# national association of mathematicians



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# **IN THE NEWS**

NOMINATIONS (open to members) are due for Vice-President, Region B representative, and Majority Institution representative.

NAM's Regional Faculty Conference on Research and Teaching Excellence is held March 28 and March 29 at the Mathematical Sciences Research Institute in Berkeley California..

CAARMS 2003 will be held June 24-27, 2003 at Purdue University. Details inside.

#### BLACKWELL-TAPIA PRIZE.

The First Blackwell-Tapia Prize: Cornell University and the Mathematical Sciences Research Institute (MSRI) established a prize in honor of two mathematicians, an African American and a Hispanic American. The award was presented at the second Blackwell-Tapia Conference held at MSRI November 1 and 2, 2002. See article inside.

Dr. James Curry is NAM's BLACKWELL LECTURER for the 2003 MAA MathFest in Boulder, Colorado.

Joint NAM and Banneker Association conference in Octo ber 2003. See the article MET II, page 6.

Dr. Trachette Jackson, Professor of mathematics at the University of Michigan, receives a Sloan Fellowship for her work in Mathematical Biology. Dr. Jackson is the third black to receive this award. Of all research opportunitues in mathematics, The Sloan Fellowship is the most competitive. Dr. Katherine Okikiolu of U.C.-San Diego and Dr. Arlie Petters of Duke University have also received the award.

## Shirley M. Malcom to Receive the Public Welfare Medal by Dr. Sylvia Bozeman



The article below is consists of excerpts from an announcement by the National Academy of Science which appears of its website. The address for the full announcement is: http://www4.nationalacademies.org/ nas/nashome.nsf/urllinks/NAS-5JENZT?OpenDocu

The National Academy of Sciences has selected Shirley M. Malcom to receive the academy's most prestigious award, the Public Welfare Medal. Established in 1914, the medal is presented annually to honor extraordinary use of science for the public good. Malcom has spent nearly 30 years working both at the grass-roots level and internationally to improve science and technology education and participation by students of diverse backgrounds.

"Dr. Malcom has served science with extraordinary scope, originality, and achievement," said R. Stephen Berry, home secretary of the National Academy of Sciences and chair of the selection committee. As head of the Directorate for Education and Human Resources of the American Association for the Advancement of Science (AAAS), Malcom has had a unique impact on advancing public understanding of science and technology, and increasing the participation of women, minorities, and people with disabilities in these areas.

"Dr. Malcom has been a tireless advocate for the empowerment of the general public through science and technology, viewing such an education as a necessary ingredient for social progress," said National Academy of Sciences President Bruce Alberts. "She has also been at the forefront in making science available to those normally underrepresented in science careers, dedicating her life to making sure that everyone has a chance to succeed."

Growing up in the South during the 1950s and 1960s and attending a segregated, all-black high school, Malcom witnessed firsthand the lack of opportunities for minorities to achieve in science. She graduated from the University of Washington, Seattle, where she was usually the only African-American woman in her science classes. Malcom went on to be a high school teacher and then a college professor, finally moving to Washington, D.C., to work as a research assistant at AAAS. There she was charged with taking an inventory of the nation's education programs in science for minority students, a task that brought home the magnitude of the problem faced by racial and ethnic minorities. Science education programs often excluded minorities, she found, and those that were set up to serve minorities favored men.

These findings resulted in the 1976 landmark report The Double Bind: The Price of Being a Minority Woman in Science, which Malcom co-authored. She helped document how minority women were the victims of both racism and sexism. That report helped bring to light a problem that until then had not been a prominent part of the national consciousness.

In 1979 Malcom became head of the AAAS Office of Opportunities in Science and in 1989 became director of the Directorate for Education and Human Resources. Realizing that traditional education was not reaching everyone, Malcom found ways to bring science to minorities in their own communities.

She led the creation and development of a host of innovative efforts such as the Black Churches Project, a network of churches that worked to bring science, environment, and health education to the African-American community, and Proyecto Futuro, a program designed to connect science with the Latino community and culture.

Malcom's activities have not been limited to grass-roots efforts. She has filled several U.S. presidential appointments, serving on the National Science Board from 1994 to 1998 as well as on the President's Committee of Advisers on Science and Technology from 1994 to 2001. Internationally, she was a U.S. delegate to the 1999 UNESCO World Conference on Science. She also helped form the Once and Future Action Network, a coalition of nongovernmental organizations (NGOs) and donor groups that worked to ensure a science and technology component in the NGO Forum held parallel to the U.N. Fourth World Conference on Women in Beijing. In 1983 she was an organizer for the meeting of the Panel of Experts on Science, Technology, and Women to prepare for the U.N. Conference on Women held in Nairobi, Kenya. She was one of eight women advisers representing different regions of the world on the Gender Working Group of the U.N. Commission on Science and Technology for Development. Malcom chairs the Committee on Capacity Building in Science of the International Council for Science.

Born on Sept. 6, 1946, in Birmingham, Ala., Malcom received her bachelor's degree with distinction in zoology from the University of Washington in 1967, and her master's degree in zoology and animal behavior from the University of California, Los Angeles, in 1968. She received her Ph.D. in ecology from Pennsylvania State University in 1974. Malcom holds 12 honorary degrees, sits on seven active boards, including the board of trustees for California Institute of Technology and Morgan State University, and has contributed to more than a dozen books and other publications.

**The Public Welfare Medal**, consisting of a medal and an illuminated scroll, will be presented to Malcom during the NAS annual meeting (April 26 - 29, 2003 in Washington, DC) The National Academy of Sciences is a private, nonprofit institution that provides science advice under a congressional charter.

Dr. Malcom's husband Horace is a Principal Professional Staff member of the Johns Hopkins University Applied Physics Laboratory.Dr. Shirley Malcom's address as University of Washington Alumna of the year can be found at http://www.washington.edu/alumni/columns/june98/malcom1.html

# CAARMS 9

### Ninth Conference for African American Researchers in the Mathematical Sciences is to be held June 24-27, 2003 at Purdue University.

The ninth Conference for African American Researchers in the Mathematical Sciences (CAARMS9) will be held during the dates of June 24-27, 2003 at Purdue University. Events include invited technical speakers, tutorials, and a graduate poster session.

The organizers are Rodrigo Banuelos, Johnny Brown, Carl Cowen and William A. Massey. More information can be found on the CAARMS9 website at: http://www.princeton.edu/~wmassey/CAARMS9 There is funding to support graduate students who want to make poster presentations at CAARMS9. All interested graduate students should submit their titles and abstracts by email to wmassey@princeton.edu before May 15, 2003.

# **Clarence F. Stephens receives the Gung-Hu Award**

The Mathematical Association of America awarded Clarence F. Stephens its Yueh-Gin Gung and Dr. Charles Y. Hu Distinguished Service to Mathematics Award.

Born in 1917, Dr. Stephens (Ph.D. University of Michigan 1943) was the ninth African American to receive a Ph.D. in Mathematics. He was the Chairman of the Mathematics Department of Morgan State University (then College) where three of his students Earl Barnes, Arthur Grainger, and Scott Williams serve as the only three students from the same graduating class of an HBCU to earn a Ph.D. The web page: http://www.math.buffalo.edu/mad/special/morgan-potsdam\_model.html lists at least ten, who went on to earn the doctorate, former students Stephens before he arrived at Pottsdam..

From 1969 until his retirement in 1987, Stephens was Chairman of the Department of Mathematics at the State University of New York at Potsdam. It is for his role in achieving the "Potsdam Miracle" in the production of undergraduate mathematics majors at SUNY Potsdam in the 1980's, which led to a model for creating a welcoming atmosphere for undergraduate mathematics majors at many other institutions.

Stephens received a number of accolades for a long and distinguished career in undergraduate mathematics education by the time he came to SUNY Potsdam in 1969, including an honorary doctorate from Johnson C. Smith University (1954) and a citation by Governor Millard Tawes of Maryland for distinguished service to mathematics education (1962). His connection with SUNY Potsdam began in the spring of 1969, when he was on the mathematics faculty of SUNY Geneseo and visited the Potsdam campus to give a talk sponsored by the Seaway Section of the MAA. The faculty at Potsdam were so impressed by his ideas on mathematics and teaching undergraduates that they began a campaign to have him come to the campus as the Chair of the Mathematics Department. He went to Potsdam in the fall of 1969 and retired from there in 1987.

Here are Stephens'own words about his goal as Chair, as reported in the book Math Education at its Best: The Potsdam Model (MEAIB), by Dilip Datta.

"My primary goal as Chair was to help establish the most favorable conditions I could for students to learn and teachers to teach. I adopted a method for developing the mathematics potential of students at Potsdam which had worked very well at Morgan State College and in National Science Foundation Summer Institutes for secondary teachers of mathematics. A team of mathematics faculty members with me as a member was formed to teach students in their early (freshman and sophomore years for undergraduates-first year for graduate students) study of mathematics, "How to Read Mathematics Literature with Understanding and to Become Independent Learners." A person selected for the team was a person who, in my opinion, had a warm relation with beginning students, strong loyalty to the department and the college. The team was informally formed by the way courses were assigned without informing faculty members that they were members of the team. Since each member of the mathematics faculty was given an opportunity to teach across the mathematics curriculum, every effort was made to add as many members to the team as possible.

"Sometimes I would teach a section of the same course with team members, and often I would teach a following required course for the mathematics major. From my earlier experiences at Morgan State College and in National Science Foundation Summer Institutes, if team members were successful in reaching their goal, then I had confidence that any caring mathematics faculty member could effectively teach the students developed by the team. Also, the students who were developed by the team would help us teach other students as tutors. The indicated method for developing the mathematics potential of students was as effective at SUNY Potsdam as it had been at Morgan State College."

And effective it certainly was. Though SUNY Potsdam is a relatively small regional state college with a total enrollment of just over 4,000 students during Stephens' time there, in 1985 the college graduated 184 mathematics majors, the third largest number of any institution in the U.S. that year (exceeded only by two University of California campuses). This represented about a quarter of the degrees given by SUNY Potsdam that year, and over 40% of the institution's honor students were mathematics majors.

The **Potsdam Miracle** was not in any sense accomplished by lowering standards, but rather by raising the standards for teaching the students and providing a supportive environment for them. It would take much more space than is available here to describe all of the innovations that Dr. Stephens implemented that led to the **Potsdam Miracle**. Portions of the model have been adopted elsewhere by institutions of many different types, particularly since the appearance of Datta's book.

Stephens received his Bachelor of Science degree in Mathematics from Johnson C. Smith University in 1938, and his Master of Science and Ph.D. degrees in Mathematics from the University of Michigan in 1939 and 1943, respectively. He began his career in 1940 at Prairie View State College and served the United States Navy from May, 1942 to the honorable discharge in December, 1945. In 1946, Stephens joined the faculty of Prairie View as a Professor of Mathematics. The following year he left to become Professor and Chairman of the Mathematics Department at Morgan State College, where he remained until 1962. He then accepted an appointment as Professor of Mathematics at the State University of New York at Geneseo. In 1969, he joined the mathematics faculty at SUNY at Potsdam as Professor and Chairman of the Mathematics faculty at SUNY at Potsdam as Professor and Chairman of the Mathematics faculty at SUNY at Potsdam as Professor and Chairman of the Mathematics faculty at SUNY at Potsdam as Professor and Chairman of the Mathematics faculty at SUNY at Potsdam as Professor and Chairman of the Mathematics faculty at SUNY at Potsdam as Professor and Chairman of the Mathematics faculty until retirement in 1987.



Left, seated: Clarence and Harriett Stephens and former students from Morgan who earned a doctorate: L-R. A. Grainger, E. Barnes, S. Reese, S. Williams.

In addition to these four, at least another five of Stephens former Morgan students, received a doctorate: V. Cateforis, E Embree, G. Ford-Gilmer, C. Moore, R. Smith.

**Dr. Stephens' Acceptance Response** 

I accept the Gung-Hu award with gratitude for doing the things I enjoyed doing. I wish to share this award with my wife, Harriette, for more than 60 years of love and support. We celebrated our 60th wedding anniversary last month. Also, I have experienced the joy of seeing the growing up of our children, Jeannette and Clarence, our grandchildren, Philip and Kim, and now our great grandson Taylor.

I learned, first at Morgan and then at SUNY Potsdam, that the practice of putting emphasis on the weak high school mathematics background of entering college students and requiring students to complete remedial mathematics courses on the basis of placement examinations created a very unfavorable environment for learning mathematics. Very few students majored in mathematics or enrolled in mathematics courses unless required to do so. Almost no students learning in this environment reached a high level of achievement in mathematics.

On the other hand, a very favorable environment for learning mathematics can be established if members of the mathematics faculty have faith in the abilities of their students to reach a high level of achievement in mathematics. This task is not easy and a solution depends on place and over time. The creative abilities of the faculty are needed to find a solution. One way to begin is by providing examples, from the students regularly admitted to the college, of students who have been encouraged to reach a high level of achievement in mathematics. We established favorable learning environments at Morgan and SUNY Potsdam.

At Morgan we attracted a high percent of the best students to major in mathematics and often the valedictorian each year was a major in mathematics. Our students were successful in the many careers they followed and in one year, three students in the same graduating class later earned the Ph.D. degree in mathematics.

At SUNY Potsdam, we had similar success. After the mathematics faculty demonstrated that they were successful in teaching almost all students who were enrolled in mathematics courses, high school teachers encouraged many of their best students to enroll in our college. Since we had a very demanding mathematics program in which students succeeded, we attracted many of the best students to major in mathematics. For a period of eight years, the average number of mathematics majors on the PRESIDENT'S LIST for academic excellence was 169, with a maximum of 197. Over 22% of the graduates in these three classes majored in mathematics.

Mathematics was not a requirement in the general education requirements at SUNY Potsdam during the 18 years I served as chair of the mathematics department. The only departments requiring calculus as part of their majors, other than mathematics, were Chemistry and Physics, and these two departments had only a few majors. As a result of a favorable environment for learning mathematics, one year with a freshman class of less than 1000 students, more than 700 of the freshmen enrolled in calculus during the fall semester. One year at least three students in the same graduating class later earned Ph.D. degree in mathematics.

Indeed, I accept the Gung-Hu award with gratitude for doing the things I enjoyed.

#### The Award

The Yueh-Gin Gung and Dr. Charles Y. Hu Award for Distinguished Service to Mathematics is the most prestigious award made by the Association. This award first given in 1990, is the successor to the Award for Distinguished Service to Mathematics, awarded since 1962, and has been made possible by the late Dr. Hu and his wife, Yueh-Gin Gung. It is worth nothing that Dr. Hu was not a mathematician. He was a retired professor of geology at the University of Maryland. He had such strong feelings about the basic nature of mathematics and its importance in all human endeavors that he felt impelled to contribute generously to our discipline. A list of recipients can be found at: http://www.maa.org/awards/gunghu.html

We thank Dr. Stephens for sending us this material to print here.

## **MET Summit II**

### A National Conference on the Mathematical Education of Teachers

The Benjamin Banneker Association (BBA) and the National Association of Mathematicians (NAM) in cooperation with the other member societies of the Conference Board of Mathematical Sciences (CBMS) is pleased to announce MET Summit II - a second National Conference on the Mathematical Education of Teachers. MET Summit II will be held October 11-12, 2003 at the Hilton Crystal City at National Airport in Arlington, VA. The Conference will emphasize participation of Historical Black Colleges and Universities (HBCU's) and other minority serving institutions involved in the mathematical education of teachers.

MET Summit II will feature working sessions on cooperative programs, courses, activities and materials that will engage the participants in planning local implementation of the ideas and recommendations in the CBMS publication "The Mathematical Education of Teachers". Invited speakers and session leaders include Lee Stiff, Freeman Hrabowski III, Judy Sowder, Robert Devaney, Barbara Franklin, Carol Malloy, Kenneth Millett, Paul Sally, Karen King, Sue Parsons, Henry Gore, Jim Lewis and Ruth Heaton.

Participants should apply in teams. Preference will be given to teams that include a mathematician, a mathematics educator, a college or university administrator with responsibility for teacher preparation programs, a community college mathematics faculty member, and a K-12 school system person involved in mathematics teacher preparation or in-service activities. There will be a nominal team registration fee of \$100. We expect to be able to cover housing and meal costs for participants. We also expect to offer ten \$3000 ExxonMobil innovation grants which are intended to help participant teams plan local improvements in teacher education and to prepare proposals for more substantial support from local, state or national agencies.

Additional information and application forms will be available by March 15, 2003 on the BBA website at: http://www.math.msu.edu/banneker and the NAM website at: http:// jewel.morgan.edu/~NAM. The Mathematical Education of Teachers book is on the CBMS website at: www.cbmsweb.org

MET Summit II is contingent on grants from the National Science Foundation; ExxonMobil Foundation; Texas Instruments, Inc.

### A Letter to Mathematics Graduate Students By Dr. Dawn Lott

That which follows is a transcript of a talk given February 20, 2003 by African American woman mathematics Ph.D. to graduate students at the institution where she earned her doctorate.

#### To my brothers and sisters at Northwestern University:

It was a pleasure to meet with many of you this past Monday and share with you some words of wisdom and encouragement. I hope you realize that I can not give you any more encouragement than the other positive forces in your life have already given you. You are in a Ph.D. program. Obviously, you have had support or encouragement from someone in your life.

What I wanted to impart to you was not only some idea of what it is that I do for work and play when I sit down to the computer and use my mathematical abilities to solve real world problems. I wanted to give you a taste of my history at Northwestern and a sense of what your future will be like on the other side of the hooding ceremony.

During my visit, were given the opportunity to talk over lunch but there were many topics we did not cover in detail. I am writing to address some of these issues and I am more than willing to correspond with any of you who wish to continue discussing the process and post activities of graduate study.

My four years at Northwestern were four of the best years of my life. I found graduate school challenging and rewarding, giving me an opportunity to grow and learn without boundaries. As you know I was in the Department of Engineering Sciences and Applied Mathematics and today, I consider the department to be top in the country in the education and the nurturing of its students.

#### To my married brothers and sisters:

I say to you that the relationship you have with your spouse, is by far the most important relationship you will ever be in other than your relationship with God. And it is my prayer that God (in whatever form you worship him) is the center of the relationship. How you relate to your spouse is a testimony of how you handle a precious gift that God has entrusted you with. This relationship is sacred and nothing should be allowed to come between the two of you.

But all of you know the strength and dedication that is required of you and you alone in the pursuit of a doctoral degree. At times, you must be so focused on yourself and what is asked of you, that it is difficult to focus on the needs of your spouse and the joys you should be experiencing with him or her. Everyone would love to have a spouse who is completely understanding of the long nights studying or the never ending thoughts of the next step in the equation, the algorithm, the technique, the analysis or whatever it is that never leaves your thoughts. And when all is said and done, God first, spouse second, academia third (unless you have children: next section).

You will have to maintain a balance between loving your spouse and loving yourself. That time that you devote to working on your dissertation should not be considered as time or attention away from your partner. It is without a doubt time that you are developing yourself and equipping yourself with the right tools to live your dreams. It will be incredibly difficult at times to be able to make choices but you can not let the lack of a choice make a choice for you. I tell my students all the time that one must find balance in their life because your teeth, your money and your spouse will all leave you if you neglect them. Make your pursuit of a Ph.D. not only be your goal but an interwoven goal for the both of you to be happy. Learn to say no to your spouse. "No, Eric. We can not go to the movies this evening but lets schedule it for Tuesday, after my D12 exam." Learn to say no to your advisor. "No Alvin, I will not be in tomorrow evening because it is my anniversary and Eric and I are going out to dinner." And learn when and how to make the appropriate choice between the two. Realize that marriage lasts forever but a dissertation is clearly a terminal pursuit. If you and your spouse have this understanding and you continue to love him/her in the midst of the mania, you will have a future with both your spouse and your degree in it.

We must accept the gifts that God has given us. I am so thankful for my ability and love of mathematics. I know that it is a part of me that defines me and makes me manage the activities of my life in an orderly and systematic manner. I, of course, seek to develop younger mathematicians but I realize this is my dream. Another may not understand what drives me. It is my hope that with a spouse, understanding and acceptance come hand in hand.

If you think the pursuit of a doctoral degree is difficult, I can honestly say I agree. I have given birth one time, to my blessed son Samuel. And I can honestly say that I would have nine more children before I would ever work on another doctoral degree. But, the degree is not the biggest challenge you will face. Your biggest challenge will be staying married to the same individual for the rest of your life. So realize that the degree is doable, is obtainable and it tangible for he/she that seeks it but it is not the cross you must bear in life, even if it feels like it.

Many of you know that my spouse and I came to Northwestern, together, as graduate students but did not leave together. But the demise of my marriage was not a direct casualty of my graduate pursuits, although our personal goals and achievements at times, did make it difficult for us to focus on each other. Why? We were each trying to "get ours." The Ph.D. is yours, not your parents, not your children, not your advisors and certainly not your spouses. It requires a major bit of selfishness to carve out your own time to devote to your studies and to your research.

You are required to be selfish with your time, your activities, and more important, your thought processes. Therefore you must make priorities. And remember, your spouse and your dissertation must be at the top of the list. There maybe times when the dissertation comes first. This was difficult for me because of my belief that my spouse should come first after God. But, when it came down to preparing for the preliminary examinations, the qualifying examinations and the defense, I had to focus my light on me just so I had enough illumination to get me through the dark tunnels. And as supportive as a mate can be, he nor she is there in the room with you when you are defending the one thing in life you have done uniquely and solely by yourself. It is your accomplishment. You did it yourself. Despite what anyone may think, it was me, Dawn Lott, who held that chalk and expounded on three or fours years of my own past energies.

Love and relate to your God. Love and relate to yourself. Love and relate to your spouse. You may have to make daily choices between your spouse and your pursuits. But they should not be lifetime choices. A doctoral degree is much more rewarding and fun when you have your mate to share in your joy and self accomplishment.

To God be the glory.

#### To my brothers and sisters with children:

By the time I was 26, I was married, I had one small child and I was "all but dissertation." How could I have been so blessed to have so much? I can honestly say that having a child in graduate school was not easy and if I had to do it all over again, I would still choose to travel the path I so familiarly remember.

Again, we are faced with choices and no one can look into the face of a child and place him/her second on your "to do list". Samuel means God's messenger and truly, my Samuel is a messenger of God. Throughout my graduate program, Samuel suffered continuously from respiratory distress, pneumonia, heart problems, growth delays, and abusive medical treatments which involved x-rays, biopsies and surgeries. In the midst of my own academic responsibilities, my marriage to a graduate student who also had academic responsibilities and parenting responsibilities, I do not know how I went to bed each night with peace in my spirit. Well, many days I did not have peace. I was faced with the reality that I might have to someday make a choice and prioritize the three most important entities in my life, Eric, Samuel and school. It was clear to me that my child deserved to have a mother who would sacrifice her life for him. And as I looked at his tiny, little frame each day, I always knew what I had to do, if necessary. I would postpone school and care for this gift that God had entrusted me with, without any reservation. For some of you this may seem to be an obvious decision. It is not. I can not tell you how difficult it is to be successfully progressing in a graduate program, nearing a defense, and think that someday a doctoral degree would be a dream unrealized.

I am thankful that I never had to make that choice and I was able to do what I had to, to meet the needs of myself, my mate, my child and my academic program. I know that at any given time, one, two or three of these had to suffer in order to for me to focus on the one. These challenges made me stronger. A graduate program is difficult and raising children is even more difficult and together they may feel like your world is closing in. But I had to have it all and with God, I did.

#### To my brothers and sisters with outside funding:

Joy and grief comes with having lots of money or in being in need of it. When we are blessed to have outside funding, it alleviates one of the many stresses a graduate student experiences. However, being "independently wealthy" can make one independent from the department. Be sure to make your department accountable

for you and your progress. You should be included in all activities involving graduate students, not just the ones the department is supporting financially. Since the department is not funding you, its investment in your education is somewhat different. Force yourself to stay in the loop. You are working just as hard, if not harder, than the other students, and you need the same guidance and advice, as well.

#### To my brothers and sisters making the choice of an advisor:

I can not equate the choice of an advisor equal to being given the opportunity to pick your own parents but it is your advisor who will shape you, mold you and provide for you the basic tools you will need in this doctoral pursuit. The benefits and repercussions of your choice depend on who your advisor is and how you relate to him or her, what you advisor is able to offer you in terms of guidance and boundaries and how much of yourself you are willing to commit to your own goal and to the student/advisor relationship. First and most important, your advisor does not have to be a person of color. He or she must be someone who believes in you and your ability to carry through to the end. Your advisor should be someone who is top in his/her field and has a carved out an area of that field for his/herself. Your advisor should be someone who will push you until you can not be pushed any farther and be able to recognize that you have reached your daily limit and all else must continue tomorrow. The relationship between you and your advisor should be one of respect, dedication, motivation and a mutual yearning to learn more.

The Department of Engineering Sciences and Applied Mathematics has a wealth of phenomenal individuals to choose from to help make and shape your career as anapplied mathematician.

But in the midst of these wonderful, educated individuals, I was very clear that I wanted to work with Dr. Alvin Bayliss because of his area of expertise and what I saw was a researcher, educator and more importantly, a humanitarian that I wanted to emulate. It was with great anticipation that I asked him to be my advisor and immeasurable joy, growth and inspiration I experienced under his direction. And I knew that he had so much faith in me and my abilities I was sure not to let either of us down.

Many of you are now being pressured to choose advisors very early in your program. No one would choose their parents or their spouse in such a short amount of time. But faced with the time constraints placed upon you, you need to do your research so that your choice will bring fruitful collaborations in your future. Let the professors in your department know that you are eager to excel in your program and you are willing to go the distance. Perform well in your classes. Make sure you are visible in the department. But most of all, familiarize yourself with the research interests of the department. Look on the websites of the professors, ask them for reprints of their papers. Get to know the people in the department who will participate in your doctoral process. Imagine if we were asked to choose our parents long before we knew what we would learn from them. The choice of an advisor is one of the few decisions you will make yourself during your tenure as a graduate student. Make it wisely. If so, you will have a lifetime collaborator, confidant, mentor, supporter and friend.



Dr. Lott and her children



Dr. Alvin Bayliss and Dr. Lott

#### To all of you:

I can not impress upon you how much my four years at Northwestern shaped my life. And with each return, I am reminded by my home department and my friends that I truly am at home. I know the challenges and the despair you may feel in the midst of this degree. But, remember, you are giving birth to something new, something you have done, something you are contributing to make a difference in your field. This process is a growing process which can be painful at times. I experienced many manic moments when I could not solve the equations that modeled my problem. It was miserable when the 6000 line program I had written did not give me the correct output. But the problems you figure out and the solutions you come up wi th are rewarding for they came from the very depths of your soul and your efforts.

Prepare your mind and your spirit for the dissertation writing process. You must be mentally and physically and spiritually fit. Keep negative forces at bay. Also prepare your family and your friends for the time when you must disassociate from all but the dissertation. Try to think in line with or ahead of your advisor. That is, start the writing process before he/she requests you to do so. The writing will also reinforce what it is that you already know. The day Alvin told me I should start writing up my problems and the results, I handed him 75 typewritten pages which I later called chapters one and two.

You may receive support and camaraderie with your fellow students of they may be the very ones who engage you in a competition you did not know would ever exist. You will be mad with your advisor and he/ she will be mad or disappointed in you. These things will come. Love your God and yourself first, stay focused and determined, be true to yourself and your goal and all else will fall into place.

May we forever be siblings in the Northwestern experience.

#### God Bless,

Dr. Dawn Lott; Department of Mathematical Sciences; New Jersey Institute of Technology This article, with additional photos, can be found at Dr. Lott's website: http://m.njit.edu/~dalc/ letter\_to\_nwu\_students.htm

# A Mathematically Interesting Game III

We began this series of articles in the Fall 2002 Newsletter 33.3 with variants of the Tower of Hanoi. In the Winter 2002 Newsletter 33.4 we discussed the game of NIM. Here are a few more games.

#### The map coloring game.

Draw a map of countries complicated as you wish and color each country in the map with the restriction, countries sharing a common boundary must receive different colors. The winner is the one using the fewest possible number of colors. The game is of course related to the famous **Four Color Problem** solved in 1976. You can read more about the problemat **http://www.ams.org/ams/wilson-jmm2003.html** 

More colorful illustrative versions of mathematical games are available on the web. My favorite site is: http://www.math.ucalgary.ca/~laf/colorful/games.html Other web sites are: http://www.cut-the-knot.com/games.shtml http://www.coolmath.com/ http://www.geocities.com/mathfair2002/games.htm

### **Support AMUCHMA**

For 26 issues, the African Mathematical Union's Commission on the History of Mathematics in Africa (AMUCHMA) has revealed new and interesting mathematical material to the world of history, archeology, and education. The reproduction and distribution of the first 24 issues of the AMUCHMA Newsletter counted with the generous support from the Research Department of the Swedish International Development Agency (SIDA-SAREC). The contract with SIDA-SAREC came to an end and there is a call for support financially AMUCHMA's activities and/or to suggest alternative sources of financing.

The newsletter s free and accessible on the website: http://www.math.buffalo.edu/mad/AMU/ amuchma\_online.html

# 2003 NAM Granville-Browne-Haynes Session of Presentations by Recent Doctoral Recipients in the Mathematical Sciences

On January 17, 2003, the National Association of Mathematicians (NAM) hosted the Granville-Browne-Haynes session of presentations by recent doctoral recipients in the mathematical sciences at the Joint Mathematics Meetings held this year in Baltimore, Maryland. These presentations serve as a forum to showcase the achievements of new African American researchers in the mathematical sciences. The event was hosted by Prof. Wiliam A. Massey of Princeton University.

Listed below are photos [by W. Massey] of the speakers, with the title of their talks and their current affiliations.





Random Walks, Trees and Extensions of Riordan Group Techniques Naiomi Cameron Harvey Mudd College,

Robust Empirical Likelihood Nancy Glenn University of South Carolina



A Comparison of Estimation Methods for Spatial Data Analysis with Discrete Data on a Lattice Monica Jackson University of Maryland



Silnikov Homoclinic Bifurcations in Semiconductor Laser Equation Jean-Michelet Jean-Michel Brown University



Using Imprecise Measures to Study Component and System Reliability Kimberley Seller Carnegie Mellon University



Computational Fluid Dynamics: Turbulent Convection Inside a Hele-Shaw Cell Idris Stoval University of Pennsylvania



Constructing Simply-Connected Isospectral Manifolds via Sunada's Method Craig J. Sutton University of Pennsylvania



At the Annual Joint Mathematics Meetings, the speaker for NAM's 2003 COX-TALBERT Address, Reception, and Banquet was Dr. Raymond L. Johnson, Professor of Mathematics the University of Maryland. The title of his talk was: **The Maryland Experience:** Building a community of African American graduate students. The photo(by J. Giles) above was taken after Dr. Raymond Johnson's address

# Howard University Departments Selected for Carnegie Foundation Initiative on the Doctorate

**WASHINGTON, DC (Feb. 6, 2003)** – Howard University departments of Chemistry, English and Mathematics have been selected to participate in the Carnegie Initiative on the Doctorate, a multi-year research and action project aimed at improving doctoral education at American universities sponsored by the Carnegie Foundation.

"These selections to the Carnegie Initiative on the Doctorate will help Howard University to position itself as a major institution in doctoral education and greatly enhance our thrust toward Tier I classification among the nation's research universities," said Orlando L. Taylor, dean of the Howard University Graduate School.

Howard's Department of Chemistry was selected among seven leading chemistry departments to direct the work in that discipline. Other partners include Duke, Ohio State University, University of Colorado at Boulder, University of Michigan-Ann Arbor, University of Wisconsin-Madison, University of Texas at Austin, and the University of Wisconsin-Madison. The Department of English was selected as an allied partner along with their counterparts at Michigan State University, Pennsylvania State University, University of Georgia, University of Kentucky, and the University of Toronto. The Department of Mathematics will work with Kent State University, University of North Carolina at Chapel Hill, and University of Utah.

The goals of the initiative are to support and study experiments in doctoral education with leading graduate programs as well as to document and analyze the character of those initiatives. Working with selective departments will also help the disciplinary community create models and evidence of success to inform others in the field.

Howard University is one of 48 U.S. private, Doctoral/Research-Extensive universities, comprises 12 schools and colleges. Founded in 1867, students pursue studies in more than 120 areas leading to undergraduate, graduate and professional degrees. Since 1998, the University has produced two Rhodes Scholar, a Truman Scholar, six Fulbright Scholars and nine Pickering Fellows. Howard produces more on-campus African-American Ph.D.s than any other university in the world. For more information on Howard University, call 202-238-2330, or visit the University's web site at http://www.Howard.edu/.

# International Conference of Mathematical Sciences Medals for Best Young Africans

In 2003 there will be held the International Conference of Mathematical Sciences. At the conference will be the maiden award of *Medals for Best Young Africans*.

Venue: University of Agriculture, Abeokuta, Ogun State, Nigeria

Date: 16th November 2003 to 22nd November 2003

**Invited Speakers**: Prospective Medallists; Established African Mathematicians in Europe and USA; Other Established Mathematicians.

**Background**: The recently concluded International Congress of Mathematicians, ICM-2002 Beijing China, showed clearly that African mathematicians have a lot to do in order to make meaningful impact in terms of ICM general participation and World Mathematics Fields Medals Awards. I was also observed sadly enough that less than three percent of the participants in the ICM2002 are Africans. In order to promote the teaching, learning and research in all aspect of Mathematics among Africans, which will eventually enable African Mathematicians to make big impact on the world stage, the committee of African Mathematicians at Beijing 2002 decided to organise an International Conference of mathematical Sciences and the maiden Award of African Medals for Young African Mathematicians in 2003 at the University of Agriculture, Abeokuta, Nigeria. The award is open to ANY AFRICAN who has:

- (1) Obtained Ph.D. degree in any area of Mathematical Sciences;
  - (ii) Who will not exceed 40 years of age in the year of the award (2003);
  - (iii) Who has published reasonable number of papers in reputable journals;
  - (iv) The candidate shall submit a maximum of 10nof his/her best publications and cv for assessment;
  - (v) Individuals are free to apply;
  - (vi) Individuals and institutions are free to nominate candidates for the awards.

The awards are likely going to be given in five broad areas (i.e. all AMS subject classifications will be grouped into these five areas - candidates should indicate in which subject area they wish to be considered; 1) Pure Mathematics; 2) Applied Mathematics (including Theoretical Physics); 3) Statistics (including Probability, Biometrics, etc.); 4) Computer Sciences (including Computer Engineering etc.); 5) Mathematics Education (and relevant subjects).

Abstracts for short contributed papers on any of the above classifications are also invited.

For more information, email, fax, or phone Professor Oluwole D. Makinde at the means given below. There is also a detailed announcement ion line at:

#### http://www.math.buffalo.edu/mad/Africa-today/2003.icms.html

Professor Oluwole D. Makinde; Applied Mathematics Department; University of the North; Private Bag X1106; Sovenga 0727, South Africa Tell: +27-15-2682459 (Office) Tel/Fax: +27-15-2912395 (Home) Cellphone: 0822005182 Fax: +27-15-2683075 (Office)

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# Dues \$15 - \$25

The cost of producing the newsletter have gone up. Please pay your dues. The rates are STUDENT : \$15; INDIVIDUAL : \$25; INSTITUTIONAL : \$100. There are more choices. There is a form on the last page of this newsletter.

# The Cornell Topology Festival

May 1-4, 2003 — Ithaca, NY http://www.math.cornell.edu/~festival/

This year's Festival features Geometric and Algebraic Topology, Manifolds and Knot Theory, and a mini concentration in Geometric Group Theory. The conference consists of one-hour talks by leading speakers with much time for interaction. There will be two instructional lectures near the beginning of the Festival.

**The Speakers**: Dror Bar-Natan (Toronto); John Meier (Lafayette); Joan Birman (Columbia); Justin Roberts (UCSD); Fred Cohen (Rochester); Dylan Thurston (Harvard); Benson Farb (Chicago); Ulrike Tillmann (Oxford); Gilbert Levitt (Toulouse); Alain Valette (Neuch\^atel); Karen Vogtmann (Cornell).

We expect that some financial support will be available: Young researchers (including graduate students) as well as members of underrepresented groups are especially encouraged to apply. If interested, please fill out the form on the webpage given above.

# **Summer Possibilities**

## **NAM Summer Possibilities Web Site**

Recall that for several years, NAM has had a web site with listings of open positions. We are now adding to that a web site for summer possibilities - undergraduate students, graduate students, and faculty, teachers and researchers. This process is open to advertisers in the Newsletter. The advertisements appear online four to six weeks before they appear in the Newsletter.

Go to the editor's NAM web site within MAD: http://www.math.buffalo.edu/mad/NAM/

### **The EDGE - Graduating Senior Summer Program**

The EDGE Program is designed to strengthen the ability of women and minority students to successfully complete graduate programs in the mathematical sciences. In 2003, the program will be held for the first time at Pomona College in Claremont, CA, June 2-27. The summer program consists of core courses in analysis and algebra/linear algebra, as well as minicourses, guest lectures and panel discussions. Applicants to the program should be women who are (i) graduating seniors who have applied to graduate programs in the mathematical sciences, (ii) recent recipients of undergraduate degrees who are now entering graduate programs, or (iii) first-year graduate students. For details and an application form, visit the program's web site: http://www.edgeforwomen.org

## **DIMACS Reconnect '03 Conferences** Current Research Relevant to the Classroom

The Reconnect '03 Conferences sponsored by DIMACS (the Center for Discrete Mathematics and Theoretical Computer Science) are geared towards exposing faculty teaching undergraduates to current research topics relevant to the classroom, involving them in writing materials useful in the classroom and reconnecting them to the mathematical sciences enterprise by exposing them to new research directions and questions. The three programs: "Some Current Problems in Coding Theory" at Salem State College, June 15-21, 2003; "Centrality in Graphs with Applications to the Theory of Location of Facilities" at Illinois Institute of Technology, July 16-13, 2003; "Internet Algorithms: Modeling the Web as a Graph, with Applications to Information Gathering and Search" at DIMACS / Rutgers University, August 10-16, 2003.

Applicants accepted to participate will receive lodging and meals through NSF funding. For more information or an application form, visit our web site at http://dimacs.rutgers.edu/reconnect/.

Or, contact the Reconnect Program Coordinator, at reconnect@dimacs.rutgers.edu or (732) 445-5928.

# **NSF-Essex Funded Workshops**

Two-week Summer Institutes July14-25, 2003 and July 2004 and Academic Year Activities for Science, Mathematics, and Technology College Faculty and Secondary Teachers at The Essex Campus of The Community College of Baltimore County Baltimore, MD 21237 Offered through National Science Foundation funding

**Purposes**: To provide 20 college faculty and secondary teachers with two consecutive summer workshops to develop their skills in using technology in teaching science, mathematics, or technology. To provide supportive opportunities for developing course-related websites and instructional multimedia presentations using current Windows software packages such as Macromedia Dreamweaver\*, Macromedia Flash\*, Adobe Photoshop\* and Macromedia Authorware\*. To provide in-person and online support in the use of these technologies during the 2003-2004 and 2004-2005 academic years and two-week summer institutes, including how to create webpages, graphics, sound files, videos, and animations, and how to incorporate multimedia into course materials. To develop and share Multimedia Learning Activities (MLAs) for classroom use.

**Participant Support**: Actively participating faculty and teachers will receive a stipend of \$60 per day for the summer institute (8:00AM - 3:00PM). (Total Value \$600). In addition, each participant who completes two summer workshops will receive Macromedia or other software for Windows valued at \$800. A very limited amount of funding is available for faculty/teachers to reside at a local hotel during the workshops. No transportation funds are available.

**Graduate Credits Available**: For Additional Information call or email: (410) 780-6768 (CCBC Essex Mathematics Department) or **ssorkin@ccbcmd.edu**.

Preference will be given to applicants who apply by March 5, 2003. However, applications will continue to be accepted after that date for any available spaces. Accepted participants and alternates will be notified approximately April 5, 2003.

# **MAA Student Research Program**

The MAA and its Strengthening Underrepresented Minority Mathematics Achievement (SUMMA) Program invite mathematical sciences faculty to apply for grants to host an MAA Student Research Program on their own campuses for six weeks in Summer 2003. These grants will support stipends for one faculty researcher and 2-4 local minority undergraduates, as well as costs for student room and board. The MAA will fund 2-3 grants.

**Proposal preparation:** Proposals must contain a narrative description of the project that should not exceed 3 pages. A separate budget and a one-page budget explanation is required.

**Narrative**: The project description should include details on the research focus and two sample research problems. This will be a critical factor in evaluation of the proposal. A schedule for each week of activities must be provided. You should address student pre-requisites and any other information that will explain the level and nature of work that will be expected of the students. Address your expected outcomes and how you will assess the effectiveness of the project.

**Budget:** The budget can include up to \$5,000 for a faculty stipend, at least \$3,000 per student stipend, and up to \$2,000 per student for room and board. The maximum for each grant will be \$20,000.

**Documentation**: You should include a short vita of no more than 2 pages and a letter of support from your department chair or an administrator in a position to commit institutional resources. The names, addresses, ethnicities, and home institutions of the minority undergraduates must be specified. The word "minority" refers to members of these groups underrepresented in the mathematical sciences: African Americans, Latino Americans, American Indians, and Native Pacific Islanders.

The deadline for receipt of proposals is March 28, 2003. Electronic submission is preferred. You can also fax your proposal to Gretchen Brown, MAA Member Services and Programs, at 202-483-5450.

The mailing address is Gretchen Brown, MAA, 1529 18th Street, N.W., Washington, DC 20036. For additional information, please call 202-319-8496.

Support for the grants has been provided by the National Security Agency.

# **NAM Calendar**

You can find NAM's <u>Online Conference</u> Calendar and the most recent links to relevant conferences announcements at: http://www.caam.rice.edu/~nated/orgs/nam/programs/conferences.html

♦ January 15-18, 2003 Joint Mathematics Meetings (NAM Events) Baltimore Convention Center, Baltimore, Maryland

♦ March 27, 2003 NAM Regional Faculty Conference on Research and Teaching Excellence at the Mathematical Sciences Research Institute in Berkeley, California.

April 9-12, 2003, NCTM Annual Meeting, San Antonio, Texas

♦ June 2003, CAARMS - The Ninth Conference for African American Researchers in the Mathematical Sciences, Purdue University

♦ June 16-20, 2003 SIAM Annual Meeting (Diversity Day) Montreal, QC, Canada

♦ July 9-12, 2003 20th Summer Conference on Topology and itsApplications Howard University Washington, DC, USA.

The conference web site is on Topology Atlas at: http://at.yorku.ca/cgi-bin/amca-calendar/d/facb94

♦ July 14-25, 2003 Workshops on Instructional Multimedia(IM): Curriculum Development, Teacher and Faculty Enhancement Community College of Baltimore County, Essex Campus, Maryland

♦ June 16-20, 2003 SIAM Annual Meeting (Diversity Day) Queen Elizabeth Hotel, Montreal, QC, Canada

♦ July 31 - August 2, 2003 MAA MathFest (NAM Blackwell Lecture) Boulder, Colorado see: http://www.caam.rice.edu/~nated/orgs/nam/programs/DBlectures/DBlectures.html

September 12, 2003 NCTM Annual Meeting San Antonio, Texas

October, 2003 NAM Undergraduate MathFest XIII

♦November 13-16, 2003 AMATYC Annual Conference Salt Lake Community College, Salt Lake City, Utah

November 16-22. International Conference of Mathematical Sciences and Medals for the Best Young Africans. http://www.math.buffalo.edu/mad/Africa-today/2003.icms.html

# **NAM Board, Elections and Terms**

NOMINATIONS (open to members) are due for the NAM Board positions Vice-President, Region B representative, and Majority Institution representative. By August 1, 2003, please contact NAM's election supervisor Dr. Earl Barnes School of Industrial Systems Engineering; Georgia Institute of Technology; Atlanta, GA 30332-0205. Make certain the nominated individual agrees to run. Send vita data such as Name, email address, School, position, and date of last degree.

All members of the Board shall be elected to a term of office for a period of two years and elections shall be staggered for continuity. Regular elections shall occur in the fall of each year and the persons elected shall be duly installed at the first Annual NAM meeting following the election. The term of each elected position is three (3) years. The editor will be an appointed position for a period of three years. The Editor shall be responsible for the production of the Newsletter and shall perform such other duties as the Board of Directors may specify. The Executive Secretary shall be selected to serve for a period of five (5) years and shall begin the term of office at the Spring Board Meeting. His/her selection must be the unanimous choice of the existing Board of Directors.

The election of the members of the Board of Directors shall be by official ballots and shall be supervised by the Board of Director's Committee on Legislation-Nomination when the election is by mail, all current members in good standing in NAM shall be provided a ballot and given reasonable time to return it.

The election cycle is can be followed modulo 3. Year 2001 was year 2 mod 3. It is the election Representative of Region C, Community College Representative, Secretary/Treasurer. In year 0 mod 3 Representative of Region A, Government/Industry Representative, President In year 1 mod 3 Representative of Region B, Majority Institution Representative, Vice President. A call for nominations will be made in the Spring Issue of the Newsletter. Nominations should be made to the Editor by August 15 of the election year.

# **JOB OPENING**

# **York University Mathematics**

Applications are invited for a tenure-track appointment at the Assistant Professor level in the Department of Mathematics and Statistics to commence July 1, 2003. Applications in Financial or Actuarial Mathematics will be considered. The successful candidate must have a PhD and is expected to have a proven record of research excellence and superior teaching ability. Preference will be given to candidates who can strengthen existing areas of present and ongoing research activity. The selection process will begin on April 15, 2003. All positions at York are subject to budgetary approval. Applicants should send resumes and arrange for three letters of recommendation (one of which should address teaching) to be sent directly to: Mathematics Search Committee, Department of Mathematics and Statistics York University, 4700 Keele Street Toronto, Ontario, Canada, M3J 1P3. Fax: (416) 736-5757.

www.math.yorku.ca/Hiring/

York University has an Affirmative Action Program with respect to its faculty and librarian appointments. The designated groups are: women, racial/visible minorities, persons with disabilities and aboriginal peoples. Persons in these groups must self-identify in order to participate in the Affirmative Action Program. The Department of Mathematics and Statistics welcomes applications from persons in these groups. The Affirmative Action Program can be found on York's website at **www.yorku.ca/acadjobs** or a copy can be obtained by calling the affirmative action office at 416-736-5713. All qualified candidates are encouraged to apply; however, Canadian citizens and Permanent Residents will be given priority.

# NATIONAL ASSOCIATION OF MATHEMATICS MEMBERSHIP FORM (FOR NEW APPLICATIONS AND ANNUAL MEMBERSHIP RENEWAL)

MEMBERSHIP CALENDAR YEAR: JANUARY 1 – DECEMBER 31

NAME
ADDRESS
INSTITUTION/EMPLOYER
FAX ( ) E-MAIL ADDRESS
SELECT APPROPRIATE MEMBERSHIP TYPE []STUDENT:\$15
[] INDIVIDUAL : \$25 [] CONTRIBUTING : \$50 [] SUSTAINING : \$75
[]INSTITUTIONAL:\$100 []LIFE:\$400
PLEASE REURN THIS COMPLETED FROM AND MEMBERSHIP DUES TO : Dr. Robert E. Bozeman, Secretary-Treasurer National Association of Mathematicians; Department of Mathematics Morehouse College Atlanta, GA 30314 (404) 215-2613 (office) E-mail: rbozeman@morehouse.edu Web page: (new) http://www.math.buffalo.edu/mad/NAM/NAM-index.html
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       Institution
Desired Participation in NAM: Institutional Representative (for NAM) Area or State Representative
Committee Member (specify interest) : Interest
Need additional information about the organizational structure of NAM
Ethnicity: African American [] Hispanic American [] White [] Other []

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#### Mid-Atlantic Delaware District of Columbia Kentucky Maryland New Jersey New York North Carolina Pennsylvania Virginia W. Virginia

#### Region C: Midwest/Southwest

Arkansas Louisiana Missouri Oklahoma Illinois Ohio Mississippi Tennessee Texas

### THE EDITOR

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