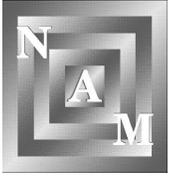


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IN THE NEWS

- Carl Graham was the David Blackwell lecturer at MAA MathFest in Los Angeles. See the "David Blackwell Lecturer" article inside.
- Dr. Bernard Mair of the University of Florida is the J. Ernest Wilkins lecturer at the NAM MathFest to be held at FAMU. See the "FAMU MathFest" article inside.
- Katherine Okikiolu is the 2002 Claytor Lecturer in San Diego. See article "A Young Mathematician Excels" inside.
- NOMINATIONS: Nominations are in for NAM's Secretary/Treasurer, Region B Representative, and Community College Representative. For more see article inside.

CALENDAR

- NAM's Online Conference Calendar at <http://www.caam.rice.edu/~nated/orgs/nam/programs/conferences.html>
- Look here for links to relevant conferences announcements.
- July 9-13, 2001 SIAM Annual Meeting (Diversity Day) Town & Country Hotel, San Diego, CA
- June 19-22, 2001, CAARMS7 at Duke University, organizers: William A. Massey and Arlie O. Petters, sponsors: Duke University, Morgan State University and the National Security Agency
- October 4-6, 2001 NAM Undergraduate MathFest XI Holiday Inn Select - Downtown Capital Hill, Tallahassee, FL
- October 18-20, 2001 Richard Tapia Celebration of Diversity in Computing Symposium Sofitel Houston Hotel, Houston, TX
- January 6-8, 2002 ACM-SIAM Symposium on Discrete Algorithms Radisson Miyako Hotel, San Francisco, CA
- January 6-9, 2002, Joint Meetings NAM, AMS, MAA in San Diego 2002, San Diego Convention Center
- July 8-12, 2002 SIAM 50th Anniversary & Annual Meeting (Diversity Day) Philadelphia Marriott Hotel, Philadelphia, PA
- June 2002 CAARMS 8, Princeton, New Jersey

OLDER THAN WE THINK

Scott Williams

The first time I studied Calculus Two, I was extremely impressed by nearly two thousand year old theorems attributed to the Greek mathematician Pappus. Here is the first:

THEOREM 1. Suppose that a plane region R is revolved around an axis in its plane not intersecting the interior of R , generating a solid of revolution. Then the volume of the solid is the product of the area of R and the distance traveled by the centroid of R .

The proof I read used double integrals, and I thought, Calculus was invented three hundred years ago, so how did a mathematician know about, much less prove, this theorem more than a thousand years earlier?

Recently, I learned that the Pythagorean Theorem might be a thousand years older than Pythagoras. Another old topic concerns "reasonable" approximations of Pythagoras' number p which the Egyptians took as approximately $4(8/9)^2$ or $3 + 1/9 + 1/27 + 1/81$.

The best early approximation was due to another mathematician who studied in Egypt, Archimedes, born 287 B.C., who discovered $223/71 < p < 22/7$.

In order to compute volumes, Archimedes probably developed some methods of integral calculus. Now it turns out that Archimedes knew a lot of differential calculus as well.

More than 2,200 years ago, Archimedes recorded his thoughts on papyrus scrolls that were then copied by scribes during the next millennium. Around the year 1000, a scribe then copied the

theories and drawings onto parchment sheets and bound them between wooden boards. The document is now known as Archimedes Palimpsest.

William of Moerbeke (1215-1286) was archbishop of Corinth and a classical scholar whose Latin translations of Greek works played an important role in the transmission of Greek knowledge to medieval Europe. He had two Greek manuscripts of the Archimedes document and he made his Latin translations from these manuscripts.

The first of the two Greek manuscripts has not been seen since 1311 when presumably it was destroyed. The second manuscript survived longer and was certainly around until the 16th century after which it too vanished. However, it was copied several times and some of these copies survive.

Up until 1906, no sources of Archimedes' works appeared to survive the Dark Ages which were not based on the Latin translations of Moerbeke or upon the copies of the second Greek manuscript which he used in his translation.

In 1906 in a Greek quarter in Constantinople, the Dutch scholar Johan Ludvig Heiberg discovered the 174-page the Archimedes document in the library of the Metochion of the Holy Sepulchre in Istanbul. This manuscript had been copied in the 10th century by a monk in a Greek Orthodox monastery Constantinople. Then in the 12th century the parchment had been washed and religious texts written on top, creating what's known as a "Palimpsest", or a text on parchment which has been overwritten with other text.

Originally the pages were about 30 cm by 20 cm but when they were reused the pages were folded in half to make a book 20 cm by 15 cm with 174 pages. This involved writing the new texts at right angles to the Archimedes text and, since it was bound as a book, part of the Archimedes text was in the spine of the "new" 12th century book. To make Heiberg's task even harder, the pages of the text had been used in an arbitrary order in making the new book.

Though Heiberg worked with a simple magnifying glass, he had amazing finds. The Palimpsest contained four works which were already known, but the versions on the palimpsest were independent of the two lost manuscripts used by William of Moerbeke in his Latin translations. This was an exciting find for scholars wanting to gain more insight into the original contents of Archimedes work. Better still the Palimpsest also contained a text of "On floating bodies" which up until that time was only known through Latin translations. Best of all however, was the fact that a work of Archimedes was found on the palimpsest for which no copy in any language was known in recent history. It was the extremely important Method of mechanical theorems only known in biographies of Archimedes. "Method..." showed Archimedes anticipated the route taken 2,000 years later by Isaac Newton, and used to describe how everything moves, from electrons, to falling objects, to planets.

After Heiberg had completed his research but before his final book was published, the Archimedes Palimpsest disappeared again from Turkey during World War I. Exactly what occurred is not yet clear. Though it was, it appears, in the hands of an unknown French collector from the 1920s, it remained officially lost, and most people assumed that it had been destroyed. It surfaced in 1998 by an anonymous seller at an auction in Christie's in New York where it was put on display with the spine broken open to reveal all the original text which had been in the spine when it had been examined by

Heiberg. It was sold to an anonymous U.S. collector for two million dollars on 29 October 1998 and the new owner agreed to make it available for scholarly research. Since January 1999, it has been on display at Baltimore's Walters Art Gallery, to which the anonymous owner loaned it for conservation and research. [see <http://www.thewalters.org/archimedes/frame.html> where you can also read an Archimedes timeline].

What eluded Heiberg were two lines on each page bound in the Palimpsest's spine and other parts not visible to the naked eye, which now have been studied with modern sophistication. It has been scanned by cameras that filter infrared to ultraviolet light. The images have also been analyzed with light focused beneath the surface of pages (this is the same remote sensing software used on satellite images of Earth) to create three-dimensional topographical maps of the parchment, which holds a faint stain of ink scraped off by a scribe 1,000 years ago. And it has been gently prodded by a sharpened syringe, a fragment of its parchment extracted, and the parchment fibers analyzed. A Microsoft video file gave Canadian parchment expert Greg Young a way to compile images of those heat-tested fibers to determine the health of the old goatskin.

Roughly six per cent of Archimedes' works are lost in its spine. Another portion is covered by 20th-century forgeries -- full-page illustrations thought to have been added to increase the value of what its owners believed was just another religious relic.

Both the 10th-century and 12th-century inks tested were confirmed to be iron gall, a solution made from gallnuts - bulbous growths on oak trees attacked by parasites - ground down and mixed with iron sulphate, rainwater, gum arabic and a little vinegar. Rich in tannic acid, they are the inks that can eat at old paper - to the extent that what remains is the shape of the letter as if it had been cut out. But by chewing their way into the fibers of the parchment, they leave stain on the Archimedes text, centuries after the ink itself was erased.

Around 1950, a French bookbinder also applied modern glue to about half of the Palimpsest's binding - glue that cannot be dissolved. The other half is held together with soluble glue from animal hide. Another piece of good news is that the modern glue - polyvinyl acetate which also cannot be dissolved - can be made pliable or dispersed.

Recently in the journal *Sciamus*, scholars describe new access to portions of text unavailable to Heiberg. They have found an unexpected phrase, "equal in magnitude" that suggests Archimedes went close to 17th-century Newton and the scientific revolution.

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C. Henry Edwards and David Penny, *Calculus with early transcendentals*, Prentice Hall 1997
J Gray, *Sale of the century?*, *The Mathematical Intelligencer*. 21 (3) (1999), 12-15.
James Midgley, *USA Today*, Science 07/12/00.
William Noel, Richard Leson, Reviel Netz, Lynn Wolfe and Joe McCourt. *The Archimedes*

Palimpsest, <http://www.thewalters.org/archimedes/frame.html>

Barbara Robson, Archimedes was ahead of his time, *The Ottawa Citizen*. July 23, 2001.

Barbara Robson, Salvaging the fragile work of Archimedes, *The Ottawa Citizen*. July 23, 2001.

NAM MATHFEST XI AT FAMU

From October 4,5,6, 2001, NAM's Eleventh Annual MathFest will be held at Florida A & M State University in Tallahassee Florida. This is a three-day weekend undergraduate mathematics research conference to enhance the development of American minority students. The program includes:

- presentations on current research by noted mathematicians
- student presentations on undergraduate research
- exposure to careers in mathematics
- discussion of graduate school issues
- direct contact with graduate school representatives

The J. Ernest Wilkins lecturer this year is Dr. Bernard Mair of the University of Florida.

Bernard A. Mair earned his Ph. D. in Mathematics from McGill University in 1983. He has published 27 papers. A particular inverse problem he has worked on is the modeling of heat flow of rocket plumes. His work in medical imaging includes the development of new methods for PET image formation and deblurring the discrete gaussian. His home page is: <http://www.math.ufl.edu/~bam/>.

ELECTIONS TO THE NAM BOARD

The three open positions on the Board, Secretary/Treasurer, Region B Representative, and Community College, are all uncontested by the current people in those offices.

Robert Bozeman, Secretary/Treasurer, is Professor of Mathematics, Morehouse College.

Jacqueline Giles, Community College Representative. Biographical Sketch I have participated in projects that benefit two year colleges and Historical Black Colleges and Universities. I believe that I can be instrumental in fostering a stronger collaborative and cooperative relationship between NAM and MAA. I have been a presenter AMATYC, NCTM and other conferences. My experiences have uniquely qualified me to represent and negotiate on behalf of underrepresented groups. I have been mentored by NAM, and I desire that NAM benefit from the wisdom I have gained. Thank you. Prof. Jacqueline Brannon Giles Member, MAA Quantitative Literacy Committee, www.maa.org Board Member, National Association of Mathematicians (NAM) Governor at large, Minority Affairs, Mathematical Association of America (MAA) Board Member, Nigeria Advisory Board - Houston Community College System Member, Council of Nigerian People and Organizations (CONPO).

Mary S. Hawkins, Region B representative, has been a active member of NAM for more than twenty years. She has been employed by Prairie View A&M university for more than twenty-five years. During that time served the University in many areas, Mathematics Teacher, Research

Scientist for the college of Home Economics and the College of Agriculture, and Coordinator of a Special Project.

A "YOUNG" MATHEMATICIAN EXCELS

Every year NAM has a special one hour lecture at the Annual Joint Mathematics Meetings (AMS, MAA, ASL, AWM, NAM). The lecture is named after W.S. Claytor the fourth African American Ph.D. You can read about Claytor at Mathematicians of the African Diaspora. This January 2002 the meetings will be held in San Diego. The Claytor Lecturer will be Dr. Katherine Okikiolu.

Katherine Okikiolu comes from a mathematical family: Her father is a mathematician who has published more than 200 papers, and her mother is a high school mathematics teacher. Her parents met after her father left Nigeria to study mathematics at the same college in England where her mother was studying physics. In 2000, Okikiolu married to the mathematician Hans Lindblad, who like Katherine, is a professor at the University of California at San Diego (UCSD). During the summer of 2001, she gave birth to a son.

Okikiolu earned her bachelors in Mathematics from Newnham College in England--the only all-women's college remaining at Cambridge University--before coming to the United States in 1987 to attend graduate school mathematics at UCLA. There, she worked with two mentors, Alice Chang and John Garnett, and was able to solve a problem concerning asymptotics of determinants of Toeplitz operators on the sphere and a conjecture of Peter Jones, characterizing subsets of rectifiable curves in Euclidean n -space. She earned her Ph.D. at UCLA in 1991.

Dr. Katherine Okikiolu went, in 1991, to Princeton University where she was an Instructor and later an Assistant Professor, then spent one year at the Institute of Advanced Study. During the fall of 1992 Okikiolu was at Duke University. From 1993 to 1995 she was an Assistant Professor at Princeton University. In 1995, she was appointed Assistant Professor in the Mathematics Department of UCSD, but was a Visitor at MIT in the Spring of 1996. Also in 1996, Dr. Okikiolu spoke as part of the twenty-fifth anniversary celebration for Association of Women in Mathematics.

Katherine Okikiolu's research areas are Classical Analysis, Differential Geometry, Partial Differential Equations and Operator Theory. She has published nine papers in mathematics, the most recent is Critical metrics for the determinant of the Laplacian in odd dimensions. *Annals of Mathematics* (2) 153 (2001), no. 2, 471--531.

In June 1997, Kate Okikiolu became the first Black mathematician to win the most prestigious award for young mathematics researchers, a \$70,000 Sloan Research Fellowship. In 1997, UCSD promoted her to Associate Professor.

Also in 1997, Dr. Okikiolu became the first Black Mathematician to win the \$500,000 Presidential Early Career Awards for Scientists and Engineers. One Newspaper report at that time said:

Dr. Okikiolu has been researching the "spectral determinant" of a drum, which is essentially the number obtained by multiplying all the individual sound pitches made from a drum note. This number helps describe the shape of the drum. Although this area

is largely understood in two-dimensional drums, Okikiolu is investigating the more challenging spectral determinant problem for three-dimensional drums. In a separate project, Okikiolu also studies linear distortions of drum notes and other types of signals. Research in this area may have implications for problems in quantum physics. For her work aiding inner-city children, Okikiolu plans to make a series of videos depicting model teaching lessons that emphasize real-world perspectives. Designing model dwellings and bridges, constructing useful articles such as clothing and shelves, mending bicycles and painting pictures are "hands-on" activities that Okikiolu believes can acquaint children with mathematical concepts and help them grasp the significance of numbers and measurements.

THE BEST JOURNAL

by Scott W. Williams

When I was a graduate student, my advisor would go to the mathematics department common room and read/scan each journal as it arrived. In those days I would guess this took about seven to ten hours a week. Now there are too many journals to read. Even the sub-sub-disciplines have two or three journals of their own. Every area of mathematics has journals where their strongest articles appear. Each of us should read are own, however, what general journals should we open? Which journals consistently publish only first rate articles? Is there a "best mathematics journal?"

A journal fitting this "best" description would have every article, no matter the field, important and extremely strong. If attention is limited to the U.S., then I would claim that such a journal exists, and it is the *Annals of Mathematics* published by Princeton. I can say from personal experience, its standards of publication are extremely high. So high that upon occasions very good important articles are rejected. *Acta Mathematica* (there are several journals by this name) published by the The Royal Swedish Academy of Sciences' Mittag-Leffler Institut is at the same level. It is questionable whether there are others in the world at this class, even the oldest mathematics journal, known as *Crelles Journal*, is not so lofty.

Which of us has published in these journals? Not me. I only know of seven papers published in these journals by people of African descent. There are three by David Blackwell, two by W. W. Schiefelin Claytor (after whom NAM's Claytor Lecture is named), and one by each of Georgia Tech's Wilfrid Gangbo and UCSD's Katherine Okikiolu. I list them chronologically below.

1. Schiefelin Claytor, Topological Immersion of Peanian Continua in a Spherical Surface, *The Annals of Mathematics*, 2nd Ser. 35, 1934), 809-835
2. Schiefelin Claytor, Peanian Continua Not Imbeddable in a Spherical Surface, *The Annals of Mathematics*, 2nd Ser. 38 (1937), 631-646.
3. Blackwell, David, Idempotent Markoff chains, *The Annals of Mathematics*, 2nd Ser. 43, (1942). 560--567.
4. Blackwell, David, Finite non-homogeneous chains, *The Annals of Mathematics*, 2nd Ser. 46, (1945). 594--599.
5. Bellman, Richard; Blackwell, David On moment spaces. *The Annals of Mathematics*, 2nd Ser. 54, (1951). 272--274.
6. Gangbo, Wilfrid; McCann, Robert J. The geometry of optimal transportation. *Acta Math.* 177 (1996), no. 2, 113--161.
7. Okikiolu, Katherine. Critical metrics for the determinant of the Laplacian in odd dimensions. *The Annals of Mathematics*, 2nd Ser. 153 (2001), no. 2, 471--531.

SUPPORT AMUCHMA

For 24 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.

Thanks to Scott Williams, the English language edition of all issues of the AMUCHMA Newsletter is also accessible for free on the following website: http://www.math.buffalo.edu/mad/AMU/amuchma_online.html

CAARMS 7 REPORT

The Seventh Conference for African-American Researchers in the Mathematical Sciences (CAARMS7) was held June 19-22, 2001 at Duke University. An inspirational keynote address was given by Dr. Freeman Hrabowski, president of the University of Maryland, Baltimore County on the best practices in producing high-achieving African American students in mathematics.

The invited researchers who each made hour long presentations on their work included: Shea Burns, North Carolina A&T University; Garikai Campbell, Swarthmore College; Jamylle Carter, Institute for Mathematics and its Applications (IMA); Gelonia Dent, IBM T.J. Watson Research Center - Yorktown; Illya Hicks, Texas A&M University; Tasha Inniss, Trinity College; Otis Jennings, Stanford University; Wole Soboyejo, Princeton University; Alain Togbe, Greenville College; Kimberly Weems, National Security Agency.

Twenty graduate students had the opportunity to present their work at the CAARMS7 graduate poster session on topics ranging from predator-prey models and algebraic geometry to internet admission control schemes and quantum Monte Carlo integration. The strong influence of Dr. Hrabowski was felt at this session since 4 of the 20 participants were his former students.

At the CAARMS7 banquet, Dr. Melvin Currie of the National Security Agency gave an address about the importance of listening to your inner voice in pursuing a career in mathematics. Finally, three tutorials were presented at CAARMS7 in algorithmic design, stochastic differential equations and mathematical finance, as well as gravitational lensing by (respectively)

Drs. Jeffrey Forbes, Duke University; Dr. William A. Massey, Bell Labs and Dr. Arlie O. Petters, Duke University.

The organizers of the CAARMS7 event were Drs. Massey, Petters and Leon Woodson of Morgan State University. The sponsors of the event were the National Security Agency, Duke University and Morgan State University.

Special thanks to Dr. Michael Reed of Duke University who graciously gave us an impromptu presentation on mathematical biology. A special thank you also to Dr. Alfred Noel of the University of Massachusetts at Boston who was the lead editor of the third volume of CAARMS proceedings and was assisted by Drs. Earl Barnes and Sonya Stephens.

Abstracts of the talks and poster presentations can be found at the CAARMS7 website <http://cm.bell-labs.com/who/will/caarms7.html>. Plans are being made to hold CAARMS8 next June of 2002 at Princeton University. For more details, contact Dr. William Massey at wmassey@princeton.edu.

Photo captions

Photo1: CAARMS7 speaker Dr. Otis Jennings and CAARMS7 organizers Drs. Arlie Petters and William A. Massey

Photo2: CAARMS7 graduate student poster presenter Michael Madison of Stanford University

Photo3: CAARMS7 graduate student poster presenter Robert Hampshire of Princeton University

Photo4: CAARMS7 keynote speaker Dr. Freeman Hrabowski, president of the University of Maryland, Baltimore County

Photo5: Six graduates of the Meyerhoff scholarship program attending CAARMS7 and introducing Dr. Hrabowski

Photo6: Attendees at the CAARMS7 banquet including CAARMS7 speaker Dr. Shea Burns

Photo7: CAARMS7 speaker Dr. Wole Soboyejo of Princeton University

Photo8: CAARMS7 speaker Dr. Alain Togbe of Greenville College

Photo9: CAARMS7 speaker Dr. Jamylle Carter of IMA



Photo 1



Photo 2

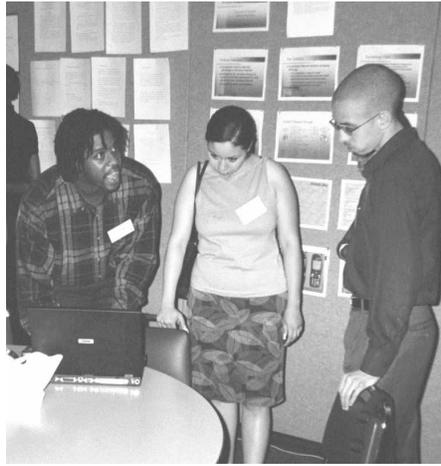


Photo 3

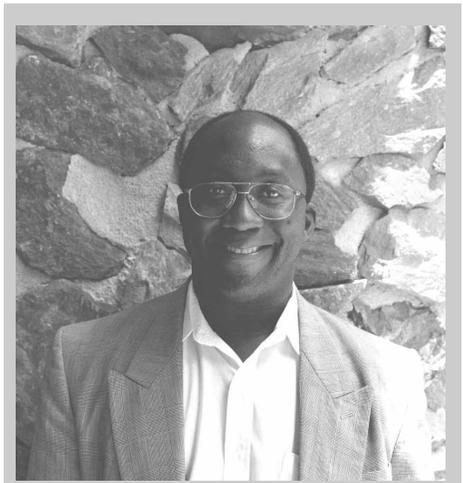


Photo 7



Photo 4



Photo 8



Photo 5

Photo 6



Photo 9

DAVID BLACKWELL LECTURER

Carl Graham gave the David Blackwell lecture at the MAA MathFest this summer.

Title of Talk: Limit theorems for a large network in which customers join the shortest queue among several.

Abstract: An important idea in communication networks is the pooling of resources so as to better utilize them. We consider a queuing network introduced by Vvedenskaya et al. to illustrate this. Customers arrive at rate proportional to N on a system of N single server infinite buffer queues, are allocated a subset of L queues uniformly at random, and join the shortest queue in this subset. Service is independent at each queue and at a fixed rate. The large N limit is considered for this mean-field model, first in a transient regime in which the initial conditions are assumed to converge, and then in equilibrium. The improvement in performance is quantified precisely at the limit: the stationary probability of having a given queue size, or of having the average queue size in the network, above some threshold, decreases super-exponentially in the threshold as soon as $L > 1$, whereas it decreases exponentially in the case $L = 1$ corresponding to independent queues. Powerful tools of probability theory are used in this context, notably non-linear martingale problems, tightness estimates, and compactness-uniqueness methods. The study in equilibrium considers first the dynamic evolution and its large N limit, and then an inversion of limits between large N limits and long time limits is performed for the study in equilibrium.

Here is a brief biography on Dr. Graham: Born in the USA, emigrated to France as a child. Former student of the Ecole Normale Supérieure. "Agrégation de Mathématiques". Thesis and "Habilitation à Diriger les Recherches" in Mathematics at the "Laboratoire de Probabilités" at the Université Paris 6. Researcher at the Centre National de la Recherche Scientifique (CNRS), in a laboratory at the Ecole Polytechnique. Currently a teacher at the Ecole Polytechnique.

THE MIAMI UNIVERSITY SUMSRI REPORT

The Summer Undergraduate Mathematical Sciences Research Institute (SUMSRI) is now underway. Sponsored by the Department of Mathematics and Statistics and led by Drs. Vasant Waikar and Patrick Dowling, SUMSRI is an intensive research opportunity for undergraduate students majoring in the mathematical sciences sponsored by Miami University, the National Security Agency and the National Science Foundation. On June 3, fifteen students from as far away as California, Puerto Rico, Maryland and Texas converged on Oxford, OH to study, conduct research and have a bit of fun. Their time at Miami is well spent. Besides doing research statistics, algebra or graph theory, they also take courses in abstract algebra and real analysis. Mini-courses in GRE preparation and technical writing prepare these students for the rigors of future graduate education. Colloquium speakers and discussions on careers and mathematics, choosing a graduate school and financial aid, help students to think concretely about the graduate school option. The SUMSRI program lasts seven weeks.

SUMSRI is a research experience for undergraduates designed to provide its participants with an opportunity to explore the option of a graduate education. Since women and minorities are currently underrepresented in the mathematical sciences, SUMSRI draws the majority of its participants from these groups. SUMSRI tries to emulate the entry-level graduate experience including course work, research concepts and time to meet with faculty informally. At the same time, SUMSRI offers an environment that demystifies the graduate application process including information on how to find a graduate school that is appropriate for each student, funding sources and the many career paths opening up to mathematicians and statisticians. In this way, the institute hopes to address the shortage of minorities and women as mathematical research scientists.

After students leave the institute, they are encouraged to stay in contact through email, follow-up evaluations and informal gatherings during national mathematics meetings. This past January, seven participants from SUMSRI 2000 attended the national AMS-MAA-SIAM Mathematics meetings in New Orleans, and gave poster presentations of their research.

"I have enjoyed the program so far, and I am getting a taste of what graduate school is really like. It is a challenging and rewarding experience surrounded by great professors and a group of wonderful new friends."-Jennifer Everson
SUMSRI is already preparing for the summer of 2002. We seek talented undergraduate students in the mathematical sciences who are interested in pursuing advanced degrees. Because of the shortage of minorities and women mathematical scientists, we are specially interested in, but not limited to, African Americans and other underrepresented minorities and women. For more information, see the website: <http://www.muohio.edu/sumsri/>.

PROJECT NExT POSTER SESSION

Project NExT and the Young Mathematician's Network invite submissions of abstracts for a poster session to be held on Monday, January 7, 2002 from 2:00 to 4:00 p.m. at the Joint Mathematics Meetings in San Diego. The room location is to be announced. The poster size will be 48" by 36"; it is best to have the posters 36" high. Posters and materials for posting pages on the posters will be available on-site. We expect to accept thirty posters from different areas within the mathematical sciences.

Should you have a special requirement involving a computer hook-up, please let us know and we will check to see if it may be accommodated.

If you are interested in participating, submit copies of your abstract to: Prof. Ken Ross Department of Mathematics University of Oregon Eugene, OR 97403-1222 Phone: (541) 346-4721 Fax: (541) 346-0987 (Label Fax clearly for "Ken Ross") e-mail: <ross@math.uoregon.edu> AND Prof. Kevin Charlwood Dept. of Math & Statistics Morgan Hall Washburn University Topeka, KS 66621 Phone: (785) 231-1010 ext. 1499 Fax: (785) 231-1089 (Label Fax clearly for "Kevin Charlwood") e-mail: <zzcharlw@washburn.edu>

Our poster sessions the past five years were a great success. Visitors to the session each year were numerous, and included prospective employers. This session provides an excellent way to showcase one's work in a relaxed, informal environment.

The deadline for final consideration is December 11, 2001. Preference will be given to those who did not earn a Ph.D. prior to 1996; please include with your submission / when and where you received your Ph.D., or indicate when you expect to receive it. Please submit your abstract via email, not an attachment. If it includes mathematical formulas, please submit it in basic LaTeX or TeX format. Submissions will be acknowledged quickly by e-mail.

SINGULARITY THEORY AND GRAVITATIONAL LENSING

The 2000 David Blackwell Lecturer was Arlie O. Petters. Dr. Petters also coorganized CAARMS 7. Now there is a book, Singularity Theory and Gravitational Lensing by A. O. Petters, H. Levine, and J. Wambsganss. In gravitational lensing, the image from a distant cosmic object appears to split into multiple images due to the effect of gravitational force exerted by massive intervening objects between them and Earth. Here it is mathematically demonstrated how gravity from not just one or two objects but multiple objects at various cosmic distances will split passing light into images, including their number and magnification. This is a tour de force of Mathematical Physics.

ALMOST AUTOMORPHIC AND ALMOST PERIODIC

In addition to editing the CAARMS 6 Journal, Dr. Gaston N'Guerekata of Morgan State University has written a new book, Almost automorphic and almost periodic functions in abstract spaces, published by Kluwer Academic/Plenum Publishers, New York, N.Y., 2001.

This book introduces and develops in a fairly homogeneous and unified manner the theory of almost automorphic vector-valued functions in Bochner's sense and the study of almost periodic functions in a locally convex space. It also applies the results obtained to study almost automorphic solutions of some abstract differential equations. This reference has a flair of innovation in that for the first time ever, the main topics are presented along with a plethora of ground-breaking new results in a book format.

The presentation is rather basic and for the sake of clarity, the concepts are studied using classical methods of functional analysis. Efforts have been made to spare the reader of unnecessary technical hurdles.

JOB OPENINGS

Job Openings Web Site

Recall that for several years, NAM has had a web site with job openings. This process is open to advertisers in the Newsletter. The advertisements appear there 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/NAM-index.html>

UNIVERSITY OF BUFFALO, SUNY

The Department of Mathematics anticipates the appointment of several tenure-track assistant professors, effective August, 2002. Salary will be competitive. We seek candidates from all fields, particularly Applied Mathematics and Geometry/Topology. Applicants should have excellent research accomplishments and potential, a Ph.D. in the mathematical sciences and a strong commitment to teaching.

A complete application consists of a curriculum vitae, a statement of research interests and four letters of recommendation. These materials should be sent to: Search Committee, Department of Mathematics, University at Buffalo, SUNY, Mathematics Building 244, Buffalo, NY 14260-2900.

The deadline for applications is November 1, 2001. Late applications will be considered until positions are filled. No electronic applications will be accepted.

The University at Buffalo is an Equal Opportunity/Affirmative Action Employer/Recruiter. We are interested in identifying prospective minority and women candidates. No person, in whatever relationship with the University at Buffalo, shall be subject to discrimination on the basis of age, color, creed, handicap, marital status, national origin, race, religion, sex, sexual orientation or veteran status.

INSTITUTE FOR ADVANCED STUDY

The School of Mathematics has a limited number of memberships, some with financial support for research in mathematics at the Institute during the 2002-03 academic year. Candidates must have given evidence of ability in research comparable at least with that expected for the Ph.D. degree. The special program for the year will focus on stochastic PDE and models of turbulence, and both Weinan E and John Ball will be in residence. For a brief description of the program and information about application materials and deadline, please consult "Activities" and "How To Apply" on our homepage at: <http://www.math.ias.edu>.

MATHEMATICAL ASSOCIATION OF AMERICA

The Mathematical Association of America is seeking a Director of Programs and Services. Information on the position will appear in the November 2001 issue of FOCUS and on the MAA website, www.maa.org.

UNIVERSITY OF ILLINOIS AT CHICAGO

Dept. of Mathematics, Statistics, and Computer Science.

The Department has active research programs in all areas of pure mathematics, computational and applied mathematics, combinatorics and computer science, statistics, and mathematics education. See <http://www.math.uic.edu> for more information.

Applications are invited for the following positions, effective August 21, 2002.

At least one Tenure track or tenured position. Candidates in all areas of interest to the Department will be considered. The position is initially budgeted at the Assistant Professor level, but candidates with a sufficiently outstanding research record may be considered at higher levels. Applicants must have a Ph.D. or equivalent degree in mathematics, computer science, statistics, mathematics

education or related field, an outstanding research record, and evidence of strong teaching ability. Salary negotiable.

Research Assistant Professorship/VIGRE Postdoctoral Fellowship. This is a non-tenure track position, normally renewable annually to a maximum of three years. This position is partially funded by a VIGRE grant from the NSF and is open only to U.S. citizens, nationals or permanent residents. The position carries a teaching load of one course per semester, with the requirement that the incumbent play a significant role in the research life of the Department. The salary for AY 2001-2002 for this position is \$45,000; the salary for AY 2002-2003 may be higher; in each of the first two years the VIGRE grant provides an additional \$6,000 for summer support. Applicants must have a Ph.D. or equivalent degree in mathematics, computer science, statistics, mathematics education or related field, and evidence of outstanding research potential.

There may also, subject to availability of funds, be one or more "non-VIGRE" Research Assistant Professorships available, which would not be subject to these nationality requirements.

Send vita and direct 3 letters of recommendation, clearly indicating the position being applied for, and whether you are eligible for a VIGRE fellowship, to: Appointments Committee; Dept. of Mathematics, Statistics, and Computer Science; University of Illinois at Chicago; 851 S. Morgan (M/C 249); Chicago, IL 60607. No e-mail applications will be accepted. To ensure full consideration, materials must be received by November 9, 2001, for the tenure/tenure track positions, and December 30, 2001 for the postdoctoral fellowships. However, we will continue considering candidates until all positions have been filled. Minorities, persons with disabilities, and women are particularly encouraged to apply. UIC is an AA/EOE.

UNIVERSITY OF CALIFORNIA AT BERKELEY

Charles B. Morrey Jr. Assistant Professorship

We invite applications for these special (nontenure-track) positions effective July 1, 2002. The terms of these appointments may range from two to three years. Applicants should have a recent Ph.D., or the equivalent, in an area of pure or applied mathematics. Applicants should send a resume, reprints, preprints and/or dissertation abstract, and ask three people to send letters of evaluation to The Vice Chair for Faculty Affairs at the above address. All letters of evaluation are subject to Berkeley campus policies on confidentiality of letters of evaluation, a summary of which can be found on our home page (<http://math.berkeley.edu> by clicking on available teaching position, and then confidentiality policy). We request that applicants use the AMS standardized application form and indicate their subject area using the AMS subject classification numbers. The form is the Academic Employment in Mathematics, Application Cover Sheet, it is available courtesy of the American Mathematical Society. Send to Department of Mathematics, University of California at Berkeley, Berkeley, CA 94720.

Applications must be postmarked by December 1, 2001. Applications postmarked after the deadline will not be considered. The University of California is an Equal Opportunity, Affirmative Action Employer.

Temporary Postdoctoral Positions

We invite applications for these special (nontenure-track) positions effective July 1, 2002. The terms of these appointments may range from two to three years. Applicants should have a recent Ph.D., or the equivalent, in an area of pure or applied mathematics. Applicants should send a resume, reprints, preprints and/or dissertation abstract, and ask three people to send letters of evaluation to The Vice Chair for Faculty Affairs at the above address. All letters of evaluation are subject to Berkeley campus policies on confidentiality of letters of evaluation, a summary of which can be found on our home page (<http://math.berkeley.edu> by clicking on available teaching position, and then confidentiality policy). We request that applicants use the AMS standardized application form and indicate their subject area using the AMS subject classification numbers. The form is the Academic Employment in Mathematics, Application Cover Sheet, it is available courtesy of the American Mathematical Society. Send to Department of Mathematics, University of California at Berkeley, Berkeley, CA 94720.

Applications must be postmarked by December 1, 2001. Applications postmarked after the deadline will not be considered. The University of California is an Equal Opportunity, Affirmative Action Employer.

Tenured or Tenured Track Position

Pending budget approval, we invite applications for one or more positions effective July 1, 2002 at either the tenure-track (Assistant Professor) or tenured (Associate or Full Professor) level, in the general areas of pure or applied mathematics.

Tenure track applicants are expected to have demonstrated outstanding research potential, normally including major contributions beyond the doctoral dissertation. Such applicants should send a resume, and reprint or preprints, and/or dissertation abstract, and ask three people to send letters of evaluation to The Vice Chair for Faculty Affairs at the above address. It is the responsibility of the tenure track applicants to make sure that letters of evaluation are sent. All letters of evaluation are subject to Berkeley campus policies on confidentiality of letters of evaluation, a summary of which can be found on our home page (<http://math.berkeley.edu> by clicking on available teaching positions).

Tenure applicants are expected to demonstrate leadership in research and should send a curriculum vitae, list of publications, a few selected reprints or preprints, and the names and addresses of three references to The Vice Chair for Faculty Affairs at the above address. Applicants should indicate whether they are applying for an Associate Professor or a Full Professor position. The department will assume responsibility to solicit letters of evaluation and will provide evaluators with a copy of the summary of policies on confidentiality of letters of evaluation.

All applicants are requested to use the AMS standardized application form and to indicate their subject area using the AMS subject classification numbers. The form is the Academic Employment in Mathematics, Application Cover Sheet, it is available courtesy of the American Mathematical Society. Send to Department of Mathematics, University of California at Berkeley, Berkeley, CA 94720.

Applications for both Tenure track and Tenure applications must be postmarked by November 15, 2001. Applications postmarked after the deadline will not be considered. The University of California is an Equal Opportunity, Affirmative Action Employer.

BOWLING GREEN STATE UNIVERSITY

Analysis/Mathematics Education

The Department of Mathematics and Statistics invites applications for the following tenure-track positions starting August, 2002. (1) Assistant Professor or Associate Professor: Mathematics Education; (2) Assistant Professor: Analysis. Preference will be given to candidates who can contribute to the graduate and undergraduate programs and broaden or complement current faculty research. Usual duties consist of teaching two courses each semester, conducting scholarly research, seeking external funding, and participating in service activities. For further information see www.bgsu.edu/departments/math/.

To apply send a cover sheet (AMS cover sheet preferred), curriculum vitae, three current letters of reference (one concerning teaching) to Search Committee, Department of Mathematics & Statistics, Bowling Green State University, Bowling Green, OH 43403-0221. Applications must be postmarked by December 31, 2001. FAX or electronic applications cannot be considered. BGSU is an AA/EO employer and encourages applications from women, minorities, veterans, and individuals with disabilities.

Statistics

The Department of Mathematics and Statistics invites applications for a tenure-track or tenured position at the rank of Associate Professor or Professor in the area of Statistics beginning August, 2002. PhD in Statistics or closely related area required. Preference will be given to candidates who can contribute to the graduate and undergraduate programs and broaden or complement current faculty research. Usual duties consist of teaching two courses each semester, conducting scholarly research, seeking external

funding, and participating in service activities. For further information see www.bgsu.edu/departments/math/.

To apply send a cover sheet (AMS cover sheet preferred), curriculum vitae, three current letters of reference (one concerning teaching) to Search Committee, Department of Mathematics & Statistics, Bowling Green State University, Bowling Green, OH 43403-0221. Applications must be postmarked by November 1, 2001. FAX or electronic applications cannot be considered. BGSU is an AA/EEO employer and encourages applications from women, minorities, veterans, and individuals with disabilities.

DARTMOUTH COLLEGE

John Wesley Young Research Instructorship

The John Wesley Young Research Instructorship is a two-year post-doctoral appointment for promising new or recent PhD's whose research interests overlap a department member's. Current departmental interests include areas in algebra, analysis, algebraic geometry, combinatorics, differential geometry, logic and set theory, number theory, probability and topology. Teaching duties of four ten-week courses spread over two or three quarters typically include at least one course in the instructor's specialty and include elementary, advanced and (at instructor's option) graduate courses. Nine-month salary of \$43,000 supplemented by summer research stipend of \$9,555 for instructors in residence for two months in summer.

Send letter of application, résumé, graduate transcript, thesis abstract, description of other research activities and interests if appropriate, and 3 or preferably 4 letters of recommendation (at least one should discuss teaching) to Betty Harrington, Department of Mathematics, 6188 Bradley Hall, Hanover, NH, 03755-3551. Applications received by January 5 receive first consideration; applications will be accepted until position is filled. Dartmouth College is committed to affirmative action and strongly encourages applications from minorities and women.

Applied Mathematics

Dartmouth College is the recent recipient of an NSF/NIMH award to establish a fMRI Data Center (see <http://www.fmriddc.org>). This is a joint effort of Dartmouth's Department of Mathematics, Center for Cognitive Neuroscience and Department of Computer Science. In conjunction with the Center, the Department of Mathematics is now accepting applications for a two-year Postdoctoral Fellow in Applied Mathematics, initial appointment in the 2002-2003 academic year. Fellows will be expected to teach one graduate seminar each year (in their specialty), and to help in the implementation and development of novel post-processing tools for the Center. Fellows will interact with all of the cooperating departments. The ideal applicant will have strong interdisciplinary interests and have a background in informatics, image or signal processing, or medical imaging, but applicants with strong mathematical backgrounds who are looking to become more applied and learn about data mining, medical imaging or image processing may also be excellent candidates.

Send letter of application, resume, graduate transcript, thesis abstract (and description of other research activities and interests if appropriate), and 3 or preferably 4 letters of recommendation (at least one should discuss teaching) to Betty Harrington, Department of Mathematics, 6188 Bradley Hall, Dartmouth College, Hanover, NH, 03755-3551. Dartmouth College is committed to affirmative action and strongly encourages applications from minorities and women.

Tenure Track

The Department of Mathematics anticipates three tenure-track openings with initial appointment in the 2002-2003 academic year. The positions are in logic/set theory, or number theory, or "applicable mathematics." The work of candidates in applicable mathematics should straddle the line of pure and applied mathematics. The successful candidate will be a researcher working in core mathematics who has a proven track record in pursuing both the theoretical development of his/her subject, as well as potential applications. Examples would include (but are not limited to) number theorists with interests in cryptography or coding theory, representation theorists who work in signal processing, combinatorialists with interests in computing, probabilists with interests in statistics, as well as

more classical applied mathematicians. Various projects are currently funded by NSF and DoD. Active collaborations with the medical and engineering schools, and programs in computer science and cognitive neuroscience exist. Collaborations and or appointments in Dartmouth's M.D./Ph.D. program as well as Dartmouth's Institute for Secure Technologies Studies are also possible. In exceptional cases an appointment at a higher level may be possible.

Candidates for any position must be committed to outstanding teaching at all levels of the undergraduate and graduate curriculum and must give evidence of a well-regarded research program that shows real promise for the future. Candidates with several years of experience should in addition be ready to direct Ph.D. theses.

To create an atmosphere supportive of research, Dartmouth offers new faculty members grants for research-related expenses, a quarter of sabbatical leave for each three academic years in residence and flexible scheduling of teaching responsibilities. The teaching responsibility in mathematics is four courses spread over two or three quarters. The department encourages good teaching with a combination of committed colleagues and bright, responsive students.

To apply, send a letter of application, curriculum vitae, and a brief statement of research results and interests. Also arrange for four letters of reference to be sent, at least one of which addresses teaching, and, if the applicant's native language is not English, the applicant's ability to use English in a classroom. All application materials should be addressed to Betty Harrington, Recruiting Secretary, Department of Mathematics, Dartmouth College, 6188 Bradley Hall, Hanover, NH 03755-3551. Applications completed by January 5 will receive first consideration. Dartmouth is committed to Affirmative Action and encourages applications from African Americans, Asian Americans, Hispanics, Native Americans and women. Inquiries about the progress of the selection process can be directed to Dwight Lahr, Recruiting Chair.

KENYON COLLEGE

Mathematics and Biology

The departments of Biology and Mathematics at Kenyon College invite applications for a joint interdisciplinary tenure-track position at the assistant professor level in a field of computational or mathematical biology. Areas of special interest may include: Biomathematics, Quantitative ecology or evolutionary biology, Modeling of organisms or populations, Computational approaches to cellular or molecular biology, Biostatistics or bioinformatics. The successful candidate will teach courses in both the departments of Mathematics and Biology, and conduct a vigorous research program involving undergraduates. Generous start-up funds are provided, including support from an award to Kenyon from the Howard Hughes Medical Institute. The candidate will work with current faculty to develop new collaborative teaching and research in computational and mathematical biology. The candidate's primary appointment will be in the individual department of her/his choice. Qualifications include a Ph.D. in an appropriate discipline, demonstrated commitment to excellent instruction, and the ability to initiate and maintain research with undergraduates.

Applicants should send a curriculum vitae, a statement of teaching philosophy and interests, a research statement (including a summary of accomplishments and direction of future research), graduate and undergraduate transcripts, and three (3) letters of recommendation to: Mathematics and Biology Search Committee, Wendy Busenburg, Higley Hall, Kenyon College, Gambier, OH 43022. Review of complete applications will begin on December 1, 2001, and will continue until the position is filled. For more information, contact the Search Committee Chair via e-mail at mathbiol@kenyon.edu. Kenyon College is an Equal Opportunity Employer, especially committed to building a diverse faculty.

MIAMI UNIVERSITY

Oxford, Ohio

Applications are invited for one (and possibly two) tenure-track assistant professorship(s) to start in fall 2002. Only candidates with primary research interest in applied mathematics will be considered. Preference will be given to candidates with a strong background in modeling, industrial mathematics, numerical analysis, optimization, or mathematical programming. Applicants must have a Ph.D. by

August 2002 in the mathematical sciences and strong credentials or demonstrated potential for both research and teaching.

Send an AMS cover sheet, curriculum vitae, description of current research, statement of teaching philosophy, and three letters of recommendation to: Mathematics Search Committee, Department of Mathematics and Statistics, Miami University, Oxford, OH 45056. At least one letter should address teaching ability. Review of applications will begin on December 1, 2001. Miami University is an affirmative action, equal opportunity employer: women and minority candidates are encouraged to apply.

MATHEMATICAL SCIENCES RESEARCH INSTITUTE

The Mathematical Sciences Research Institute in Berkeley, California, solicits applications for membership during the 2002-2003 year, which will feature three programs:

Commutative Algebra (August 19, 2002 - May 16, 2003)

Quantum Computation (August 19 - December 20, 2002)

Semi-Classical (January 2 - May 16, 2003)

In addition, MSRI continues the COMPLEMENTARY PROGRAM, in which applications from candidates working in any field of mathematics are welcome.

Award categories: Research Professorships: partial salary support for at least three months, intended for mathematicians with PhDs awarded 1996 or earlier. Deadline: Sept. 28, 2001. Postdoctoral Fellowships: support for five or ten months, intended for mathematicians with PhDs awarded 1997 or later. Deadline: Nov. 16, 2001. General Memberships: partial support toward living and travel expenses. Deadline: Nov. 16, 2001.

Information and application form available from <http://www.msri.org> or by writing to Applications, MSRI, 1000 Centennial Dr., Berkeley, CA 94720-5070.

PURDUE UNIVERSITY

Department of Mathematics

Applications are invited for tenure-track Assistant Professor or three-year Research Assistant Professor appointments beginning August 2002. Ph.D. by August 2002, exceptional research promise, and strong teaching record required.

Applications will also be accepted for possible appointments at the Associate Professor/Professor level. Ph.D. and excellence in research and teaching required.

Outstanding applicants from all mathematical research areas will be considered. Because the department has several openings in applied mathematics, candidates who have significant research accomplishments in applied mathematics or computational applied mathematics are especially encouraged to apply.

Several positions may be available for terms ranging from one semester to two years beginning August 2002.

All applicants should have research interests in common with Purdue faculty. Send vita, summary of research interests/plans, and arrange for three letters of recommendation (one addressing teaching) to be sent to: Carl Cowen, Head, Department of Mathematics, Purdue University, West Lafayette, IN 47907-1395.

Review of applications will begin November 15, 2001 and continue until available positions are filled. Offers for tenure-track positions may be made at any time; some offers for RAP and visiting positions will be made before the end of January 2002.

Purdue is an Affirmative Action/Equal Opportunity Employer.

NORTHWESTERN UNIVERSITY

Boas Assistant Professor

Applications are solicited from people whose research is related to Nonlinear Partial Differential Equations and related analysis for two Ralph Boas assistant professorships of three years each starting in September 2002. These positions are non-tenure track and are part of the Emphasis Year in Nonlinear Partial Differential Equations which the department will be sponsoring in 2002-2003. Applications should be sent to the Emphasis Year Committee, Department of Mathematics, 2033 Sheridan Road, Evanston, Illinois 60208-2730 and include: (1) the American Mathematical Society's Application Cover Sheet for Academic Employment, (2) a curriculum vitae, and (3) three letters of recommendation including one which discusses in some detail the candidate's teaching qualifications. Inquiries may be sent via e-mail to: [hiring@math.nwu.edu](mailto: hiring@math.nwu.edu)

Applications are welcomed at any time, but the review process starts December 1, 2001. Northwestern University is an affirmative action, equal opportunity employer committed to fostering a diverse faculty; women and minority candidates are especially encouraged to apply.

Tenure-Track or Tenured Position

Applications are invited for anticipated tenure-track or tenured positions starting September 2002, pending final approval. Priority will be given to exceptionally promising research mathematicians. Fields of interest within the department include Algebra, Algebraic Geometry, Analysis, Dynamical Systems, Mathematical Physics, Probability, Partial Differential Equations, and Topology.

Application material should be sent to Personnel Committee, Department of Mathematics, 2033 Sheridan Road, Evanston, Illinois 60208-2730 and include: (1) the American Mathematical Society's Application Cover Sheet for Academic Employment, (2) a curriculum vitae, and (3) at least four letters of recommendation including one which discusses in some detail the candidate's teaching qualifications. Inquiries may be sent via e-mail to: [hiring@math.nwu.edu](mailto: hiring@math.nwu.edu)

Applications are welcome at any time, but the review process starts in October 2001. Northwestern University is an affirmative action, equal opportunity employer committed to fostering a diverse faculty; women and minority candidates are especially encouraged to apply.

WESTERN MICHIGAN UNIVERSITY

Western Michigan University seeks applications for two tenure-track assistant professors for Fall 2002. We are interested in individuals whose research interests will complement or enhance the existing strengths of the Department. Areas of particular interest include: algebraic geometry, algebraic topology, applied mathematics, collegiate mathematics education, combinatorics/graph theory, control theory, differential equations, differential geometry, Lie/representation theory, matrix analysis/operator theory, numerical analysis, optimization. For additional details, see the Department's web page at <http://www.wmich.edu/math-stat>.

Western Michigan University, a student-centered research university, encourages applications from underrepresented groups. Send letter of application, AMS cover sheet, vita, statement of research, teaching philosophy, graduate transcripts, and four letters of reference (one letter should address the candidate's teaching) to: Jay Wood, Chair, Department of Mathematics, Western Michigan University, 1903 W. Michigan Avenue, Kalamazoo, MI 49008-5248. Review of applications will begin November 1, 2001 and continue until the positions are filled. The positions are contingent upon authorization of funding.

YORK UNIVERSITY

Operations Research or Applied Discrete 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, 2002. Applications in the areas of Operations Research or Applied Discrete Mathematics will be considered. The successful candidate must have a PhD and is expected to have a proven record of research and superior teaching ability. Candidates will be expected to provide leadership to the undergrad OR program, and to make a solid contribution to the mathematics graduate programme. The selection process will begin on January 7, 2002. Applicants should send resumes and arrange for three letters of recommendation (one of which should address teaching) to be sent directly to: Applied Mathematics Search Committee, Department of Mathematics and Statistics, York University, 4700 Keele Street, Toronto, Ontario, Canada, M3J 1P3. Fax: (416) 736-5757. E-mail: appld.recruit@mathstat.yorku.ca, www.math.yorku.ca/Hiring/

In accordance with Canadian immigration requirements, Canadian citizens and permanent residents will be considered first for this position. All positions at York are subject to budgetary approval.

For many years, York University has had a policy of employment equity including affirmative action for women faculty and librarians. Recently, York has included racial/visible minorities, persons with disabilities and aboriginal peoples in its affirmative action program. Persons who are members of one or more of these three groups are encouraged to self identify during the selection process. Please note that candidates from these three groups will be considered within the priorities of the affirmative action program only if they self identify. The Department of Mathematics and Statistics welcomes applications from women, racial/visible minorities, persons with disabilities and aboriginal peoples. The affirmative action program can be found on York's website at www.yorku.ca or a copy can be obtained by calling the affirmative action office at 416-736-5713.

Infinite Dimensional dynamical systems

Applications are invited for a tenure-track appointment at the Assistant Professor level in the Department of Mathematics and Statistics, in the area of Infinite Dimensional dynamical systems, with applications to population biology, neural networks, or data mining. The successful candidate must have a PhD and is expected to have a proven record of research and superior teaching ability. Preference will be given to candidates who can make solid contributions to an undergraduate programme in Computational Mathematics and to the graduate programme, and who can strengthen existing areas of present and ongoing research activity. The position commences July 1, 2002 and the selection process will begin on January 7, 2002. Applicants should send resumes and arrange for three letters of recommendation (one of which should address teaching) to be sent directly to: Dynamics Search Committee, Department of Mathematics and Statistics, York University, 4700 Keele Street, Toronto, Ontario, Canada, M3J 1P3. Fax: (416) 736-5757. E-mail: dynamics.recruit@mathstat.yorku.ca, www.math.yorku.ca/Hiring/.

In accordance with Canadian immigration requirements, Canadian citizens and permanent residents will be considered first for this position. All positions at York are subject to budgetary approval.

For many years, York University has had a policy of employment equity including affirmative action for women faculty and librarians. Recently, York has included racial/visible minorities, persons with disabilities and aboriginal peoples in its affirmative action program. Persons who are members of one or more of these three groups are encouraged to self identify during the selection process. Please note that candidates from these three groups will be considered within the priorities of the affirmative action program only if they self identify. The Department of Mathematics and Statistics welcomes applications from women, racial/visible minorities, persons with disabilities and aboriginal peoples. The affirmative action program can be found on York's website at www.yorku.ca or a copy can be obtained by calling the affirmative action office at 416-736-5713.

Algebra, Logic, or related area

Applications are invited for a tenure-track appointment at the Assistant Professor level in the Department of Mathematics and Statistics to commence July 1, 2002. Applications in Algebra, Logic, or related areas will be considered. The successful candidate must have a PhD and is expected to have a proven record of research 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 January 7, 2002.

Applicants should send resumes and arrange for three letters of recommendation (one of which should address teaching) to be sent directly to: Pure Mathematics Search Committee, Department of Mathematics and Statistics, York University, 4700 Keele Street, Toronto, Ontario, Canada, M3J 1P3. Fax: (416) 736-5757. E-mail: pure.recruit@mathstat.yorku.ca, www.math.yorku.ca/Hiring/

In accordance with Canadian immigration requirements, Canadian citizens and permanent residents will be considered first for this position. All positions at York are subject to budgetary approval.

For many years, York University has had a policy of employment equity including affirmative action for women faculty and librarians. Recently, York has included racial/visible minorities, persons with disabilities and aboriginal peoples in its affirmative action program. Persons who are members of one or more of these three groups are encouraged to self identify during the selection process. Please note that candidates from these three groups will be considered within the priorities of the affirmative action program only if they self identify. The Department of Mathematics and Statistics welcomes applications from women, racial/visible minorities, persons with disabilities and aboriginal peoples. The affirmative action program can be found on York's website at www.yorku.ca or a copy can be obtained by calling the affirmative action office at 416-736-5713.

UNIVERSITY OF MINNESOTA-MINNEAPOLIS

Postdoctoral position with emphasis in Mathematics Education

The School of Mathematics will have available a temporary position (Assistant Professor) starting fall semester, 2002. Ph.D. or equivalent degree in mathematics, teaching and some related education experiences at the undergraduate level are required. This position will emphasize: * excellence in teaching, including some experiences with mathematically talented high school students; * involvement with creative academic programs, curriculum development, and educational scholarship/professional activities (i.e., new curricula and curricula supplements, professional development materials, and relevant statistical/evaluative studies and publications). Experience working with K-12 mathematics coursework and preservice/in-service teacher education is desirable. Preference will be given to applicants within 4 years of their Ph.D. degree whose background and experience are compatible with the above stated objectives. The position can be structured to allow sufficient opportunities to work on mathematical research and related activities. This position will initially be a 2-year appointment, with the possibility of an additional 2-year appointment, contingent on satisfactory performance and funding. Salary will be commensurate with background and experience. Consideration of applicants will begin December 1, 2001 and will continue until the position is filled. Send cover letter of interest, a current curriculum vitae, including a complete description of related experience and research to this position, and 3 letters of recommendation, at least one of which comments on teaching ability and educational experience, to: Professor Harvey Keynes, School of Mathematics, University of Minnesota, 127 Vincent Hall, 206 Church Street S.E., Minneapolis, MN 55455. The University of Minnesota is an equal opportunity educator and employer. See also our web page at <http://www.math.umn.edu>

Tenure-Track Position with emphasis in Mathematics Education

The School of Mathematics will have available a tenure-track position (Assistant Professor or higher) starting fall semester, 2002. Ph.D. or equivalent degree in mathematics, teaching and related education experiences at the undergraduate level and research are required. This position will emphasize: * excellence in teaching, including experience with mathematically talented high school students; * involvement with creative academic programs, curriculum development, and educational scholarship/professional activities (i.e., new curricula and curricula supplements, professional development materials, and relevant statistical/evaluative studies and publications); * developing capabilities for educational leadership, and the ability to constructively work with management and public relations aspects of educational programs and projects. Experience working with K-12 mathematics coursework and preservice/in-service teacher education is desirable. Preference will be given to applicants at any level whose background and experience are compatible with the above stated objectives. The position can be structured to allow sufficient opportunities to work on mathematics research and related activities. Salary will be commensurate with background and experience. Consideration of applicants will begin December 1, 2001 and will continue until the position is filled. Send cover letter of interest, current curriculum vitae, including a complete description of related experience and research to this position, and 4 letters of recommendation, at least

one of which comments on teaching ability and educational experience, to: Professor Harvey Keynes, School of Mathematics, University of Minnesota, 127 Vincent Hall, 206 Church Street S.E., Minneapolis, MN 55455. The University of Minnesota is an equal opportunity educator and employer. See also our web page at <http://www.math.umn.edu>

DUNHAM JACKSON ASSISTANT PROFESSOR

This is a three-year appointment from fall semester, 2002 through spring semester, 2005 with a teaching load of 3 one-semester courses per academic year. Outstanding research and teaching abilities required. Preference will be given to applicants whose research interests are compatible with those of the School. Applicants should have received a Ph.D. or equivalent degree in mathematics no earlier than Jan. 1, 2001 and no later than August 25, 2002. Summer School teaching may be available during the summer of 2003 and 2004 to supplement regular stipend. Salary competitive. Consideration of applications will begin December 1, 2001 and continue until available positions are filled. Send letter of application, current curriculum vitae, minimum 4 letters of recommendation, one of which should address teaching ability, and description of research to Naresh Jain, Head, School of Mathematics, University of Minnesota, 206 Church Street S.E., 127 Vincent Hall, Minneapolis, MN 55455. The University of Minnesota is an equal opportunity educator and employer. See also <http://www.math.umn.edu>

Tenure-Track positions in Mathematics

The School of Mathematics may have available several tenure track Assistant Professor or tenured Associate or Full Professor positions starting fall semester, 2002. Ph.D. or equivalent degree in mathematics by the beginning date of appointment, outstanding research and teaching abilities are required. Applications at all levels are invited; preference will be given to applicants whose research interests are compatible with those of the School. Consideration of applications will begin November 1, 2001 and will continue until available positions are filled. Send letter of application, current curriculum vitae, at least 4 letters of recommendation, one of which should address teaching ability, and description of research to: Naresh Jain, Head, School of Mathematics, University of Minnesota, 127 Vincent Hall, 206 Church Street S.E., Minneapolis, MN 55455. The University of Minnesota is an equal opportunity educator and employer. See also <http://www.math.umn.edu>

Temporary or Visiting Positions

Several temporary or visiting positions at all levels (Instructor, Assistant, Associate or Full Professor) may be available for terms ranging from one semester to two years beginning fall semester, 2002. Ph.D. or equivalent degree in mathematics by beginning date of appointment, strong research and teaching abilities are required. Preference will be given to applicants whose research interests are compatible with those of the School. Salary competitive. Consideration of applications will begin December 1, 2001 and continue until available positions are filled. Send letter of application, current curriculum vitae, at least 4 letters of recommendation, one of which should address teaching ability, and description of research to Naresh Jain, Head, School of Mathematics, University of Minnesota, 206 Church Street S.E., 127 Vincent Hall, Minneapolis, MN 55455. The University of Minnesota is an equal opportunity educator and employer. See also <http://www.math.umn.edu>

NAM'S ENDOWMENT CAMPAIGN "A CAMPAIGN FOR THE PERPETUITY OF NAM" PLEDGE – CONTRIBUTION FORM

The principal of the campaign is never to be spent; only the interest and dividends received from the investment of these funds may be spent. (All life memberships will go toward NAM's campaign).

To help with the success of this campaign, we are requesting all members and friends of NAM to contribute what you can and to assist NAM by helping NAM to locate other contributors.

Please pledge the amount that you desire to contribute and please honor all pledges (where feasible) by paying \$100.00 or more toward the pledge. Persons may pay for a Life Membership over a period of one year by making four payments of \$100.00 each.

Send to: Dr. Robert E. Bozeman, Secretary-Treasurer, NAM; Depart. of Mathematics; Morehouse College; Atlanta, GA 30314; (404) 215-2613 (office); rbozeman@morehouse.edu

PLEDGE/CONTRIBUTION LEVELS

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