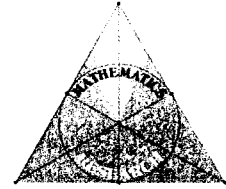




NATIONAL SECURITY AGENCY
CENTRAL SECURITY SERVICE
FORT GEORGE G. MEADE, MARYLAND 20755-6000



August 2008

Math Department Chair

The Mathematics Research Group at the National Security Agency (NSA) offers two exceptional summer programs for undergraduate and graduate mathematics students.

Both programs offer a unique opportunity for students to work directly with NSA mathematicians on mission-critical problems and experience the excitement of the NSA mathematics community.

Attached are announcements for the Director's Summer Program, for undergraduates, and the Graduate Mathematics Program, for graduates. We would appreciate you taking the time to post this information so your students may take advantage of these exciting opportunities.

The announcements cover requirements, application procedures/documents required, deadline date, and name, address and phone number of the program manager.

Thanks for your time and for posting this information.

A handwritten signature in black ink, appearing to read "Tad P. White". The signature is fluid and cursive, with a long horizontal stroke extending from the end.

Dr. Tad P. White
Chief, Mathematics Research Group



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THE GRADUATE MATHEMATICS PROGRAM

CRYPTOLOGIC MATHEMATICS FOR EXCEPTIONAL GRADUATE STUDENTS IN MATHEMATICS

Mrs. Tonya M. Viola, Program Manager
math@nsa.gov

The Graduate Mathematics Program provides an opportunity for exceptional mathematics graduate students to work directly with NSA mathematicians on mission-critical problems and experience the excitement of the NSA mathematics community. Admission to the 12 week program is highly competitive. Applicants must be U.S. citizens who are currently enrolled in a mathematics graduate program.

Applicants should have demonstrated superior mathematical aptitude and problem-solving skills. Evidence of successful work on an independent project in pure or applied mathematics or computer science is desirable. Applicants may be at any stage in their graduate careers and working, or intending to work, in any area of mathematics. Computer programming experience, especially C or C++, is desirable.

State of the art computing resources are available to Graduate Mathematics Program participants. Computational software packages such as MATHEMATICA, MATHLAB, MAGMA, MAPLE and SPLUS are also available.

Information about the Graduate Mathematics Program is sent to over 300 colleges and universities across the United States. Because of the lengthy security processing required, the deadline for applications to be received is 15 October each year. To apply, a student must send a resume, at least two letters of recommendation from faculty members familiar with their work, and a copy of undergraduate and graduate transcripts through the current academic year. All students must be U.S. citizens. All information should be sent to: National Security Agency, 9800 Savage Road, ATTN: R1 (GMP) Suite 6515, Fort George G. Meade, MD 20755-6515

GMP, located at Fort Meade, Maryland, runs from end of May through middle of August. Students are paid a salary commensurate with their education level. Responsibility for housing finances rest with the student. Students who attend out-of-state schools are eligible for round trip airline ticket to and from school or mileage reimbursement up to cost of government issued airline ticket.

For additional information about the GMP, call Mrs. Tonya Viola, Program Manager, at (301) 688-0983 or send e-mail to math@nsa.gov. For more information about career opportunities at the NSA visit www.nsa.gov.



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Fact Sheet: Hiring Process for Mathematicians at the National Security Agency

The mathematics hiring process at the NSA involves a visit consisting of three to four hour-long interviews, an opportunity to present a seminar to an audience of mathematicians and an evaluation by NSA mathematicians, in addition to the processing required for a security clearance. Please note that:

- United States citizenship is required.
- A polygraph exam and background investigation are required in order to obtain a security clearance.

The process of granting a clearance may take three to six months from the date of the polygraph, but this period varies. Applicants with immediate family members who are not United States citizens may experience delays.

Typical starting salaries are \$49,685 for an applicant with a Bachelors degree, \$59,811 for a Masters and \$83,720 for a Ph.D.

To apply, visit the NSA website (www.nsa.gov) to submit an on-line application and send (1) a cover letter stating interest in a position as a mathematician, (2) a standard résumé or Curriculum Vitae (CV) with postal address, phone number, e-mail address and all degrees earned or expected, with granting institutions, and (3) original copies of all undergraduate and graduate transcripts to:

National Security Agency
9800 Savage Road
Suite 6515
Fort Meade, MD 20755-6515
ATTN: Mathematics Hiring Manager

For additional information, please contact Deanna Egelston, Mathematics Hiring Manager, at (301) 688-0944 or dmegels@nsa.gov.



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Mathematics Today at the National Security Agency

The role of mathematicians at NSA is continually evolving in response to the ever changing world of communications technology. In recent years the changes have been dramatic. While it is not possible to describe on one page what mathematics is at NSA today, we can at least highlight some characteristics.

- **NSA mathematicians solve problems.**

The primary responsibility of mathematicians at NSA is to solve problems associated with signals intelligence (the interception, collection and analysis of foreign signals) and information security (the protection of all classified information that is stored in, or sent through, U. S. government equipment). In addition to the traditional area of cryptology, mathematicians at NSA now work on problems in areas such as signal analysis, speech processing, coding theory, data compression, analysis of communication networks and computer security. NSA is unique in its ability to offer the opportunity to work in such diverse areas of applied mathematics. To solve the problems generated by NSA's mission, mathematicians draw from a wide body of mathematical knowledge, ranging over number theory, finite field theory, Fourier analysis, probability, statistics and more. However, many times, the essential ingredient to the solution of a problem is not mathematical knowledge per se, but the keen analytic ability that a mathematician possesses through training and talent.

- **The ingenuity of NSA's mathematicians and the computer are a powerful team.**

NSA mathematicians use computers to test ideas and implement solutions to a diverse set of problems. While there is no requirement for any previous computer work, a mathematician at NSA must learn to use the computer effectively. It is the combination of a mathematician's ingenuity and the power of modern computers that has made the mathematics community at NSA so successful.

- **NSA mathematicians take pride in being part of a mathematics community.**

At NSA, teamwork is a tool that contributes to problem solving. Interaction among mathematicians varies from working together on small teams to participating in workshops. Mathematicians routinely share their results and ideas through papers, seminars and conferences. NSA's learned societies provide opportunities for both intellectual and social interaction among mathematicians. While mathematicians take pride in being part of a vibrant and cohesive mathematics community here at NSA, ties to the wider mathematics community outside NSA are also maintained. Besides attending external conferences sponsored by mathematics organizations, NSA mathematicians have sponsored a series of Invitational Math Meetings at NSA. One of these was attended by minority mathematicians from academic institutions throughout the country. At another, prominent women in mathematics from academia were invited to NSA to learn more about us. Out of the latter meeting grew an NSA organization which continues NSA's outreach to women in mathematics in academia, both students and faculty, as well as fosters career opportunities for women in mathematics within NSA.

- **The future will offer NSA mathematicians more opportunities than ever before.**

In the future, mathematicians will find themselves in pioneering roles where perhaps even the mathematical formulation of a problem is not clear. More and more, mathematicians will work with people in other disciplines like computer science and electrical engineering, and there will be greater opportunities for mathematicians to learn and experiment in areas far from their original academic training. No description of mathematics at NSA can ever be final and complete. As new communication technologies emerge, so will new challenges for mathematicians at NSA.