting in December. http://www.msri.org/web/msri/education/for-undergraduates/msri-up

## Math Circles

An expanding supply field for the pipeline comes under the heading of Mathematical circles. Mathematical circles are a form of education enrichment and outreach that brings mathematicians and mathematical scientists into direct contact with the community. There are many different variations on the math circle theme, each customized to meet the needs of a unique audience.

MSRI founded the National Association of Math Circles (NAMC) to promote and spread math circles across
the US. Today there are more than 100 circles registered with the NAMC. Contrary to the situation in some other countries, mathematics is not generally considered as to be an extra-curricular activity in the US. NAMC aims to change this and make it common for people, especially school children, to use mathematics as a recreational activity. Math circle students and teachers meet with mathematical professionals in an informal setting after school or on weekends to tackle exciting and challenging problems or topics in mathematics. The goal is to motivate the students to be passionate about mathematics by providing them with a setting that encourages them to creatively think outside of the box.

To support this movement, NAMC offers grants to organizations wishing to start or continue math circles. The next workshop will be held in Washington, DC in the Spring of 2012. For more information about math circles and this movement and to see lesson plans and video of math circle sessions, go to: http://www.mathcircles.org/

## Diversity-oriented Mathematics Workshops

MSRI was awarded a grant from the NSF to fund ten di-versity-oriented mathematics workshops. The institute will collaborate with the other eight NSF-funded mathematics institutes to organize these workshops. More information may be found at:
http://www.mathinstitutes.org/diversity.php
Through active collaborations, providing opportunities for undergraduate research, promoting the recreational fun of mathematics, and supporting workshops, MSRI actively engages all communities in mathematics. With the great mathematical spring of energy that flows from the Institute, we hope that many become inspired and enlightened, mathematically speaking.

David Auckly is the Associate Director at MSRI and is on -leave from Kansas State University. His e-mail address is auckly@msri.org.Suzanne Weekes is an Associate Professor at Worcester Polytechnic Institute. Her e-mail address is sweekes@wpi.edu.

## CAARMS 17

The CAARMS 17 (Conference for AfricanAmerican Researchers in the Mathematical Sciences) was held at the Institute for Pure and Applied Mathematics (IPAM) at the University of California, Los Angeles from June 1-4, 2011.


## Ladies of EDGE 2011

The EDGE Program (Enhancing Diversity in Graduate Education) took place at Florida Agricultural \& Mechanical University from June 6 to July 1, 2011. The program was run by Rhonda Hughes (Bryn Mawr College) and Sylvia Bozeman (Spelman College) with local organization by Roselyn Williams (Florida A\&M University).

The program involved 16 female students who are beginning graduate school in the mathematical sciences, as well as four instructors, three mentors, from colleges and universities around the country. The instructors, Joyati Debnath (Winona State University), Ami Radunskaya (Pomona College), Talitha Washington (Howard University), and Ulrica Wilson (Morehouse College) taught classes in abstract algebra and real analysis. The students participated in a diversity seminar with Mrs. Jane Marks, a psychologist and the First Lady of Tallahassee, and they took a short course in Stochastic Calculus with Vasile Lauric (Florida A\&M University). The mentors, Marisa Hughes (Cornell Universi-
ty), Katheleen Ryan (Lehigh University), and Carmen Wright (University of Iowa), were former participants in previous years of the program. Their role was to mentor and assist the students with homework as well as provide recreational programs outside of the classroom.

The 2012 EDGE program is scheduled to take place at Pomona College. For the first time in the history of the program, the directorship changed: directors Rhonda Hughes and Sylvia Bozeman handed over the leadership reins over to Ami Radunskaya and Ulrica Wilson.


## NAM Calendar

The 5th Annual Field of Dreams Conference, hosted by the National Alliance for Doctoral Studies in the Mathematical Sciences, will be held October 14-16 at Arizona State University, Tempe, Arizona. Undergraduate participants will attend seminars and get advice on graduate school. See: http://www.mathalliance.org/conference.asp

The National Conference for the Society for Advancement of Chicanos and Native Americans in Science (SACNAS) will be held from October 27-30 in San Jose, CA. The theme of the conference will be "Empowering Innovation and Synergy Through Diversity". Preconference registration ends on October 6; the deadline for Undergrad Student Travel Scholarship applications for summer program participants is July 21. For more information, visit http://sacnas.org/civicrm/event/info?reset=1\&id=11

## The National Association of Mathematicians' Under-

 graduate MATHFest XXI will be in New Orleans, LA at Dillard University on November 3-5. Interested juniors/seniors and faculty should contact Leon Woodson at leon.woodson@morgan.edu for more information.

The Joint Mathematics Meeting will be held in Boston, Massachusetts on January 4-7, 2012. The Cox-Talbot Address will be given by Dr. Sylvia Bozeman of Spelman College and the Claytor-Woodard Lecture will be given by Dr. Aderemi Kuku of Grambling State University. Applications for the Undergraduate Student Poster Session are due October 28 and faculty are invited to register to serve as judges. See: http://www.maa.org/students/ undergrad/jmmposterindex.html

The Statistical and Applied Mathematical Sciences Institute (SAMSI) will offer a two-day undergraduate workshop on topics of current interest in statistics and applied mathematics on February 24-26, 2012 at SAMSI. Applications for funding for travel and lodging are due January 27, 2012. See: http://www.samsi.info/workshop/ undergraduate-workshop-february-24-25-2012
The 2012 Infinite Possibilities Conference (IPC) will be held March 30-31 at the University of Maryland, Baltimore County. IPC is a national conference designed to promote, educate, encourage and support minority women interested in mathematics and statistics. For more information, visit http://www.ipemath.org/

## ECSU Highly Ranked for Awarding Mathematics Degrees

## Kesha Williams

Diverse Issues in Higher Education recently released a report on universities, focusing on those which successfully graduated minorities with bachelor's degrees in mathematics. Elizabeth City State University ranked seventh for mathematics degrees conferred to African-American students.

In 2008-2009, ECSU graduated three students with degrees in mathematics. That number increased in the next academic year to 10 students. The university is on course to graduate between 12 and 15 students in mathematics by the end of the 2011-2012 school year.

Dr. Farrah Jackson Chandler, chairperson of the ECSU Mathematics and Computer Science Department, is proud of the department's efforts in increasing the number of


Dr. Farrah Jackson Chandler mathematics graduates. "Mathematics is the backbone of many sciences," Chandler said. "Math skills are essential to many of the best paying jobs in the country." The increasing number of mathematics graduates also means school districts local to Elizabeth City will have more math teachers who can use their skills to teach students.

To Chandler's delight, many of the 2011 graduates who earned B.S.
degrees in math are now enrolled in the graduate program at ECSU. "Seven of the 12 who graduated in 2011 are now enrolled in our graduate program. Dr. Paula Viltz, program director of the Office of Graduate Education, has a wonderful grant that helps them return for graduate school," Chandler noted. "Those students are dispersed in all three of our graduate student concentrations - Applied Mathematics, Mathematics Education and Remote Sensing." Chandler is confident that mathematics graduates will become eligible for a host of jobs that are developing quickly around the country.
"Our students need these math skills as our country searches for sources of energy other than those we rely upon today," Chandler said. "In order to put Americans in the forefront, we must produce math graduates."

ECSU's top-level ranking was published recently as part of Diverse Issues in Higher Education's "Top 100 Degree Producers," which ranked institutions that award the most degrees to minority students. The rankings indicate the total number of degrees awarded in specific disciplines. See http://diverseeducation.com/top $100 /$ for more details.

Kesha Williams is the Director of Media Relations at ECSU. Her email is kdwilliams@mail.ecsu.edu.

## Richard Tapia Receives National Medal of Science



On September 27, 2011, Dr. Richard Tapia was awarded the National Medal of Science. Tapia is a professor in the Department of Computational and Applied Mathematics at Rice University in Houston, Texas.

Established in 1959, the National Medal of Science is awarded by the president in recognition of outstanding contributions to knowledge in the physical, biological, mathematical, engineering, behavioral and social sciences. Recipients are selected by a 12 -member committee of scientists and engineers that is appointed by the president and administered by the National Science Foundation. The medal has been awarded to 468 people.

In a press release from the White House, President Obama said, "Each of these extraordinary scientists, engineers, and inventors is guided by a passion for innovation, a fearlessness even as they explore the very frontiers of human knowledge, and a desire to make the world a better place. Their ingenuity inspires us all to reach higher and
try harder, no matter how difficult the challenges we face."
Dr. Tapia holds the positions of University Professor, Maxfield-Oshman Professor in Engineering, Director of the Center for Excellence and Equity in Education, and the Director of the Empowering Leadership Alliance. Tapia has authored or co-authored two books and more than 100 mathematical research papers, and he is currently authoring a graduate-level textbook on the foundations of optimization.

There are two conferences named in his honor. The Richard Tapia Celebration of Diversity in Computing Conference, was most recently held from April 3-5, 2011 in San Francisco, California. The next Blackwell-Tapia Conference will be held from November 9-10, 2012 at the Institute for Computational and Experimental Research in Mathematics (ICERM) at Brown University (see: http:// icerm.brown.edu/blackwell- tapia-2012).

Tapia will receive the medal at a White House ceremony in October.

## Tapia's Influence on My $7^{\text {th }}$ Grader

## Talitha M. Washington

The other day, my oldest daughter came home with an assignment from her $7^{\text {th }}$ grade Spanish class: she was to write an article on a prominent Spanish-speaking person. I encouraged her to write about Dr. Richard Tapia instead of the hip-shaking songstress Shakira; after all, her school focuses on aerospace engineering.

My daughter rolled her eyes at me and asked if he was famous. "Of course!" I responded. I reminded her that she even attended a conference in his honor - the 2010 Blackwell-Tapia Conference - yet she was not convinced. To further attempt to prove his fame, we watched several videos of Dr. Tapia on YouTube. Many showed him encouraging students to succeed. In one lively video, he told of his life story and his mathematical ca-
reer. My daughter finished her assignment, albeit somewhat credulous of his fame, but satisfied that he would suffice.


A few days later, I came home to my daughter, screaming with rhapsodic glee: "Dr. Tapia was recognized by President Obama today!" My internet savvy $7^{\text {th }}$ grader, in typical disbelief of her mother, proceeded to read the news announcement for herself. She smiled as her eyes glazed over his many achievements and accolades.

I am extremely grateful that Dr. Tapia has had such a strong, positive influence on so many people. In particular, I am especially grateful that he has had such a strong, positive influence on my daughter. Thank you, Dr. Tapia!

## Job Openings

## University of South Carolina

Applications are invited for a tenure-track Assistant Professor position in the broad area of Algebra. Candidates must have a Ph.D. in Mathematics, an outstanding research program, and a commitment to effective teaching. Applicants must apply electronically at http://www.mathjobs.org. A completed application should contain a cover letter, standard AMS cover sheet, curriculum vitae, description of research plans, statement of teaching philosophy, and four letters of recommendation. One
of the letters should appraise the candidate's teaching ability. The beginning date for the position will be August 16, 2012. Review of applications will begin on December 1, 2011, and continue until the position is filled. To ensure consideration, applications should be received by January 10, 2012. Please address inquiries to hiring@math.sc.edu.

The University of South Carolina is an affirmative action, equal opportunity employer. Minorities and women are encouraged to apply.

## Non-Institutional Members

## Georgia Southern University

Georgia Southern University's Department of Mathematical Sciences invites applications for Lecturer in Mathematics Education. The full text advertisement, including information about the department, faculty, and the complete position announcement with all qualifications and application instructions, is available at

Lecturer in Mathematics Education
http://math.georgiasouthern.edu/math/. The application deadline is December 15, 2011. Georgia is an open records state. Georgia Southern is an AA/EO institution. Individuals who need reasonable accommodations under the ADA to participate in the search process should contact the Associate Provost.

## Institute for Advanced Study, School of Mathematics

Multiple Positions

The School of Mathematics has a limited number of memberships with financial support for research in mathematics and computer science at the Institute during the 2012-13 academic year.

During the 2012-13 academic year, the School will have a special program on Univalent Foundations of Mathematics. The program will be organized by Steve Awodey of Carnegie Mellon University, Thierry Coquand of the University of Gothenburg and Vladimir Voevodsky of the Institute. The main goal of the program is to make available to a wider mathematical audience the recent advances which may finally make it practical for pure mathematicians to use "proof assistants" in their work. More information about the special program can be found at "special years" on the School's home page at http://www.math.ias.edu.

Several years ago the School established the von Neumann Fellowships, and up to 6 of these fellowships will be available for the 2012-13 year. To be eligible for a von Neumann Fellowship, applicants should be at least 5, but no more than 15 , years following the receipt of their Ph.D.

The Veblen Research Instructorship is a 3-year position which the School of Mathematics and the Department of Mathematics at Princeton University established in 1998. Three-year instructorships will be offered each year to candidates in pure and applied mathematics who have received their Ph.D. within the last 3 years. The first and
third year of the instructorship will be spent at Princeton University and will carry regular teaching responsibilities. The second year will be spent at the Institute and dedicated to independent research of the instructor's choice.

Candidates must have given evidence of ability in research comparable at least with that expected for the Ph.D. degree. Application materials may be requested from Applications, School of Mathematics, Institute for Advanced Study, Einstein Drive, Princeton, NJ 08540, e-mail: applications@math.ias.edu.

Postdoctoral computer science and discrete mathematics applicants may be interested in applying for a joint (2year) position with one of the following: The Department of Computer Science at Princeton University, http://www.cs.princeton.edu, DIMACS at Rutgers, The State University of New Jersey, http://www.dimacs.rutgers.edu or the Intractability Center, http://intractability.princeton.edu. For a joint appointment, applicants should apply to the School of Mathematics as well as to the above noting their interest in a joint appointment.

Applications may be made online at:
https://applications.ias.edu. The deadline for all applications is December 1. The Institute for Advanced Study is committed to diversity and strongly encourages applications from women and minorities.

## Northwestern University

Applications are solicited for a 3 year lectureship starting September 2012. This is a non-tenure track position with a teaching load of six quarter courses per year. We invite applications from qualified mathematicians in all fields and the primary criterion for selection is teaching excellence. Preference will be given to those candidates whose teaching and research interests are compatible with current faculty.

Applications should be made electronically at www.mathjobs.org and should include (1) the American Mathematical Society Cover Sheet for Academic Employ-
ment, (2) a curriculum vitae, (3) a research statement, (4) a teaching statement, and (5) four letters of recommendation, one of which discusses the candidate's teaching qualifications. Inquiries may be sent to:
boas@math.northwestern.edu
Applications are welcomed at any time, but the review process starts December 1, 2011. Northwestern University is an affirmative action, equal opportunity employer committed to fostering a diverse faculty; women and minority candidates are especially encouraged to apply.

## Bowdoin College

The Department of Mathematics at Bowdoin College invites applications for a tenure-track position in statistics at the rank of assistant professor starting Fall 2012. Preference is for applicants whose professional interests lie in statistics and its applications; statistical consultation experience in the natural and/or social sciences desirable. We seek someone who appreciates the rich balance of theoretical mathematics, applied mathematics, and statistics that our department presently enjoys, and who has the potential to ultimately assume a leadership role in statistics at the College. Bowdoin values dedication to teaching excellence in a liberal arts environment as well as a promise of successful scholarly engagement and extensive professional activity such as statistical consultation. Regular teaching load is two courses per semester. The successful candidate will teach primarily introductory and major-level courses in statistics and probability. Ph.D. in statistics preferred, advanced ABDs (and doctorates in interdisciplinary statistics programs) considered.

Bowdoin College accepts only electronic submissions. Please visit http://www.MathJobs.org to submit a cover letter, AMS application cover sheet, resume, statement of research and/or professional activity plans, statement on teaching philosophy, and contact information for three ref-
erences who will provide letters of recommendation.
Review of applications will begin November 14, 2011, and will continue until the position is filled.

A highly selective liberal arts college on the Maine coast with a diverse student body made up of $29 \%$ students of color, $3 \%$ international students and approximately $15 \%$ first generation college students, Bowdoin College is committed to equality and diversity and is an equal opportunity employer. We encourage inquiries from candidates who will enrich and contribute to the cultural, socio-economic, and ethnic diversity of our college. Bowdoin College does not discriminate on the basis of age, race, creed, color, religion, marital status, gender, sexual orientation, veteran status, national origin, or disability status in employment, or in our education programs.

Bowdoin College offers strong support for faculty research and teaching. We recognize that recruiting and retaining faculty may involve considerations of spouses and domestic partners. To that end, where possible, the College will attempt to accommodate and respond creatively to the needs of spouses and partners of members of the faculty. For further information about the college and the department, see our website at www.bowdoin.edu.

## U.S. Coast Guard Academy

The U.S. Coast Guard Academy, located in New London, Connecticut, invites applications for a full-time tenmonth tenure-track faculty position in the Department of Mathematics for the academic year beginning 2012. The U.S. Coast Guard Academy is a highly selective federal military college providing a rigorous undergraduate program. In addition, the Coast Guard Academy provides the professional education and training required to prepare young women and men for careers as commissioned officers in the U. S. Coast Guard-the nation's oldest continuous sea-going service-which is well-known for its humanitarian missions.

## Tenure-track Faculty in Mathematics

Applicants should be committed to outstanding undergraduate teaching in the Department of Mathematics, which offers courses in Mathematics, Operations Research, Statistics, and Computer Programming \& Databases. A Ph.D. in Operations Research, Statistics, or in a related academic discipline is strongly preferred, as is undergraduate teaching experience. Excellent interpersonal, teaching, and written and oral communications skills are essential. Minority and women candidates are strongly encouraged to apply.

For additional information about the position, and to apply, go to http://www.cga.edu/facultyopenings.

Tenure-Track Position
Math Search Committee
Department of Mathematics and Computer Science
University of San Diego
5998 Alcala Park
San Diego, CA 92110
Please also register as an applicant at
http://apptrkr.com/201190, Job number IRC4869.
USD is an AA/EOE employer and is committed to seeking and sustaining a culturally and ethnically diverse campus environment. Priority will be given to applications arriving by November 1, 2011.

## Northwestern University

Applications are invited for up to three Ralph Boas Assistant Professorships. These positions are three-year, non-tenure-track positions beginning September 2012, with a teaching load of four quarter courses per year. Applications are invited from qualified mathematicians in all fields.

Applications should be made electronically at www.mathjobs.org and should include (1) the American Mathematical Society Cover Sheet for Academic Employ-

Ralph Boas Assistant Professorships
ment, (2) a curriculum vitae, (3) a research statement, and (4) four letters of recommendation, one of which discusses the candidate's teaching qualifications. Inquiries may be sent to: boas@math.northwestern.edu.

The review process starts December 1, 2011. Northwestern University is committed to fostering a diverse faculty; women and minority candidates are especially encouraged to apply. AA/EOE.

## Tenured and Tenure-track Position

ment, (2) a curriculum vitae, (3) a research statement, and (4) four letters of recommendation, one of which discusses the candidate's teaching qualifications. Inquiries may be sent to: tenure@math.northwestern.edu.

The review process starts November 1, 2011. Northwestern University is committed to fostering a diverse faculty; women and minority candidates are especially encouraged to apply. AA/EOE.

## The Ohio State University

The Department of Mathematics in the College of Arts and Sciences at The Ohio State University anticipates having a tenure-track assistant professor position available in Analysis, effective Autumn Quarter 2012. Further information about the department can be found at http://www.math.ohio-state.edu. Candidates are expected to have a Ph.D. in mathematics (or related area) and to present evidence of excellence in teaching and research. Applications will be considered on a continuing basis, but the

## Tenure-Track Position in Analysis

annual review process begins November 14, 2011.
Applications should be submitted online at http://www.mathjobs.org. If you cannot apply online, please contact facultysearch@math.ohio-state.edu or write to: Hiring Committee, Department of Mathematics, The Ohio State University, 231 W. 18th Avenue, Columbus, OH 43210 . To build a diverse workforce Ohio State encourages applications from individuals with disabilities, veterans and women. EEO/AA employer.

Tenure-Track Position in Probability, Rank Open annual review process begins November 14, 2011. Applications should be submitted online at http://www.mathjobs.org. If you cannot apply online, please contact facultysearch@math.ohio-state.edu or write to: Hiring Committee, Department of Mathematics, The Ohio State University, 231 W. 18th Avenue, Columbus, OH 43210. To build a diverse workforce Ohio State encourages applications from individuals with disabilities, veterans and women. EEO/AA employer.

## Smith College

The Smith College Department of Mathematics and Statistics invites applications for a tenure-track position starting Fall 2012. A Ph.D. in mathematics or related discipline is required by appointment date. Excellence in teaching is essential, as is evidence of a strong and ongoing research program. Applications must be submitted online

## Tenure-Track Position

through mathjobs.org, and all applicants must also complete the faculty application online at http://jobs.smith.edu (see Posting Number 2011009F). Applications must be complete by November 15, 2011. Smith College is an equal opportunity employer encouraging excellence through diversity.

## Wesleyan University

The Department of Mathematics and Computer Science at Wesleyan University invites applications for a ten-ure-track assistant professor in mathematics to begin in the academic year 2012-2013.

Candidates must possess, or be close to completing, a Ph.D. degree, and must have strong records in both research and teaching. We seek candidates whose research is in geometry, broadly construed, and whose interests are compatible with those of the department. Strong candidates in any field compatible with the research interests of the faculty are encouraged to apply. Teaching duties will be two courses each semester.

For full consideration applications must be received by

November 10, 2011, and include a cover letter, curriculum vitae, research statement, teaching statement and at least four letters of recommendation, one of which discusses teaching. Applications must be submitted online at mathjobs.org. Other correspondence may be directed to the following addresses: Search Committee, Department of Mathematics and Computer Science, Wesleyan University, Middletown, CT 06459; or email to searchcom@math.wesleyan.edu.

Wesleyan University is an equal opportunity employer who welcomes applications from women and historically underrepresented minority groups.

## University of Texas at Austin

Expected openings for Fall 2012 include: (a) Instructorships, some that have R.H. Bing Faculty Fellowships, RTG Postdoctoral instructorships, attached to them, and (b) possibly two or more positions at the tenure-track/tenure level.
(a) Instructorships at The University of Texas at Austin are postdoctoral appointments, renewable for two additional years. It is assumed that applicants for Instructorships will have completed all Ph.D. requirements by August 17, 2011. Other factors being equal, preference will be given to those whose doctorates were conferred in 2010 or 2011. Candidates should show superior research ability and have a strong commitment to teaching. Consideration will be given only to applicants whose research interests have some overlap with those of the permanent faculty. Duties consist of teaching undergraduate or graduate courses and conducting independent research. The projected salary is $\$ 46,000$ for the nine-month academic year.

Each R.H. Bing Fellow holds an Instructorship in the Mathematics Department, with a teaching load of two courses in one semester and one course in the other. The combined Instructorship-Fellowship stipend for ninemonths is $\$ 54,000$, which is supplemented by a travel allowance of $\$ 1,000$. Pending satisfactory performance of teaching duties, the Fellowship can be renewed for two additional years. Applicants must show outstanding promise in research. Bing Fellowship applicants will automatically be considered for other departmental openings at the postdoctoral level, so a separate application for such a position is unnecessary.

Each R.T.G. Instructor holds an Instructorship in the Mathematics Department, with a teaching load of two courses per year. The combined Instructorship-Fellowship stipend for nine-months will be at least $\$ 50,000$, which is

## Multiple Positions

supplemented by a travel allowance of $\$ 3,000$ and $\$ 10,000$ Summer salary for the first two years, pending availability of grant support. For satisfactory performance of teaching duties, the Instructorship may be renewed for two additional years. Applicants must show outstanding promise in research.

Those wishing to apply for Instructor positions are asked to send a vita and a brief research summary to the above address c/o Instructor Committee. Transmission of the preceding items via the internet (URL: https:// www.ma.utexas.edu/jobs/application) is encouraged.
(b) An applicant for a tenure-track or tenured position must present a record of exceptional achievement in her or his research area and must demonstrate a proficiency at teaching. In addition to the duties indicated above for Instructors, such an appointment will typically entail the supervision of Ph.D. students. The salary will be commensurate with the level at which the position is filled and the qualifications of the person who fills it.

Those wishing to apply for tenure-track/tenured positions are asked to send a vita and a brief research summary to the above address, c/o Recruiting Committee. Transmission of the preceding items via the internet (URL: https://www.ma.utexas.edu/jobs/application/TenureTrack) is encouraged.

All applications should be supported by four or more letters of recommendation, at least one of which speaks to the applicant's teaching credentials. The screening of applications will begin on November 1, 2011.

Background check will be conducted on the applicant selected.

The University of Texas at Austin is an Affirmative Action/Equal Opportunity Employer.

# Alliance for Building Faculty Diversity in the Mathematical Sciences 

Postdoctoral Fellowships

The Alliance for Building Faculty Diversity in the Mathematical Sciences aims to increase the access of US underrepresented minority groups to academic tenure-track positions. The Alliance offers 3 year NSF funded Postdoctoral Fellowships beginning Fall 2012 targeted at new or recent minority Ph.D.s. The alliance is comprised of NSF Mathematical Sciences Institutes and seven major research universities with a good record of mentoring underrepresented mathematics students. Successful applicants will show strong research potential and be interested in continuing in a career at a research university. The Fellowship are
$\$ 60,000$ per year plus benefits. For more information see http://www.math.ncsu.edu/alliance. Applicants must be US Citizens or Permanent Residents who have obtained a Ph.D. in mathematics within the last 5 years.

To submit your application materials, go to http://www.mathjobs.org/jobs/alliance. Include a vita, three letters of recommendation, a research statement and a short statement to address how your plans fit with the priorities of this program. Applications received by December 15, 2011 will be given priority.

## Austin Peay State University

The Department of Mathematics and Statistics at Austin Peay State University invites applications for a tenuretrack faculty position in Statistics. Rank and salary will be commensurate with experience. Potential for excellence in teaching is required, as well as the ability to support the

## Tenure-track Position in Statistics

programs of the department at both graduate and undergraduate levels. APSU is a regional university of about 10,500 students, located an hour's drive from Nashville. Browse to http://www.apsu.edu/human-resources/faculty/ currentjobopenings to apply.

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## Fall 2011

