

## Newsletter

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### *Young, Gifted and Black*



Duane Cooper (Morehouse College, second from right) moderated a panel discussion at the Joint Mathematics Meetings 2010 entitled “Young, Gifted and Black.” Panelists included from left to right are Kobi Abayomi (Georgia Institute of Technology), Jamylle Carter (Diablo Valley College), Emille Davie (University of California Santa Barbara), Omayra Ortega (Arizona State University), and Robin Wilson (California State Polytechnic University, Pomona).

# The National Association of Mathematicians (NAM)

publishes the NAM Newsletter four times per year.

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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.

## From the Editor

When I drive down the street, people can see that I have a passion for mathematics; here is the photo of me next to my license plate. I am honored to continue the great work that Scott Williams has done over the years. I am currently an Assistant Professor of Mathematics at the University of Evansville in Indiana. I grew up in Evansville, in the same neighborhood as Elbert Frank Cox, the first Black in the world to earn a PhD in mathematics.

Feel free to submit articles, historical papers, or book reviews that may be of interest to our readers. If you would like to receive the *Newsletter* electronically only, you can submit a request via email at [nam\\_newsletter@yahoo.com](mailto:nam_newsletter@yahoo.com).

In this edition, we focus on various NAM events at the Joint Mathematics Meetings. One article in this edition is from a new math PhD, and it focuses on developing heuristics of salaries of African American males. We also have an article about the story of the first Black student at Rice University who has recently returned as a professor. There are many upcoming exciting events that can be found in the calendar section. *Enjoy!*



Talitha Washington



# First Black Student Returns as a Math Professor

Scott Williams

In his biography *You Can Get There Even From Alice, Texas*, Dr. Raymond Lewis Johnson wrote, "I would describe my life, including my entry into the profession, as being characterized by my coming of age on the right side of several transition points from the totally segregated society in which I grew up to the quasi-open society in which we now live." A continuation of the "transition points" and an extraordinary turn of events occurred during the Fall of 2009 when Dr. Raymond Johnson stepped to the front of a Rice University classroom for the first time. Johnson, the first black student to earn a degree at Rice University in 1963 had returned as a professor.

Raymond Johnson's story reminds us how the United States of America has changed since the landmark decision of the United States Supreme Court *Brown v. Board of Education of Topeka*, 347 U.S. 483 (1954). The nation has witnessed a seminal struggle for rights, equality and inclusion in American society.

Johnson grew up in a tiny (population around 10,000) south oil Texas town called Alice. His two-room schoolhouse had eight grades and was a six block walk past a nearby new elementary school that did not allow Blacks. This unequal education opportunity was buffered by lessons in reading and arithmetic from his grandfather. Johnson skipped two grades as a consequence of this family effort.

Alice wasn't big enough to have an all-black upper level school, so black students suffered another unequal travesty of segregation; they were bused 28 miles to another small town for education from grades 9 through 12. Just prior to his turn, when Johnson was in the 8th grade, another extraordinary turn of events occurred in the event of the Supreme Court's *Brown vs. Board of Education* ruling, and the Alice School Board chose to abide by it. Thus, Johnson's fortune rode again in his favor.

After Johnson entered high school, he was affected by another transition event in American history; the Russians launched the first space satellite called Sputnik. America was embarrassed and as a result, considerable effort was put into improving science education in the nation. Thus, one of the high school teachers in Alice returned to the University of Texas for further training in science and mathematics. Subsequently this teacher offered enriched material beyond that in their textbooks, and this material was absorbed by Johnson. Upon graduation, he was one of a small number of Black students ever to receive the coveted National Merit Scholarships.

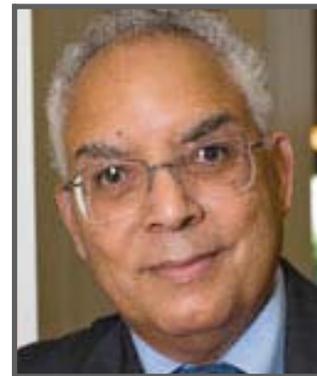
Thanks to an introduction from his high school teacher to a mathematics professor, Dr. H. B. Curtis at the University of Texas and thanks to its integration in the 1950's, Johnson enrolled with his scholarship as a math

major in the Austin school. The word "Integration" used for the university should be in quotes because dorms were still segregated, sports were still segregated and most aspects of campus life remained segregated, except for university fees.

In the 1960's Texas-Austin mathematics department, you were either on the third floor (applied) or fourth floor (pure). Johnson became one of the applied math students and he took reading courses with Dr. Curtis. He took a number of courses from Curtis, including a real analysis course out of Halmos' book as a (third-year) senior. It was while taking Curtis' Linear Algebra course that Johnson met a new black graduate student who was grading for the course, Vivienne Mayes. She was the fifth African-American woman to receive a Ph.D. in Mathematics (University of Texas-Austin, 1966).

At that time, the real head of the pure math department was Robert Lee Moore. He was a well known topologist, inventor of a unique teaching method - the Moore method (currently called Inquiry Based Learning) - which stresses self-learning. In this method, one is not allowed to read books and everything is learned from first principles. The method had been very successful in producing mathematicians and has been widely implemented. After Johnson learned of Moore's great prestige, he thought of taking one of his courses. But an older black student, Walker Hunt (who earned a Ph.D. in mathematics in 1979 from the University of Texas-Austin), told me he had gone to Moore to ask about taking a course with him. Moore told Hunt that he was welcome to take his course but that he would start with a C and could only go down from there.

I have two things to say about this. Moore, his method and his work are highly thought of in the mathematical world. When he died, there was a laudatory article in the *Math Monthly*, a publication of the Mathematical Association of America. The image of R. L. Moore in my eyes, however, is that of a mathematician who went to a topology lecture given by a student of R. H. Bing. Bing was a student of Moore. The speaker was what we refer to as Moore's mathematical grandson. When Moore discovered that the student was Black, he walked out of the lecture. (Parenthetically, let me say one more good thing about Bing. He was a topologist of world-renowned stature and Texas desperately wanted to attract him back



Raymond Johnson



from Wisconsin. Word was that Bing had said he would never return to Texas while Moore was there. Moore died and a year or so later, Bing returned to Texas.)

Ray Johnson writes "I was affected by another transition in American society when I was ready to begin graduate school. Rice University was a private university and according to its Founder's will, it was only for white citizens of Texas. The University had broken the limitation to citizens of Texas years before, and as I prepared to graduate from college in 1963, it had decided to break the part of the will limiting access to whites. Dr. Curtis had his Ph. D. from Rice and he recommended that I attend there. He was going to spend the next year at Rice on sabbatical, which would help ease my transition. I applied, was admitted, and just as I was ready to enter in the summer, the University announced its change of policy. Two alumni sued. As a result I spent a year as a Research Associate, but eventually the University won and I was admitted as a regular student in 1964. I nearly left after my first year when I discovered that I was receiving less money than other students who came in the same year as I did. I applied for and received an NSF graduate fellowship, which I would have been able to use anywhere, but I chose to stay at Rice. I learned this year that I was the first African American to graduate from Rice University. I always assumed otherwise because there was an undergraduate who was admitted in 1964 and I assumed she would have graduated first."

"Finally, the last transition occurred as I finished graduate school. My advisor, Dr. Jim Douglas, Jr., had left Rice as I was about to finish. I went to Chicago with him, and when I was ready to graduate, he asked where I would like to go. I consulted my wife, and she said, 'East'. He called a friend at Maryland, and I eventually received an appointment at College Park. (It is hard to believe that it used to be so easy and casual to get an appointment.) I did not know it then, but I was the first African American (actually African anything) to be appointed in the Mathematics Department at College Park."

"The adjustment to life in College Park on the non-mathematical side was not easy. The first thing my wife and I saw when we arrived on campus was a large set of

'Wallace for President' stickers. I wanted to turn back, but it was too late. I had no idea what I was doing in the classroom, although I had taught a little at Rice. I had little idea of what I was supposed to be doing in research, although a few colleagues like John Benedetto eventually helped. I was promoted though the ranks at Maryland, surviving long enough to become the African American faculty with the longest tenure at College Park. As a reward for this, they made me Chair; frankly, I think I deserved better."

"I started my mathematical life working on *non-well posed problems*. Well-posed problems are known to admit good numerical treatments, because you can estimate errors involved with your approximations. Non-well posed problems do not allow such approximations. The problem of determining the temperature at future times, given its current temperature is well-posed. The problem of determining its temperature in the past, given its current temperature is not well-posed. Douglas had a method that allowed you to show that the problem became reasonably well posed if the solutions had certain types of representation in terms of their initial temperatures. I became more interested in the representation of solutions in terms of their initial temperatures, which led me to the study of Besov spaces and harmonic analysis. I have continued to work in harmonic analysis."



Raymond Johnson

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*In addition to hosting the website Mathematicians of the African Diaspora, Scott Williams is the former editor of the NAM Newsletter and a Professor at SUNY Buffalo. His email address is sww@buffalo.edu.*

## Copulas for Tunable Markov Processes: Heuristics of Salaries of African American Males

Kobi Abayomi and Lee Hawkins

*I could play Basketball, with a consuming passion... On the basketball court I could find a community of sorts, with an inner life all its own..., on turf where blackness couldn't be a disadvantage.*

—From *Dreams From My Father* by Barack Obama

This quote — an unmistakable comment on the persistent friction between blackness and African American male accomplishment — is from Barack Obama, thirteen years before his inauguration as the 44th president of the United States. Educational achievement is often cited



as the appropriate talisman against enduring racial chauvinism and its effect on salary attainment ([1]), particularly in the population of African Americans who can and do attend college and graduate school ([2]). Salary inequality is believed to be lessened by increased African-American competitiveness on standardized tests ([3]), in undergraduate and graduate school attendance ([4]), and ultimately, parity in labor market participation ([5]). Recent research ([6]), as well as the conspicuous diorama generated by the recent economic crisis ([7]), suggests these factors insufficiently predict equitable salary attainment for African-Americans, in particular. We are in the process of developing heuristics for labor market paths and outcomes for African-American males.

We utilize a specific methodology for Markovian probability models — models for conditional independence — using salary and educational data, for divining heuristics of African-American career choice and income attainment at the wealthy extreme of the salary distribution. We focus on comparing the probability of labor market outcome for two groups of African American males: graduates of Masters of Business Administration programs and athletes in the three major professional sports — Baseball, Football and Basketball denoted by B, F, and Ba, respectively. Our goal is to compare outcomes for two classes of professions at the ‘extremes’ of the salary distribution. We use educational and employment data to set the marginal distribution at each state of a Markov process. The transitional dependence between states — the throughput across states — is illustrated by the copula parameter estimates.

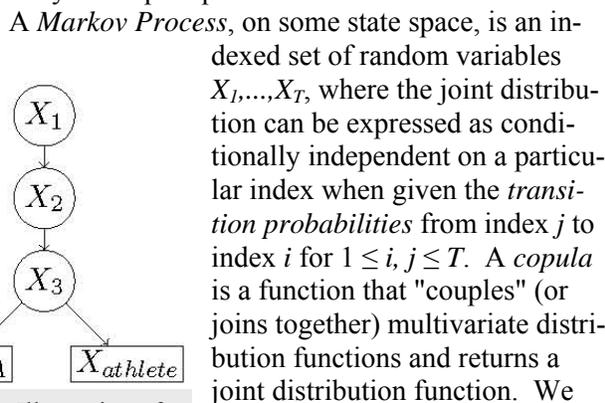


Figure 1: Illustration of Markov Process for data:  $X_1$ = Eighth grade,  $X_2$ = High School Senior,  $X_3$ = College Senior. Each state is transient and professional athlete or MBA graduate are the absorbing final states. The copula families are the transition probabilities and these are represented by the arrows.

A *Markov Process*, on some state space, is an indexed set of random variables  $X_1, \dots, X_T$ , where the joint distribution can be expressed as conditionally independent on a particular index when given the *transition probabilities* from index  $j$  to index  $i$  for  $1 \leq i, j \leq T$ . A *copula* is a function that "couples" (or joins together) multivariate distribution functions and returns a joint distribution function. We exploit the role of the copula as an engine for parametric dependence by using the Markovian process equivalence for the Chapman-Kolmogorov equations illustrated by Darsow, Nguyen and Olson ([8]).

We consider the states of the Markov Process as Eighth grade, High School Senior, College Senior and Professional Ath-

$X_{t_1}; X_{t_2}$	Professional Athlete	Salaried MBA
8th Grade	-	.2; < .1
HS Senior (B, F, Ba)	.03, .08, .45; < .16	-
College Senior (B, F, Ba)	1.2, 1.8, .94; < .24	-

Figure 2: Estimated transition probabilities using Gumbel-Hougaard copula. Numbers in **bold** are estimated transitional dependence parameter.

lete or Salaried MBA graduate. We used data from the National Center on Educational Statistics and the NCAA (see [9] and [10]) and fit marginal distributions. It is preferable to fit a process on a complete longitudinal dataset — the marginal distributions (of covariates as well) will correspond at each state.

Unfortunately, longitudinal data that covers the span from eighth grade to post-graduate employment for African-American men is scarce. Thus, only insignificant observations were available in the NELS dataset. We augmented the NELS data with the NCAA data by associating and randomizing over quintiles. Estimates via this approximation may not be consistent. See Figure 2.

At this point, we can make only some very preliminary comments. First, in the NCES 1988 cohort data the frequency of African American Males earning a Ph.D. is approximately 0.1 percent. Second, given participation in NCAA athletics, there is a 10-90 times higher probability of playing professional sports than an African American male eighth grader has of earning a Master's degree. Third, the probability of becoming a professional athlete, for any racial identification, is 2.25 greater than the probability of an African American male eighth grader earning a Master's degree — and 4.5 greater than the probability of an African American male eighth grader earning a graduate (or professional) degree.

African American MBA salary and attainment data is shamefully under recorded and difficult to acquire. Our preliminary findings suggest that *greater* barriers remain to becoming a salaried African American male MBA as illustrated in the relatively low estimates for transitional dependence between eighth grade and salaried MBA. This relatively low value may suggest an explanation for a oft derided but perhaps justifiable heuristic among young African American males. That is, given the barriers to achievement, non-traditional academic paths to wealth may be the ones of least resistance. We intend to revisit the methodology with better data so that we can provide a better understanding of the heuristics for salaries of African American males.

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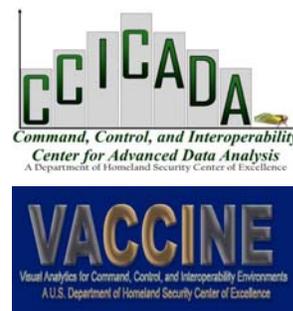
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## CCICADA/VACCINE Reconnect Workshop

The CCICADA/VACCINE Summer Reconnect Workshop on "Extracting and Visualizing Information from Natural Language Text" will take place from June 6-12, 2010 at the University of Southern California. This workshop exposes faculty teaching undergraduates to the role of the mathematical sciences in homeland security and provides an opportunity to researchers in government or industry to learn about recent techniques in data analytics. Participants may develop materials for publication in either the CCICADA Technical Reports or the Educational Modules Series published by the DIMACS Center at Rutgers University. The deadline for Applications is **April 5, 2010** or until all slots are filled. For more information, contact Christine Spassione (spassion@dimacs.rutgers.edu) or see <http://ccicada.org/Reconnect/2010/>.



## Granville-Browne-Haynes Session of Recent Doctoral Recipients at the Joint Mathematics Meetings 2010



Kobi Abayomi



Moustapha Pemy

The Granville-Browne-Haynes Session of Presentations by Recent Doctoral Recipients showcased talks by five new faculty. Dr. Kobi A. Abayomi (Georgia Institute of Technology), Dr. Nicola Edwards-Omolewa (Delaware State University), Dr. Moustapha N. Pemy (Towson University), Dr. Suman Sanyal (Marshall University), and Dr. Talithia D. Williams (Harvey Mudd College) each spoke for fifteen minutes at the Joint Mathematics Meetings in San Francisco, California. Dr. Dawn Lott (Delaware State University), Vice-President of NAM, hosted the two-hour session.

Kobi A. Abayomi received his doctorate in probability and statistics in February of 2008 from Columbia University. He gave a talk entitled "Parametric Copula Models for Markovian Processes, for African-American Male Career Heuristics."

Nicola D. Edwards-Omolewa received her doctorate in 2007 from the University of Delaware. She gave a talk entitled "Third Graders' Strategies and Preferences for Solving Arithmetic Problems: A Gender Difference Study."

Moustapha N. Pemy received his doctorate in 2005 from the University of Georgia. He gave a talk entitled "Liquidation of a large block of stock with regime switching."

Suman Sanyal received his doctorate in mathematics in May of 2008 from Missouri University of Science and Technology. He gave a talk entitled "Brownian motion indexed by a time scale and its applications."

Talithia D. Williams received her doctorate in statistics in January of 2008 from Rice University. She gave a talk entitled "Calculating target Cataract Surgical Rates for Africa."



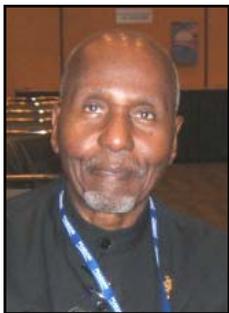
Suman Sanyal



Talithia Williams



## Cox-Talbot Lecture *at the Joint Mathematics Meetings 2010*



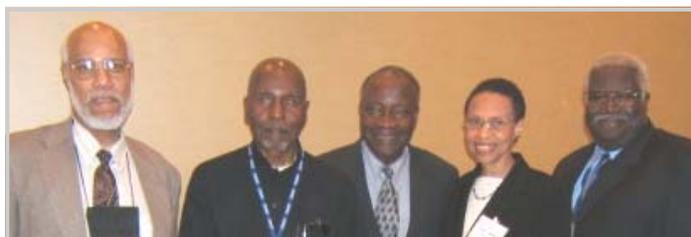
Abdulalim  
Abdullah Shabazz

The Cox-Talbot Lecture was presented by Dr. Abdulalim Abdullah Shabazz, Endowed Chair in mathematics at Grambling State University. He gave a talk entitled "The Number Zero: Its Origin and Use" at the Joint Mathematics Meetings in San Francisco, California. Dr. Nathaniel Dean, president of NAM, presented Shabazz with an award of appreciation.

Shabazz's talk focused on the history of algebra. He discussed how, from the third millennium on, the Egyptians had already developed the decimal notation and used the number zero which is indicated by the spaces they left where the zero would be placed today. This way of recording numbers appeared in China, India, Persia, and Babylonia, as well as East, North, West and Central Africa. During the eighth and ninth centuries, it appeared in Spain and Portugal, and after the thirteenth century, in the rest of Europe. Shabazz explained how the use of zero in the decimal place-value system eased the representation of numbers as well as calculations.

Shabazz has received many awards over the years for his contributions to the mathematical community. In

1992, the American Association for the Advancement of Science (AAAS) presented him with the 1992 Mentor Award for his leadership in efforts to increase the participation of women, minorities, and individuals with physical disabilities in science and engineering. In April of 1994, he received the NAM's Distinguished Service Award for his years of mentoring and teaching excellence. In 1995, he received the Quality Education for Minorities (QEM) Mathematics, Science, and Engineering (MSE) Network Giants in Science Award. In September of 2000, then President Bill Clinton bestowed Shabazz with the Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring. In 2001, Shabazz received the Association of African American Educators Lifetime Achievement Award for outstanding work with African Americans in mathematics.



Left to right: Bill Hawkins, Abdulalim Abdullah Shabazz, Johnny Houston, Sylvia Bozeman, and Robert Bozeman

## Claytor-Woodard Lecture *at the Joint Mathematics Meetings 2010*

The Claytor-Woodard Lecture was presented by Dr. Abdul-Aziz Yakubu, professor and chair of the mathematics department of Howard University. He gave a talk entitled "The Impact of Periodic Proportional Harvesting Policies on TAC-Regulated Fishery Systems" at the Joint Mathematics Meetings in San Francisco, California. Dr. Nathaniel Dean, president of NAM, presented Yakubu with an award of appreciation.

Yakubu's talk focused on how current fishing strategies, pollution and other environmental factors are reducing commercially valuable stocks. In the lecture, Yakubu discussed a mathematical model developed in his research collaborations with Jon Conrad (Cornel University), Nianpeng Li (Howard University) and Mary Lou Zeeman (Bowdoin College) on Computational Sustainability to demonstrate that periodic harvesting strategies can effectively stabilize complex dynamics caused by over-compensation. Under specific conditions related to the "Allee effect," Yakubu illustrated that both constant and periodic fishing strategies can lead to a sudden collapse of fishery systems. He explained how this behavior happens in actual fishery systems: Yakubu discussed how he applied the mathematical model framework to the Gulf of

Alaska Pacific halibut data from the International Pacific Halibut Commission (IPHC) annual reports and Georges Bank Atlantic cod data from the North East Fisheries. The model showed that, at recent harvesting levels, halibut fishery is sustainable while cod fishery is endangered. Yakubu explained that the likelihood of collapse of both the halibut and cod fisheries increase with heightened weather variability.

Yakubu has research interests in the analysis of mathematical models that arise in the diverse fields of ecology, epidemiology and demography. His interdisciplinary research activities include understanding the role of population dynamics on disease dispersal and persistence; the role of preventative treatments on the incidence of infectious diseases; and the role of subpopulation linkages on the stability and resilience of exploited fisheries. In addition, he has research interests in biosurveillance and early disease outbreak detection. Yakubu is the author of 60 scientific papers and co-editor of 2 books.



Abdul-Aziz  
Yakubu



## Mathematical Physicist Has Street Named in His Honor



Arlie Petters

In August of 2009, the Town Council of Dangriga, Belize voted to rename a street after Dr. Arlie Petters, Benjamin Powell professor of mathematics, physics, and business administration at Duke University. Petters is a native of Dangriga, a culturally vibrant town located in the southern part of Belize (a country in Central America). With his strong passion for education, in 2005, he founded the Petters Research Institute in Dangriga.

The Petters Research Institute (PRI) is a non-profit, interdisciplinary center of excellence which focuses on the application, theory, and pedagogy in science, technology, engineering, and mathematics. It encourages synergistic interactions with local businesses to induce economic growth, and hosts a variety of outreach programs to scholars, professionals, and youth. For example, during the summer of 2009, PRI hosted a two week long program in business leadership for

fifteen high school students from the United States, England, and Belize. They also host workshops at the institute on mathematics, science, and technology. More information can be found at the web site <http://www.pribelize.org/>.



Petters' own research centers on "gravitational lensing," a phenomenon described by Einstein where light is affected by the warping of space and time. He was the first to develop the mathematical theory of gravitational lensing; he has a forthcoming book entitled "Gravitational Lensing and Black Holes" which is due to be published this year by Springer Verlag. Petters has received many accolades for his innovative research: in 1998, he received a CAREER award from the National Science Foundation; in 2002 he was the first recipient of the Blackwell-Tapia prize in the Mathematical Sciences; and in 2008, he was named by the Queen of England as member of the Most Excellent Order of the British Empire.

"When we do selfless acts to empower others," Petters said, "the unexpected can happen." The next time you visit Dangriga, Belize, take a stroll down "Dr. Arlie Petters Street" and stop at the Petters Research Institute — you may be able to catch a glimpse of the many roads that he has paved for others.

## Infinite Possibilities Conference

Lily Khadjavi

In March, the Infinite Possibilities Conference (IPC) will be hosted by the Institute for Pure and Applied Mathematics (IPAM) at UCLA. IPC is a unique and exciting opportunity for women of color in math and their allies to gather for mathematics and community-building.

This year marks the first time the conference will be held on the West Coast. On the agenda for the conference are workshops for both students and professionals, research talks and poster sessions, and a wide variety of panels, ranging from advice for graduate studies in mathematics and statistics to navigating our paths beyond school. Given the goal of building connections and community between those at different stages of education and career, conference participants include faculty, researchers, teachers, graduate students, and undergraduates — and there is even a high school student component.

Saturday night, a banquet will feature the presentation of the Dr. Etta Z. Falconer Award for Mentoring and Commitment to Diversity to Dr. Ivelisse M. Rubio of the

University of Puerto Rico, Rio Piedras. She has been involved in many activities to promote minority undergraduate students to graduate studies. She earned a Ph.D. in Applied Mathematics from Cornell University, and her research interests are applications of computational algebra, finite fields and coding theory.

The Infinite Possibilities Conference is a project of Building Diversity in Science, hosted by IPAM and UCLA, with support from the NSA, Oracle, Symantec. See <http://ipcmath.org> for more details.



Ivelisse Rubio

Lily Khadjavi is an Associate Professor of Mathematics at Loyola Marymount University. She is also on the IPC Organizing Team. Her email address is [lkhadjavi@lmu.edu](mailto:lkhadjavi@lmu.edu)



## NAM Calendar

The third **Infinite Possibilities Conference (IPC)** will take place from **March 19-20** at the University of California, Los Angeles. IPC is a national conference that is designed to promote, educate, encourage and support minority women interested in mathematics and statistics. See: <http://www.ipcmath.org/>

**IMA Special Workshop, Career Options for Underrepresented Groups in Mathematical Sciences**, will take place on **March 25-27** at the Institute for Mathematics and Its Applications (IMA), University of Minnesota. This workshop encourages underrepresented minorities at various stages of their careers, including graduate students and postdocs to become prepared to work in the academics, industry or the government labs. See: <http://www.ima.umn.edu/2009-2010/SW3.25-3.27.10/>

**2010 Project NExT** (New Experiences in Teaching) is a professional development program for new and recent Ph.D.s in the mathematical sciences. Faculty for whom the 2010-2011 academic year will be the first or second year of full-time teaching at the college or university level are invited to apply. The application deadline is **Friday, April 16, 2010**. See: <http://archives.math.utk.edu/projnext/>

The **EDGE Program** (Enhancing Diversity in Mathematics Education) invites women to participate in a post baccalaureate summer enrichment program from **June 7 to July 2** at North Carolina State University in Raleigh, North Carolina. More information can be found at the web site <http://www.edgeforwomen.org/>

The **Summer Undergraduate Mathematical Science Research Institute (SUMSRI)** is a program conducted under the guidance of Miami University's Department of Mathematics and Statistics. SUMSRI will be held for **seven weeks in June and July**, on Miami University's campus in Oxford, Ohio. More information can be found at the web site <http://www.units.muohio.edu/sumsri/>

## Conferences & Workshops

**NAM's Regional Faculty Conference on Research and Teaching Excellence** will be held at Dillard University in New Orleans, Louisiana from **April 23-24**. Contact Leon Woodson via email at [leon.woodson@morgan.edu](mailto:leon.woodson@morgan.edu).

The **CAARMS 16** (Conference for African American Researchers in Mathematical Sciences) will be held on **June 15-18** in Baltimore, Maryland at the Mt. Washington Conference Center. For more information, contact Bill Massey at [wmassey@princeton.edu](mailto:wmassey@princeton.edu) or see: <http://www.princeton.edu/~wmassey/>



The **NAM David Blackwell Lecture at MAA MathFest 2010** in Pittsburgh, Pennsylvania will be given by Asamoah Nkwanta of Morgan State University on **Friday, August 6** at 1:00 pm. See: <http://www.maa.org/mathfest/ia.cfm#nkwanta>

**Blackwell-Tapia Conference** will take place on **November 5-6** at the Mathematical Biosciences Institute, The Ohio State University. See: <http://mbi.osu.edu/2010/ctwdescription.html>

## Summer Programs

The **National Alliance** for Doctoral Studies in the Mathematical Sciences will host a National Science Foundation (NSF) sponsored summer **Research Experience for Undergraduates (REU)**. The deadline to apply is March 19. More information can be found at the web site <http://www.mathalliance.org/reu.asp>

The Math **SPIRAL** summer program in the Department of Mathematics at the University of Maryland in College Park is funded by the National Science Foundation (NSF) and the National Security Agency (NSA). This **six-week** intensive program is open to students at the affiliate institutions of SPIRAL who are rising sophomores and rising juniors. For more information see: <http://spiral.math.umd.edu>

## Job Openings

For several years, NAM has had a web site with listings of open positions. This process is open to advertisers in the *Newsletter*. Advertisements too late for the publication date appear there. The remainder of the advertisements appear there six more weeks before they appear in print in the *Newsletter*. See the editor's website: <http://faculty.evansville.edu/tw65/NAM.htm>





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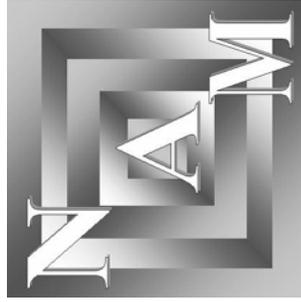
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