Fair Allocation

H. Peyton Young, Editor
(Proceedings of Symposia in Applied Mathematics. AMS Short Course Lecture Notes. Volume 33)

This collection of six papers provides a valuable source of material on the real-world problem of allocating objects among competing claimants. The examples given show how mathematics, particularly the axiomatic method, can be applied to give insight into complex social problems. Originally presented as an AMS Short Course, these papers could serve as a suitable text for courses touching on game theory, decision sciences, economics, or quantitative political science. Most of the material is accessible to the mathematically mature undergraduate with a background in advanced calculus and algebra. Each article surveys the recent literature and includes statements and sketches of proofs, as well as unsolved problems which should excite student curiosity.

The articles analyze the question of fair allocation via six examples: the apportionment of political representation, the measurement of income inequality, the allocation of joint costs, the levying of taxes, the design of voting laws, and the framing of auction procedures. In each of these examples fairness has a somewhat different significance, but common axiomatic threads reveal broad underlying principles. Each of the topics is concerned with norms of comparative equity for evaluating allocations or with standards of procedures for effecting them; it is this focus on normative properties which suggests that a mathematical analysis is appropriate. Though game theory provides a useful tool in many of these allocation problems, the emphasis here is on standards rather than strategy and equity rather than rationality, an approach which aims to more accurately mirror real-world social problems.

Contents

M. L. Balinski and H. P. Young. The apportionment of representation
James E. Foster. Inequality measurement
H. Peyton Young. Cost allocation
H. Peyton Young. The allocation of debts and taxes
Hervé Moulin. Fairness and strategy in voting
Robert J. Weber. Auctions and competitive bidding

1980 Mathematics Subject Classification: 90-XX
ISBN 0094. LC 85-18542
ISSN 0160-7634
xiv + 170 pages, December 1985

Hardcover: Individual member $16, Institutional member $21, List price $26
Softcover: Individual member $13, Institutional member $17, List price $21
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AMERICAN MATHEMATICAL SOCIETY
Volume 32, Number 7, December 1985

Special Issue
Assistantships and Fellowships in the Mathematical Sciences 1986—1987

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975 Annual Index, Volume 32
Statement by AMS Committee on Employment and Educational Policy

Current and prospective graduate students in mathematics and their advisors should be informed of employment prospects in the profession.


Committee on Employment and Educational Policy

(December 1985)

Lida K. Barrett
Stefan A. Burr
Philip C. Curtis, Jr.
Lisl Novak Gaal
Gerald J. Janusz
Donald C. Rung, chairman

Data Subcommittee

Lida K. Barrett
Edward A. Connors
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Barbara L. Osofsky
Robert P. Kurshan

Employment Concerns Subcommittee

Charlotte Lin
Audrey Terras
Barnet M. Weinstock,
Robert J. Thompson

chairman

The list of assistantships and fellowships on the following pages at universities includes 356 departments of mathematics, applied mathematics, statistics, computer science, and related mathematical disciplines; these represent 258 colleges and universities. Institutions in the United States are listed alphabetically by state, followed by Canadian institutions.

This year the list of assistantships and fellowships in the mathematical sciences includes the number that will be available for NEW students, in the first year or above, during the academic year 1986-1987. In the past, assistantships and fellowships held by continuing graduate students were sometimes included in the total, although the intent was always to count only anticipated openings.

The number following “Faculty” is the number of faculty members in the department who are full time employees in the institution and at least half-time in the department; the number following “Published” is the number of those reported who have published a technical paper or book in the last three years.

The section on “Graduate Students” refers to the number of graduate students in the department who are full-time (including teaching assistants), full-time first year, and part-time. Information not supplied in any of these categories is indicated by a dash.

Under the DEGREES AWARDED column the following terms have been used:

Bachelor’s by inst. . . . . Number of bachelor’s degrees awarded by the institution
Bachelor’s by dept. . . . . Number of bachelor’s degrees awarded by the department
Master’s by dept. . . . . Number of master’s degrees awarded by the department
Ph.D. (82/85) . . . . . . . Doctoral degrees awarded during the last three years


Abbreviations used

ANT . . Algebra or Number Theory
AFA . . Analysis or Functional Analysis
GT . . Geometry or Topology
L . . . . Logic
P . . . . Probability
S . . . . Statistics
CS . . . Computer Science
OR . . . Operations Research
AM . . . Applied Mathematics
ME . . . Mathematics Education

Under the SERVICE REQUIRED column, hours per week section, “c” denotes contact hours.
# Mathematical Sciences Assistantships and Fellowships

for Graduate Study at Universities in 1986-1987 for new students, first year or above

<table>
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<th>TYPE OF ASSISTANCE</th>
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<th>SERVICE REQUIRED</th>
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<td>dollars</td>
<td>student ($)</td>
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## Alabama

**Alabama A&M University, Normal 35762**  
MATHEMATICS  
Jerry R. Shipman, Chairman  
Applications due: 9/23/86  
Graduate Students: full-time; full-time first year 2; part-time 10

| Teaching Assistantship (1) | 4250 | 9 | 20 | Teaching |

## Auburn University, Auburn University 36849

**MATHEMATICS**  
James R. Wall, Head  
Applications due: 3/10/86*  
Graduate Students: full-time 41; full-time first year 13; part-time 1

<table>
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<th>Teaching Assistantship (18)</th>
<th>7020**</th>
<th>9</th>
<th>1200</th>
<th>5</th>
<th>Teaching</th>
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</table>
| *Late applications considered.  
**1985-1986 stipend. |

## University of Alabama in Birmingham 35294

**MATHEMATICS**  
Roger T. Lewis, Chairman  
Applications due: 3/15/86  
Graduate Students: full-time 8; full-time first year 4; part-time 5

| Teaching Assistantship (5) | 5700 | 9 | 4 |
| Research Assistantship (1) | 5024 | 12 |
| Scholarship (1) | 1000 | 9 |

## University of Alabama in Huntsville 35899

**COMPUTER SCIENCE**  
Sajjan G. Shiva, Chairman  
Applications due: 3/15/86  
Graduate Students: full-time 15; full-time first year 10; part-time 300

| Teaching Fellowship (4) | 5000-9000 | 9 | Waived | 20 |
| Teaching Assistantship (4) | 5000-9000 | 9 | Waived | 20 |

**MATHEMATICS AND STATISTICS**  
Peter M. Gibson, Chairman  
Applications due: 3/1/86  
Graduate Students: full-time 9; full-time first year 5; part-time 26

| Teaching Assistantship (5) | 6000-9000 | 9 | Waived | 20 | Teaching, assisting |
| Research Assistantship (3) | 6000-9000 | 9 | Waived | 20 | Research |

## University of Alabama, University 35486

**MANAGEMENT SCIENCE AND STATISTICS**  
F. H. Barron, Head  
Applications due: Open  
Graduate Students: full-time 12; full-time first year 2; part-time 5

| Fellowship (2) | 6000-8000 | 9 | Teaching |
| Teaching Assistantship (6) | 5500-6000 | 9 | Research |
| Research Assistantship (3) | 5500-8000 | 9 | 20 | Research |
| Scholarship (1) | 0-1900 | 9 | 2800 | 10 | Grading |

**Ph. D. (82/85) S 4, OR 1. Total: 5**
Arizona State University, Tempe 85287

MATHEMATICS
Applications due: 3/15/86*
Faculty 47; Published 30
Graduate Students: full-time 45; full-time first year 15; part-time 2
Teaching Assistantship (15) 7420-8000 9 980 15-20 Grading, tutoring
Ph. D. (82/85) AFA 1, GT 1, P 1. Total: 3

*Late applications considered.

Northern Arizona University, Flagstaff 86011

MATHEMATICS
Applications due: 4/86
Faculty 32; Published 11
Graduate Students: full-time 10; full-time first year 5; part-time 15
Teaching Assistantship (5–10) 4500–7300 9 * 13 Tutorial, teaching
*In-state: $495; out-of-state: $1627.

University of Arizona, Tucson 85721

APPLIED MATHEMATICS
Applications due: 1/15/86
Faculty 2; Published 2
Graduate Students: full-time 48; full-time first year 16; part-time 0
Fellowship (1) 8000 10 20 Ph. D. (82/85) AM 16. Total: 16
Teaching Assistantship (8) 4880–7700 9 990 3
Research Assistantship (7) 4860–7700 20
MATHMATICS
Applications due: 3/15/86
Faculty 48; Published 42
Graduate Students: full-time 85; full-time first year 20; part-time 5
Fellowship (1) 7300 9 Waived Ph. D. (82/85) ANT 4, AFA 2, AM 15. Total: 21
Teaching Assistantship (62) 7300–8076 9 995 4
Research Assistantship (6) 7300–8076 9 995
Scholarship (4) Waived

Arkansas

Arkansas State University, State University 72487

COMPUTER SCIENCE, MATHEMATICS AND PHYSICS
Applications due: 4/1/86
Faculty 25; Published 11
Graduate Students: full-time 16; full-time first year 10; part-time 4
Teaching Assistantship (6–12) 4250 9 33/hr. 3 Teaching grading
Ph. D. (82/85) AN 1, AFA 2, AM 15. Total: 21

UNIVERSITY OF ARIZONA

The Program in Applied Mathematics at the University of Arizona is seeking highly qualified graduate students to pursue the M.S. and Ph.D. degrees. First year fellowships of $8,000 per year with tuition waiver are available on a competitive basis. Research assistantships of approximately the same value are available for exceptional students who wish to pursue their studies in geometry and mechanics, modern dynamics, chaos, turbulence, nonlinear waves, solitons, nonlinear optics, pattern formation in fluids and condensed matter, and other areas of nonlinear and computational science. Teaching assistantships are also available. For more information write:

Program in Applied Mathematics
Mathematics Building, Room 414
University of Arizona
Tucson, Arizona 85721

876
University of Arkansas, Fayetteville 72701

MATHEMATICAL SCIENCES
Bernard L. Madison, Chairman

Graduate Assistantship (20) 6000-6400 9 6* Ph. D. (82/85) ANT 2, AFA 1.
Teaching Assistantship (20) 5200-5600 9 6* Ph. D. (82/85) ANT 2, AFA 1.

California Institute of Technology, Pasadena 91125

MATHEMATICS
David W. Wales, Executive Chairman

Graduate Assistantship (18) 8200 12 Ph. D. (82/85) ANT 1, AFA 3,
Teaching Assistantship (18) 6585-7405 9 3* Teaching

*One-hour recitation section per week, plus grading and office hours.

California Polytechnic State University, San Luis Obispo 93407

MATHEMATICS
Paul F. Murphy, Interim Chairman

Graduate Assistantship (8-10) 4500 9 * 15 Teaching, grading

*In-state: $690 per year; out-of-state: $690 per year plus $84 per unit.

THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA

PROGRAM OF STUDY: The department offers programs leading to the M.Ed., M.A., M.S., and Ph.D. degrees. Our Ph.D. program is designed to provide students with the basic tools needed to initiate a research proposal leading to a thesis. We expect that those students entering our Ph.D. program will enroll in the year long courses dealing with algebra, complex analysis, geometry/topology. Following this basic training a research topic is chosen and a program of research is developed in consultation with one or more members of the faculty.

For the academic year 1986-87 two special topics were so designated, one in algebraic geometry and the other in mathematical physics and applied mathematics. There is a separate committee on applied mathematics and an excellent inter-disciplinary program has been developed. A close relationship exists between the program in pure mathematics and applied mathematics allowing students a great deal of flexibility in planning their individual programs. Prospective graduate students are encouraged to write to us and we will send them a summary of the research activities of the faculty.

An important ingredient in any research program is the opportunity for the exchange of ideas. The department has a very active colloquia schedule. Besides these regularly scheduled weekly talks the department has also set aside "special years". During these special years several positions, both long and short term appointments, will be available for visiting faculty. During these special years, courses and workshops will be designed to efficiently make use of the many visitors who will be coming through and will provide a unique opportunity to learn the many facets of a subject area.

The faculty, approximately 48, carry on a very active research program in the areas of algebra, algebraic geometry, analysis, combinatorics, computational number theory, differential equations, differential geometry, mathematical physics, number theory, numerical analysis, probability and statistics, and many topics in applied mathematics. There is a separate committee on applied mathematics and an excellent inter-disciplinary program has been developed. A close relationship exists between the program in pure mathematics and applied mathematics allowing students a great deal of flexibility in planning their individual programs. Prospective graduate students are encouraged to write to us and we will send them a summary of the research activities of the faculty.

Financial Aid: The department plans to have approximately 70 teaching assistantships for the academic year 1986-87. The teaching assistantship carries a stipend beginning at $7,300 for 9 months plus full remission of out-of-state fees. The teaching load is 4 contact hours per week. Approximately 2-3 weeks before classes begin a program for new teaching assistants is offered by the department. This program is designed to prepare new graduate students to be effective teachers.

One fellowship is available with a stipend of $7,200 plus remission of all registration fees. This carries no teaching duties. Approximately 2-3 graduate science fellowships are available for first year graduate students. These carry a stipend of $2,000 and are in addition to the teaching assistantship.

Fees: Out-of-state fees are waived for teaching assistants, but a registration fee of $495 is required each semester.

Tucson: The Tucson metropolitan area has a population of 500,000. It is located in a valley surrounded by mountain ranges, some of which tower 7,000 feet above the city. The Mexican border is 65 miles south of the University. The winter climate is dry and mild; air conditioning makes the buildings pleasant in the summer. The surroundings lend themselves to various outdoor recreational activities. Classical concerts, theater, skiing, and mountain hikes are all readily available.

Applying: Application forms for admission and financial assistance may be obtained from the department at the address given below. Credentials for admission are processed by the Graduate Committee of the department as they are received, and the student is notified as soon as possible. The Graduate Committee requests that the GRE scores also be submitted to the department. Applications for assistantships should be made prior to March 15. Notification of awards is made by April 15.

Correspondence and Information: Write to: William Yslas Velez - Director of Graduate Studies

Department of Mathematics - University of Arizona - Tucson, AZ 85721

Equal Opportunity Employer/Affirmative Action
<table>
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California State University, Hayward 94542

STATISTICS

Michael Orkin, Chairman

Graduate Students: full-time 35; full-time first year -; part-time -

Type of Assistance

- Grading Assistantship (4-6) 500/mo. 9 800/3 qtr. 10-15 *

*Undergraduate tutoring center; graders for faculty.

California State University, Long Beach 90840

MATHMATICS AND COMPUTER SCIENCE

Charles W. Austin, Chairman

Graduate Students: full-time 8; full-time first year 3; part-time 22

Teaching Assistantship (10) 7142-7766 9 6* Teaching
Graduate Assistantship (2) 5720-6150 9 20 Computer lab. assisting

California State University, Los Angeles 90032

MATHMATICS AND COMPUTER SCIENCE

Wayne Bishop, Chair

Graduate Students: full-time 15; full-time first year 6; part-time 25

Teaching Assistantship (20) 4556-13233 9/12 * 4-8 Teaching

*In-state resident: $708; out-of-state resident carrying 8 units: $2436.

Claremont Graduate School, Claremont 91711

MATHMATICS

Robert Williamson, Chair

Graduate Students: full-time 17; full-time first year 6; part-time 10

Fellowship (4) 1000-3000 9 Waived
Scholarship (Merit) (3) 4000 9 Waived
Tuition Waiver (6) 9
Clinic Team Leaders (3) 5000-9000 9 275/unit 8 Research

Humboldt State University, Arcata 95521

MATHMATICS

Elmo Moore, Chair

Graduate Students: full-time 13; full-time first year 9; part-time 0

Teaching Assistantship (7) 5000-8000 9 714* 15 Teaching

*Plus $84 per unit for nonresidents.

CALIFORNIA STATE UNIVERSITY, LOS ANGELES

M.S. IN PURE OR APPLIED MATHEMATICS

The Department of Mathematics and Computer Science offers programs leading to the masters degree in either pure or applied mathematics. Graduate Teaching Assistantships are available to all candidates who are eligible for classification into the graduate program and who maintain acceptable performance.

Assistantship support is approximately $4150 for teaching one course per quarter for 3 quarters and up to $12030 for teaching two courses for 4 quarters. For more information write:

WAYNE BISHOP, Chair
Department of Mathematics and Computer Science
California State University, L.A.
Los Angeles, California 90032

AN AFFIRMATIVE ACTION/EQUAL OPPORTUNITY/HANDICAPPED/TITLE IX EMPLOYER
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<td>dollars</td>
<td>months</td>
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San Diego State University, San Diego 92182

**MATHEMATICAL SCIENCES**

David H. Carlson, Chair

Graduate Students:
- full-time 32, full-time first year 15, part-time 164

Teaching Assistantship (10) 7429-8028
- 9
- 661
- 6
- Teaching

San Jose State University, San Jose 95192

**MATHEMATICS AND COMPUTER SCIENCE**

Veril L. Phillips, Chairman

Graduate Students:
- full-time 17, full-time first year 10, part-time 20

Teaching Fellowship (18-20) 4200-8500
- 9
- 765*
- 3-6
- Teaching

Stanford University, Stanford 94305

**ENGINEERING-ECONOMIC SYSTEMS**

David G. Luenberger, Chairman

Graduate Students:
- full-time 140, full-time first year 35, part-time 7

Fellowship (5) 5748
- 9

Teaching Assistantship (12) 6108-8918*
- 9
- **
- 20
- Preparing, grading

Research Assistantship (20) 6108-8918*
- 9
- **
- 20
- Research


**Limited to 9 units.

Stanford University, Stanford 94305

**MATHEMATICS**

Solomon Feferman, Chairman

Graduate Students:
- full-time 46, full-time first year 12, part-time 0

Fellowship (45)* 6500-8000
- 9
- **
- Ph. D. (82/85) AFA 5, GT 1, P 4, AM 2, Other 1. Total: 13

*Graduate Assistants serve for one quarter as Teaching Fellows, for one quarter as Course Assistants, and for one quarter as Research Assistants, or serve for three quarters as Course Assistants.

**Teaching Fellows have three contact hours per week, and have sole responsibility for a class. Course Assistants have six contact hours per week. Research Assistants have no formal classroom duties.

University of California, Berkeley 94720

**LOGIC AND THE METHODOLOGY OF SCIENCE**

William Craig, Chair

Graduate Students:
- full-time 6, full-time first year 7, part-time 2

Fellowship (2-3) 4800-11000***
- 9

Teaching Assistantship (1-2) 9315**
- 9
- ***
- 4
- Teaching

*Fellowships: 12/15/85; assistantships: 2/1/86.

**Stipend amounts and fees as of July 1, 1985. Students may also be considered for teaching assistantships in the Philosophy Department. Most fellowship holders also receive part-time teaching assistantships to supplement their fellowships.

***California resident: $1406; nonresident: $5222. Nonresident may also receive scholarships covering all or part of the nonresident tuition.
University of California, Davis 95616

**MATHMATICS**

Applications due: 1/15/86  Bachelor's by inst.  2808
Marc Mangel, Chairman  Graduate Students: full-time 24; full-time first year 12; part-time 2  Bachelor's by dept.  11
Faculty 31; Published 11  Master's by dept.  4
Graduate Students: full-time 20; part-time 1

Fellowship (5)  4800-5300  9  1272-6404  10  Research
Ph. D. (82/85) ANT 2, GT 4, CS 1, AM 3. Total: 10
Teaching Fellowship (3)  9315  10  1272-6404  20  Teaching
Research Assistantship (20–30)  9315  9  1272-6404  10  Research
Research Assistantship (2)  3483  9  1272-6404  10  Research
NSF (1)  8325  9  1272-6404  10  Research
Associate-In (6)  9540  9  1272-6404  20  Research

Fellowships: 1/15/86; assistantships: 2/15/86.
**Stipend amounts do not include possible July 1, 1986 adjustments.
***Nonresident tuition fee schedule may increase by 1986-1987.

University of California, Irvine 92717

**MATHEMATICS**

Applications due: 1/1/86  Bachelor's by inst.  52
James J. Yeh, Chair  Graduate Students: full-time 46; full-time first year 18; part-time 2  Bachelor's by dept.  6
Faculty 26; Published 18  Master's by dept.  6
Graduate Students: full-time 18; part-time 2

Teaching Assistantship (27)  9315  9  1383.50  20  Grading, teaching
Ph. D. (82/85) AFA 2, P 1. Total: 3

University of California, Los Angeles 90024

**MATHEMATICS**

Applications due: 2/14/86  Bachelor's by inst.  4719
Yannis N. Moschovakis, Chairman  Graduate Students: full-time 65; full-time first year 28; part-time 17  Bachelor's by dept.  353
Faculty 60; Published 35  Master's by dept.  21
Graduate Students: full-time 35; full-time first year 17; part-time 12

Fellowship (1–2)  8000–10000  9  Waived  
Ph. D. (82/85) ANT 3, AFA 4, GT 7, L 2, P 4, S 2, CS 1.
Teaching Assistantship (15)  9495–10517.94  9  1346-5162  4*  Teaching
Research Assistantship (8)  8000–10000  9  Waived  
AM 9. Total: 32
Community Teaching Fellowship (1)  9495  9  1346-5162  5*  Teaching
University of California, Riverside 92521

MATHMATICS AND COMPUTER SCIENCE

Applications due: 2/1/86

Faculty 21; Published 18

Graduate Students: full-time 65, full-time first year 25; part-time 3

Fellowship (3) 2400-4800 9
Teaching Assistantship (22) 560-1035 9 1344 8-16

Ph. D. (82/85) AFA 4, Other 2.

Bachelor's by inst. 992
Bachelor's by dept. 37
Master's by dept. 15

Total: 6

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

GRADUATE PROGRAMS IN MATHEMATICS

PROGRAMS: Masters of Arts in Mathematics, Applied Mathematics, Ph. D. in Mathematics, Ph. D. in Mathematics with an emphasis in Science applications.

FINANCIAL AID: Teaching Assistantships (approx. $9,315) and a number of Research Assistantships and Tuition Fellowships are available. Additional fellowships are awarded on the basis of academic merit.

The Department is interested in the advancement of women and minorities in the field of Mathematics.

We especially encourage applications from women and minorities, for whom need-based and merit-based fellowships are available.

For full information and application forms, write to:

Ms. Nan Anderson
GRADUATE AFFAIRS ASSISTANT
Department of Mathematics
University of California
Santa Barbara, CA 93106
(805) 961-4348

UNIVERSITY OF CALIFORNIA, RIVERSIDE

The department has masters and Ph.D. programs in mathematics and a masters program in computer science. Areas of specialization include: Applied Mathematics, Differential Equations, Functional Analysis, Approximation Theory, Commutative Algebra, General Topology, Algebraic Semi-lattices and semi-groups, Probability and Statistics, Differential Geometry, Several Complex Variables. UCR has a total of about 4500 students, including approximately 1300 graduate students. The Department of Mathematics has a faculty of 21 and about 65 graduate students; a ratio which enables faculty members to work closely with each student. Excellent computing facilities are being regularly expanded and updated. Write to:

Graduate Advisor
Department of Mathematics
University of California, Riverside, CA 92521
**University of California, San Diego, La Jolla 92093**

**MATHEMATICS**

Applications due: 2/15/86  
Faculty 48; Published 43

Bachelor's by inst. 2027  
Bachelor's by dept. 60  
Master's by dept. 25

Graduate Students: full-time 93; full-time first year 40; part-time 15

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In 1985-1986 all graduate students (resident and nonresident) pay per quarter $455.50. Nonresident graduate students pay per quarter $1272 tuition in addition to the above. Health Insurance, $53 per quarter, is mandatory for foreign students.

**University of California, Santa Barbara 93106**

**MATHEMATICS**

Applications due: 1/31/86  
Faculty 36; Published 30

Bachelor's by inst. 3231  
Bachelor's by dept. 163  
Master's by dept. 16

Graduate Students: full-time 45; full-time first year 17; part-time 0

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<td>Ph. D. (82/85) ANT 5, AFA 7,</td>
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<td>3304–9912</td>
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<td>Scholarship (*)</td>
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<td></td>
<td>**</td>
<td>**</td>
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</table>

**University of Southern California, Los Angeles 90089**

**MATHEMATICS**

Applications due: 5/1/86  
Faculty 37; Published 37

Bachelor's by inst. 2900  
Bachelor's by dept. 13  
Master's by dept. 5

Graduate Students: full-time 97; full-time first year 37; part-time 0

<table>
<thead>
<tr>
<th>TYPE OF ASSISTANCE</th>
<th>STIPEND (paid to student)</th>
<th>FEES (paid by student $)</th>
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<th>DEGREES AWARDED</th>
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<td>9 or 12</td>
<td>Other 2. Total: 6</td>
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</table>

**Colorado School of Mines, Golden 80401**

**MATHEMATICS**

Applications due: 7/1/86  
Faculty 20; Published 15

Bachelor's by dept. 17  
Master's by dept. 2

Graduate Students: full-time 18; full-time first year 8; part-time 9

<table>
<thead>
<tr>
<th>TYPE OF ASSISTANCE</th>
<th>STIPEND (paid to student)</th>
<th>FEES (paid by student $)</th>
<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<td>9 or 12</td>
<td>12-18 Research</td>
</tr>
</tbody>
</table>

**Colorado**

**University of California, San Diego, La Jolla 92093**

Graduate Mathematics at La Jolla, California

Programs: (i) M.A. and Ph.D. degrees in pure mathematics offer studies in all major fields of pure mathematics, and in probability, statistics, combinatorics and numerical analysis. A new group in differential geometry and partial differential equations is forming around Professor Shing-Tung Yau. We anticipate that it will be a major force during the next few years. (ii) The M.A. in applied mathematics and the M.S. in statistics are special one to two year courses of study emphasizing applicable mathematics, the latter concentrating on statistics and related subjects.

Financial Aid: Research Assistantships (approximately $826.00 per month + Tuition and/or Fees). Teaching Assistantships (approximately $1,065 per month for 9 months). San Diego Fellowship (for educationally disadvantaged students; approximately $750.00 per month + Fees and/or Tuition for 9 months).

Department of Mathematics - University of California, San Diego

La Jolla, California 92093
COLORADO STATE UNIVERSITY, FT. COLLINS 80523

COMPUTER SCIENCE
Robert B. Kelman, Chair

Faculty 12; Published 10
Graduate Students: full-time 90; full-time first year 20; part-time 10

Teaching Assistantship (10)
Research Assistantship (4)

- Type of Assistance
- Stipend
- Fees
- Service Required
- Degrees Awarded

<table>
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<tr>
<th>Type of Assistance</th>
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<th>Fees</th>
<th>Service Required</th>
<th>Degrees Awarded</th>
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<tr>
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<td>20</td>
</tr>
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</table>

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

GRADUATE PROGRAMS IN STATISTICS AND APPLIED PROBABILITY


FINANCIAL AID: Teaching Assistantships (approx. $9,315) and a number of Research Assistantships and Tuition Fellowships are available. Additional Fellowships are awarded on the basis of academic merit.

The Program in Statistics and Applied Probability is interested in the advancement of women and minorities and encourages their applications; need-based and merit-based fellowships are available.

For full information and application forms, write to:

Ms. Sheila Claydon
Administrative Assistant
Statistics and Applied Probability Program
University of California
Santa Barbara, CA 93106
(805) 961-3266

GRADUATE MATHEMATICS AT THE UNIVERSITY OF SOUTHERN CALIFORNIA


Financial Aid includes:

- Teaching Assistantship $7,132—$7,900 (1985 Award) for nine months, plus 12 units of tuition remission per semester
- Dean’s Scholarship $3,600 supplement to other awards for qualified students

Address Correspondence to: Graduate Vice-Chairman — Department of Mathematics
University of Southern California — Los Angeles, CA 90089-1113
<table>
<thead>
<tr>
<th>TYPE OF ASSISTANCE</th>
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<td><strong>MATHEMATICS</strong></td>
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<tr>
<td>Robert E. Gaines, Chairman</td>
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<td>Teaching Assistantship (15)</td>
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<tr>
<td>Duane C. Boas, Chairman</td>
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<td>Teaching Assistantship (3-5)</td>
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<td>Consulting (1-2)</td>
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<td>288.06</td>
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**University of Colorado, Boulder 80309**

**MATHEMATICS**

L. W. Baggett, Chairman

Fellowship (7) 1000-1500 | 9 | 140 |

Teaching Assistantship (15) 6490 | 9 | 140 | 20 | Teaching |

**University of Colorado, Colorado Springs 80933**

**MATHEMATICS**

K. M. Rangaswamy, Chairman

Applications due: 4/30/86

Faculty 11; Published 10

Graduate Students: full-time 6; full-time first year 4; part-time 1

Teaching Assistantship (5) 6600-7000 | 9 | 600 | 6 | Teaching |

**University of Colorado at Denver 80202**

**MATHEMATICS**

J. Richard Lundgren, Chairman

Applications due: 4/15/86

Faculty 17; Published 14

Graduate Students: full-time 18; full-time first year 56; part-time 56

Teaching Assistantship (5-10) 6500-6800 | 9 | 60/cr.hr. | 15 | Teaching |

Research Assistantship (5-10) 6500-6800 | 9 | 60/cr.hr. | 15 | Research |

---

**Applied Mathematics at CU-Denver**

Graduate degrees in • Operations Research • Computer Science • Applied Statistics • Discrete Mathematics • Computational Mathematics

Home of the Center for Computational Mathematics

Research in supercomputing, algorithms for parallel and advanced architectures.

CU-Denver is located on the Front Range of the Colorado Rockies in one of the West’s fastest growing centers of research.

Write to: Graduate Program, Mathematics Department, University of Colorado at Denver, 1100 14th St., Denver, CO 80202, (303) 556-8442.

CU-Denver is an affirmative action equal opportunity institution.

---

**University of Colorado at DENVER**
University of Connecticut, Storrs 06268

MATHMATICS
Jeffrey L. Tollefsen, Head

Applications due: Open
Faculty 31; Published 30
Graduate Students: full-time 38; full-time first year 14; part-time 1

Bachelor's by inst. 2929
Bachelor's by dept. 74
Master's by dept. 7

Ph. D. (82/85) ANT 2. Total: 2

Connecticut

University of Connecticut, Storrs 06268

MATHMATICS
Jeffrey L. Tollefsen, Head

Applications due: Open
Faculty 31; Published 30
Graduate Students: full-time 38; full-time first year 14; part-time 1

Bachelor's by inst. 2929
Bachelor's by dept. 74
Master's by dept. 7

Ph. D. (82/85) ANT 2. Total: 2

Uwe Koehn, Head

Applications due: 3/1/86
Faculty 10; Published 9
Graduate Students: full-time 19; full-time first year 8; part-time 5

Bachelor's by inst. 2929
Bachelor's by dept. 15
Master's by dept. 7

Ph. D. (82/85) S 1. Total: 1

Wesleyan University, Middletown 06457

MATHMATICS
Lewis C. Robertson, Chairman

Applications due: 2/15/86
Faculty 15; Published 15
Graduate Students: full-time 15; full-time first year 6; part-time –

Bachelor's by inst. 694
Bachelor's by dept. 34

Ph. D. (82/85) ANT 2, AFA 1, GT 3. Total: 6

*Grading or teaching at help sessions.
Yale University, New Haven 06520

MATHEMATICS
Richard W. Beals, Chairman

Applications due: 1/15/86
Faculty 27; Published 27
Graduate Students: full-time 42; full-time first year 22; part-time 0

Fellowship (10) 4600–6600 9 5 Grading, tutoring Ph. D. (82/85) ANT 3, AFA 8,

STIPEND FEES

paid to student paid by service required

TYPE OF ASSISTANCE (number anticipated 1986–1987) Stipend fees

YEARS

Academic year 1984–1985

DELTA

DEGREES

AWARDED

Academic year 1984–1985

Bachelor’s by inst. 1774
Bachelor’s by dept. 35
Master’s by dept. 4

Ph. D. (82/85)

ANT 3, AFA 8,

GT 3, L 6. Total: 20

*Most students receive a tuition fellowship from the University.
***3rd- and 4th-year students earn half of their stipend through teaching, consulting, or work on a research contract. ***Total funds available $11130; amount paid to student affects the number of positions available.

Delaware

University of Delaware, Newark 19716

MATHEMATICAL SCIENCES
Ivar Stakgold, Chairman

Applications due: 3/1/86
Faculty 40; Published 28
Graduate Students: full-time 36; full-time first year 13; part-time 17

Fellowship (2) 6625–7330 9 Research Ph. D. (82/85) AFA 4, GT 1,
Teaching Assistantship (29) 6625–7330 9 12–15 Teaching, grading
Scholarship (1) 6625–7330 9 Research Total: 3
Internship (2) 15100–16000 12 4800 40 Consultant

Ph. D. (82/85) S 6. Total: 6

District of Columbia

George Washington University, Washington 20052

MATHEMATICS
T. P. G. Liverman, Chairman

Applications due: 2/15/86
Faculty 15; Published 6
Graduate Students: full-time 15; full-time first year 10; part-time 25

Teaching Assistantship (6) 5400–6000 9 150 6* Ph. D. (82/85) AFA 3. Total: 3

Howard University, Washington 20059

MATHEMATICS
James A. Donaldson, Chairman

Applications due: 1/15/86
Faculty 28; Published 16
Graduate Students: full-time 23; full-time first year 8; part-time –

Teaching Assistantship (9) 4493 9 Waived 20 Grading problem
sessions Ph. D. (82/85) AM 1. Total: 1

Florida

Florida Atlantic University, Boca Raton 33431

MATHEMATICS
Frank O. Hadlock, Chairman

Applications due: 1/15/86
Faculty 15; Published 14
Graduate Students: full-time 9; full-time first year 5; part-time 15

Teaching Assistantship (10) 4000–10000 9 * 4 Teaching

*Resident: $49.30 per credit; nonresident: $143.80 per credit.
<table>
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<th>TYPE OF ASSISTANCE</th>
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<th>DEGREES AWARDED</th>
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<td>hours</td>
<td>type</td>
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**Florida International University, Miami 33199**

**MATHEMATICAL SCIENCES**

- Samuel Shapiro, Chairperson
  - Faculty: 45; Published: 19
  - Graduate Students: full-time 20; full-time first year 10; part-time 50

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<th>Research Assistantship (6)</th>
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<th>Grading, teaching or research</th>
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*Resident: $900; nonresident: $2500.

**Florida State University, Tallahassee 32306**

**COMPUTER SCIENCE**

- Applications due: *
- Faculty: 10; Published: 10
- Graduate Students: full-time 58; full-time first year 26; part-time 18

<table>
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<th>Fellowship (2)</th>
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</table>

*Fellowships: 1/1/86; assistantships: 4/1/86.

**MATHEMATICS**

- Applications due: *
- Faculty: 33; Published: 25
- Graduate Students: full-time 41; full-time first year 21; part-time 3

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<thead>
<tr>
<th>Fellowship (3)</th>
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<th>Fellowship (3)</th>
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</table>

*Fellowships: 1/5/86; assistantships: 4/15/86.

**STATISTICS**

- Applications due: 2/15/86
- Faculty: 16; Published: 16
- Graduate Students: full-time 19; full-time first year 5; part-time 7

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<th>Fellowship (2)</th>
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<th>Fellowship (2)</th>
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<td>12</td>
<td>13</td>
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</table>

*In-state: $47.31 per hour; out-of-state: $141.81 per hour. (Waivers reducing out-of-state to in-state rate are usually available).

**University of Central Florida, Orlando 32816**

**MATHEMATICS**

- Applications due: 3/15/86
- Faculty: 34; Published: 12
- Graduate Students: full-time 6; full-time first year 2; part-time 23

<table>
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<th>Teaching Assistantship (12)</th>
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<th>Teaching, research, grading</th>
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**University of Florida, Gainesville 32611**

**INDUSTRIAL AND SYSTEMS ENGINEERING** *(Ad on p. 888)*

- Applications due: 3/15/86
- Faculty: 19; Published: 11
- Graduate Students: full-time 32; full-time first year 7; part-time 17

<table>
<thead>
<tr>
<th>Fellowship (1)</th>
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<th>52.69/cr.hr.</th>
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<th>52.69/cr.hr.</th>
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<td>5600–8400</td>
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<td>52.69/cr.hr.</td>
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</table>

**MATHEMATICS**

- Applications due: 4/15/86
- Faculty: ; Published:
- Graduate Students: full-time 73; full-time first year 16; part-time 6

| Teaching Assistantship (60)                | 6500–8000  | 9    | 1156.32 | Teaching Assistantship (60)                | 6500–8000 | 9 | 1156.32 |

*4–6 teaching hours (not including research hours).
University of Miami, Coral Gables 33124

MATHMATICS AND COMPUTER SCIENCE

Applications due: 2/1/86

Faculty 32; Published 20

Graduate Students: full-time 41; full-time first year 11; part-time 20

Ph. D. (82/85) S 8. Total: 8

University of North Florida, Jacksonville 32216

MATHEMATICAL SCIENCES

Applications due: 4/1/86

Faculty 12; Published 10

Graduate Students: full-time 3; full-time first year 2; part-time 40

University of South Florida, Tampa 33620

MATHMATICS

Applications due: 3/15/86

Faculty 31; Published 18

Graduate Students: full-time 34; full-time first year 20; part-time 8

DEPARTMENT OF INDUSTRIAL AND SYSTEMS ENGINEERING
UNIVERSITY OF FLORIDA, GAINESVILLE, FL

We invite applications from students with a solid mathematical background for graduate work in operations research and related disciplines. We offer curricula leading to the M.S. and Ph.D. degrees in which programs of study may be tailored to emphasize the individual interests of students. There are excellent opportunities for M.S. students, as well as for Ph.D. candidates, to work closely with the faculty on theoretical or applied research topics.

Application forms and additional information are available from:

PROFESSOR DONALD W. HEARN, GRADUATE COORDINATOR
DEPARTMENT OF INDUSTRIAL AND SYSTEMS ENGINEERING
UNIVERSITY OF FLORIDA, GAINESVILLE, FL 32611

Georgia

Augusta College, Augusta 30910

MATHMATICS AND COMPUTER SCIENCE

Faculty 14; Published 23

Graduate Students: full-time 0; full-time first year 0; part-time 1

We invite applications from students with a solid mathematical background for graduate work in operations research and related disciplines. We offer curricula leading to the M.S. and Ph.D. degrees in which programs of study may be tailored to emphasize the individual interests of students. There are excellent opportunities for M.S. students, as well as for Ph.D. candidates, to work closely with the faculty on theoretical or applied research topics.

Application forms and additional information are available from:

PROFESSOR DONALD W. HEARN, GRADUATE COORDINATOR
DEPARTMENT OF INDUSTRIAL AND SYSTEMS ENGINEERING
UNIVERSITY OF FLORIDA, GAINESVILLE, FL 32611
Emory University, Atlanta 30322

MATHEMATICS AND COMPUTER SCIENCE
Paul Waltman, Chairman

Applications due: 2/15/86
Graduate Students: full-time 28; full-time first year 10; part-time 3

<table>
<thead>
<tr>
<th>TYPE OF ASSISTANCE (number anticipated 1986-1987)</th>
<th>STIPEND paid to student</th>
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<td>Other (2)</td>
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<td>Total: 2</td>
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</tbody>
</table>

*Teach one class per semester.
**Assist in research projects.

*Teach one class per semester.
**Assist in research projects.

UNIVERSITY OF SOUTHERN FLORIDA — TAMPA, FLORIDA

GRADUATE STUDIES IN MATHEMATICS LEADING TO M.A. AND PH.D. DEGREES

Our 30 full-time faculty members represent most areas of pure and applied mathematics and statistics. Programs leading to M.A. and Ph.D. degrees are available in Analysis, Applied Mathematics, Approximation Theory, Differential Equations, Number Theory, Probability, Computational Statistics, Statistics, Theoretical Computer Science, and other areas. Interdisciplinary programs with the College of Engineering and the College of Medicine are available. The special facilities of the department include an Institute for Constructive Mathematics, and a Center for Mathematical Services in which qualified students and faculty can become involved in consulting services to business, industries, hospitals, and schools in the Tampa Bay Area.

The University has over 27,000 students and three branch campuses. The main campus is located at the north edge of the city of Tampa. The area is a resort area boasting of a warm climate, and many recreational and cultural attractions.

Financial aid is available to qualified students in the form of Fellowships and Teaching Assistantships. Teaching Assistantships carry a stipend of between $7,000 and $10,000 for nine months. Tuition waivers are also available to qualified students. In addition, the Department nominates students each year to compete for Graduate Council Fellowships. These awards range between $5,500 and $6,000 for one year, plus tuition. For further information, write to:

Dr. K. L. Pothoven, Chairman
Department of Mathematics — University of South Florida, Tampa 33620

EMORY UNIVERSITY
Department of Mathematics and Computer Science

The Department offers programs leading to the M.A., M.S., and Ph.D. degrees in Mathematics and to the M.S. degree in Mathematics-Computer Science and Statistics-Computer Science. Ph.D. students in Mathematics may specialize in many areas including algebra, analysis and combinatorics. Advanced study is supported by excellent library holdings and computing facilities.

Financial Aid — The Department offers aid in the form of teaching assistantships, fellowships, and tuition waivers. Awards carry a stipend of between $6,500 and $10,000 for nine months, plus tuition. Assistants typically teach one class per semester.

Woodruff Fellowships — The University also offers a number of Woodruff Fellowships carrying a $10,000 award and full tuition for three academic years. The Department may nominate five students to compete for these awards. Students with outstanding undergraduate records are particularly urged to apply for these awards.

Additional summer support is also available for interested students.

For information contact:

Ronald J. Gould
Department of Mathematics and Computer Science
Emory University
Atlanta, Georgia 30322
TYPE OF ASSISTANCE  
(number anticipated  
1986-1987)  
STIPEND paid to student  
dollars  
FEES paid by  
student ($)  
SERVICE REQUIRED  
hours  
type  
DEGREES AWARDED  
Academic year  
1984-1985

Georgia Institute of Technology, Atlanta 30332

MATHEMATICS  
W. F. Ames, Director  
Applications due: 2/1/86  
Faculty 50; Published 40  
Graduate Students: full-time 60; full-time first year 20; part-time 5  
Fellowship (2)  
10000  
9  
1587  
13  
Research  
Ph. D. (82/85) AM 6. Total: 6

Teaching Assistantship (15)  
6420-7230  
9  
1587  
13  
Grading, teaching  

Research Assistantship (4)  
6420-7230  
9  
1587  
13  
Research

Georgia State University, Atlanta 30303

MATHEMATICS AND COMPUTER SCIENCE  
Fred A. Massey, Chairman  
Applications due: *  
Faculty 28; Published 18  
Graduate Students: full-time 10; full-time first year 5; part-time 20  
Research Assistantship (4)  
2400-6000  
12  
900  
6-15  
Tutoring, grading, research

*First day of phase I registration.

University of Georgia, Athens 30602

MATHEMATICS  
Ray A. Kunze, Head  
Applications due: 2/15/86  
Faculty 41; Published 35  
Graduate Students: full-time 34; full-time first year 9; part-time 3  
Teaching Assistantship (4)  
6000-10700  
9  
1475  
5-10  
Teaching  
Ph. D. (82/85) ANT 1, AFA 1, GT 2, P 1. Total: 5

Nonteaching Assistantship (6)  
6000-10700  
9  
1475  
10  
Problem sessions, grading

MATHEMATICS EDUCATION  
James W. Wilson, Head  
Applications due: 2/15/86  
Faculty 11; Published 8  
Graduate Students: full-time 24; full-time first year 7; part-time 25  
Teaching Assistantship (10)  
6113-8150  
9  
1407  
13-18  
Teaching  
Ph. D. (82/85) ME 12. Total: 12

Research Assistantship (2)  
6113-8150  
9  
1407  
13-18  
Research

STATISTICS  
Lynne Billard, Head  
Applications due: 2/15/86  
Faculty 16; Published 15  
Graduate Students: full-time --; full-time first year --; part-time --  
Teaching Assistantship (29)  
5731–6113*  
9  
1362-1554*  
1-2  
Ph. D. (82/85) S 7. Total: 7


University of Hawaii, Honolulu 96822

MATHEMATICS  
William A. Lampe, Chairman  
Applications due: 3/1/86  
Faculty 37; Published 35  
Graduate Students: full-time 12; full-time first year 6; part-time 0  
Teaching Assistantship (4)  
5964-6636  
9  
30  
3'  
Teaching  
Ph. D. (82/85) AFA 1, L 1, Other 2. Total: 4

Idaho

Idaho State University, Pocatello 83209

MATHEMATICS  
Richard D. Hill, Chairperson  
Applications due: 3/15/86*  
Faculty 14; Published 9  
Graduate Students: full-time 15; full-time first year 6; part-time 6  
Fellowship (5)  
5800  
9  
6  
Ph. D. (82/85) ANT 2, S 1, AM 1, Other 2. Total: 6

Teaching Assistantship (8)  
4600  
9  
4-5  
Teaching*Late applications considered.

890
University of Idaho, Moscow 83843
MATHEMATICS AND APPLIED STATISTICS
James Calvert, Chairman
Applications due: 3/86
Faculty 20; Published 12
Graduate Students: full-time 18; full-time first year 10; part-time –

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<tr>
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<th>FEES</th>
<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<td>Teaching Assistantship (8)</td>
<td>7200</td>
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<td>672</td>
<td>1986-1987</td>
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Eastern Illinois University, Charleston 61920
MATHEMATICS
Alphonso J. DiPietro, Chairman
Applications due: 3/1/86
Faculty 30; Published 8
Graduate Students: full-time 20; full-time first year 10; part-time –

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<th>FEES</th>
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<td>10</td>
<td>1986-1987</td>
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Illinois Institute of Technology, Chicago 60616
COMPUTER SCIENCE
C. Robert Carlson, Chairman
Applications due: 3/15/86
Faculty 12; Published 12
Graduate Students: full-time 40; full-time first year 20; part-time –

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<th>STIPEND</th>
<th>FEES</th>
<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<td>Fellowship (1)</td>
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<td>Research Assistantship (3)</td>
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Illinois State University, Normal 61761
MATHEMATICS
John Dossey, Chair
Applications due: 5/1/86
Faculty 42; Published 20
Graduate Students: full-time 19; full-time first year 8; part-time –

<table>
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<th>STIPEND</th>
<th>FEES</th>
<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<td>Teaching Assistantship (10)</td>
<td>4050-4500</td>
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<td>9-12</td>
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<td>1986-1987</td>
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<td>Instructorship (3-5)</td>
<td>7200-9000</td>
<td>9</td>
<td>6-8</td>
<td>1986-1987</td>
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Northeastern Illinois University, Chicago 60625
MATHEMATICS
Barry Dayton, Chair
Applications due: 7/1/86
Faculty 14; Published 4
Graduate Students: full-time 4; full-time first year 2; part-time 97

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<th>TYPE OF ASSISTANCE</th>
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<th>FEES</th>
<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<td>Teaching Assistantship (2)</td>
<td>4500</td>
<td>10</td>
<td>20</td>
<td>1986-1987</td>
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</table>

**M. A. AND PH.D. PROGRAMS AT HAWAII**
The University of Hawaii Mathematics Department has an excellent young faculty of 37 members. The Ph.D. program is relatively new, and the small number of graduate students makes for an extremely favorable student-faculty ratio. The academic, living, and recreational environments are very agreeable. Teaching assistantships are available starting at $5964 plus a tuition waiver. Additional compensation is available for summer teaching. *For details write:*

T. C. Craven, Graduate Chairman – Department of Mathematics
University of Hawaii at Manoa – Honolulu, HI 96822

*AN EQUAL OPPORTUNITY EMPLOYER*
<table>
<thead>
<tr>
<th>UNIVERSITY</th>
<th>TYPE OF ASSISTANCE</th>
<th>STIPEND</th>
<th>FEES</th>
<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<td><strong>Northern Illinois University, Dekalb 60115</strong></td>
<td><strong>MATHMATICAL SCIENCES</strong></td>
<td>Faculty 52; Published 45</td>
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<td>Master's by dept. 8</td>
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<td>Anton Zettl, Chair</td>
<td>Teaching Assistantship (35)</td>
<td>5200-5400</td>
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<tr>
<td><strong>Northwestern University, Evanston 60201</strong></td>
<td><strong>ENGINEERING SCIENCES AND APPLIED MATHEMATICS</strong></td>
<td>Applications due: 2/17/86</td>
<td>Faculty 10; Published 10</td>
<td>Bachelor's by inst. 1593</td>
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<tr>
<td>R. A. Kliphardt, Chairman</td>
<td>Fellowship (10)</td>
<td>7200-8500</td>
<td>9</td>
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<td>Ph. D. (82/85) AM 8. Total: 8</td>
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<td>Teaching Assistantship (5)</td>
<td>6800-7500</td>
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<td></td>
<td>Research Assistantship (10)</td>
<td>10200-11000</td>
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<td><strong>MATHMATICS</strong></td>
<td>Applications due: 1/15/86</td>
<td>Faculty 35; Published 35</td>
<td>Bachelor's by dept. 28</td>
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<tr>
<td>R. Clark Robinson, Chairman</td>
<td>Fellowship (1-12)</td>
<td>6660</td>
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<td>Ph. D. (82/85) ANT 2, AFA 5, GT 7, P 1, S 1, Other 2.</td>
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<td><strong>Southern Illinois University, Carbondale 62901</strong></td>
<td><strong>MATHMATICS</strong></td>
<td>Applications due: 2/1/86*</td>
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<td>Ronald B. Kirk, Chair</td>
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<td>6500-10000</td>
<td>11</td>
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<td>Ph. D. (82/85) ANT 1, S 1, CS 1, AM 1. Total: 4</td>
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<td>5750</td>
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<td><strong>Southern Illinois University, Edwardsville 62026</strong></td>
<td><strong>MATHMATICS, STATISTICS, AND COMPUTER SCIENCE</strong></td>
<td>Applications due: 3/15/86</td>
<td>Bachelor's by inst. 1238</td>
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<td>Robert N. Pendergrass, Chairman</td>
<td>Fellowship (5-8)</td>
<td>7250</td>
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<td>500</td>
<td>Ph. D. (82/85) ANT 7, AFA 5, GT 2, AM 4. Total: 18</td>
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<td>7250</td>
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<td>500</td>
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<td><strong>MATHMATICS</strong></td>
<td>Applications due: 1/1/86</td>
<td>Faculty 42; Published 42</td>
<td>Bachelor's by dept. 661</td>
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<tr>
<td>J. Peter May, Chairman</td>
<td>Fellowship (10)</td>
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<td>9</td>
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<td></td>
<td><strong>STATISTICS</strong></td>
<td>Applications due: 2/1/86</td>
<td>Faculty 13; Published 9</td>
<td>Bachelor's by inst. 661</td>
<td></td>
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<tr>
<td>Paul Meier, Chairman</td>
<td>Fellowship (10)</td>
<td>7500</td>
<td>9</td>
<td>10</td>
<td>Ph. D. (82/85) S 7. Total: 7</td>
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</table>
The University: The main campus of Northern Illinois University is in DeKalb, a community of about 33,000 located 65 miles west of Chicago’s Loop on the East-West Tollway. The university’s location offers many cultural, recreational, and economic opportunities. There are approximately 24,000 students at the university.

The Department: The Department of Mathematical Sciences offers graduate programs of instruction and research leading to the degrees of Master of Science and Doctor of Philosophy. There are 65 graduate students enrolled in those programs and the department has 40 graduate faculty. The major areas of research strength are algebra, analysis, differential equations, mathematics education, number theory, numerical analysis, and statistics.

Master of Science in Mathematics: The degree in mathematics is designed so that the student may specialize in pure mathematics, applied mathematics, computational mathematics, or mathematics education. Students coming out of these programs have been successful in taking advantage of the many job opportunities in research organizations, government, industry, and education. These programs have also provided an excellent preparation for the pursuit of the Ph.D. degree.

Master of Science in Applied Probability and Statistics: The degree Master of Science with a major in applied probability and statistics has been offered since 1976 through the Department of Mathematical Sciences. Students coming out of the program have been successful in taking advantage of the many job opportunities that require career statisticians. These occur, for example, in research organizations, government, industry, and education. The program has also proved to be an excellent preparation for the pursuit of the Ph.D. degree in statistics.

Doctor of Philosophy: The department has recently instituted a Ph.D. program which is of a nontraditional nature. The program speaks to today’s needs and prepares researchers in the mathematical sciences who possess a unique blend of knowledge in the mathematical sciences and awareness of applications of that knowledge. Students develop a perspective which sees the mathematical sciences as an integrated whole with appropriate roles played by pure and applied considerations. The required combination of coursework and experience enables the student who completes the program to pursue a career in either the academic or the nonacademic world.

Financial Assistance: The department currently has 38 graduate teaching assistants and anticipates that this number will increase next year. Teaching assistants generally serve under the direction of a faculty member and meet four recitation classes, of about 25 students each, per week. Anticipated are nine month stipends of: $5,300 and $5,500 for first and second year students respectively and $6,500 for Ph.D. students beyond the second year.

For information contact:
Bernard J. Harris
Director of Graduate Studies
Mathematical Sciences Department
Northern Illinois University
DeKalb, IL 60115-2888

Northern Illinois University is an equal opportunity institution and does not discriminate on the basis of race, color, religion, sex, age, national origin, handicap, or status as a disabled or Vietnam-era veteran.
### University of Illinois, Chicago 60680

**MATHEMATICS, STATISTICS, AND COMPUTER SCIENCE**

Louise Hay, Head

- **Applications due:** 1986-1987
- **STIPEND:** paid to student
- **FEES:** paid by student
- **SERVICE REQUIRED:** hours type

<table>
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<th>Type of Assistance</th>
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<th>Fees (paid by student)</th>
<th>Service Required (hours)</th>
<th>Degrees Awarded</th>
<th>Academic Year</th>
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<td>Fellowship (2)</td>
<td>6000</td>
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<td>220</td>
<td>117; full-time 1986-1987</td>
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<td>Teaching Assistantship</td>
<td>5850-6200</td>
<td>Waived</td>
<td>65, 20</td>
<td>21; full-time 1986-1987</td>
<td>164</td>
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<td>Research Assistantship (5)**</td>
<td>6200</td>
<td>Waived</td>
<td>20</td>
<td>109; part-time 1986-1987</td>
<td>58</td>
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*Fellowships: 1/15/86; assistantships: 4/1/86. **Ph.D. students only.

### University of Illinois at Urbana-Champaign, Urbana 61801

**MATHEMATICS**

Heini Halberstam, Head

- **Applications due:** 2/15/86
- **STIPEND:** paid to student
- **FEES:** paid by student
- **SERVICE REQUIRED:** hours type

<table>
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<th>Type of Assistance</th>
<th>Stipend (dollars)</th>
<th>Fees (paid by student)</th>
<th>Service Required (hours)</th>
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<th>Academic Year</th>
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<td>35</td>
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<td>18; full-time 1986-1987</td>
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**Fellowships:** 1/15/86; *Ph.D. students only.

### Western Illinois University, Macomb 61455

**MATHEMATICS**

Larry Morley, Chair

- **Applications due:** 4/30/86
- **STIPEND:** paid to student
- **FEES:** paid by student
- **SERVICE REQUIRED:** hours type

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<th>Service Required (hours)</th>
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<td>10-15 Grading, teaching</td>
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### Indiana

**Ball State University, Muncie 47306**

**MATHEMATICAL SCIENCES**

Donald R. Whitaker, Chairman

- **Applications due:** 3/1/86
- **STIPEND:** paid to student
- **FEES:** paid by student
- **SERVICE REQUIRED:** hours type

<table>
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<th>Type of Assistance</th>
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<th>Service Required (hours)</th>
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<th>Academic Year</th>
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**Indiana State University, Terre Haute 47809**

**MATHEMATICS AND COMPUTER SCIENCE**

Donald F. Reynolds, Chairman

- **Applications due:** 6/1/86
- **STIPEND:** paid to student
- **FEES:** paid by student
- **SERVICE REQUIRED:** hours type

<table>
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<tr>
<th>Type of Assistance</th>
<th>Stipend (dollars)</th>
<th>Fees (paid by student)</th>
<th>Service Required (hours)</th>
<th>Degrees Awarded</th>
<th>Academic Year</th>
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<td>Teaching, grading</td>
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### Applied Mathematics at Northwestern University

Applied Mathematics is concerned with the solution of problems in the physical, engineering, life and social sciences which can be formulated as mathematical models. The curriculum encompasses courses in mathematical methods and in areas of application. Students are trained for careers in fields where mathematical tools play an essential role, including teaching, basic and industrial research.

The campus is located immediately north of Chicago adjacent to Lake Michigan. This location provides the combined advantages of a lovely suburban community and the many cultural opportunities of the metropolitan area.

Fellowships and assistantships ($6800-$8500, for nine months with full remission of tuition) are available with additional opportunity for summer support. Health service, hospitalization and surgical benefits are included.

For further information about M.S. and Ph.D. degrees in Applied Mathematics write to:

Professor R. A. Kliphardt, Department of Engineering Sciences and Applied Mathematics
Northwestern University, Evanston, Illinois 60201
<table>
<thead>
<tr>
<th>TYPE OF ASSISTANCE</th>
<th>STIPEND paid to student</th>
<th>FEES paid by student ($)</th>
<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<td>hours type</td>
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<td><strong>Indiana University, Bloomington 47405</strong></td>
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<td><strong>COMPUTER SCIENCE</strong></td>
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<td>Edward L. Robertson, Chairman</td>
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<td>Graduate Students: full-time 155, full-time first year 65, part-time 0</td>
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<td>288</td>
<td>20 Programming</td>
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<td>William P. Ziemer, Chairman</td>
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<td>Graduate Students: full-time 114, full-time first year 43, part-time 2</td>
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<td>Teaching Assistantship (30)</td>
<td>6000-6700**</td>
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<td>Summer Teaching Assistantship (10)</td>
<td>1000-1500</td>
<td>2</td>
<td>***</td>
<td>15-20 Teaching, grading, assisting</td>
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</table>

*The teaching and research assistantships are accompanied by a full fee remission which exempts the student from paying all fees except approximately $15 per credit hour.

**The typical stipend for new graduate students will be at least $6000.

***Accompanied by a full fee remission which exempts the student from paying all fees except approximately $15 per credit hour.

**Indiana University-Purdue University at Fort Wayne 46805**

**MATHMATICAL SCIENCES**

M. J. Mansfield, Chairman

 applications: 6/1/86

  Bachelor's by inst. 505
  Bachelor's by dept. 10
  Master's by dept. 3

  Teaching Assistantship (2) 4940 9 246 6* Teaching

**Indiana University-Purdue University at Indianapolis 46223**

**MATHMATICAL SCIENCES**

Neal J. Rothman, Chairman

 applications: 6/1/86

  Bachelor's by inst. 505
  Bachelor's by dept. 10
  Master's by dept. 3

  Teaching Assistantship (2) 4940 9 246 6* Teaching

**Purdue University, West Lafayette 47907**

**COMPUTER SCIENCE**

John R. Rice, Head

 applications: 2/1/86

  Bachelor's by inst. 5195
  Bachelor's by dept. 219
  Master's by dept. 35

  Fellowship (*) 6000-10800 12 ** Teaching, grading
  Teaching Assistantship (20) 6500-7100 10 ** 20 Teaching, grading
  Research Assistantship (*) 6500-7100 10 ** 20 Research
  Minority Fellowship (*) 6000 12

*Number anticipated not known at this time.

**$143 per semester; $71.50 per summer.

**INDUSTRIAL ENGINEERING**

F. F. Leimkuhler, Head

 applications: 3/15/86

  Bachelor's by inst. 5195
  Bachelor's by dept. 155
  Master's by dept. 42

  Fellowship (2) 6000 12 286 20 Teaching
  Teaching Fellowship (4) 5000-12000 9 286 20 Teaching
  Teaching Assistantship (10) 5000-5600 9 286 20 Grading
  Research Assistantship (20) 5000-7500 9 286 20 Research
  GE (1) 5000-7500 9
  XR (1) 6000 12

Ph. D. (82/85) OR 18. Other 13. Total: 31
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<th>TYPE OF ASSISTANCE</th>
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<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<td>(number anticipated 1986-1987)</td>
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<td>paid by student ($)</td>
<td>hours</td>
<td>type</td>
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<td></td>
<td>Academic year 1984-1985</td>
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| M.S. Baouendi, Head        | Applications due: *  
  Graduate Students: full-time 147; full-time first year 44; part-time 4 |
| Fellowship (5)            | 6000     | 12       | 286              | Bachelor's by inst. 5195 |
| Teaching Assistantship (170) | 6700-8600 | 10      | 286              | Bachelor's by dept. 65 |
| Research Assistantship (10) | 6000     | 10       | 286              | Master's by dept. 29 |
| Summer Assistantship (60)  | 1340-1720 | 2  | 71.50           | Ph. D. (82/85) ANT 3, AFA 4, GT 3, L 3, P 1, AM 2, Other 3. |

*Fellowships: 2/1/86; assistantships: 3/1/86.

TEACHING FELLOWSHIPS

Purdue University

The Department of Mathematics of Purdue University is offering a limited number of Teaching Fellowships to outstanding new graduate students. The stipend for two semesters will be at least $10,000 plus a reduction in tuition. The Fellowships are renewable and Fellows will usually teach four hours per week. Please read our other advertisement for more details concerning our programs.

PURDUE UNIVERSITY

DEPARTMENT OF MATHEMATICS

GRADUATE PROGRAMS: The department invites applications for graduate study in programs leading to the M.S. and Ph.D. degrees in pure or applied mathematics, and the Master of Arts in Teaching degree. A special M.S. program in applied mathematics specifies seven core courses and suggests elective courses in numerical analysis, statistics, or mathematical physics, with the majority of graduates finding employment in industry, research laboratories, or government. The Departments of Mathematics, Statistics, and Computer Sciences offer a wide range of courses that can also be supplemented by courses in engineering and science.

GRADUATE FACULTY: The Department of Mathematics currently has 147 graduate students. The research faculty is distributed according to the following mathematical areas: Algebra & Algebraic Geometry, Applied Mathematics, Complex Analysis, Differential Equations, Differential Geometry & Lie Groups, Functional Analysis, Harmonic Analysis, Logic, Mathematics Education, Numerical Analysis, Probability & Statistics, and Topology.

CENTER FOR APPLIED MATHEMATICS: Professor Avner Friedman is the Director of the Center. An emphasis year on Control of Free Boundaries and Inverse Problems is planned for 1986-87.

HALF-TIME ASSISTANTS: Assistants usually teach four hours per week. The salary range for two semesters (August 27 to May 9) will be $6700 to $8600 plus a reduction in tuition.

FELLOWSHIPS: Purdue University Fellowships ($6000 for twelve months in 1985-86) and Black and Other Minorities Fellowships ($5000 for twelve months in 1985-86 plus allowances for dependents and for research).

SUMMER ASSISTANTSHIPS: Positions are available for assistants whose performance in course work and assistantship duties is satisfactory. The stipend is one fifth of the student's academic year salary.

FEES: For holders of half-time assistantships and fellowships, fees for 1985-86 are reduced from $2417.50 ($814.50 for a state resident) to $143 per semester and to $71.50 for summer.

APPLICATIONS: For application forms and information write to:

GRADUATE OFFICE — Department of Mathematics — Mathematical Sciences Building — Purdue University — West Lafayette, IN 47907

896
### PROGRAM OF STUDY

The purpose of the graduate program in mathematics is to give students the opportunity to develop into educated and creative mathematicians. In most instances the doctoral program starts with two years of basic training, including introductory and advanced course work in the fundamentals of algebra, analysis, geometry, and topology. This is followed by thesis work done in close association with one or more members of the faculty. Limited enrollment and the presence of several active groups of research mathematicians provide thesis opportunities in many areas of algebra, algebraic geometry, complex analysis, differential geometry, logic, partial differential equations, and topology.

### FINANCIAL AID

All new students receive a stipend of up to $7700 and have no teaching duties the first year. They then become teaching assistants with a stipend of over $6700 and begin the three stages of supervised teaching provided by the department. A teaching assistant usually starts by doing tutorial work in freshman and sophomore calculus courses (4 classroom hours per week); this is followed by a variety of duties in advanced undergraduate courses; the final, lecturing stage involves independent teaching in the classroom. All doctoral students in mathematics also receive a full tuition fellowship. Support is available for citizens and noncitizens.

### APPLYING

All applicants are urged to take the General Test and the mathematics test of the Graduate Record Examination. Application for these tests should be made to Educational Testing Service in Princeton, New Jersey 08541, or at 1947 Center Street, Berkeley, California 94705. While there is no final application date, completed forms should be filed before February 15. All applicants are considered without regard to race, sex, or religious affiliation.

### UNIVERSITY OF NOTRE DAME DEPARTMENT OF MATHEMATICS

GRADUATE STUDIES IN MATHEMATICS

Professor William G. Dwyer, Chairman — Department of Mathematics — University of Notre Dame — P.O. Box 398 — Notre Dame, Indiana 46556
University of Iowa, Iowa City 52242

APPLIED MATHEMATICAL SCIENCES
Herbert W. Hethcote, Chairman

Teaching Assistantship (1–2)
7200–8000
9
1546
15–20
Research Assistantship (26)
640–710/mo.
9
386/sem.*
20
Ph. D. (82/85) AM 2. Total: 2

By competition. An award offered by the Graduate College as a Premium for Academic Excellence (PACE) based on prior scholastic achievement.

University of Northern Iowa, Cedar Falls 50614

MATHEMATICS AND COMPUTER SCIENCE
David R. Duncan, Head

Graduate Assistantship (4)
4250
9
15

Statistics
George A. Milliken, Head

Teaching Assistantship (4)
4500–6000
9
770
10–16
Teaching, grading

Kansas State University, Manhattan 66506

MATHEMATICS
Louis Pigno, Head

Teaching Assistantship (6)
7290
9
5
Ph. D. (82/85) GT 2, AM 1, ME 2. Total: 5

Statistics
George A. Milliken, Head

Teaching Assistantship (4)
4500–6000
9
770
10–16
Teaching, grading

Research Assistantship (2)
6000–7800
12
770
10–20
Research

Other (1)
3600–5850
9
770
10–20
Teaching, grading

Kansas
KANSAS STATE UNIVERSITY

Graduate Study in Mathematics

We offer a varied program of graduate study leading to the M.S. and Ph.D. degrees in mathematics.

Particular strengths of the department are harmonic analysis, applied mathematics, and finite geometry. We also have faculty actively pursuing such other research areas as categorical topology, global analysis, group theory, lattice theory, and number theory.

We offer teaching assistantships that pay at least $810 per month and also have a substantial endowment for scholarships and fellowships.

All graduate students are afforded close contact with the senior faculty. For additional information and application forms write to:

Director of Graduate Studies
Department of Mathematics
Kansas State University
Manhattan, KS 66506
Kentucky

Eastern Kentucky University, Richmond 40475
MATHEMATICS, STATISTICS AND COMPUTER SCIENCE
Charles H. Franke, Chair
Applications due: 4/15/86
Faculty 36; Published 20
Graduate Students: full-time 7; full-time first year 3; part-time 5
Teaching Assistantship (1) 3100-5200 9 1048 3-6 Teaching, recitation sections
*Late applications considered.

Murray State University, Murray 42071
MATHEMATICS
Donald Bennett, Chairman
Applications due: 3/15/86
Faculty 16; Published 8
Graduate Students: full-time 5; full-time first year 2; part-time 4
Teaching Assistantship (4) 4800-5600 9 1032 6 Teaching

University of Kentucky, Lexington 40506
COMPUTER SCIENCE
James H. Wells, Chairman
Applications due: 2/1/86
Faculty 15; Published 7
Graduate Students: full-time 58; full-time first year 21; part-time 10
Fellowship (1) 5600 9 756
Teaching Assistantship (12) 5600 9 50 20 Teaching
Research Assistantship (2) 5600 9 Research

UNIVERSITY OF KANSAS
Graduate Study in Mathematics

DEGREE PROGRAMS The Department of Mathematics offers graduate programs leading to the M.A. and Ph.D. degrees. Programs for these degrees can be designed to emphasize either pure or applied mathematics or statistics. A broad range of programs is possible, as the faculty is actively engaged in research in a variety of areas including algebra, analysis, functional analysis, operator theory, set theory, number theory, topology, combinatorics, differential equations, control theory, theoretical physics, numerical analysis, probability and statistics.

FINANCIAL AID Teaching assistantships will have stipends between $7100 and $8000 per academic year. Outstanding students may either supplement or replace teaching assistant stipends through scholarships or faculty NSF grants. Summer support is also available from teaching assistantships, scholarships and grants.

FEES Approximately $27.00 per semester credit hour. Outstanding applicants may have their fees paid by a fee scholarship.

APPLY TO: Director of Graduate Studies
Department of Mathematics
University of Kansas
Lawrence, KS 66045-2142

900
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<th>TYPE OF ASSISTANCE (number anticipated 1986-1987)</th>
<th>STIPEND paid to student</th>
<th>FEES paid by student ($)</th>
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<tr>
<td>Paul Eakin, Chairman</td>
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<td><strong>STATISTICS</strong></td>
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<tr>
<td>David M. Allen, Chairman</td>
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<td><strong>University of Louisville, Louisville 40292</strong></td>
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<td><strong>MATHEMATICS</strong></td>
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<td>F. R. McMorris, Chairman</td>
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<td>9 Teaching</td>
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<td><em>Resident: $88 per hour; nonresident: $195 per hour.</em></td>
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**PRESIDENTIAL FELLOWSHIPS IN MATHEMATICS**

**University of Kentucky**

$10,850/9 months plus paid tuition

These fellowships are offered to applicants of exceptional promise and include a half-time teaching assignment of one course (3-4 contact hours per week) per semester. Applications are invited for the academic year 1986-87.

The Mathematics Department offers programs of graduate study in a diversity of fields of pure and applied mathematics leading to the Ph.D. degree or the Master's degree. In addition, a program leading to a Master's degree in Operations Research is offered jointly by the departments of Mathematics, Statistics, and Computer Science.

For more information and application materials, call (606)-257-4653 or write:

**Director of Graduate Studies**  
**Department of Mathematics**  
**University of Kentucky**  
**Lexington, KY 40506**
Louisiana State University, Baton Rouge 70803

MATHEMATICS

Applications due: 3/15/86

J. R. Dorroh, Chairman

Graduate Students: full-time 47; full-time first year 22; part-time 3

Teaching Assistantship (7)

Teaching Assistantship (20)

Fellowship (3)

Research

Ph. D. (82/85) ANT 3, GT 2,

Other 1. Total: 6

Louisiana Tech University, Ruston 71272

MATHEMATICS AND STATISTICS

Applications due: 3/1/86

Bill J. Attebery, Head

Graduate Students: full-time 8; full-time first year 6; part-time 0

Teaching Assistantship (3)

12-15 Grading, teaching

McNeese State University, Lake Charles 70609

MATHEMATICS, COMPUTER SCIENCE AND STATISTICS

Applications due: 3/15/86

George F. Mead, Jr., Head

Graduate Students: full-time 12; full-time first year 7; part-time 15

Teaching Assistantship (5)

6

Nicholls State University, Thibodaux 70310

MATHEMATICS

Applications due: 3/1/86

Donald M. Bardwell, Head

Graduate Students: full-time 11; full-time first year 6; part-time 6

Teaching Assistantship (7)

6
Tulane University, New Orleans 70118

**MATHEMATICS**

Applications due: 2/1/86

Bachelor's by inst. 1234

Bachelor's by dept. 23

Master's by dept. 1

Teaching Assistantship (25) 6500–6700 9 300 3.4 Teaching

Ph. D. (82/85) Other I. Total: 1

University of New Orleans, New Orleans 70148

**MATHEMATICS**

Applications due: 4/1/86

Bachelor's by inst. 1500

Bachelor's by dept. 11

Master's by dept. 3

Fellowship (3) 12000 12 Ph. D. (82/85) ANT I. Total: 1

Teaching Assistantship (16–21) 4300–6500 9 6 Teaching

University of Southwestern Louisiana, Lafayette 70504 (Ad on p. 904)

**MATHEMATICS**

Applications due: 4/1/86

Bachelor's by inst. 112

Bachelor's by dept. 3

Master's by dept. 0

Teaching Assistantship (10) 4800 9 50 6 Teaching

Maine

University of Maine at Orono 04469

**MATHEMATICS**

Faculty 32; Published 14

Bachelor's by dept. 13

Master's by dept. 3

Teaching Assistantship (6) 3800 9 20

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**MATHEMATICS STATISTICS COMPUTATION GRADUATE PROGRAMS AT TULANE**

**DEGREE PROGRAMS**

The Ph.D. program provides a broad background in mathematics and requires a dissertation consisting of original and significant research. Besides the traditional mathematical areas, the Ph.D. program may concentrate on statistics or on numerical computation.

The Master’s degree programs (Master’s in Mathematics, Master’s in Applied Statistics, Master’s in Applied Mathematical) are tailored to the students’ interests and often involve coursework in other departments at the university. They prepare the student either for a variety of employment opportunities or for the Ph.D. program.

**FINANCIAL AID**

The teaching assistantship consists of a stipend and a tuition waiver. The current stipend is $6500–$6700; a raise is anticipated for the coming year. The duties consist of four hours of teaching per week. Special teaching fellowships paying $10,000 per year are also available to exceptional, advanced graduate students. Applications for these positions should be received by February 1, 1985 but later applications will also be considered.

**GRADUATE FACULTY AND RESEARCH AREAS**

- **Algebra:** A. Clifford (Caltech), J. Dauns (MIT), L. Fuchs (Budapest), P. Grillet (Paris).
- **Numerical Computation:** R. Miller (Berkeley), G. Sod (Berkeley).
- **Partial Differential Equations:** B. Najman (Zagreb), R. Svirsky (Johns Hopkins), J. Goldstein (Carnegie Tech), S. Rosencrans (MIT).
- **Relativity:** F. Tipler (Maryland), R. Knill (Notre Dame).
- **Several Complex Variables-Differential Geometry:** F. Birrel (Notre Dame), J. Bland (UCLA), M. Kalka (NYU), F. Quigley (Chicago), A. Vitter (Princeton), M. Guest (Oxford), P. Topiwala (Michigan).
- **Statistics:** A. Levine (UCLA), J. Diem (Purdue), A. Muhly (Wisconsin), A. Dorfman (Johns Hopkins).
- **Topological Algebra:** M. Dupre (Pennsylvania), H. Kosaki (UCLA), J. Liukkonen (Columbia), M. Mislove (Tennessee), N. Riedel (Munich).
- **Topology:** R. Fintushel (SUNY at Binghamton), T. Lawson (Stanford), J. Rogers (U. of California, Riverside).

For more information write to:

Professor Jerry Goldstein
Chairman, Graduate Studies Committee
Mathematics Department
Tulane University
New Orleans, Louisiana 70118
Maryland

Johns Hopkins University, Baltimore 21218

MATHEMATICAL SCIENCES
Alan F. Karr, Chairman

Applications due: 2/15/86*
Faculty 11; Published 10
Graduate Students: full-time 18; full-time first year 5; part-time 7

Teaching Fellowship (1) 10000 9 6 Grading, recitation
Teaching Assistantship (4) 8500 9 13 Grading, recitation
Research Assistantship (1–2) 8500 9 15 Research

Ph. D. (82/85) S 2, OR 4, AM 2. Total: 8

*MATHEMATICS
J.-P. Meyer, Chairman

Applications due: 3/1/86
Faculty 16; Published 16
Graduate Students: full-time 25; full-time first year 11; part-time 1

Teaching Assistantship (4–6) 6000* 9 9680 2c

Ph. D. (82/85) ANT 7, AFA 3, GT 3. Total: 13

University of Maryland Baltimore County, Baltimore 21228

APPLIED MATHEMATICS
Richard C. Roberts, Chairman

Applications due: 3/15/86
Faculty 25; Published 15
Graduate Students: full-time 15; full-time first year 7; part-time 10

Teaching Assistantship (8) 7000–7900 9 18

University of Maryland, College Park 20742

COMPUTER SCIENCE
Victor Basili, Chairman

Applications due: 2/1/86*
Faculty 40; Published 33
Graduate Students: full-time 115; full-time first year 11; part-time 157

Fellowship (6) 100–1000 9 **
Teaching Assistantship (55) 7000–7900 9 Up to 20 Teaching
Research Assistantship (90) 8400–9480 12 ** Research
Scholarship (3) 1500 9

Ph. D. (82/85) CS 25. Total: 25

*Foreign nationals must apply earlier.
**In-state: $87 per credit; out-of-state: $154 per credit.

MATHEMATICS
Nelson G. Markley, Chairman

Applications due: 3/1/86
Faculty 90; Published 75
Graduate Students: full-time 160; full-time first year 59; part-time 55

Fellowship (12) 6000–8000 12 Research
Teaching Assistantship (120) 7000–7900 10 15 Teaching
Research Assistantship (15) 7000–7900 10 Research

Ph. D. (82/85) ANT 7, AFA 4, GT 6, L 1, P 1, S 2, AM 17. Total: 38

$12,000 Fellowships

The University of Southwestern Louisiana has a number of duty-free fellowships for students seeking a Ph.D in Mathematics. The stipend is $12,000 per calendar year and the fellowship can be renewed for up to three years. High GRE scores and high GPA are required. Qualified black students are encouraged to apply. For further information contact:

Bradd Clark
Department of Mathematics
University of Southwestern Louisiana
Lafayette, LA 70504

904
Graduate Study in Mathematics at
UNIVERSITY OF MARYLAND, COLLEGE PARK

Ph.D. and M.A. degrees are available in each of the three Graduate Programs:

○ MATH The Mathematics Program
  The Department is strongly represented in Analysis, Topology, Geometry, Number Theory, Logic, Differential Equations, and Numerical Analysis, allowing the student to develop expertise in a variety of areas.

○ MAPL The Interdisciplinary Applied Mathematics Program
  The Program is sponsored by 12 departments and offers a flexible course of study which combines mathematics with an area of application (such as Physics, Operations Research, Fluid Dynamics, Computer Software, Continuum Mechanics, Systems and Control Theory, etc.)

○ STAT The Mathematical Statistics Program
  This is a flexible program enabling students to emphasize either mathematical aspects (such as Asymptotic Theory, Stochastic Processes) or applications of statistics (such as Biostatistics, Time Series, Analysis of Variance).

MATH—STAT FACULTY: There are about 100 faculty members, including a number of Guggenheim and Sloan fellows. Many of the faculty members are internationally recognized in their field.

MAPL FACULTY: There are over 100 participating faculty members, drawn from the Departments of Mathematics; Aerospace, Chemical, Civil, Electrical, and Mechanical Engineering; Computer Science; Meterology; Physics; Economics; Business and Management; as well as the Mathematical Statistics Program, the Public Management Program and the Institute for Physical Science and Technology. Again, this faculty is comprised of many highly distinguished members.

RESEARCH CLIMATE: There is an active seminar program which features a number of distinguished visitors from throughout the world, as well as internal speakers. In addition, each year is designated a “Special Year” in a particular area of mathematics.

FINANCIAL AID: Teaching assistantships are readily available to qualified students. Fellowships to outstanding applicants and Work-Study Programs with various government agencies (e.g., NBA, NSA and NSWL) are available.

FOR FURTHER INFORMATION, PLEASE WRITE TO:

Mathematics Graduate Committee
Department of Mathematics
UNIVERSITY OF MARYLAND
College Park, MD 20742
### Massachusetts

**Boston College, Chestnut Hill 02167**

**MATHEMATICS**
- Paul R. Thie, Chairman
  - Teaching Fellowship (5) 6400–6800 9 6\(^c\) Teaching
  - Scholarship (2)

**COMPUTER SCIENCE**
- Joyce B. Friedman, Chair
  - Applications due: 3/15/86
  - Teaching Fellowship (13) 6300 9 15-20 Teaching, grading
  - University Fellowship (Varies) 6300 9

**MATHEMATICS**
- R. Devaney, Chairman
  - Applications due: 2/1/86
  - Fellowship (3) 6000–8500 9
  - Teaching Fellowship (6) 6300–6800 9

**Mathematics**
- Applications due: Open
- Graduate Students: full-time 14, full-time first year 11; part-time 2

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**Boston University, Boston 02215**

**COMPUTER SCIENCE**
- Joyce B. Friedman, Chair
  - Teaching Fellowship (13) 6300 9 15-20 Teaching, grading
  - University Fellowship (Varies) 6300 9

**MATHEMATICS**
- Paul R. Thie, Chairman
  - Applications due: 2/1/86
  - Graduate Students: full-time 80; full-time first year 20; part-time 7
  - Teaching Fellowship (14) 6200-6800

**Mathematics**
- Applications due: 2/1/86
- Graduate Students: full-time 42; full-time first year 12; part-time 18
  - Teaching Fellowship (6) 6300–6800 9

---

**Brandeis University, Waltham 02254**

**MATHEMATICS**
- Teruhisa Matsusaka, Chairman
  - Applications due: 2/17/86
  - Graduate Students: full-time 39; full-time first year 12; part-time 0
  - Teaching Fellowship (14) 6200–6800 9

**Mathematics**
- Applications due: 2/17/86
- Graduate Students: full-time 33; full-time first year 11; part-time 3
  - Teaching Fellowship (14) 6200–6800 9

---

**Harvard School of Public Health, Boston 02115**

**BIOSTATISTICS**
- Marvin Zelen, Chairman
  - Applications due: 2/1/86
  - Graduate Students: full-time 33, full-time first year 11; part-time 3
  - Fellowship (8) 6552 12
  - Teaching Assistantship (14) 1000–1500 9 1009* 10 Tutorials, grading
  - Research Assistantship (8) 7500–12000 12 1009* 20 Research

*Estimate.

---

**Harvard University, Cambridge 02138**

**MATHEMATICS**
- Barry Mazur, Chairman
  - Applications due: 1/1/86*
  - Graduate Students: full-time 49; full-time first year 12; part-time –
  - Fellowship (8) 11700–20000** 12
  - Scholarship (2) 1000–20000** 12

*For full consideration.
**Maximum would include tuition and fees plus stipend.

---

**Academic Year 1984-1985**

**Bachelor's by inst.**
- 5153

**Bachelor's by dept.**
- 45

**Master's by dept.**
- 8

**Ph. D. (82/85)**
- 2. S 3.

**Total:**
- 6
Massachusetts Institute of Technology, Cambridge 02139

MATHMATICS
Applications due: 1/15/86
Arthur Mattuck, Chairman
Faculty 78; Published 72
Graduate Students: full-time 125; full-time first year 23; part-time 0
Fellowship (8) 8325–8364 9 *
Teaching Assistantship (8) 7290 9 * 8 Teaching, grading
Research Assistantship (2) 6345 9 * Varies
*Scholarship.

Northeastern University, Boston 02130

MATHMATICS
Applications due: 3/15/86
M. E. Gilmore, Chairman
Faculty 51; Published 38
Graduate Students: full-time 56; full-time first year 11; part-time 26
Teaching Assistantship (34) 6400 9 *
Tuitionship (4) 4-8 Grading, workshop
*Three hours teaching and three hours conference.

Tufts University, Medford 02155

MATHMATICS
Applications due: 3/15/86
Richard Weiss, Chairman
Faculty 18; Published 15
Graduate Students: full-time 10; full-time first year 4; part-time
Teaching Assistantship (4) 6100-6500 9 * 6 Teaching
*Tuition remission to cover this also available.

University of Massachusetts, Amherst 01003

COMPUTER AND INFORMATION SCIENCE
Applications due: 2/15/86
Conrad Wogrin, Acting Chair
Faculty 26; Published 25
Graduate Students: full-time 210; full-time first year 60; part-time
Fellowship (4) 3400-8000 9
Teaching Assistantship (40) 6800 9 20
Research Assistantship (100) 8000-10000 12 20

MATHMATICS AND STATISTICS
Applications due: 2/1/86
Larry N. Mann, Head
Faculty –; Published –
Graduate Students: full-time 56; full-time first year 17; part-time 7
Fellowship (3) 3000-4000 9
Teaching Assistantship (15) 6400-7200 9-12 Teaching, grading
Research Assistantship (2-3) 7200-10200 12 10 Research

University of Massachusetts at Amherst

GRADUATE STUDIES. M.A. and Ph.D. programs in pure and applied mathematics and statistics. Active departmental and interdisciplinary research environment.

TEACHING ASSISTANTSHIPS. 3-4 contact hours/week. Tuition waiver. Possible summer teaching. Fellowships for qualified applicants.

ATTRACTION LOCATION. Five college area in the beautiful Pioneer Valley. Easy access to Boston and New England ski and recreation areas. University housing available. Free local bus system. For information write

Director of Graduate Admissions
Department of Mathematics and Statistics
University of Massachusetts
Amherst, Massachusetts 01003

907
Michigan

Central Michigan University, Mt. Pleasant 48859

**MATHEMATICS**

Applications due: 3/1/86

Richard J. Fleming, Chairperson
Faculty 37; Published 18
Graduate Students: full-time 8; full-time first year 3; part-time 7

Fellowship (12)
4000 9
Teaching Assistantship (10)
5000-5300 9 6

**Michigan State University, East Lansing 48824**

**COMPUTER SCIENCE**

Faculty 22; Published 11
Graduate Students: full-time 115; full-time first year 48; part-time 11

Fellowship (2)
1000-10000 10 Varies
Teaching Assistantship (10)
7900-8600 10-20 Varies 
Research Assistantship (4)
7900-8600 10-20 Varies

**MATHEMATICS**

Applications due: 4/1/86

Kyung Whan Kwon, Chairman
Faculty 68; Published 69
Graduate Students: full-time 104; full-time first year 31; part-time 0

Teaching Assistantship (40)
7800-8600 9 1750 4-8 Grading, teaching
Scholarship (2)
9000 9 1750

**STATISTICS AND PROBABILITY**

Dennis Gilliland, Chairperson
Faculty 15; Published 14
Graduate Students: full-time 55; full-time first year 18; part-time 5

Fellowship (1)
8000-10000 9 2800
Teaching Assistantship (15)
7500-8280 9 2800 20
Scholarship (2)
1000-3000 9 2800 20

*1/1/86 preferred but no later than 5/1/86.

**Michigan Technological University, Houghton 49931**

**MATHEMATICAL SCIENCES**

Applications due: 5/30/86

Martyn R. Smith, Head
Faculty 40; Published 20
Graduate Students: full-time 8; full-time first year 6; part-time 3

Teaching Assistantship (8)
5000 9 10

**Oakland University, Rochester 48063**

**MATHEMATICAL SCIENCES**

Applications due: 3/15/86

Donald E. G. Maale, Chairperson
Faculty 29; Published 25
Graduate Students: full-time 4; full-time first year 1; part-time 34

Teaching Assistantship (3)
6000-6500 9 20 Teaching

**University of Michigan, Ann Arbor 48109**

**BIOSTATISTICS**

Applications due: 3/15/86

Morton B. Brown, Chairman
Faculty 11; Published 11
Graduate Students: full-time 33; full-time first year 12; part-time 2

Fellowship (2)
4500 9
Teaching Assistantship (4)
4500-6000 9 15 Teaching
Research Assistantship (2)
4500-6000 9 15 Research

**INDUSTRIAL AND OPERATIONS ENGINEERING**

Applications due: 5/15/86

Stephen Pollock, Chairman
Faculty 22; Published 22
Graduate Students: full-time 120; full-time first year 40; part-time 0

Fellowship (2)
15000 12
Teaching Assistantship (10)
4000 9 2000 10
Research Assistantship (10)
4000 9 10
Scholarship (5)
100-3500 4000-7000

908
Western Michigan University, Kalamazoo 49008

MATHEMATICS

Applications due: 2/15/86

- Bachelor's by inst. 4978
- Bachelor's by dept. 54
- Master's by dept. 28

- Ph. D. (82/85) Other 5. Total: 5

D. J. Lewis, Chairman

Graduate Students: full-time 1986-1987; full-time first year 10; part-time 3

- Fellowship (5)
  - 5000-7000
  - 6250-8000
  - 5000-7000*

- Teaching Assistantship (25)
  - 6250-8000
  - 6-8*

- Internship (4)
  - 2500-4500

- Spring or Summer Teaching Assistantship and Fellowship (25)
  - 1000-1250
  - 6*

- Resident: $61.50 per credit hour; nonresident: $149.75 per credit hour.

---

DEGREE PROGRAMS

WMU offers master's degrees in Mathematics, Biostatistics, Statistics, (Applied or Theoretical options available), Applied Mathematics and Mathematics Education. In addition to the Ph.D. in Mathematics, the department also offers a Ph.D. in Mathematics with a concentration in Statistics, a concentration in Graph Theory and Computer Science, and a concentration in college mathematics teaching.

SPECIAL OPPORTUNITIES

The WMU Math Department is internationally acclaimed in the field of graph theory. In 1984 the Department hosted the Fifth International Research Conference on the Theory and Applications of Graphs with special emphasis on algorithms and computer science applications.

A unique Master's in Biostatistics, developed in cooperation with the pharmaceutical industry, trains graduates to meet needs of prospective employers. Paid internships are included in programs in Biostatistics and Applied Statistics.

FINANCIAL ASSISTANCE

In 1986 Graduate Teaching Assistantships with a stipend of $6,250 are available for the academic year. A limited number of Senior Assistantships with a stipend of $8,000 and Doctoral Fellowships of $6,000 are also available. Additional $1,250 assistantships are available for Spring or Summer session. Applications for Fellowships and Assistantships are due by February 15. Late applications for assistantships will be accepted if openings remain.

For additional information contact:
Dr. Joseph Buckley
Department of Mathematics
Western Michigan University
Kalamazoo, MI 49008-3899

WMU is an Equal Opportunity/Affirmative Action Institution.
Minnesota

Mankato State University, Mankato 56001

MATHEMATICS, ASTRONOMY AND STATISTICS
Francis T. Hannick, Chairman

Applications due: 6/1/86
Faculty 23; Published 7
Graduate Students: full-time 75; full-time first year 40; part-time 10
Teaching Assistantship (15) 2000-5000 9 10-15 Teaching, grading

St. Cloud State University, St. Cloud 56301

MATHEMATICS AND COMPUTER SCIENCE
Kent F. Carleson, Chairperson

Applications due: 3/1/86
Faculty 38; Published 6
Graduate Students: full-time 0; full-time first year 0; part-time 0
Teaching Assistantship (5) 5000 9 1050 10 Teaching

University of Minnesota, Minneapolis 55455

MATHEMATICS
Willard Miller, Jr., Head

Applications due: * Faculty 90; Published 71
Graduate Students: full-time 168; full-time first year 43; part-time 2
Fellowship (1-3) 7200 9 537 2 Teaching
Teaching Fellowship (1-6) 11800 9 2931 2 Teaching
Research Assistantship (7) 4600-5100 9 2931 4-5 Research
Summer Teaching Assistantship (25) 2395-2495 1.5 84 10 Teaching
Summer Fellowship (24) 1990-1995 2 84 Research
*Fellowships: 2/1/86; assistantships: open.

Warren Statt University is an Equal Opportunity/Affirmative Action Employer.

GRADUATE STUDY IN MATHEMATICS

The Mathematics Department offers graduate programs leading to the M.A. and Ph.D. degrees. Master's degrees are offered in mathematics, applied mathematics, and statistics. Doctoral students may specialize in a variety of areas, including combinatorics, algebra, classical and functional analysis, differential equations, geometry and topology, probability and statistics, and applied mathematics. The department presently includes forty-five full-time faculty, and a favorable student/faculty ratio allows for individual attention.

Financial support includes teaching assistantships with stipends in the range $5,200-$6,500 together with a waiver of tuition up to 10 credit hours and health insurance. Fellowships and housing allowances are also available to well-qualified students. The suggested deadline for completion of applications is Feb. 25; applicants meeting this deadline will be notified in time to respond by April 15. Late applications, however, will be accepted as long as openings remain.

Direct inquiries to: Clarence W. Wilkerson, Chairman
Department of Mathematics
Wayne State University
Detroit, Michigan 48202

Wayne State University is an Equal Opportunity/Affirmative Action Employer.
Mississippi

Jackson State University, Jackson 39217

MATHEMATICS
Roosevelt Gentry, Chair

Applications due: 4/1/86

Fellowship (3) 4500 12 Graduate Students: full-time 8; full-time first year 5; part-time 25
Teaching Fellowship (8) 2665 12 15 Teaching
Teaching Assistantship (1) 2665 12 15 Teaching
Research Assistantship (3) 2500 12

Mississippi State University, Mississippi State 39762

BUSINESS INFORMATION SYSTEMS AND QUANTITATIVE ANALYSIS
E. R. Callahan, Jr., Head

Applications due: 3/1/86

Teaching Assistantship (3)* 6050** 9 3508 20 Teaching, grading
Research Assistantship (1)** 6050** 9 3508 20 Research
Graduate Assistantship (3)*** 2520** 9 3508 15 Research, grading

*Doctorate in Business Administration.
**All out-of-state fees are waived also.
***Master of Science in Business Administration.

MATHEMATICS AND STATISTICS
J. L. Solomon, Head

Applications due: 3/15/86

Teaching Assistantship (15) 5400-6000 9 1400 6

Mathematics at Minnesota

The University of Minnesota offers graduate programs leading to the M.S. and Ph.D. degrees. There are seventy-nine full-time faculty members. Almost all areas of mathematics are represented, with particular strengths in analysis and applied mathematics. The Institute for Mathematics and Its Applications, located in the Mathematics building, enhances the research atmosphere at Minnesota. There are extensive opportunities for interaction with various engineering, science, and social science departments. The faculty-student ratio is 3:4; there is an excellent library, and the Twin Cities area is a pleasant one to live in. Teaching Assistantships and Fellowships are available. Write to:

Professor John A. Eagon
School of Mathematics
127 Vincent Hall, 206 Church St. S.E.
University of Minnesota
Minneapolis, Minnesota 55455
University of Southern Mississippi, Hattiesburg 39406

**MATHEMATICS**

Applications due: 3/15/86  
Steve Doblin, Chair  
Faculty 20; Published 10  
Graduate Students: full-time 7, full-time first year 2, part-time 6

- Teaching Assistantship (6-9)  
  6400–7050  
  9  
  1401  
  20  
  Grading, teaching

- Tutor/Teaching Assistantship (*)  
  3.10–5/hr.  
  9  
  **  
  10-20  
  Grading, tutoring

- Part-Time Instructor (*)  
  900–3600  
  9  
  **  
  10-20  
  Teaching

*Several.  
**Out-of-state: $2583.

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Missouri

Central Missouri State University, Warrensburg 64093

**MATHEMATICS AND COMPUTER SCIENCE**

Applications due: 5/1/86  
Edward Davenport, Chair  
Faculty 21; Published 4  
Graduate Students: full-time 6; full-time first year 2; part-time 4

- Teaching Fellowship (4)  
  1950–3900  
  9  
  Waived  
  3-6  
  Teaching

Northeast Missouri State University, Kirksville 63501

**MATHEMATICS AND COMPUTER SCIENCE**

Applications due: 2/1/86  
Lanny Morley, Chairman  
Faculty 21; Published 2  
Graduate Students: full-time 4; full-time first year 3; part-time 2

- Fellowship (1-3)  
  3600  
  9

- Teaching Assistantship (3)  
  2400  
  9  
  3'  
  Teaching

- Temporary Instructor (5)  
  7800  
  12  
  6'  
  Teaching

Saint Louis University, St. Louis 63103

**MATHEMATICS AND COMPUTER SCIENCE**

Applications due: 4/1/86  
Raymond Freese, Chairman  
Faculty 12; Published 6  
Graduate Students: full-time 15; full-time first year 12; part-time 8

- Teaching Assistantship (10)  
  4200–4400  
  9  
  *  
  6'  
  Teaching

*Six hours tuition remission.

Southeast Missouri State University, Cape Girardeau 63701

**MATHEMATICS**

Applications due: 3/1/86  
Harold W. Hager, Chairman  
Faculty 22; Published 4  
Graduate Students: full-time 5; full-time first year 1; part-time 10

- Teaching Fellowship (4)  
  3750  
  9  
  Waived  
  6'

Southwest Missouri State University, Springfield 65804

**MATHEMATICS**

Applications due: 12/15/85  
Simon J. Bernau, Chairman  
Faculty 23; Published 3  
Graduate Students: full-time 6; full-time first year 3; part-time 3

- Teaching Assistantship (2)  
  4750  
  9  
  918  
  20

- Scholarship (40)  
  756–1104  
  9  
  1104

- Federal, State, Local Grants (1600)  
  100–3300  
  9  
  1104

University of Missouri–Columbia 65211

**MATHEMATICS**

Applications due: 2/15/86  
Keith Schrader, Chair  
Faculty 33; Published 26  
Graduate Students: full-time 33; full-time first year 10; part-time 0

- Fellowship (5)  
  8000  
  9  
  65/cr.hr.

- Teaching Assistantship (60)  
  8000–8300  
  9  
  65/cr.hr.  
  6-7'  
  Teaching

- Scholarship (40)  
  1000–3000  
  9  
  65/cr.hr.

*University-wide.
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<th>TYPE OF ASSISTANCE</th>
<th>STIPEND paid to student</th>
<th>FEES paid by student ($)</th>
<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<td>paid by hours type</td>
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<td>dollars</td>
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**STATISTICS**

John E. Hewett, Chairperson

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<th>Fellowship (2)</th>
<th>1000–3000</th>
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<th>1846.20</th>
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<th>Research</th>
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<td>Research</td>
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**University of Missouri–Kansas City 64110**

**MATHEMATICS**

Roger Carlson, Chairman

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<tr>
<th>Teaching Assistantship (6)</th>
<th>7500–7800</th>
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<th>7500–7800</th>
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<th>411**</th>
<th>6**</th>
<th>Ph. D. (82/85) ANT 2. Total: 2</th>
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*To be sure of consideration.
**For students taking 9 credit hours per semester.

**University of Missouri–Rolla 65401**

**ENGINEERING MECHANICS**

Peter G. Hansen, Chairman

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<tr>
<th>Teaching Assistantship (12)</th>
<th>8700*</th>
<th>9</th>
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<th>8700*</th>
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*Half-time.
**Approximately $1900 (14 hours or more), plus $20 per credit hour of engineering courses.

**MATHEMATICS AND STATISTICS**

Louis Grimm, Chairman

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<th>Teaching Assistantship (12)</th>
<th>8700</th>
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<th>6–7¢</th>
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<td>Chancellor’s Fellowship (6–6)</td>
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</table>

*Late applications considered if positions are still available.

**Washington University, St. Louis 63130**

**COMPUTER SCIENCE**

Jerome R. Cox, Chairman

<table>
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<tr>
<th>Teaching Assistantship (2)</th>
<th>5650</th>
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</table>

**MS in Applied Mathematics**

MA and PhD in Mathematics

MAIN CAMPUS of the University located midway between Kansas City and St. Louis. Graduate Teaching Assistantships available to all admitted to the graduate program. Current stipend $6300. Applications for women and minorities are encouraged.

*for information write: Dr. C.W. Morris, Associate Chair Department of Mathematics 201 Math Science Building University of Missouri Columbia, MO 65211

an equal opportunity institution
GRADUATE MATHEMATICAL SCIENCES AT THE UNIVERSITY OF MONTANA

PH.D.PROGRAM. This program for the advanced training of college mathematics teachers and other mathematical "generalists" has been developed with aid of a grant from the Advanced Training Projects, NSF Division of Graduate Education. It emphasizes breadth of knowledge, skill in the communication of mathematical thought, an awareness of the influence of mathematics on modern society and intellectual life, and the development of a sense of vocation as teacher and scholar. The program provides the opportunity for both traditional and interdisciplinary thesis work and boasts of a one hundred percent success rate in placing its graduates in positions in 4-year colleges and universities. For details, please write for the "Ph.D. Packet".

INTERDISCIPLINARY APPLIED MATHEMATICS MASTERS PROGRAM. This new option in the MA program is intended to prepare students to undertake careers as applied mathematicians, knowledgeable and experienced in the mathematical modeling of scientific phenomena. The program is intended for students whose undergraduate degree is in science or mathematics. It includes an individually tailored course of study, emphasizing the process of modeling and its role in scientific inference, and including some practical experience in model building. The student may choose an emphasis in physical science, biological science, or economic theory and operational analysis. For details, please ask for the "Interdisciplinary Masters Packet". Write to:

Chairman, Graduate Committee
Mathematics Department, University of Montana, Missoula, MT 59812
<table>
<thead>
<tr>
<th>TYPE OF ASSISTANCE</th>
<th>STIPEND</th>
<th>FEES</th>
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<th>DEGREES AWARDED</th>
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<td>University of Nebraska–Lincoln 68588</td>
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<tr>
<td>COMPUTER SCIENCE</td>
<td>Faculty 14; Published 5</td>
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<td>Bachelor’s by inst.</td>
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<tr>
<td>Roy F. Keller, Chairman</td>
<td>Graduate Students: full-time 62; full-time first year 15; part-time</td>
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<td>MATHEMATICS AND STATISTICS</td>
<td>Applications due: 4/15/86</td>
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<td>David Logan, Chair</td>
<td>Faculty 38; Published 34</td>
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<td>University of Nevada, Reno 89557</td>
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<td>Montclair State College, Upper Montclair 07043</td>
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<td>Kenneth C. Wolff, Chairman</td>
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<td>Graduate Students: full-time 34; full-time first year 12; part-time 182</td>
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New Jersey Institute of Technology, Newark 07102

MATHEMATICS Applications due: 7/15/86 Bachelor's by inst. 500
Murray Lieb, Chairman Faculty 29; Published 17 Bachelor's by dept. 0
Graduate Students: full-time 29; full-time first year 21; part-time 6
Teaching Assistantship (4) 5400 9 2200 6

Princeton University, Princeton 08544

MATHEMATICS Applications due: 1/7/86 Bachelor's by inst. 1125
Elias M. Stein, Chairman Faculty 43; Published 30 Bachelor's by dept. 14
Graduate Students: full-time 58; full-time first year 12; part-time –
Fellowship (26) 6000–10000 9–12 Ph. D. (82/85) ANT 10, AFA 12,
Teaching Assistantship (33)* 7200–8300 10 20 GT 13. Total: 35
Research Assistantship (33)* 6200–6700 10
*Most appointments are one-half teaching, one-half research.

Rutgers University, New Brunswick 08903

MATHEMATICS Applications due: 3/1/86 Bachelor's by inst. 4699
Joseph D'Atri, Chairman Faculty 89; Published 82 Bachelor's by dept. 97
Graduate Students: full-time 83; full-time first year 31; part-time 33
Fellowship (8) 5000–6000 9 200 Ph. D. (82/85) ANT 10, AFA 2,
Teaching Assistantship (12) 7360–7560 9 200 3 Teaching GT 3, L 1, AM 7, Other 2.
Total: 25
OPERATIONS RESEARCH CENTER (RUTCOR)
Peter Hammer, Director Applications due: 3/1/86 Bachelor's by inst. 4699
Graduate Students: full-time 11; full-time first year 6; part-time 4
Teaching Assistantship (4) 7360–7560 200 Bachelor's by dept. 0
Research Assistantship (2) 7360–7560 200 Master's by dept. 0

STATISTICS Applications due: 3/86 Bachelor's by inst. 4699
Joseph I. Naus, Chairman Faculty 16; Published 16 Bachelor's by dept. 8
Graduate Students: full-time 39; full-time first year 25; part-time 42
Fellowship (6) 5000–6000 9 Ph. D. (82/85) S 5. Total: 5
Teaching Assistantship (10) 7360–7560 9 15
Research Assistantship (3) 7360–7560 9 15
*$2490 plus $136 fee.

Seton Hall University, South Orange 07079

MATHEMATICS Applications due: 5/21/86 Bachelor's by inst. 1040
John J. Saccoman, Chairman Faculty 17; Published 11 Bachelor's by dept. 18
Graduate Students: full-time 8; full-time first year 0; part-time 7
Teaching Assistantship (2) 3500–3700 9 10

Rutgers University
Graduate Program in Mathematics
Graduate Program in Statistics
Rutgers University has a limited number of highly attractive fellowships to support outstanding students entering its graduate programs in mathematics and statistics in New Brunswick. These fellowships carry a stipend of $10,000 per year, plus waiver of tuition, and are renewable for up to four years. For information write Graduate Director, Department of Mathematics, Hill Center, Rutgers University, New Brunswick, NJ 08903.
Trenton State College, Trenton 08625

MATHEMATICAL SCIENCES
Michael Iannone, Chairman

Applications due: 5/1/86
Graduate Students: full-time 0; full-time first year 0; part-time 22

Teaching Assistantship (1)
- Stipend: 2500 dollars
- Fees: 9 months
- Service: 15 hours
- Type: Teaching

New Mexico

New Mexico Institute of Mining and Technology, Socorro 88001

COMPUTER SCIENCE
Kazem Taghva, Chairman

Applications due: 3/15/86
Graduate Students: full-time 26; full-time first year 6; part-time 1

Fellowship (1)
- Stipend: 5500 dollars
- Fees: 9 months
- Service: 557-2177 hours
- Type: Grading, teaching

Teaching Assistantship (4)
- Stipend: 6100-6500 dollars
- Fees: 179 months
- Service: 20 hours
- Type: Teaching

Research Assistantship (3)
- Stipend: 6000-6600 dollars
- Fees: 179 months
- Service: 20 hours
- Type: Research

Memorial Award (1)
- Stipend: 500 dollars
- Fees: 9 months
- Service: 557-2177 hours
- Type: Grading, teaching

MATHEMATICS
Allan Gutjahr, Chairman

Applications due: 3/30/86
Graduate Students: full-time 36; full-time first year 15; part-time 1

Teaching Assistantship (4)
- Stipend: 6100 dollars
- Fees: 9 months
- Service: 20 hours
- Type: Teaching, grading, tutoring

Research Assistantship (2)
- Stipend: 8500 dollars
- Fees: 12 months
- Service: 20 hours
- Type: Research

New Mexico State University, Las Cruces 88003 (Ad on p. 918)

COMPUTER SCIENCE
Philippe J. Gabrini, Head

Applications due: 5/1/86
Graduate Students: full-time 32; full-time first year 8; part-time 9

Teaching Assistantship (12)
- Stipend: 6300 dollars
- Fees: 9 months
- Service: 450/sem.
- Type: Teaching

Research Assistantship (13)
- Stipend: 6300-10000 dollars
- Fees: 9 months
- Service: 450/sem.
- Type: Research

MATHEMATICAL SCIENCES
Carol L. Walker, Head

Applications due: 3/31/86
Graduate Students: full-time 36; full-time first year 17; part-time 1

Teaching Fellowship (3)
- Stipend: 9449-9891 dollars
- Fees: 9 months
- Service: 689 hours
- Type: Teaching

Teaching Assistantship (25)
- Stipend: 6299-6594 dollars
- Fees: 9 months
- Service: 689 hours
- Type: Teaching

Research Assistantship (5)
- Stipend: 6299-6594 dollars
- Fees: 9 months
- Service: 689 hours
- Type: Research

*Late applications considered.

University of New Mexico, Albuquerque 87131

COMPUTER SCIENCE
Edward Angel, Chairman

Applications due: 6/30/86
Graduate Students: full-time 52; full-time first year 22; part-time 56

Fellowship (2)
- Stipend: 7500 dollars
- Fees: 9 months
- Service: 12 hours
- Type: Teaching

Teaching Assistantship (10)
- Stipend: 5250-6750 dollars
- Fees: 9 months
- Service: 20 hours
- Type: Research

Research Assistantship (6)
- Stipend: 6000-11000 dollars
- Fees: 9-12 months
- Service: 20 hours
- Type: Research

MATHEMATICS AND STATISTICS
David A. Sanchez, Chairman

Applications due: 3/31/86
Graduate Students: full-time 56; full-time first year 17; part-time 11

Teaching Fellowship (5)
- Stipend: 5400-6000 dollars
- Fees: 9 months
- Service: Waived
- Type: Ph. D. (82/85) ANT 2, S 4, OR 1, AM 1. Total: 9

Title IV HEW (2)
- Stipend: 4500 dollars
- Fees: 12 months
- Service: 5 hours
- Type: Ph. D. (82/85) ANT 2, S 4, OR 1, AM 1. Total: 9

*Grant Graduate Professional Fellowship Program (minority/women).
New York

Clarkson University, Potsdam 13676

MATHEMATICS AND COMPUTER SCIENCE

Applications due: 3/15/86

Athanassios S. Fokas, Acting Chairman

Faculty 23; Published 21

Graduate Students: full-time 28; full-time first year 11; part-time 10

Teaching Assistantship (6)*  8450
Research Assistantship (2)*  8450

*Estimate.

Columbia University, New York 10027

MATHEMATICS

Applications due: 1/15/86*

Masatake Kuranishi, Chairman

Faculty 32; Published 29

Graduate Students: full-time 45; full-time first year 15; part-time 24

Fellowship (13-15)**  7200

*Late applications considered.

**All supported students are regarded as Fellows. Of these Fellows, approximately 5 per academic year receive their stipends through the National Science Foundation in the form of Graduate Research Assistantships. All students are funded equally. All students are required to serve as teaching assistants for two of the four years of support.

***All graduate students are currently given four years of full support, including tuition and fees.

NEW MEXICO STATE UNIVERSITY


* Financial Support. Teaching Assistantships available. Also support for work in mathematical aspects of AI, including Computer Vision, Pattern Recognition, Neural Network Modeling. Development work in CAI and Technical Text Editors.

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New Mexico State University, Las Cruces, NM 88003

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APPLIED MATHEMATICS

Philip J. Holmes, Director

Applications due: * Bachelor's by inst. 3146
Faculty 1**, Published 1 Master's by dept. 3

Graduate Students: full-time 25; full-time first year 9, part-time 0

Fellowship (5)*** 5800-10000 9 Ph. D. (82/85) AM 12. Total: 12
Teaching Assistantship (15) 5800-6000 9 15 Teaching
Research Assistantship (3) 5800-8000 9 15 Research

*Fellowships: 1/15/86; assistantships: 2/15/86.
**Interdisciplinary program with 57 part-time members.
***In addition, some of 20 Mathematical Sciences Institute Fellowships are available for fourth and fifth year Ph.D. students in the mathematical sciences with stipends of about $14000.

COMPUTER SCIENCE

David Gries, Chairman

Applications due: 1/15/86 Bachelor's by inst. 3146
Faculty 23; Published 23 Bachelor's by dept. 80

Graduate Students: full-time 90; full-time first year 21; part-time 0 Master's by dept. 5

Fellowship (6) 12000 9 Ph. D. (82/85) CS 22. Total: 22
Teaching Assistantship (10) 5500-6000 9

MATHMATICS

Anil Nerode, Chairman

Applications due: 1/15/86 Bachelor's by inst. 3146
Faculty 43; Published 40 Bachelor's by dept. 41

Graduate Students: full-time 56; full-time first year 12; part-time 0 Master's by dept. 5

Fellowship (8) 6000-7500 9 Research Ph. D. (82/85) ANT 6, GT 4,
Teaching Assistantship (55) 5600-5850 9 15 Grading, teaching L 6, P 4, OR 3, AM 1. Total: 24
Graduate Research
Assistantship (5) 5600-5850 9 Research

Hofstra University, Hempstead 11550

MATHMATICS

Harold Hastings, Chairman

Applications due: 2/1/86 Bachelor's by inst. 1500
Faculty 18; Published 13 Bachelor's by dept. 20

Graduate Students: full-time 3; full-time first year 3; part-time 13

Fellowship (2-3) 3000 9 205/cr.
Teaching Assistantship (3) 3000-4000 9 205/cr.
Industrial Internship (3) 5000-6000 9 Waived

New York University, Courant Institute of Mathematical Sciences, New York 10012

COMPUTER SCIENCE

Cathleen S. Mortwetz, Director, Courant Institute

Applications due: 1/16/86 Bachelor's by inst. 1055
Faculty 25; Published 25 Bachelor's by dept. 146

Olof B. Widlund, Chairman, Computer Science Master's by dept. 81
Graduate Students: full-time 165; full-time first year 80; part-time 30

Fellowship (3) 11100-14000 12 Ph. D. (82/85) CS 12. Total: 12
Teaching Assistantship (12) 10000 9 500 Individual
Research Assistantship (7) 10000 9 500 Individual

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Department of Mathematics
HOFSTRA UNIVERSITY
HEMPSTEAD, NEW YORK 11550

Hofstra University is an equal educational opportunity institution.
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<td>Henry P. McKean, Chairman, Mathematics</td>
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<td>*Ten credit waiver.</td>
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Polytechnic Institute of New York, Brooklyn 11201

Rensselaer Polytechnic Institute, Troy 12180

State University College at Brockport 14420

State University College at Cortland 13077

State University of New York at Albany 12222

920
<table>
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<tr>
<th>Type of Assistance</th>
<th>Stipend</th>
<th>Fees</th>
<th>Service Required</th>
<th>Degrees Awarded</th>
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<td>Teaching Assistant</td>
<td>$6000-$8000</td>
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<td>Research Assistant</td>
<td>$5500-$7500</td>
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<td>Waived 15 Research</td>
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<td>Special Teaching Assistant</td>
<td>$900</td>
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<td>State University of New York at Stony Brook 11794</td>
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North Carolina

Appalachian State University, Boone 28608

MATHEMATICAL SCIENCES

Applications due: 5/1/86

H. William Paul, Chairman

Faculty 28; Published 4

Graduate Students: full-time 8; full-time first year 4; part-time 0

Teaching Assistantship (10)

3400–5100

9

740

10

Duke University, Durham 27706

COMPUTER SCIENCE

Applications due: 2/1/86

Donald J. Rose, Chairman

Faculty 22; Published 12

Graduate Students: full-time 7; part-time 2

Fellowship (3)

7650

9

Waived

Teaching Assistantship (2)

7650

9

Waived

Research Assistantship (4)

7650

9

Waived

MCNC (VLSQ) Fellowship (2)

12000

12

Waived

von Neumann Fellowship (1)

13800

12

Waived

MATHMATICS

Applications due: 2/1/86

William K. Allard, Chairman

Faculty 30; Published 24

Graduate Students: full-time 26; full-time first year 8; part-time 1

Teaching Fellowship (6)

13500–14500

9

5430

4h

Grading, teaching

Teaching Assistantship (16)

10330–13800

9

1960–5430

6h

Grading, teaching

Research Assistantship (4)

10330

9

1960

6h

Research

Department of Computer Science

Ray P. Hylan Building

Rochester, NY 14627

The Computer Science Department at the University of Rochester was established in 1974 with the goal of establishing a research-oriented department of the first rank at a compact scale. Today our department is young, energetic, and interested primarily in graduate education and research. We present the many advantages of a first rate department in a manageable and congenial setting. We are a recent recipient of an NSF Coordinated Experimental Research grant, and as part of our associated five-year plan we shall acquire a 128-node, M68000-based "Butterfly" multicomputer, a new building, and five new faculty. Our laboratory and workstation facilities are excellent: besides the new Butterfly, there is a network of SUNS, VAXen, Xerox Dandelions, three Symbolics Lisp machines and a 3-processor version of the Butterfly, as well as a professional staff to maintain software and hardware.

The Department has enjoyed good fortune in having various funding sources, and to date no student has ever gone without full-year funding for financial reasons. There is no undergraduate major or professional master's program, allowing faculty more time to devote to their advisees and to research. This close-knit relationship between our faculty and students is further enhanced by scientific and social exchanges with other departments.

The Finger Lakes area has four honest seasons and there are plenty of facilities to engage in sports and activities for any season. Rochester also has a surprisingly rich and concentrated cultural life, including a resident Philharmonic, several theatre companies, and museums.

922
East Carolina University, Greenville 27834

MATHEMATICS
Robert L. Bernhardt, Chairman

Applications due: 4/15/86
Faculty 40; Published 21
Graduate Students: full-time 12; full-time first year 2; part-time 0

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<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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*In-state: $764 per year; out-of-state: $3610 per year; special talent, out-of-state: $764 per year.
**Assist in Computer Center and Mathematics Lab.

Teaching Assistantship (20)         8600 9 810 20 Teaching, grading
Research Assistantship (5)          9400–10000 12 810 20 Research

North Carolina State University, Raleigh 27695

MATHEMATICS
E. E. Burniston, Head

Applications due: 4/1/86
Faculty 76; Published 46
Graduate Students: full-time 67; full-time first year 23; part-time 0
Teaching Assistantship (70)         6900–7500 9 810 20 Grading, teaching
Research Assistantship (9)          8000–10000 12 810 15–20 Research
Total: 4

STATISTICS
Daniel L. Solomon, Head

Applications due: 3/1/86
Faculty 35; Published 30
Graduate Students: full-time 68; full-time first year 12; part-time 0
Fellowship (3)                      7650 9 Ph. D. (82/85) ANT 2, AM 2.
Teaching Assistantship (20)         8600 9 810 20 Teaching, grading
Research Assistantship (5)          9400–10000 12 810 20 Research
Total: 26

GRADUATE STUDY IN MATHEMATICS AT DUKE

The Department of Mathematics of Duke University offers courses and thesis direction leading to the degrees of Master of Arts, Master of Science in Statistics and Computing, and Doctor of Philosophy. The Department and University offer fellowships, teaching assistantships, and research assistantships. There are 27 graduate faculty members representing many areas of mathematics, especially nonlinear partial differential equations and geometry. Excellent library facilities as well as office space are available in the mathematics building. For further information write to:

Professor Lawrence C. Moore
Director of Graduate Studies, Department of Mathematics
Duke University
Durham, North Carolina 27706

NORTH CAROLINA STATE UNIVERSITY

The Department of Mathematics offers flexible programs of study leading to M.S. and Ph.D. degrees in pure and applied mathematics. A graduate faculty of more than 50 represents a wide variety of research interests with strengths in abstract algebra, linear algebra, analysis, functional analysis, differential equations, applied mathematics, numerical analysis, control theory, biomathematics, topology, mathematical physics, category theory and geometric programming. The Department has close ties with several other departments on the campus; namely, Computer Science, Operations Research, Physics, Statistics and several engineering departments.

N. C. State is located in Raleigh, capital of North Carolina and one of the vertices of the Research Triangle. Cultural, scholastic, and recreational opportunities abound.

Teaching and research assistantships and scholarships are available. Summer support is also possible. For detailed information concerning the Department admission and degree requirements, and financial assistance together with application forms write to:

PROFESSOR JOHN FRANKE — Department of Mathematics — Box 8205
North Carolina State University — Raleigh, N. C. 27695-8205
The Department of Mathematics offers programs leading to the degrees Master of Arts, Master of Science, and Doctor of Philosophy. Faculty members are active in research especially in the fields of classical analysis, algebra, combinatorics, differential geometry, dynamical systems, algebraic topology, foliation theory, algebraic geometry, several complex variables, numerical analysis, and partial differential equations. Financial assistance is available and can be obtained by writing to address below. There is great flexibility in arranging the masters degree program to include course work in Operations Research and Systems Analysis, Statistics, Computer Science and other areas related to mathematical sciences.

Department of Mathematics
University of North Carolina at Chapel Hill
Chapel Hill, N.C. 27514

Equal Opportunity/Affirmative Action Employer.
Wake Forest University, Winston-Salem 27109

MATHMATICS AND COMPUTER SCIENCE  Faculty 16; Published 10
Marcellus E. Waddill, Chairman
Graduate Students: full-time 9; full-time first year 5; part-time 0

Fellowship (2-4) 8800 9 6000
Teaching Assistantship (2-4) 12250 9 6000 6
Scholarship (4) 6000 9 6000

Western Carolina University, Cullowhee 28723

MATHMATICS  Applications due: 3/15/86
Charles J. Martin, Head
Faculty 7; Published 6
Graduate Students: full-time 3; full-time first year 2; part-time 25

Teaching Assistantship (4) 4000 9 408.50/sem. 3

North Dakota

North Dakota State University, Fargo 58105

MATHMATICAL SCIENCES  Applications due: 3/15/86
Ronald M. Mathsen, Chairman
Faculty 35; Published 22
Graduate Students: full-time 97; full-time first year 40; part-time 14

Teaching Assistantship (15) 5400 9 100 20 Teaching
Research Assistantship (3) 5400 9 100 20 Research

Ohio

Bowling Green State University, Bowling Green 43403

APPLIED STATISTICS AND OPERATIONS RESEARCH  Faculty 14; Published 6
James A. Sullivan, Chair
Graduate Students: full-time 17; full-time first year 4; part-time 2

Teaching Assistantship (7-9) 3124–6249 9 10-20 Grading, teaching

Case Western Reserve University, Cleveland 44106

COMPUTER ENGINEERING SCIENCE  Applications due: 2/14/86
Harry Nara, Chairman
Faculty 12; Published 11
Graduate Students: full-time 81; full-time first year 16; part-time 35

Teaching Assistantship (5) 11475 9 5625 20 Grading

Cleveland State University, Cleveland 44115

MATHMATICS  Applications due: 9/1/86
Thomas W. Hungerford, Chairman
Faculty 27; Published 19
Graduate Students: full-time 3; full-time first year 3; part-time 12

Teaching Assistantship (2) 5190 9 Tutoring
John Carroll University, University Heights 44118

MATHMATICS
R. J. Kolesar, Chair
Applications due: 3/17/86*
Graduate Students: full-time 3; full-time first year 2; part-time 9

Teaching Assistantship (5) 4800
9 20 **

*Late applications accepted. **Tutoring and grading; teaching is possible.

Kent State University, Kent 44242

MATHEMATICAL SCIENCES
Olaf P. Stackelberg, Chairman
Applications due: 3/1/86
Graduate Students: full-time 45; full-time first year 14; part-time 0

Teaching Assistantship (24) 6500
9 490 18 Teaching, assisting
Summer Fellowship (24) 1000

Miami University, Oxford 45056

MATHEMATICS AND STATISTICS
David J. Lutzer, Chair
Applications due: 3/15/86
Graduate Students: full-time 24; full-time first year 14; part-time 0

Ohio State University, Columbus 43210

STATISTICS
Jagdish S. Rustagi, Chairman
Applications due: 4/1/86
Graduate Students: full-time 61; full-time first year 21; part-time 3

Fellowship (7) 5850
12

Teaching Assistantship (14) 5850
9 20

Ph. D. (82/85) S S. Total: 5

Ohio University, Athens 45701

MATHEMATICS
Shih-liang Wen, Chairman
Applications due: 3/1/86
Graduate Students: full-time 131; full-time first year 37; part-time 2

Teaching Assistantship (12) 5000-6500
9 500 15 Teaching
Scholarship (3) Tuition waiver
5

Ph. D. (82/85) AN 2, GT 1. Total: 3

University of Akron, Akron 44325

MATHEMATICAL SCIENCES
William H. Beyer, Head
Applications due: 3/1/86
Graduate Students: full-time 35; full-time first year 13; part-time 13

Teaching Assistantship (45) 4500
9 15-20 Teaching

University of Cincinnati, Cincinnati 45221

MATHEMATICAL SCIENCES
Charles W. Groetsch, Chairman
Applications due: 2/15/86
Graduate Students: full-time 64; full-time first year 26; part-time 4

Fellowship (3) 6000-8500
9 216

Teaching Fellowshio (2) 7000-8000
9 Teaching

Teaching Assistantship (3) 6000-7000
9 Teaching

Scholarship (14) 9 216

Ph. D. (82/85) AN 1, P 1, S 2, AM 4. Total: 8

QUANTITATIVE ANALYSIS AND INFORMATION SYSTEMS
James R. Evans, Head
Graduate Students: full-time 40; full-time first year 5; part-time 1

Teaching Assistantship (4) 3500
9 20 Teaching
Research Assistantship (9) 5500
9 2 Research

DEGREES AWARDED

Academic year 1984-1985

Bachelor's by inst. 432
Bachelor's by dept. 23
Master's by dept. 12

Ph. D. (82/85) ANT 2, AFA 4, Other 1. Total: 7

Bachelor's by inst. 2409
Bachelor's by dept. 64
Master's by dept. 13

Bachelor's by dept. 1

Bachelor's by dept. 15
Master's by dept. 3

Bachelor's by inst. 1343
Bachelor's by dept. 15
Master's by dept. 37

Ph. D. (82/85) AN 2, GT 1. Total: 3

Bachelor's by inst. 1875
Bachelor's by dept. 120
Master's by dept. 3

Bachelor's by inst. 2771
Bachelor's by dept. 34
Master's by dept. 16

Ph. D. (82/85) AN 1, P 1, S 2, AM 4. Total: 8

Bachelor's by inst. 2771
Bachelor's by dept. 15

Bachelor's by inst. 1986-1987
University of Dayton, Dayton 45469

MATHEMATICS

John W. McCloskey, Chairman

Applications due: 3/30/86

Graduate Students: full-time 4, full-time first year 2; part-time 6

Teaching Assistantship (5) 5200-5600 9 6
Research Assistantship (3) 5500-6000 9 20

University of Toledo, Toledo 43606

MATHEMATICS

Harvey Wolff, Chairman

Applications due: Open

Graduate Students: full-time 25; full-time first year 15; part-time 4

Teaching Assistantship (21) 5750-6500 9 240 4-6 Grading, teaching
Research Assistantship (2) 6500 9

Wright State University, Dayton 45435

MATHEMATICS AND STATISTICS

Edgar A. Rutter, Jr., Chair

Applications due: 4/1/86*

Graduate Students: full-time 10; full-time first year 8; part-time 15

Teaching Assistantship (3) 5400 9 16**

*Late applications accepted.
**Teaching and/or tutoring in supplemental instruction program.

UNIVERSITY OF CINCINNATI
Mathematics Graduate Program

Degree Programs: The department offers programs leading to the M.S., M.A.T., and Ph.D. degrees in a variety of areas. The Master's program is primarily intended to prepare students for employment as mathematicians in business, industry or government. Ph.D. candidates can choose from a variety of faculty research interest including algebra, complex analysis, dynamical systems, functional analysis, fuzzy set theory, mathematical ecology, numerical analysis, ordinary and partial differential equations, probability, statistics, and topology.

Financial Aid: Fellowship support of $6000–6500 + tuition remission and Teaching Assistantship support of $6000–7000 + tuition remission are available to qualified students.

A.J. Macintyre Teaching Fellowships: The department offers to outstanding new applicants two teaching fellowships. These awards carry a stipend of $7500–8000 + tuition remission and may be renewed for one year upon superior performance.

For more information contact: Professor J. Thomas King

Graduate Program Director
Department of Mathematical Sciences  #25
University of Cincinnati, Cincinnati, OH 45221
Youngstown State University, Youngstown 44555

MATHMATICAL AND COMPUTER SCIENCES
Richard L. Burden, Chairman

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Oklahoma State University, Stillwater 74078

MATHMATICS
William H. Jaco, Head

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STATISTICS
J. Leroy Folks, Head

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Graduate Mathematics at THE OHIO STATE UNIVERSITY

Graduate students enrolling at O.S.U. may choose from numerous options: a broad program of Ph.D. studies offering specialization in nearly all branches of contemporary mathematics, both pure and applied; M.S. studies in pure or applied mathematics (a dual degree program with Computer Science, and a concentration in Actuarial Science are available); or a mathematics-content M.A. program designed for high school teachers.

Successful applicants are invited to begin their studies at O.S.U. in June, 1986, with Summer Fellowship support including a stipend of $1775. Academic year financial support is available in the form of Fellowships and Teaching Associateships with stipends from $719 to $831 per month plus all tuition and fees. M.A. applicants may request double teaching assignments for double stipends. Summer support is also available for most continuing students.

Further information and application materials are available from:

Professor Phil Huneke, Vice Chairman, Department of Mathematics
THE OHIO STATE UNIVERSITY, Columbus, Ohio 43210

928
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<td>Stanley B. Eliason, Interim Chairman</td>
<td>Graduate Students: full-time 59; full-time first year 10; part-time 4</td>
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<td>Industry Intern (2) 3800-4100 9* 20 Research</td>
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*Some summer support is available.  

Oregon

Oregon State University, Corvallis 97331

COMPUTER SCIENCE
Walter G. Rudd, Chairman
Faculty 15; Published 10
Graduate Students: full-time 23; full-time first year 7; part-time 9

| Fellowship (2) | 10000 12 |
| Teaching Assistantship (6) | 4500-9000 9 12-20 |
| Research Assistantship (4) | 4500-9000 9 12-20 |

Ph. D. (82/85) CS 4. Total: 4

Oklahoma State University
Department of Mathematics

The Department has a growing number of faculty with specialists in most fields of contemporary mathematics. We are particularly strong in analysis, topology, number theory, and algebra.

**Pure Mathematics:** The Department offers both M.S. and Ph.D. programs.

**Applied Mathematics:** The Department cooperates with the Department of Computer Science and Statistics as well as with industry to offer both M.S. and Ph.D. programs in applied mathematics.

**Mathematics Education:** The Department cooperates with the College of Education to offer one of the strongest Ed.D. programs in the nation.

**Industrial Internships:** The option is available to earn graduate credit while getting on-the-job-training in industrial mathematics.

**Financial Aid:** The Department offers teaching assistantships, research assistantships, fellowships, grants, and fee waivers for the support of its graduate students.

For further information write:

Professor John Jobe  
Graduate Director  
Department of Mathematics  
Oklahoma State University  
Stillwater, Oklahoma 74078
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**MATHMATICS**

- **Philip M. Anselone, Chairman**

  - Teaching Assistantship (8-12) 5324-5896
  - Research Assistantship (9) 2508-7700

**STATISTICS**

- **G. David Faulkenberry, Chairman**

  - Teaching Assistantship (8) 2250-6000
  - Research Assistantship (9) 2500-7700

**Portland State University, Portland 97207**

**MATHEMATICAL SCIENCES**

- Eugene A. Enneking, Head

  - Teaching Assistantship (10) 4221-6174

**University of Oregon, Eugene 97403**

**COMPUTER AND INFORMATION SCIENCE**

- Eugene M. Luks, Head

  - Teaching Fellowship (10-12) 4794-5662
  - Research Assistantship (2) 4794-5662

**MATHMATICS**

- C. R. B. Wright, Head

  - Teaching Fellowship (15) 5565-6520

**Pennsylvania**

**Bucknell University, Lewisburg 17837**

**MATHMATICS**

- David S. Ray, Head

  - Fellowship (2) 925
  - Teaching Assistantship (5) 3000
  - Scholarship (5) 9

**OREGON STATE UNIVERSITY**

M. A., M. S. and Ph.D. in Mathematics

Courses of study for the Ph.D. and M. S. degrees are available in all of the principal branches of mathematics: algebra, analysis, applied mathematics, geometry, probability, and topology. In addition, there is a program in mathematics education leading to an M. A. or an M. S. degree with a teaching emphasis, and a career program featuring an occupational internship leading to an M. A. or M. S. for students planning government or industrial careers in mathematics.

Teaching Assistantships $5324—$6092 plus tuition remission.

For application materials write:

**Professor Wolfgang Smith**

Department of Mathematics

Oregon State University, Corvallis, OR 97331
Carnegie-Mellon University, Pittsburgh 15213

MATHEMATICS
George J. Fix, Head
Research Assistantship (10) 10200 12 Total: 24
Special Scholarship (5) 10200 9

STATISTICS
John P. Lehoczky, Head
Teaching Assistantship (20) 5850–7800 9 12 Grading, teaching Ph. D. (82/85) S 15. Total: 15
Research Assistantship (8) 5850–7800 9 12 Research
Scholarship (1) 13100 12

Drexel University, Philadelphia 19104

MATHEMATICS AND COMPUTER SCIENCE
Loren N. Argabright, Head
Teaching Assistantship (18) 5000–6000 9 Waived 6* Ph. D. (82/85) P 2, AM 1.
Research Assistantship (2) 5000–6000 9 Waived 20 Total: 3

Pennsylvania State University, University Park 16802

COMPUTER SCIENCE
Joseph M. Lambert, Head
Fellowship (2) 6760–7220 9 Research Ph. D. (82/85) CS 2. Total: 2
Teaching Assistantship (20–25) 6760–7220 9 20 Grading, teaching
Research Assistantship (2) 8890–9488 12 20 Research

MATHEMATICS
Richard Herman, Chairman
Fellowship (3) 7220 9 Grading, teaching Ph. D. (82/85) ANT 7, AFA 3, GT 2, L 3, P 1, AM 3. Total: 19
Teaching Assistantship (20) 6760–7220 9 20

STATISTICS
William L. Harkness, Head
Fellowship (1) 4500–7200 9 Ph. D. (82/85) S 6. Total: 6
Teaching Assistantship (11) 6300–7000 9 12–15
Research Assistantship (2) 6800–7500 9 20

*Six hours for those teaching, per academic year.

THE UNIVERSITY OF OREGON
Graduate Programs. The Department of Mathematics offers established programs leading to the M.S. and Ph.D. degrees in pure and applied mathematics, numerical analysis, mathematical statistics, and mathematics education.

Graduate classes are small and there is a tradition of personal contacts among faculty and students. Facilities include nearby computing services and a mathematics library housed adjacent to the offices.

Graduate Teaching Fellowships involve 4 contact hours per week, leaving time for carrying a full graduate program. Students find the cost of living in Eugene to be moderate and have access to ocean and mountain recreation areas a short distance away.

For further information and application materials write or telephone:
Charles R.B. Wright, Head, Department of Mathematics University of Oregon, Eugene, Oregon 97403 Phone (503) 686-4705

The University of Oregon is an Equal Employment/Affirmative Action Employer.
<table>
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<th>TYPE OF ASSISTANCE</th>
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<td>William Wei, Chairman</td>
<td>Applications due: 3/15/86</td>
<td>Faculty 24; Published 20</td>
<td>Graduate Students: full-time 22; full-time first year 9; part-time 23</td>
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<td>Stephen S. Schwartz, Chairman</td>
<td>Applications due: 2/15/86</td>
<td>Faculty 34; Published 30</td>
<td>Graduate Students: full-time 41; full-time first year 12; part-time 0</td>
<td>Bachelor's by inst. 2000</td>
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<td>Fellowship (12)</td>
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<td>Graduate Students: full-time 18; full-time first year 4; part-time –</td>
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<td>David K. Hildebrand, Chairman</td>
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<td><strong>COMPUTER SCIENCE</strong></td>
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<td>Applications due: 3/1/86</td>
<td>Faculty 16; Published 13</td>
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<td>Faculty 45; Published 42</td>
<td>Graduate Students: full-time 93; full-time first year 28; part-time 29</td>
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**TEMPLE UNIVERSITY**

ARE YOU LOOKING FOR:
- A department of over 40 members, actively involved in research in Pure and Applied Mathematics?
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- Stimulating seminars and colloquia?
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IF SO: The Mathematics Department of Temple University may be the place for you. For more information about the M.A. and Ph.D. programs in pure and applied mathematics that we offer, write: Graduate Chairman, Box N, Department of Mathematics 038-16, Temple University, Philadelphia, Pa. 19122
Villanova University, Villanova 19085

GRADUATE COMPUTER SCIENCE
Don Goelman, Director
Applications due: 3/15/86
Faculty 10; Published 2
Graduate Students: full-time 50; full-time first year 25; part-time 375
Research Assistantship (5) 5600 9 20 Grading, research
Tuition Waiver (4) 9 7 Grading, research

MATHEMATICAL SCIENCES
Frederick W. Hartmann, Chairperson
Applications due: 3/15/86
Faculty 47; Published 10
Graduate Students: full-time 5; full-time first year 3; part-time 60
Teaching Assistantship (8) 5600 9 3 Teaching

Rhode Island

Brown University, Providence 02912

APPLIED MATHEMATICS
Donald E. McClure, Chairman
Applications due: 1/2/86
Faculty 24; Published 24
Graduate Students: full-time 52; full-time first year 11; part-time 1
Fellowship (8) 6000 9
Teaching Assistantship (2) 6000 9 20 Teaching
Research Assistantship (2) 6000 9 20 Research
Title IX (1) 6000 9
Proctorship (1) 6000 9

University of Pittsburgh
GRADUATE PROGRAMS

M.A., M.S., PH.D.
Classical, Modern Analysis
Combinatorics and Algebra
Differential Equations
Fluid Dynamics
Geometry and Topology
Logic and Set Theory
Multivariate Analysis
Numerical Analysis
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Scientific Computing

For Information Write To:
Director of Graduate Admissions
Department of Mathematics and Statistics
University of Pittsburgh
Pittsburgh, PA 15260
or Telephone (Collect): (412) 624-5846

933
TYPE OF ASSISTANCE  |  STIPEND  |  FEES  |  SERVICE REQUIRED  |  DEGREES AWARDED  
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<td>paid by student ($)</td>
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**MATHEMATICS**

**Applications due:** 1/2/86

- Fellowship (16) 5600–6000 9
- Teaching Assistantship (12) 2800–5600 9 4 Teaching

**Rhode Island College, Providence 02908**

**MATHEMATICS AND COMPUTER SCIENCE**

- Faculty 22; Published 11
- Graduate Students: full-time 2; full-time first year 0; part-time 11

**Teaching Assistantship (2) 4000 9 20 *

*Three hours per week in-class teaching, seven hours per week preparing and 10 hours per week tutoring.

**University of Rhode Island, Kingston 02881**

**MATHEMATICS**

- Applications due: Open
- Faculty 22; Published 11
- Graduate Students: full-time 18; full-time first year 7; part-time 15

**Teaching Assistantship (2) 4000 9 3-6**

**South Carolina**

**Clemson University, Clemson 29634**

**COMPUTER SCIENCE**

- Applications due: 3/1/86
- Faculty 21; Published 15

**Teaching Assistantship (28) 8000–8600 12 600 20 Teaching**

**Mathematical Sciences**

- Applications due: 2/1/86
- Faculty 45; Published 35

**Teaching Assistantship (8) 9100 12 30/hr. 20 Research**

**University of South Carolina, Columbia 29210**

**MATHEMATICS**

- Applications due: 3/31/86
- Faculty 36; Published 30

**Teaching Assistantship (15–20) 8200–9500 12 450 3-5 Teaching**

**South Dakota**

**South Dakota School of Mines and Technology, Rapid City 57701**

**MATHEMATICS AND COMPUTER SCIENCE**

- Applications due: 3/1/86
- Faculty 14; Published 6

**Teaching Assistantship (15) 1000–4600 9 15.35/cr.hr. 14 Teaching**
South Dakota State University, Brookings 57007

MATHMATICS
Kenneth L. Yocom, Head
Applications due: 4/15/86
Graduate Students: full-time 7; full-time first year 3; part-time 2
Teaching Assistantship (3)

Teaching Assistantship (3) 2500-5100 9 16/cr.hr. 3–5 Teaching

University of South Dakota, Vermillion 57069

MATHEMATICAL SCIENCES
Alexander Mehaffey, Jr., Chairman
Applications due: 2/15/86
Graduate Students: full-time 5; full-time first year 2; part-time -
Teaching Assistantship (1–2)

Teaching Assistantship (1–2) 3050 9 * 16 Teaching
*Resident: $46 per hour; nonresident: $89 per hour; fees: $90. Teaching assistants pay one-third in-state tuition.

Tennessee

Memphis State University, Memphis 38152

MATHEMATICAL SCIENCES
R. J. Faudree, Chairman
Applications due: 4/1/86
Graduate Students: full-time 40; full-time first year 9; part-time 67
Teaching Assistantship (11)

Teaching Assistantship (11) 6372-8172 9 54/sem. hr. 20 Teaching, grading

UNIVERSITY OF SOUTH CAROLINA
DEPARTMENT OF MATHEMATICS AND STATISTICS

The Department offers programs of study leading to the M.S., M.A., and Ph.D. degrees in Mathematics and the M.S. and Ph.D. degrees in Statistics. In addition, there are two teaching-oriented nonthesis degrees — the Master of Mathematics and Master of Arts in Teaching.

Students may specialize in pure or applied mathematics. Specific areas of specialization in pure mathematics include algebra, analysis, differential geometry, discrete mathematics, logic, number theory and topology. Specialization in applied mathematics is offered in approximation theory, differential equations and numerical analysis. Students in applied mathematics are encouraged to undertake study in a cognate discipline to which their specialization is directly applicable.

The broad spectrum of advanced study is supported by excellent library holdings and computing facilities within the department.

FINANCIAL AID

The primary source of financial aid is the graduate assistantship. The Department offers teaching assistantships, grading assistantships, and service assistantships with the computing and statistics laboratories. In addition, a number of research assistantships are available through faculty grants. Full-time teaching assistantships typically require 3–5 contact hours per week and carry a stipend of $7000 to $7500 for the academic year. In addition, graduate assistants receive a substantial reduction in tuition and fees. Summer stipends range from $1200 to $2000, for those who desire summer support.

For further information and application materials, contact the Director of Graduate Studies, Department of Mathematics, University of South Carolina, Columbia, South Carolina 29208.
<table>
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<td>4676-4722</td>
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<td>full-time 18; full-time first year 10; part-time 10</td>
<td>Bachelor's by inst. 1018</td>
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<td>Bachelor's by dept. 58</td>
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<td>full-time 8; full-time first year 3; part-time 8</td>
<td>Master's by dept. 4</td>
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**Middle Tennessee State University, Murfreesboro 37132**

**MATHMATICS AND COMPUTER SCIENCE**

Applications due: 4/30/86

Graduate Students: full-time 18; full-time first year 10; part-time 10

*Later applications accepted if not filled.*

**Tennessee Technological University, Cookeville 38505**

**MATHMATICS AND COMPUTER SCIENCE**

Applications due: 5/1/86

Graduate Students: full-time 7; full-time first year 5; part-time 0

**University of Tennessee, Knoxville 37996**

**MATHMATICS**

Applications due: 3/1/86

Graduate Students: full-time 57; full-time first year 12; part-time 5

**STATISTICS**

Applications due: 2/15/86

Graduate Students: full-time 8; full-time first year 3; part-time 8

---

**UNIVERSITY OF TENNESSEE, KNOXVILLE **** GRADUATE STUDY IN APPLIED AND PURE MATHEMATICS**

**PROGRAMS OF STUDY.** The Department of Mathematics offers N.S., M.M., and Ph.D. degrees in a wide variety of areas. Broadly based programs are encouraged. Thesis and non-thesis options are available to M.S. candidates. The department is energetically engaged in research. Currently, it has 46 faculty and regularly hosts visiting faculty. Major fields of research include algebra and number theory, analysis (classical, functional, harmonic), applied mathematics, mathematical ecology, matrix theory, numerical analysis (linear algebra, ordinary and partial differential equations), integral, ordinary and partial differential equations, probability and statistics, geometric topology, transformation groups, and topological algebra. Faculty and students are currently engaged in joint work in computer science, ecology, management science, education, electrical and nuclear engineering, and engineering mechanics. The Department maintains close contact with Oak Ridge National Laboratory and the Tennessee Valley Authority.

**FINANCIAL AID.** The department is offering to one or two outstanding candidates the Dryzer Teaching Fellowship, which carries support of about $10,592 to $13,664, including tuition remission, and a reduced teaching load; the net stipend for a recipient is $9,000. Regular Teaching Assistantship support, ranging from about $8,592 to $12,364, including remitted tuition, is available to qualified students; the net stipend to students range from $7,000 to $7,900. Because of its involvement in a state-funded Center of Excellence program at UT, the Department expects to have at least three Science Alliance Associateships with support ranging from about $11,592 to $15,364, including remitted tuition; the net stipend to recipients range from $10,000 to $10,900. For all awards, continuation of support, including assistantship and remitted tuition, is normal for students making satisfactory progress in their academic and teaching programs. Teaching Assistants who wish to do so are able to teach a course during the summer for an additional stipend of at least $1,200. Other support, in the form of Research Assistantships through departmental grants or from the Oak Ridge National Laboratory, is often available.

**ENVIRONMENT.** The University of Tennessee, Knoxville, is located along the Tennessee River with the Cumberland Mountains to the north, the Cumberland Plateau to the west and southwest, and the Great Smoky Mountains to the east and southeast. Many lakes, national forests and wilderness areas are nearby. Places to fish, water ski, canoe, sail, hike, rock climb, backpack, camp, and go caving or whitewater rafting are numerous. Snow skiing is available at several sites within three hours driving time. University-affiliated clubs participate in many of these activities.

The population of the city of Knoxville is 175,045; the metropolitan area contains a population of 571,917. For January the average low temperature is 32°F. For July the average low is 88°F. University housing on or near campus is available for both single and married students. Bus service is available.

**FOR INFORMATION, write to:** Dr. John S. Bradley, Head, Department of Mathematics, University of Tennessee, Knoxville, Tennessee 37996-1300.
Vanderbilt University, Nashville 37235

COMPUTER SCIENCE
Patrick C. Fischer, Chairman

Applications due: 2/1/86
Faculty 10; Published 8
Graduate Students: full-time 31, full-time first year 12; part-time 4

Fellowship (2) 7650–8100 9
Teaching Fellowship (8) 8100–9000 9 20 Teaching
Teaching Assistantship (12) 6750–7650 9 16 Grading
Research Assistantship (5) 7650–10200 9–12 16–20 Research
Scholarship (4) 1500–7000 12

MATHMATICS
Richard R. Goldberg, Chairman

Applications due: 2/1/86
Faculty 27; Published 21
Graduate Students: full-time 21; full-time first year 10; part-time 3

Teaching Fellowship (22) 7000* 9 Waived 4–5 Teaching
H. S. Vanderbilt Scholarship (2) 9500* 9 Waived 4–5 Teaching


Texas

Baylor University, Waco 76798

MATHMATICS
Howard L. Rolf, Chairman

Applications due: Open
Faculty 21; Published 12
Graduate Students: full-time 17; full-time first year 13; part-time 6

Teaching Assistantship (4) 6000–8000 9 25 3 Teaching
Scholarship (2) 5000 9 300 6

East Texas State University, Commerce 75428

MATHMATICS
Dale R. Bedgood, Head

Applications due: 4/1/86
Faculty 13; Published 4
Graduate Students: full-time 17; full-time first year 13; part-time 24

Teaching Fellowship (5) 5000 9 300 6
Scholarship (2) 5000 9 300 6

North Texas State University, Denton 76203

MATHMATICS (Ad on p. 938)
John Ed Allen, Chairman

Applications due: 5/15/86
Faculty 21; Published 17
Graduate Students: full-time 60; full-time first year 14; part-time 6

Teaching Fellowship (44) 6400–10800 9 556 6–9 Teaching

Rice University, Houston 77251

MATHMATICS
William A. Veech, Chairman

Applications due: 3/1/86
Faculty 16; Published 16
Graduate Students: full-time 15; full-time first year 6; part-time 0

Teaching Fellowship (3–5) 7000–10000 9 150 Variable

Ph. D. (82/85) AFA 2, GT 2. Total: 4

Southern Methodist University, Dallas 75275

MATHMATICS
George W. Reddien, Chairman

Applications due: 7/15/86
Faculty 12; Published 12
Graduate Students: full-time 25; full-time first year 13; part-time 3

Teaching Fellowship (6) 6300–8750 9 10
Dean's Award (1) 8300–8750 9 10

Ph. D. (82/85) S 12. Total: 12
TEACHING FELLOW STIPENDS FOR 1986–87
WILL RANGE FROM $6,400 TO $10,800

The University: North Texas State University is located in Denton, Texas, a city of 50,000 residents just 35 miles north of the Dallas-Fort Worth metropolis and about 25 miles north of the D/FW Airport. The North Central Texas climate is mild and the University’s location offers many cultural, recreational, and economic opportunities to students. The University enrolls more than 21,000 students with nearly one-third of these engaged in graduate study. Our school of Music is the second largest in the country.

The Mathematics Library: The University maintains one of the nation’s finest library collections in the mathematical sciences with more than 17,000 volumes. The library currently subscribes to 554 mathematics journals, has 388 complete runs, and 729 journal titles represented.

The Department: The Department offers programs of instruction and research leading to the Master of Arts, Master of Science and Doctor of Philosophy degrees. It is one of only a very few departments in the world which furnishes a research and an educational experience for its students in the “Texas Tradition”, a method of learning and doing mathematics used by Professor R. L. Moore and H. S. Wall of the University of Texas. This method is widely used by our faculty along with a variety of other techniques which enable the students to have excellent research and educational training in mathematics. The department has 21 faculty members and 44 teaching fellow positions. There are approximately 60 graduate students in mathematics. We have been fortunate to have as our guests in recent years S. Kakutani, Stan Ulam, Paul Erdös, W. Zelazko, D. Cenzer, S. Graf, and Gian-Carlo Rota.

Financial Assistance: Teaching fellow stipends are $1800 per class for students with a master’s degree and $1600 per class for students with a Baccalaureate degree in mathematics. A class generally has 30–40 students and most graduate students teach two and some teach three classes each semester. Out-of-state fees are waived for teaching fellows and spouses.

Write for additional information and application forms.

Dr. John Ed Allen, Chairman
Department of Mathematics
North Texas State University
Denton, Texas 76203

EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER
Stephen F. Austin State University, Nacogdoches 75962

MATHMATICS AND STATISTICS
T. A. Atchison, Chairman

Applications due: 4/1/86*
Faculty 20; Published 5
Graduate Students: full-time 17; full-time first year 6; part-time 5

Teaching Assistantship (10) 4725 9 500 6 Teaching

*Late applications will be considered.

Texas A&M University, College Station 77843

MATHMATICS (Ad on p. 940)
H. E. Lacey, Head

Applications due: 3/1/86*
Faculty 61; Published 58
Graduate Students: full-time 38; full-time first year 12; part-time 5

Minority Merit Fellowship (18) 8100 12 700
University-wide Fellowship (15) 9000-9600 12 700
Teaching Assistantship (30) 9000-12000 12 700 20 Teaching
Assistant Lecturer (9) 9450-15000 10.5 700 20 Teaching

*First round offers.

STATISTICS
W. B. Smith, Head

Applications due: Open
Faculty 16; Published 15
Graduate Students: full-time 8; full-time first year 12; part-time 0

Teaching Fellowship (13) 5625-6030 9* 700 20 Teaching
Teaching Assistantship (4) 5625-11050 9* 700 20-30 Research
Graduate Assistantship Nonteaching (8) 5625-5967 9* 700 20 Teaching related

*Summer support available.

Texas Tech University, Lubbock 79409

MATHMATICS (Ad on p. 941)
John T. White, Chair

Applications due: 4/15/86 Master's by dept. 9
Faculty 47; Published 39
Graduate Students: full-time 60; full-time first year 14; part-time 12

Teaching Assistantship (54) 6650-7150 9 150 6 Teaching
Research Assistantship (5) 6650-7150 9 150 Research
Scholarship (1) 7250-7450 9 150 6

Ph. D. (82/85) S 1, AM 2. Total: 6

University of Houston–University Park, Houston 77004

MATHMATICS
Garret J. Etgen, Chairman

Applications due: 2/15/86* Bachelor's by dept. 2521
Faculty 47; Published 36
Graduate Students: full-time 39; full-time first year 8; part-time 41

Teaching Fellowship (15) 6200-7004 9 625 6 Teaching
Teaching Assistantship (7) 600-650/mo. 9 ** 20 Teaching, grading
Instructorship (3) 8000-12000 9 ** 7.5 Teaching

*$625 or less.

University of Texas at Arlington 76019

MATHMATICS
V. Lakshmikantham, Chairman

Applications due: 4/15/86 Bachelor's by dept. 2558
Faculty 36; Published 24
Graduate Students: full-time 40; full-time first year 10; part-time 17

Teaching Assistantship (45) 6300 9 20 Teaching, grading, research

Ph. D. (82/85) AFA 4, S 2, Other 6. Total: 12

939
Graduate Studies

The Department of Mathematics offers graduate studies leading to the M.S. and Ph.D. degrees in mathematics. Graduate students in mathematics can design their programs from a diverse set of courses in the following areas: algebra, applied analysis, functional analysis, mathematical physics, probability, and topology.

The Department of Mathematics has strong research groups in approximation theory, functional analysis, and probability theory. The recruitment of new faculty during the last five years has resulted in a significant upgrading of the research programs in these areas. Special augmentation stipends for graduate students of exceptional promise are available for students pursuing research in these areas.

The University has recently created within the Department the Center for Approximation Theory. The Center has become a focal point for research in approximation theory in this country, and, as such, is attracting many researchers from around the world. The Center provides unique opportunities for graduate students who are interested in approximation theory.

Financial Aid

Financial assistance is available on a competitive basis to all qualified applicants in the form of Graduate Assistantships awarded by the Department. Current stipends range from $750 to $1000 per month and are usually awarded for a 12 month period. Preference for Assistantships is given to those who complete their applications by March 1, 1986.

In addition, University fellowships are available on a competitive basis to highly qualified applicants. Individuals who wish to be considered for fellowships should have their applications completed by February 1, 1986.

Most advanced graduate students are supported as Assistant Lecturers with stipends ranging from $900 to $1030 per month for half-time appointments.

For additional information, address inquiries to:

Chairman, Graduate Studies Committee
Department of Mathematics
Texas A&M University
College Station, Texas 77843-3368
Texas Tech University - Graduate Study in Mathematics and Statistics

The University: Texas Tech University is located in Lubbock, Texas, a city of 200,000. Lubbock is in the South Plains of West Texas at an altitude of 3,250 feet. Dry, crisp air and sunny days throughout practically the entire year provide a healthful and invigorating climate. Texas Tech University is a multipurpose university and offers graduate work in most areas. A School of Medicine and a School of Law are housed on campus. Since 1952, approximately 1,600 doctorates have been awarded. The university enrolls 23,500 students with 3,200 graduate students.

The Department: The department offers graduate study in a broad range of areas, including applied mathematics, probability and statistics, analysis, algebra and topology leading to the M.S. and Ph.D. degrees. A special M.S. degree with emphasis in computer science and a M.A. degree designed for pre-college teachers are also offered.

The department has 47 faculty members and 54 supported teaching assistants. Active research is carried out in such areas as solar power, pattern recognition and video tracking, flow in porous media, three-dimensional seismic interpretation, wave propagation, transport theory, numerical analysis, nonlinear systems and control theory, coding theory, several complex variables, statistics, topology, partial differential equations, geometric function theory, recursive function theory, and theoretical computer science. Sixty-eight Ph.D.'s have been awarded by the department since 1967.

Financial Aid: Teaching assistant stipends for the academic year 1986-87 are expected to range from $6650-$7350. Summer support is usually available for those who want it. The State of Texas pays most of the employee's share of social security. Out-of-State tuition is waived for teaching assistants; the cost of tuition and fees is approximately $150 per semester.

Contact:

Dr. T. G. McLaughlin, Graduate Advisor
Department of Mathematics
Texas Tech University
Lubbock, Texas 79409.

The University of Texas at Austin

Dodd Teaching Fellowship

Several Dodd Teaching Fellowships are available each year to graduate students new to UT Austin. They are renewable for one year upon (expected) superior performance. The stipend will be $9,500 for nine months beginning in September 1986; tuition is low but will not be waived. In addition to the large stipend, teaching duties are reduced compared to those of a standard teaching assistantship.

For further information and application materials write to:

Graduate Student Selection Committee
Mathematics Department
The University of Texas
Austin, Texas 78712
<table>
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<tr>
<th>University of Texas at El Paso 79968</th>
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<td><strong>MATHEMATICAL SCIENCES</strong></td>
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<tr>
<td>Eugene F. Schuster, Chairman</td>
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<tr>
<td>Applications due: 4/15/86</td>
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<tr>
<td>Faculty 27; Published 11</td>
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<td>Graduate Students: full-time 15; full-time first year 5; part-time 5</td>
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<td>paid to student dollars months</td>
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<tr>
<td>5200-6000 9 465 20 Grading, teaching, research</td>
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<td>Stanley G. Waymouth, Division Director</td>
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<td>8000–8450 9 320* 10-20 Teaching, grading, research</td>
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<td>T. Benny Rushing, Chairman</td>
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<td>Donald V. Sisson, Head</td>
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Virginia

College of William and Mary, Williamsburg 23185

MATHEMATICS

John H. Drew, Chairman
Applications due: 4/1/86
Faculty 13; Published 5
Graduate Students: full-time 6; full-time first year 3; part-time 6

Teaching Assistantship (2) 4600 9 10 Grading

James Madison University, Harrisonburg 22807

MATHEMATICS AND COMPUTER SCIENCE

Diane M. Spresser, Head
Applications due: 4/30/86
Faculty 28; Published 13
Graduate Students: full-time 3; full-time first year 1; part-time 1

Teaching Assistantship (5) 4000 9 6 Teaching

Old Dominion University, Norfolk 23508

MATHEMATICS (Ad on p. 944)

John Tweed, Chairman
Applications due: 5/1/86
Faculty 24; Published 16
Graduate Students: full-time 20; full-time first year 10; part-time 20

Fellowship (7) 5000-7000 9
Teaching Assistantship (20) 5000-7000 9 20 Teaching, grading
Research Assistantship (3) 5000-10000 9 20 Research
Summer Teaching/Research (10) 2000

Utah State University
Graduate Program in Mathematics

The mathematics department offers flexible programs of study leading to the Master's and Doctor of Philosophy degrees. The PhD program in mathematical sciences features the following options:

Traditional Mathematics Option
The Department offers graduate study in areas including applied mathematics, differential equations, numerical analysis, analysis, optimization, topology, geometry, matrix theory, algebra, and probability.

Interdisciplinary Mathematics Option
This program offers a flexible course of study which combines mathematics with an area of application.

College Teaching Option
This program trains teachers for two and four-year colleges. The student obtains a broad background in advanced mathematics, together with experience in teaching undergraduate mathematics.

Teaching assistantships are readily available for interested and qualified students. Assistantships will range from $7500-$8500.

Utah State University is located in Logan, a city of about 30,000 residents. Logan is about 80 miles north of Salt Lake City in the picturesque Wasatch Mountain Range. The University's location offers many recreational and cultural opportunities to students. There are about 12,000 students including about 2500 full-time graduate students.

For more information on the graduate programs and faculty research interests, contact the:

Graduate Recruitment Chairman
Department of Mathematics
Utah State University
Logan, Utah 84322-4125
(801) 750-2809
University of Virginia, Charlottesville 22903

APPLIED MATHEMATICS

Applications due: 2/1/86

Faculty 11; Published 8

Graduate Students: full-time 21, full-time first year 9; part-time 3

Teaching Fellowship (2) 7500–8500 9 10
Teaching Assistantship (6–8) 7800–8700 9 0–2000 20
Research Assistantship (8–10) 7900 9 0–2000 20

*For initial round of offers.

Virginia Commonwealth University, Richmond 23284

MATHEMATICAL SCIENCES

Applications due: 7/1/86

Faculty 35; Published 26

Graduate Students: full-time 18; full-time first year 9; part-time 27

Teaching Assistantship (7) 6500–8000 9 450 6 Teaching
Research Assistantship (5) 6500–8000 9 450 12–15 Consulting, research
Summer Support (8) 1200–2400

THE DEPARTMENT OF MATHEMATICAL SCIENCES
OLD DOMINION UNIVERSITY

offers M.S. and Ph.D. programs in COMPUTATIONAL AND APPLIED MATHEMATICS. Emphasis areas include analytical and computational methods, numerical analysis, statistics, modeling, and applications (atmospheric sciences, oceanography, fluid and solid mechanics, ecosystem studies, economics and operations research).

ODU is a public, state-supported institution located in Norfolk, VA, heart of the historic Tidewater region. Scientific facilities of the region include the NASA-Langley Research Center, the Institute for Computer Applications in Science and Engineering (ICASE), and the Atlantic Marine Center of the National Oceanographic and Atmospheric Administration (NOAA).

Financial aid is available in the form of research and teaching assistantships and fellowships with stipends up to $10,000 per academic year.

Further information and application forms may be obtained by writing to:

GRADUATE PROGRAM DIRECTOR — Department of Mathematical Sciences
Old Dominion University — Norfolk, VA 23508

UNIVERSITY OF VIRGINIA

GRADUATE STUDIES IN APPLIED MATHEMATICS

The Department of Applied Mathematics offers masters and Ph.D. degrees in Applied Mathematics. The research strengths in the department are in the areas of scientific computing and numerical analysis with particular emphasis on the use of supercomputers, in theoretical and computational fluid and solid mechanics, and in control theory. The Department has a close association with Computer Science and the location of the Department within the School of Engineering and Applied Science allows for programs of study which combine courses in Applied Mathematics with courses in Computer Science and in Engineering. Research and teaching assistantships are available, with possible tuition fellowships. For information write:

Department of Applied Mathematics
University of Virginia, Thornton Hall, Charlottesville, VA 22903
Virginia Commonwealth University, Medical College of Virginia, Richmond 23298

BIOSCIENCE

Applications due: 4/1/86
Stipend Fees paid to student paid by student ($)
Service Required: (number anticipated 1986-1987)

Teaching Fellowship (2)
5417 9 20
Ph. D. (82/85) S 5. Total: 5

Research Assistantship (2)
5417 9 20

Virginia Polytechnic Institute and State University, Blacksburg 24061

MATHEMATICS

Applications due: 3/15/86
C. Wayne Patty, Head
Graduate Students: full-time 70; full-time first year 24; part-time 0

Teaching Assistantship (20)
7110-7695 9 0-2187 20
Ph. D. (82/85) ANT 3, AFA 3,

STATISTICS

Applications due: 1/31/86
Klaus Hinkelmann, Head
Graduate Students: full-time 47; full-time first year 18; part-time 0

Teaching Assistantship (29)
6975-7560 9 * 20 Teaching, consulting
Research Assistantship (5)
6975-7560 9 * 20 Research, consulting

Washington

University of Washington, Seattle 98195

APPLIED MATHEMATICS

Applications due: 2/1/86
Frederic Y. M. Wan, Chairman
Graduate Students: full-time 34; full-time first year 9; part-time 7

Fellowship*
7000 9 94
Teaching Assistantship*
6228-7182 9 94 20 Grading
Research Assistantship*
6228-7182 9 94 20 Research

MATHEMATICS

Applications due: 2/15/86
Robert B. Warfield, Chairman
Graduate Students: full-time 77; full-time first year 21; part-time 5

Fellowship (1)
2500 3 94 Research
Teaching Fellowship (1)
6228 9 282 10 Teaching
Teaching Assistantship (60)
6228-7182 9 282 20* Teaching
Research Assistantship (3)
6228-7182 9 282 Research

UNIVERSITY OF VIRGINIA

Graduate Studies in Mathematics

The Department of Mathematics offers Masters and Ph.D. programs. There are particular strengths in algebra, analysis, and topology which support research activity in a broad range of fields. These include—mathematical physics, statistics, probability and stochastic processes, ergodic theory, function theory, harmonic analysis, operator theory, special functions, commutative algebra, finite and algebraic groups, coding theory, Jordan and Lie algebras, algebraic K-theory, algebraic topology, and topology of manifolds.

A variety of financial aid arrangements are available including fellowships and teaching assistantships. For information write:

Department of Mathematics
Mathematics/Astronomy Building
Charlottesville, Virginia 22903

4 to 6 hours in class, plus office hours and preparation time.
<table>
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<th>TYPE OF ASSISTANCE</th>
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<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<td>Bachelor's by dept. 50</td>
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<td>Mathematics</td>
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<td>Michael J. Kallaher, Chairman</td>
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**Washington State University, Pullman 99164**

**Computer Science**  
Robert E. Lord, Chairman  
Applications due: 3/1/86  
Faculty: 12; Published: 12  
Graduate Students: full-time 50; full-time first year 20; part-time 5

**West Virginia**

**Marshall University, Huntington 25701**

**Mathematics**  
C. V. Preece, Chairman  
Applications due: 4/15/86  
Faculty: 16; Published: 5  
Graduate Students: full-time 5; full-time first year 0; part-time 2

**West Virginia University, Morgantown 26506**

**Mathematics**  
Alphonse Baartmans, Chairman  
Applications due: 3/15/86  
Faculty: 31; Published: 22  
Graduate Students: full-time 24; full-time first year 12; part-time 5

**Wisconsin**

**Marquette University, Milwaukee 53233**

**Mathematics, Statistics and Computer Science**  
Douglas Harris, Chairman  
Applications due: 2/15/86  
Faculty: 29; Published: 18  
Graduate Students: full-time 28; full-time first year 18; part-time 15

**University of Wisconsin-–Eau Claire 54701**

**Mathematics**  
Marshall E. Wick, Chairman  
Applications due: 3/1/86  
Faculty: 40; Published: 2  
Graduate Students: full-time 1; full-time first year 1; part-time 7

**University of Wisconsin, Madison 53706**

**Mathematics**  
Thomas G. Kurtz, Chairman  
Applications due: 1/15/86  
Faculty: 76; Published: 69  
Graduate Students: full-time 147; full-time first year 48; part-time 51

**University of Wisconsin, Madison 53706**

**Mathematics**  
Thomas G. Kurtz, Chairman  
Applications due: 1/15/86  
Faculty: 76; Published: 69  
Graduate Students: full-time 147; full-time first year 48; part-time 51

**Fellowship (1 or 2)** | 500 | 9 | 1080 | 20 |
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**University of Wisconsin, Madison 53706**

**Mathematics**  
Thomas G. Kurtz, Chairman  
Applications due: 1/15/86  
Faculty: 76; Published: 69  
Graduate Students: full-time 147; full-time first year 48; part-time 51

**Fellowship (13)** | 10863 | 12 | 2513 | 20 |
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<td>Teaching Assistantship (35)</td>
<td>9495-10866</td>
<td>9</td>
<td>2043</td>
<td>18-25</td>
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*25 percent teaching assistantship available per semester, if desired.*
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<th>STIPEND</th>
<th>FEES</th>
<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<tr>
<td>(number anticipated</td>
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<td>paid by</td>
<td>hours</td>
<td>Academic year</td>
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<td>STATISTICS</td>
<td>Applications due: 1/15/86</td>
<td>Bachelor's by inst. 5558</td>
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<tr>
<td>Gouri K. Bhattacharyya, Chairman</td>
<td>Faculty 22; Published 20</td>
<td>Bachelor's by dept. 6</td>
<td></td>
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<tr>
<td>Graduate Students:</td>
<td>full-time 95; full-time first year 25; part-time 14</td>
<td>Master's by dept. 7</td>
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<tr>
<td>Fellowship (1–3)</td>
<td>12</td>
<td>2416*</td>
<td>Ph. D. (82/85) S T. Total: 7</td>
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<tr>
<td>Teaching Assistantship (14)</td>
<td>9714–10251*</td>
<td>9</td>
<td>2416*</td>
<td>20</td>
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<tr>
<td>Research Assistantship (2)</td>
<td>9638*</td>
<td>12</td>
<td>2416*</td>
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</table>

*1985-1986 figures. 1986-1987 will be more but not yet known.

University of Wisconsin–Milwaukee 53201

MATHEMATICAL SCIENCES

Applications due: * |
R. H. Moore, Chairman |
Faculty 28; Published 20 |
Graduate Students: full-time 52; full-time first year 19; part-time 1 |
Teaching Assistantship (50) |
9101–9882** |
1517** |
6 |
Teaching |
Ph. D. (82/85) ANT 1, AFA 1, AM 1. Total: 3 |


University of Wisconsin–Oshkosh 54901

MATHEMATICS

Applications due: 4/1/86 |
N. J. Kuenzi, Chairman |
Faculty 27; Published 6 |
Graduate Students: full-time 1; full-time first year 0; part-time 15 |
Research Assistantship (2) |
5000 |
9 |
1000 |
20 |

Wyoming

University of Wyoming, Laramie 82071

COMPUTER SCIENCE

Faculty 16; Published 4 |
Henry R. Bauer III, Chairman |
Graduate Students: full-time 8; full-time first year 4; part-time 1 |
Teaching Assistantship (6.5) |
5670 |
9 |
18 |
Teaching |
Research Assistantship (1) |
5670 |
9 |
18 |
Research |
MATHMATICS

Applications due: 3/1/86 |
Ben Roth, Head |
Faculty 26; Published 22 |
Graduate Students: full-time 26; full-time first year 12; part-time 1 |
Teaching Assistantship (5–10) |
6000–11000 |
9 |
Waived |
18–24 |
Teaching |
Research Assistantship (1–2) |
6000–11000 |
9 |
Waived |
18–24 |
Research |

Ph. D. (82/85) AFA 1, AM 3. Total: 4

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF WYOMING

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Inquiries: Box 3036, Univ. Station
Laramie, WY 82071
<table>
<thead>
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<th>TYPE OF ASSISTANCE</th>
<th>STIPEND FEES</th>
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<th>DEGREES AWARDED</th>
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<td>paid by student ($)</td>
<td>hours</td>
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<tr>
<td>Lyman L. McDonald, Chairman</td>
<td>Faculty 10; Published 6</td>
<td>Graduate Students: full-time 26; full-time first year 9; part-time 3</td>
<td>Bachelor's by inst.</td>
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<td>2835–5670</td>
<td>18</td>
<td>Teaching, grading</td>
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<td>Research Assistantship (3)</td>
<td>2835–5670</td>
<td>18-22</td>
<td>Research</td>
</tr>
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**Canada**

**Carleton University, Ottawa, Ontario K1S 5B6**

**MATHEMATICS AND STATISTICS**

Applications due: 3/1/86

B. M. Puttaswamaiah, Chairman

Faculty 37; Published 24

Graduate Students: full-time 36; full-time first year 13; part-time 23

Teaching/Research Assistantship (28) 8500–12500 12 600–8000 10 Grading, teaching Ph. D. (82/85) ANT 4, AFA 1, P 2, S 2, AM 1. Total: 10

**Concordia University, Montréal, Québec H3G 1M8**

**COMPUTER SCIENCE**

Applications due: *

Renato de Mori, Chairman

Faculty 26; Published 24

Graduate Students: full-time 142; full-time first year 76; part-time 66

Fellowship (30-40) 6500 Masters ** 7500 Ph.D. Ph. D. (82/85) CS 2. Total: 2

Teaching Fellowship (6) 2500 ** 5

Teaching Assistantship (Varies) 2200/course ** 5

Research Assistantship (6-10) 4000–10000 ** 5-15

*Three months before entry to program, local students.

**International students: $195 per credit; Canadian: $10 per credit. 24-30 credits per year, normal full-time load.

**MATHEMATICS**

Applications due: 4/1/86

M. Malik, Chairman

Faculty 38; Published 20

Graduate Students: full-time 34; full-time first year 15; part-time 8

Teaching Assistantship (8) 9000 12 500-5000 4 Tutorials

**Dalhousie University, Halifax, Nova Scotia B3H 4H8**

**MATHEMATICS, STATISTICS, AND COMPUTING SCIENCE**

Applications due: 3/31/86

Ken A. Dunn, Chairman

Faculty 40; Published 32

Graduate Students: full-time 23; full-time first year 13; part-time 2

Teaching Fellowship (12) 10000 12 1600 6 Tutorial Ph. D. (82/85) AFA 1, AM 1. Total: 2

**McGill University, Montréal, Québec H3A 2K6**

**MATHEMATICS AND STATISTICS**

Applications due: 2/1/86*

Michael Herschorn, Chairman

Faculty 44; Published 30

Graduate Students: full-time 51; full-time first year 16; part-time 0

Incoming students getting financial aid (7-8 per year) receive a minimum of $8000 for mixed duties.

*Loose deadline for Assistantships.

**McMaster University, Hamilton, Ontario L8S 4K1**

**MATHEMATICS AND STATISTICS**

Applications due: 3/30/86

B. Banaschewski, Chairman

Faculty 38; Published 32

Graduate Students: full-time 19; full-time first year 6; part-time 10

Teaching and Research Assistantship (10) 8500–13200 12 1345–7150 10 Grading, teaching Ph. D. (82/85) ANT 4, AFA 1, Other 1. Total: 6
Memorial University of Newfoundland, St. John’s, Newfoundland A1C 5S7

MATHMATICS AND STATISTICS
B. Shawyer, Chairman
Graduate Students: full-time; full-time first year 2; part-time –
**Stipend (8)** 790–10756 12 **5 Grading

**TYPE OF ASSISTANCE**
- Fellowship (*) 500–7000 12
- Teaching Fellowship (*) 7190–10762 12

*Number available unknown at this time.
**Number anticipated unknown at this time.

Ph. D. (82/85) GT 1. Total: 1

Simon Fraser University, Burnaby, British Columbia V5A 1S6

MATHMATICS AND STATISTICS
G. A. C. Graham, Chairman
Graduate Students: full-time 46; full-time first year 9; part-time 6

Fellowship (**) 11100 2
Fellowship (100) 3100–3670 4 150–619/sem. 20 Grading, teaching
Research Assistantship (**) 3560 4 Varies Research
Open Scholarship (4) 8500 12
Research Fellowship (4) 3000 4
Stipend (8) 2400–8500 4

*One month prior to start of the semester.
**Number anticipated unknown.

Ph. D. (82/85) ANT I, S 1, AM 1. Total: 3

Technical University of Nova Scotia, Halifax, Nova Scotia B3J 2X4

APPLIED MATHEMATICS
S. N. Sarwal, Head
Graduate Students: full-time 11; full-time first year 8; part-time 10

Fellowship (2) 4000–6000 12 2400
Teaching Fellowship (10) 5300 12 2400 10
Research Assistantship (2–3) 4000–6000 12 2400 5

Ph. D. (82/85) AM 4. Total: 4

Université Laval, Québec, Québec G1K 7P4

MATHÉMATIQUE ET STATISTIQUE
Bernard R. Hodgson, Directeur
Graduate Students: full-time 32; full-time first year 16; part-time 18

Fellowship (2) 6352–8400 9 1037 12
NSERC
AHFMR Varies
NSERC Summer Support 2800 3

Ph. D. (82/85) AFA 2, L 1, P 1, AM 1. Total: 5

University of Alberta, Edmonton, Alberta T6G 2G1

MATHMATICS (Ad on p. 950)
Jack W. Macki, Chairman
Graduate Students: full-time 32; full-time first year 16; part-time –

Teaching Assistantship (15) 6352–8400 9 1037 12
NSERC
AHFMR Varies
NSERC Summer Support 2800 3

Ph. D. (82/85) GT 1, AM 3. Total: 4

University of British Columbia, Vancouver, British Columbia V6T 1W5

COMPUTER SCIENCE
James M. Varah, Chairman
Graduate Students: full-time 35; full-time first year 16; part-time 5

Fellowship (2) 880 12 1900
Teaching Assistantship (12) 752–880 8 1900 12 Grading, teaching
Research Assistantship (6) 880 8 1900 12 Research

Ph. D. (82/85) CS 2. Total: 2

STATISTICS
James V. Zidek, Head
Graduate Students: full-time 10; full-time first year 4; part-time 1

Teaching Assistantship (5) 6020 8 1800 12 Grading, tutorial
Research Assistantship (1) 10560 12

Ph. D. (82/85) GT 1, AM 3. Total: 4
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<tr>
<td>Maurice Sion, Head</td>
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<td>Graduate Students:</td>
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<tr>
<td>full-time 25; full-time first year 7; part-time 2</td>
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<td>1760–5000</td>
<td>8–12</td>
<td>3–12</td>
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<td>*Teaching assistantship and research assistantship packages are usually offered totalling over $11000 for 12 months.</td>
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<tr>
<td>**$1750 for first year, reduced for subsequent years.</td>
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</table>

University of Calgary, Calgary, Alberta T2N 1N4

**MATHMATICS AND STATISTICS**

P. J. Browne, Chairman

Applications due: 3/31/86

Graduate Students: full-time 35; full-time first year 12; part-time 5

Teaching Assistantship (12) | 8140–9550 | 8 | 12 | Preparation, contact, marking |
Research Assistantship (4) | 6120 | 8 |
Scholarship (**) | 6600–12000 | 12 |

*All applicants are automatically considered. **Unlimited.

University of Manitoba, Winnipeg, Manitoba R3T 2N2

**MATHMATICS AND ASTRONOMY**

N. S. Mendelsohn, Head

Applications due: 2/1/86

Graduate Students: full-time 11; full-time first year 5; part-time 2

Fellowship (2) | 7500–11600 | 12 |
Teaching Assistantship (4) | 2500–10000 | 12 | 12 | Teaching |

University of Saskatchewan, Saskatoon, Saskatchewan S7N 0W0

**MATHMATICS**

R. Manohar, Chairman

Applications due: 3/31/86

Graduate Students: full-time 12; full-time first year 5; part-time 0

Teaching Assistantship (5) | 4400 | 8 | 1025 | 6 | Teaching |
Scholarship (*) | 8019–10692 | 12 | 1025 |
Summer Supplement** | 2679 | 4 |

*Unlimited. **For teaching assistants.

---

**THE UNIVERSITY OF ALBERTA**

The University of Alberta offers graduate programs leading to the M.Sc. degree with thesis, the M.Sc. non-thesis degree and the Ph.D. degree in most branches of Pure and Applied Mathematics represented by its 57 member Department of Mathematics. Opportunities for studies of an interdisciplinary nature are provided in co-operation with other departments, including the Departments of Statistics and Applied Probability, Computing Science and Physics.

Teaching Assistantships are available carrying a stipend between $7750 and $9114 for 8 months. In addition summer support of about $2,500 is generally available.

The University of Alberta, Canada’s third largest University, is located in Edmonton, Alberta’s capital city of 550,000 people, providing a wide variety of cultural and recreational attractions.

Inquiries are invited and should be addressed to:

The Graduate Committee, Department of Mathematics

The University of Alberta, Edmonton, Alberta, Canada T6G 2G1
University of Toronto, Toronto, Ontario M5S 1A1

COMPUTER SCIENCE
D. G. Cornell, Chairman

Applications due: 2/1/86
Faculty 35; Published =

Graduate Students: full-time 113; full-time first year 35; part-time 40

<table>
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<th>Stipend Fee</th>
<th>Service Required</th>
<th>Degrees Awarded</th>
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<td>Connaught Fellowship (3)</td>
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<td>Teaching Assistantship (90)</td>
<td>1049.63-1173.74</td>
<td>1416.25*</td>
<td>CS 28. Total: 28</td>
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<td>Research Assistantship (30)</td>
<td>9880-10560</td>
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<td>NSERC (35)</td>
<td>11600-17500</td>
<td>1416.25*</td>
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<td>Ontario Graduate Scholarship (4)</td>
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<td>1416.25*</td>
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<td>University Open Fellowship (20)</td>
<td>4400</td>
<td>1416.25*</td>
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*Projected fees will be about $1500 per year for Canadian students and about $7475 per year for visa students.

University of Waterloo, Waterloo, Ontario N2L 3G1

APPLIED MATHEMATICS
Bruno Forte, Chairman

Applications due: 4/15/86
Faculty 22; Published 16

Graduate Students: full-time 18; full-time first year 3; part-time 1

<table>
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<td>4800-9800</td>
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<td>Research Assistantship (25)</td>
<td>2000-9000</td>
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<td>University Bursary (6)</td>
<td>800-1500</td>
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</table>

*Projected fees will be about $1500 per year for Canadian students and about $7475 per year for visa students.

THE UNIVERSITY OF CALGARY
Graduate Studies in Mathematics and Statistics

Research Areas:


Teaching/Research Assistantships: $6120-$9550/8 months. Summer support of approximately $4070/4 months is generally available.

For further information write to: The Director of Graduate Studies, Department of Mathematics and Statistics, University of Calgary, 2500 University Drive N.W., Calgary, Alberta, Canada T2N 1N4.
COMBINATORICS AND OPTIMIZATION

**Applications due: 4/15/86**

*Projected fees will be about $1500 per year for Canadian students and about $7475 per year for visa students.*

**Scholarship (5-10)**

University of Western Ontario, London, Ontario N6A 5B7

Graduate Students: full-time 23; full-time first year 7; part-time 2

*Ph. D. (82/85) AN 8, OR 1,*

**Teaching Assistantship (78)** 1632-9800 12 *

**Research Assistantship (38)** 4000-10000 12 *

**University Bursary (10)** 600-3000 12 *

**COMPUTER SCIENCE**

**Applications due: 4/15/86**

*Projected fees will be about $1500 per year for Canadian students and about $7475 per year for visa students.*

**Teaching Assistantship (300 units) 1632-9792** 12 *

**Research Assistantship (90)** 2000-6000 12 *

**University Bursary (5)** 500-3000 12 *

**PURE MATHEMATICS**

**Applications due: 4/15/86**

*Projected fees will be about $1500 per year for Canadian students and about $7475 per year for visa students.*

**Teaching Assistantship (9) 1632-9792** 12 *

**Research Assistantship (9) 2000-6000** 12 *

**University Bursary (5) 500-3000** 12 *

**STATISTICS AND ACTUARIAL SCIENCE**

**Applications due: 4/15/86**

*Projected fees will be about $1500 per year for Canadian students and about $7475 per year for visa students.*

**Teaching Assistantship (15)** 1532-7500 12 *

**Research Assistantship (15)** 3000-8000 12 *

**University Bursary (12)** 600-2000 12 *

**STIPEND**

**FEES**

**SERVICE REQUIRED**

**DEGREES AWARDED**

**TYPE OF ASSISTANCE**

(number anticipated 1986-1987)

paid to student paid by student ($) hours required type

**1984-1985**

**3285**

**Bachelor's by inst.**

**3285**

**Bachelor's by dept.**

**Bachelor's by dept.**

**5-10**

**Grading, tutorial**

**Ph. D. (82/85) CS 16. Total: 16**

**2000-6000**

**University of Toronto, Toronto, Canada, MSS 1A1.**
York University, Downsview, Ontario M3J 1P3

MATHEMATICS
Joan W. Pelleiter, Chair

Applications due: 4/1/86; Published 34

Graduate Students: full-time 20; full-time first year 15; part-time 31

Bachelor's by inst. 3841
Bachelor's by dept. 244
Master's by dept. 20

Teaching Assistantship (19) 6600 9 ** 10 Grading
Research Assistantship (20) 1000-3000 9 **
Scholarship (3) 2000 **

*Foreign students: 4/1/86; Canadian students: 6/1/86.
**Canadian: $1593; visa: $7900 (three terms).

Dual Algebras with Applications to Invariant Subspaces and Dilation Theory

Hari Bercovici, Ciprian Foiaş and Carl Pearcy

(CBMS Regional Conference Series, Number 56)

This book is a slightly expanded and revised version of the lecture notes from the NSF/CBMS Regional Conference held in Tempe, Arizona in May, 1984, at which the third author was the principal lecturer. In the book the authors have tried to summarize some of the voluminous progress that has been made in the theory of dual algebras since the appearance in 1978 of Scott Brown's pioneering paper which clearly showed the utility of this concept for studying the structure theory of bounded linear operators on Hilbert space. The aim of the book is to present an approach for studying (non-self-adjoint) dual algebras that allows one, in particular, to obtain results on invariant subspaces and dilation theory.

The book is put together as follows. Chapter I contains facts of a general nature about dual algebras. Chapters II and III describe a general method for proving structure theorems concerning the preduals of operator algebras. Several instances in which these general structure theorems for preduals can be applied are studied in Chapters VI, VII and IX. Chapter IX, for example, contains a very general reflexivity theorem for operator algebras. The remaining chapters are dedicated to the study of singly generated algebras, with special emphasis on a new dilation theory (Chapter V). Chapters VIII and X contain applications to special classes of operators, like weighted shifts and subnormal operators.

This book may serve as an introduction to this area of research for those not already familiar with it. Results in this area are scattered throughout the literature and, sometimes, unpublished. The book provides a unified approach to developments following Scott Brown's invariant subspace theorem for subnormal operators.

A background in basic functional analysis and operator theory on Hilbert space will prepare the reader. Some knowledge of canonical models for contractions will also be helpful, especially for Chapter VIII.

Mathematics Subject Classifications: 47A, 47C, 47D, 46H, 46J
ISBN 0-8218-0706-4, LC 84-24528
ISSN 0610-7642

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Critical, Historical, or Expository Theses

Departments supplying the information published on the preceding pages were asked the following question: Will your department accept a critical, historical or expository thesis of sufficiently high quality for the Ph.D. degree? D.A. degree? or other degree? Affirmative responses to this question are listed below.

<table>
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<th>State</th>
<th>University/Institution</th>
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<td>Alabama</td>
<td>Univ of Alabama, Huntsville Computer Science</td>
<td>Ph.D.</td>
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<td>Univ of Alabama, University Management Science and Statistics</td>
<td>Ph.D.</td>
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<tr>
<td>Arizona</td>
<td>Univ of ArizonaApplied Mathematics</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>California</td>
<td>Univ of California, Berkeley Logic and Methodology of Science</td>
<td>Ph.D.</td>
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<td>Univ of California, Davis Mathematics</td>
<td>Ph.D.</td>
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<td>Univ of California, Irvine Mathematics</td>
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<tr>
<td>Connecticut</td>
<td>Yale Univ Statistics</td>
<td>Ph.D.</td>
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<tr>
<td>Florida</td>
<td>Univ of Miami, Coral Gables Mathematics and Computer Science</td>
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<td>Georgia</td>
<td>Univ of Georgia Mathematics Education</td>
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<td>Idaho</td>
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<td>Univ of Illinois, Chicago Mathematics, Statistics, and Computer Science</td>
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*Some dissertation supervisors will accept such dissertations.*
Stipends for Study and Travel

Graduate Support

**American Association for the Advancement of Science. Summer Fellowship.** Provides support for up to twenty outstanding graduate students in the social and natural sciences and engineering as intern reporters, researchers, and production assistants in the mass media for 10 weeks during the summer of 1985. (Exceptional undergraduate or postdoctoral students will also be considered.) Fellows will work for radio and television stations, newspapers and magazines and will have their travel expenses and stipends paid by the AAAS. Fellows will have the opportunity to: observe and participate in the process by which events and ideas become news; improve their communication skills by teaming to describe complex technical subjects in a manner understandable by the public; and increase their understanding of editorial decision-making and the manner in which information is effectively disseminated. Each fellow will: attend an orientation and evaluation session in Washington, D.C.; begin the internship in mid-June; and submit an interim and final report to AAAS to help evaluate the program. Interested students should write for more information and application procedures to: Coordinator, Mass Media Science and Engineering Fellow Program, American Association for the Advancement of Science, 1333 H Street, N.W., 10th Floor, Washington, D.C. 20005. Application deadline will be February 1.

**American Society for Engineering Education. ONR Graduate Fellowship Program.** About 45 three-year fellowships will be granted by the Office of Naval Research to support study and research leading to a doctoral degree in one of the following fields: electrical engineering, computer science, naval architecture and ocean engineering, materials science, applied physics, aerospace/mechanical engineering, physical oceanography, mathematics and life sciences. Applicants must be citizens or nationals of the U.S. (of any age) who will receive their baccalaureate degree in 1985, or who, by reason of military service, have not attended graduate school since receiving their baccalaureate degree. The fellowships, tenable at U.S. institutions offering doctoral degrees in the designated science and engineering disciplines, offer a stipend of $13,000 per 12-month year. In addition, ONR will provide the affiliated institution, on behalf of each Fellow, full tuition and fees, and will provide $2,000 per year to the Fellow's department. The application deadline is 31 January 1986. Application materials are available from the American Society for Engineering Education (ASEE), Eleven Dupont Circle, Suite 200, Washington, D.C. 20036 (202-745-3616 or 202-293-7080).

**Associated Western Universities (AWU).** AWU is a contractor for the U.S. Department of Energy, providing stipends and other necessary remuneration to teaching faculty members and to student participants who desire to become involved in an energy or energy-related research project at one of the cooperative laboratories or centers in the western U.S. For information telephone or write to Associated Western Universities, Inc., 142 East 200 South, Suite 200, Salt Lake City, Utah 84111 (801-364-5659).

**Battelle Memorial Institute, Pacific Northwest Laboratory.** Mathematics efforts in support of a number of current Department of Energy programs include neutron transport and radiative transfer, plasma dynamics, electromagnetic theory, applied statistics, diffusion processes, two-phase fluid flow, stochastic processes, and economic modelling. A limited number of summer appointments are available to faculty members, graduate students, and undergraduates through the Northwest College and University Association for Science (NORCUS) Program. Inquiries should be directed to NORCUS Office, Joint Center for Graduate Study, 100 Sprout Road, Richland, Washington 99352 (509-375-3090).

**California State Graduate Fellowships.** The state offers fellowships of up to $6,180 to cover tuition and fees only, for residents of California who attend accredited graduate or professional schools located in California. Write to Graduate Fellowship Section, California Student Aid Commission, 1410 Fifth Street, Sacramento, California 95814. The application deadline for 1986-1987 awards is February 11, 1986.

**Center for Naval Analyses. Summer Employment.** CNA, operated under contract with the Hudson Institute, is engaged in a broad spectrum of operations research and systems analysis studies for the U.S. Navy, Marine Corps, and other government agencies. Opportunities are
available for graduate students in operations research, economics, engineering, mathematics, physics, and statistics. Assignments include analysis related to force level planning, manpower, logistics, and operational effectiveness. U.S. citizenship required. Information may be obtained from Mr. P. D. Moke, Employment Manager, Center for Naval Analyses, 4401 Ford Avenue, Alexandria, Virginia 22302-0268.

Committee on Institutional Cooperation. **CIC Minorities Fellowships in the Sciences, Mathematics and Engineering.** Fellowships are offered to American Indians, Black Americans and Hispanic Americans for graduate study leading to the Ph.D. The fellowships provide full tuition plus an annual stipend of at least $6,000 for each of four years. They may be used at any of these eleven CIC universities: University of Chicago, University of Illinois, Indiana University, University of Iowa, University of Michigan, Michigan State University, University of Minnesota, Northwestern University, Ohio State University, Purdue University, or University of Wisconsin. The deadline for applications for the 1986-1987 academic year is January 17, 1986. Detailed information about the program can be obtained by writing to the CIC Minorities Fellowships Program, 111 Kirkwood Hall, Indiana University, Bloomington, Indiana 47405.

**General Electric Foundation.** Provides research and study grants to selected institutions on a programmed, rotational basis, to be used by the graduate departments as they deem appropriate, which includes fellowships and teaching assistantships in some cases. The Foundation does not grant fellowships or other awards to individuals. For specific information regarding institutions to which grants have been made, write to David Latham, General Electric Foundation, Fairfield, Connecticut 06431.

**Georgia Institute of Technology. President's Fellowships.** These stipends of $10,000 for twelve months, plus waiver of all tuition and fees, are awarded to first-year Ph.D. students and exceptional Masters students. The awards are highly competitive; selection is based on academic criteria and evidence of scholarship. Participants are expected to maintain high academic standing. The Fellowship is renewable upon review for an additional two years. **Graduate Research/Teaching Assistantships.** Part-time employment at the equivalent rates of $20,000 to $26,000 per 12 months, plus waiver of all tuition and fees. Appointments are based primarily on scholarship and ability to contribute to on-going programs of the school. Prospective students who consider themselves highly qualified for an award should include with their application for admission a letter describing in as much detail as possible their qualifications and needs. Write to the Director of the School of Information and Computer Science, Georgia Institute of Technology, Atlanta, Georgia 30332.

**Daniel and Florence Guggenheim Foundation.** Fellowships for U.S. and Canadian residents interested in jet propulsion, energy conversion, fluid mechanics and flight structures. For information on flight structures, write to the Department of Civil Engineering and Engineering Mechanics, Columbia University. For information on applied physics and materials science; dynamics and control systems; energy conversion, propulsion, and combustion; energy and environmental policy; flight science and technology; and fluid mechanics, and computational and experimental fluid mechanics, write to the Director of Graduate Studies, Department of Mechanical and Aerospace Engineering, Princeton University.

**Fannie and John Hertz Foundation Fellowships.** The stipend is $12,500, plus $7,000 cost-of-education allowance per nine month year. Offered on the basis of academic (A- undergaduate GPA) and research performance, recommendations, and personal technical interview, for the support of personal and institutional expenses during graduate education directed toward the Ph.D. degree in applied physical sciences. Tenable at the Department of Applied Science of the Davis Campus, and at all campuses of the University of California; California Institute of Technology; Carnegie-Mellon University; The University of Chicago; Cornell University; Courant Institute of Mathematical Sciences, New York University; Georgia Institute of Technology; Harvard University; University of Illinois at Urbana-Champaign; Massachusetts Institute of Technology; Polytechnic Institute of New York; Princeton University; Rensselaer Polytechnic Institute; Rice University; University of Rochester; Stanford University; University of Texas at Austin; Texas A&M University; Vanderbilt University; and University of Wisconsin, Madison. Application deadline is November 1. Applicants should write to the Office of the Graduate Dean at these institutions, or write directly to the Hertz Foundation, P.O. Box 2230, Livermore, California 94550-0130.

**Hughes Aircraft Company Fellowships.** Masters, Engineer Degree, and Doctoral Fellowships are awarded on a competitive basis to qualified individuals in the Engineering Sciences for study
at selected universities in the fields of electrical, mechanical, aerospace or systems engineering, computer science, mathematics, or physics. Most are awarded on a work-study basis. U.S. citizenship is required. Write to the Hughes Aircraft Company, Corporate Fellowship Office, P.O. Box 1042, El Segundo, California 90245.

**Hubert H. Humphrey Doctoral Fellowships.** Awards are made by the U.S. Arms Control and Disarmament Agency (ACDA) to stimulate interest in the study of arms control in universities around the country by supporting unclassified doctoral dissertation research in the field. Applicants must be U.S. citizens or nationals and must have completed all requirements for the doctorate, except the dissertation, at a U.S. college or university. (Law students are also eligible.) The stipend will be $5,000 for a 12-month period, plus applicable tuition and fees of up to $3,400 for one year. Application deadline is March 15, for the 12-month award period beginning in either September or the following January. For application materials write: Hubert H. Humphrey Fellowship Program, U.S. Arms Control and Disarmament Agency, Washington, D.C. 20451.

**Johns Hopkins University.** Tuition scholarships and stipends are available to students seeking the Sc.M. or Ph.D. in biostatistics. Applicants should have one year of biological, physical, or social science in addition to preparation in mathematics. Address inquiries to Chairman, Department of Biostatistics, School of Hygiene and Public Health, 615 North Wolfe Street, Baltimore, Maryland 21205.

**Kosciuszko Foundation.** Scholarships and grants for Americans of Polish background. Application deadline is January 15. For information write to Scholarship and Exchange Programs, the Kosciuszko Foundation, 15 East 65th Street, New York, New York 10021.

**Laboratory Graduate Participation.** Supports full-time thesis and dissertation research at participating DOE research facilities for M.A. and Ph.D. candidates majoring in the life, physical, and social sciences; mathematics; and engineering. Applicants must be U.S. citizens who have completed all requirements for the degree except thesis or dissertation research. The annual stipend is $8,400 plus tuition and fees and additional allowances for dependents. Approximately eighteen appointments are awarded annually. Additional information and application materials may be obtained from University Programs Division, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, Tennessee 37830-0117.

**National Science Foundation.** *Graduate Fellowships.* Three-year awards available to citizens or nationals of the U.S. for full-time study leading to master's or doctoral degrees in science (including mathematics). Awards made only to students who have completed less than one year of graduate study. Stipends of $11,000 for a 12-month tenure ($925 per month), regardless of level of study. No dependency allowances. Education allowance paid to fellowship institution. Application deadline November 15. Further information and application materials may be obtained from the Fellowship Office, National Research Council, 2101 Constitution Avenue, Washington, D.C. 20418.

**National Science Foundation.** *Minority Graduate Fellowships.* Awarded for study or work leading to the master's or doctoral degrees, these fellowships are granted for periods of three years. They are open to U.S. citizens or nationals who are members of an ethnic minority group underrepresented in the advanced levels of the U.S. science personnel pool, i.e., American Indian, Alaskan Native (Eskimo or Aleut), Black, Hispanic, or native Pacific Islander. The stipend is $11,000 for 12-month tenures ($925 per month), regardless of level of study. No dependency allowances. Education allowance paid to fellowship institution. The deadline for applications is November 15. Application materials may be obtained from the Fellowship Office, National Research Council, 2101 Constitution Avenue, Washington, D.C. 20418.

**Office of Naval Research.** *Graduate Fellowship Program.* ONR will award up to 45 three-year fellowships for study and research at U.S. institutions offering doctoral degrees in specified engineering science disciplines. Participants must be U.S. citizens or nationals and receive a baccalaureate degree in 1986. Fellows selected in 1986 will receive a $13,000 for the first year of tenure. ONR will pay the institution full tuition and fees and provide $2,000 to the Fellow's department. ONR Fellowships awarded in this fifth year of the fifth program will be for study and research in nine major disciplines: Electrical Engineering, Computer Science, Naval Architecture and Ocean Engineering, Materials Science, Applied Physics, Aerospace/Mechanical Engineering, Life Sciences, Mathematics, and Secretary of the Navy Fellowships in Oceanography. Deadline for applications is January 31, 1986. Application materials may be obtained from the American...
Sig{}da Delta Epsilon, Graduate Women in Science. Awards are available on a competitive basis to those who hold a degree from a recognized institution of higher learning in one of the mathematical, physical or biological sciences and are currently involved in research or have an approved research proposal. Appointments will be made irrespective of race, nationality, creed or age. Applications from women are especially encouraged. Two types of awards are available: Eloise Gerry Fellowship ($2,000 to $8,000, not to be used for a degree program, deadline for applications and credentials December 1), and Grants-in-Aid ($750, deadline February 1). Announcement of awards will be made by the following July 1. Further information and application forms may be obtained from Sigma Delta Epsilon, Graduate Women in Science, Inc., 9550 Rockville Pike, Bethesda, Maryland 20814. An individual may apply for only one of the two awards. Please indicate to which type of award your inquiry is addressed.

Smithsonian Institution. Predoctoral Fellowships. Appointments to students who have substantially completed formal course requirements for the doctorate or its equivalent, to conduct research for the dissertation. Offered annually in the history of mathematics, for a period from six months to one year. Approximately $11,000 stipend, plus research expense allowance and relocation allowance. The proposed project must be approved in advance by appointee’s advisor, conducted within Smithsonian facilities, and must be related to research and interests of the Institution. Deadline for application is January 15th yearly for the following academic year. Further information and application forms may be obtained from the Office of Fellowships and Grants, Smithsonian Institution, Room 3300, L’Enfant Plaza, Washington, D.C. 20560.

University of Massachusetts. Sabbatical Lectureships. Available in the Department of Mathematics and Statistics, these lectureships are open to faculty members of colleges or universities without a Ph.D. program in mathematics and/or statistics, who wish to spend their sabbatical leaves at the University of Massachusetts. Applicants should generally have a master’s degree, will be required to teach one course per semester, and will be expected to enroll in one or two courses and a seminar. Stipends are available; tuition will be waived. For further information, write to Professor M. K. Bennett, Director, Sabbatical Lectureship Program, Department of Mathematics and Statistics, University of Massachusetts, Amherst, Massachusetts 01003.

Postdoctoral Support

Air Force Office of Scientific Research. Research Contracts and Grants. Mathematicians and computer scientists are encouraged to submit proposals through their organizations for research support. Research areas include mathematics of dynamics and control, mathematics of computation, mathematics of physical, chemical or biological systems, mathematics of communication and signal processing, mathematical optimization, applied analysis, finite mathematics, probability and statistics, general computer science, and artificial intelligence. Research proposals should be forwarded to the Director of Mathematical and Information Sciences, Air Force Office of Scientific Research, Bolling AFB, Washington, D.C. 20332.

American Association for the Advancement of Science. Science, Engineering and Diplomacy Fellowships. One-year fellowships are available for work as staff officers in the State Department and in the Agency for International Development. The Fellow must demonstrate exceptional competence in some area of science or engineering, be flexible, and have a strong interest or some experience in applying knowledge toward the solution of problems in the area of foreign affairs. A secret security clearance must be obtained after selection. Salaries are at the GS11 or GS12 level depending upon education and experience. Deadline for receipt of applications is February 1. For application materials and more specific information on assignment possibilities write to Science, Engineering and Diplomacy Fellows Program, AAAS, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036.

American Mathematical Society Research Fellowship. Postdoctoral Fellowships. These fellowships are open to individuals five to ten years past the Ph.D. degree (or equivalent), regardless of age, but below the academic rank of professor. Applicants should have received the Ph.D. degree between January 1, 1976, and December 31, 1981. Moreover, the vita must include the equivalent of at least three full years postdoctoral teaching or industrial experience, i.e., non-fellowship
Applicants must be citizens or permanent residents of a country in North America. Fellowships will be held at any institution the Fellow selects or at more than one in succession. There is flexibility in the choice of time interval(s) and manner in which the Fellow may draw funds. For instance, given the opportunity, a Fellow may elect to hold a half-time academic appointment with a teaching responsibility not exceeding one course per term while holding the fellowship at one-half stipend over a two-year period. The Fellow should consult with the Secretary of the Society to learn whether the arrangement proposed is acceptable to the Society. The number of fellowships depends on the amount of money contributed to the program. The Trustees have arranged the matching program from general funds in such fashion that funds for at least one fellowship are guaranteed. The deadline for receipt of applications is December 2, 1985. Awards will be announced late in January 1986. For application forms, write to William J. LeVeque, Executive Director, American Mathematical Society, P.O. Box 6248, Providence, Rhode Island 02940. (It should be noted that completed application and reference forms should NOT be sent to this address, but to the address given on the forms.)

American Philosophical Society. Postdoctoral research grants averaging $1,800 for candidates with Ph.D. or equivalent to aid specific research projects. Grants contribute toward travel expenses, food and lodging, photoduplication, and some other research costs. Tenable abroad and in U.S. The Committee on Research meets by end of February, April, June, October, and December. Respective deadlines for application and all supporting material are December 1, February 1, April 1, August 1, and October 1. For information write to Dr. Randolph S. Klein, American Philosophical Society, 104 South Fifth Street, Philadelphia, Pennsylvania 19106.

American Society for Engineering Education. NASA-ASEE Summer Faculty Fellowships. Programs in science and engineering research in collaboration with the National Aeronautics and Space Administration research centers; for U.S. citizens who are faculty or research members of institutions of higher education. Stipends will be $700/week for ten weeks, plus travel allowance. Application deadline is February 1. For published announcement write to NASA-ASEE Summer Faculty Fellowships, American Society for Engineering Education, Suite 200, Eleven Dupont Circle, N.W., Washington, D.C. 20036.

American Society for Engineering Education. Navy- and DOE-ASEE Summer Faculty Research Programs. Programs in science and engineering research at the laboratories and R&D centers of the Navy and Department of Energy; for U.S. citizens who are faculty or research members of institutions of higher education. Stipends will be $700/week, plus travel and relocation allowances. Application deadline is February 1. For a program announcement write to American Society for Engineering Education, Suite 200, Eleven Dupont Circle, N.W., Washington, D.C. 20036.

Argonne National Laboratory. Predoctoral, postdoctoral, and visiting scientist appointments in mathematics and computer science with an emphasis on applied analysis, numerical mathematics, automated program transformations, and automated theorem proving. Summer appointments available at undergraduate through visiting scientist levels. Information: Paul Messina, Director, Mathematics and Computer Science Division, Argonne National Laboratory, Argonne, Illinois 60439.

Australian Institute of Nuclear Science and Engineering. Research Fellowships. Fellowships are intended for scientists and engineers who have qualifications equivalent to the Ph.D. Stipends are in the range of $22,260 to $26,700 per annum (Australian currency), and the Institute may contribute to travel costs to and from Australia. A research project within the field of nuclear science and engineering of interest to the Institute must be proposed in the nomination after agreement between the candidate and the nominating organization. Further information can be obtained from Executive Office, Australian Institute of Nuclear Science and Engineering, Private Mail Bag, Post Office, Sutherland N.S.W. 2232, Australia. Candidates must be nominated by an Australian university, the Australian Atomic Energy Commission or the Commonwealth Scientific and Industrial Research Organization. Closing dates are February 28 and August 31 each year, and all nominations received after one closing date will be considered together after the next closing date.

Bowling Green State University. Post-doctoral Lectureship. Bowling Green offers a lectureship for the academic year to promising mathematicians and statisticians of any age with a recent
Ph.D. The candidate's research interests should supplement those of the departmental faculty. The appointee is expected to participate in seminar activity and teach one calculus course per semester for a compensation of $18,000 for the academic year. Interested persons should send a vita, an official copy of graduate transcripts, and arrange for three letters of reference to: Arjun K. Gupta, Chair, Department of Mathematics and Statistics, Bowling Green State University, Bowling Green, Ohio 43403. Bowling Green State University is an equal opportunity/affirmative action employer.


**The Bunting Institute of Radcliffe College. Science Scholar Fellowships.** The Bunting Institute provides fellowships to postdoctoral scientists to work on projects that will make a contribution to their fields and advance their careers. Open to scientists in the fields of physical, mathematical, psychological and biological sciences and engineering. Office and laboratory space; stipend $20,000 plus research expenses; two year appointment for recipients affiliated with a laboratory; one year for recipients who do not require a laboratory affiliation; access to Harvard/Radcliffe libraries and facilities. Deadline for applications is October 15, 1985. Write or call for application and information to: Science Scholar Fellowship Program, The Bunting Institute of Radcliffe College, 10 Garden Street, Cambridge, Massachusetts 02138 (617-495-8212).

**California Institute of Technology. Harry Bateman Research Instructorships.** Offered by the Department of Mathematics at the California Institute of Technology. Normally open to men and women (of any age) who have just received their doctorate in mathematics. Appointments are for one year and are renewable for one additional year. The annual salary will be $27,000. Duties include teaching one course for the full academic year. Application deadline is January 15. Inquiries or requests for application forms should be addressed to Professor D. Wales, Department of Mathematics 253-37, California Institute of Technology, Pasadena, California 91125. Affirmative Action Employer.

**Carnegie-Mellon University. Zeev Nehari Assistant Professorship in Mathematics.** This position has been instituted in the Department of Mathematics of Carnegie-Mellon University to honor the memory of Professor Zeev Nehari, a member of the Department from 1954 to his death in 1978. Applicants are expected to show exceptional research promise as well as clear evidence of achievement. Each appointment is for two academic years, extendable for one further year when mutually agreeable. It carries a reduced academic year teaching load of six hours per week during one semester and three hours per week during the other. The applicant should have research interests which intersect those of current faculty of the Department. The stipend for the academic year 1986-1987 will be $28,000–$30,000. Application forms and further information on the position and the Department can be obtained by writing to Professor David R. Owen, Chairman, Zeev Nehari Assistant Professorship Committee, Department of Mathematics, Carnegie-Mellon University, Pittsburgh, Pennsylvania 15213. To ensure consideration, applications should be filed by February 1, 1986. Carnegie-Mellon University is an Equal Opportunity Employer.

**Cornell University.** Possible *H. C. Wang Assistant Professorship.* During the first year the holder of a Wang Assistant Professorship will have a teaching load of two courses in the first semester and one in the second; thereafter, it will be two courses per semester. Salary $27,500. The Assistant Professorship is nonrenewable after a three-year term. Applications and letters of reference should be addressed to Chairman, Department of Mathematics, Cornell University, Ithaca, New York 14853.

**Courant Institute. Instructorships in Mathematics.** Open to mathematicians (of any age) who are recent recipients of doctoral degrees and who show strong promise in research. The teaching duty will consist of one course each term. Appointments are for two years. The academic salary for nine months will be at least $27,000. In addition, the Courant Institute may be able to offer support for research in residence during two summer months. (When longer term faculty positions are available, applicants for Instructorships will also be considered for them.) Inquiries and requests for application forms should be addressed to the Committee on Instructorships and Visiting Memberships, Courant Institute of Mathematical Sciences, New York University, 251 Mercer Street, New York, New York 10012. Applications should be filed no later than January 1, 1986. N.Y.U. is an Equal Opportunity Affirmative Action Employer.

**Courant Institute. Postdoctoral Visiting Memberships.** The Courant Institute of Mathematical Sciences of New York University offers postdoctoral Visiting Memberships to mathematicians,
scientists and engineers who are interested in its program of training and research in a broad range of pure and applied mathematics. Applications for the academic year 1985-1986 must be submitted before January 1, 1986. Inquiries and requests for application forms should be addressed to the Committee on Instructorships and Visiting Memberships, Courant Institute of Mathematical Sciences, New York University, 251 Mercer Street, New York, New York 10012. N.Y.U. is an Equal Opportunity Affirmative Action Employer.

**Dartmouth College. John Wesley Young Research Instructorships.** Two instructorships are normally awarded by Dartmouth College each year. Teaching duties average less than six hours per week and are of a varied and nonroutine nature. The academic-year salary of $21,500 is supplemented by a two-month resident research stipend of $3,000. Appointments are for two years and are not renewable. Applicants should write to Department of Mathematics and Computer Science, Dartmouth College, Hanover, New Hampshire 03755 (Attention: Recruiting). Applicants are advised to apply promptly, and no later than January 15, 1986.

**Department of State, Agency for International Development.** Research grants for research projects and analytical studies on development policy issues emphasizing food production, nutrition, health, education, population, socio-economic and related issues. Research groups are encouraged to propose research to the Agency within the above areas. For further information, write to Edwin Hullander, Policy Development and Program Review, Bureau for Program and Policy Coordination, Agency for International Development, Washington, D.C. 20523.

**Fulbright Scholar Awards.** The Fulbright Scholar Awards for 1986-1987 include 300 grants in research and 700 grants in university lecturing for periods ranging from three months to a full academic year. There are openings in over 100 countries with some opportunity for multi-country research. Fulbright Awards are granted in virtually all disciplines. Scholars in all academic ranks, retired faculty and independent scholars are eligible to apply. Benefits include round-trip travel for the grantee and, for full academic year awards, one dependent; maintenance allowance to cover living costs of grantee and family; tuition allowance, in many countries, for school-age children; and book and baggage allowances. Basic eligibility requirements are U.S. citizenship; Ph.D. or comparable professional qualifications; university or college teaching experience; and, for selected assignments, proficiency in a foreign language. Application deadlines vary. For more information and applications, call or write Council for International Exchange of Scholars, Eleven Dupont Circle N.W., Washington, D.C. 20036-1257 (202-939-5401).

**John Simon Guggenheim Memorial Foundation Fellowships.** Fellows are usually between thirty and forty-five years of age, but the Committee of Selection also is empowered to nominate persons older than forty-five and younger than thirty. Fellowships are on an advanced professional level. U.S. or Canadian citizenship or permanent residence is required. Fellowships are also offered to citizens or permanent residents of all countries and territories of the Western Hemisphere and the Philippines. Application deadline: October 1. Approximately 300 awards are made, averaging approximately $20,000 in 1985. For more information write to John Simon Guggenheim Memorial Foundation, 90 Park Avenue, New York, New York 10016.

**Harvard University. Benjamin Peirce Lectureships.** Rank of Assistant Professor. The appointments are for three years with a starting salary of approximately $26,300 (for the nine-month academic year) which can be augmented by teaching in the summer school or by work on a research contract if funds are available. The teaching commitment is six hours per week of lectures including a half course on any topic of the lecturer's choice. Application forms may be obtained by writing to: Benjamin Peirce Lectureships, Department of Mathematics, Harvard University, One Oxford Street, Cambridge, Massachusetts 02138. Applications must be filed by January 1, 1986. Harvard is an Equal Opportunity/Affirmative Action Employer.

**IBM Thomas J. Watson Research Center. Mathematical Sciences Department Postdoctoral and Junior Faculty Research Fellowships.** These fellowships provide an opportunity for scientists of outstanding ability to pursue their own research interests in pure or applied mathematics while interacting closely with Department members in an atmosphere in which basic research is combined with exposure to technical problems arising in a mathematically oriented industry. Candidates (of any age) must have no more than five years of postdoctoral professional experience when the fellowship commences. The duration of the fellowship is one or two years, and the stipend will be generally in the range of $40,000 to $46,000 per year, depending on experience. To apply, submit the following by January 15, 1986: résumé; thesis summary; thesis or reprints of publications based on thesis, if available; bibliography with reprints of principal papers;
period you are requesting (one or two years); research proposal for the period of your fellowship; and three or more letters of reference, including one from your thesis adviser. The letters of reference may arrive separately, but must be received by the above date. Direct all material to Committee on Postdoctoral Fellowships, Mathematical Sciences Department, IBM Thomas J. Watson Research Center, Post Office Box 218, Yorktown Heights, New York 10598. Applicants will be notified of the Committee’s decisions by March 1, 1986. The Research Center is located in Westchester County about thirty miles north of New York City.

Indiana University, Bloomington. Václav Hlavatý Research Assistant Professorships. The Mathematics Department at Indiana University expects to receive funding for at least one position at this level, offered to mathematicians with doctorates who show definite promise in research. The appointment is for three years with an academic-year salary of at least $25,000. The teaching duties during the first academic year will involve three hours per week and during the next two academic years will involve six hours per week. The salary may be supplemented by either teaching or research contracts during the summer months. There will also be an amount of $500 available for professional expenses, such as travel to meetings, supplies, publication costs, etc. Inquiries or requests for application forms should be addressed to William P. Ziemer, Chairman, Department of Mathematics, Swain Hall East, Indiana University, Bloomington, Indiana 47405. Preference will be given to applications received before January 1, 1986. Affirmative Action Employer.

Institute for Advanced Study Memberships. The School of Mathematics will grant a limited number of memberships, some with financial support, for research in mathematics at the Institute during the academic year 1986-1987. Candidates must have given evidence of ability in research comparable at least with that expected for the Ph.D. degree. Application blanks may be obtained from the Administrative Officer of the School of Mathematics, Institute for Advanced Study, Princeton, New Jersey 08540, and should be returned (whether or not funds are expected from some other source) by December 31, 1985. An Equal Opportunity/Affirmative Action Employer.

Institute for Computer Applications in Science and Engineering (ICASE). A limited number of visiting appointments are available for both junior- and senior-level researchers at the Institute for Computer Applications in Science and Engineering (ICASE) which is operated by Universities Space Research Association. ICASE serves as a center for interaction between Langley Research Center staff and the academic community in the areas of applied and numerical mathematics, applied computer science, and development of mathematical models in a variety of application areas. Applications for partial support while on sabbatical leave are encouraged, as are applications from Ph.D.’s for one- or two-year renewable appointments. Inquiries should be addressed to the Director, ICASE, Mailstop 132C, NASA Langley Research Center, Hampton, Virginia 23665.

Institute for Mathematics and its Applications. The IMA will sponsor a program on Scientific Computation. The organizing committee for this program consists of Bjorn Engquist (Chairman), Roland Glowinski, Mitchell Luskin, and Andrew Majda. Topics to be covered include Computational Fluid Dynamics, Numerical Algorithms for Parallel Computer Architectures, Numerical Simulation in Oil Recovery, Materials with Nonlinear Constitutive Laws, Scientific Software, Semiconductor Simulation, and Atomic and Molecular Structure and Dynamics. Postdoctoral Memberships are available for twelve months beginning August 16, 1986. Applicants who will have completed the doctorate by August 16, 1986 should submit the following materials by January 15, 1986: (1) A personal statement of scientific interest, research plans, and reasons for wishing to participate in the Institute program. (This is an essential part of the application.) (2) A curriculum vitae including a list of publications. (3) Three letters of recommendation, to be sent directly to the IMA. Other support is available. Preference is given to supplementing sabbaticals, fellowships, and other stipends. Send all correspondence to Hans Weinberger, Director, Institute for Mathematics and its Applications, University of Minnesota, 514 Vincent Hall, 206 Church Street S.E., Minneapolis, Minnesota 55455.

Lawrence Livermore National Laboratory. Postdoctoral research appointments and graduate research assistantships. Areas of special interest include development of computer systems, computer graphics, numerical analysis, and programming science. U.S. citizenship required. Inquiries should be directed to John E. Ranelletti (L-61), Computation Department, Lawrence Livermore National Laboratory, University of California, Livermore, California 94550.

Los Alamos National Laboratory. Research opportunities in computer science, numerical science, applied mathematics, and physics. A limited number of postdoctoral appointments is available...
for one year, subject to renewal for a second year. Los Alamos National Laboratory is an equal opportunity employer. Write to Mail Stop P-290, Los Alamos National Laboratory, University of California, Los Alamos, New Mexico 87545.

Los Alamos National Laboratory. J. Robert Oppenheimer Research Fellowship. Candidates must be recipients of a doctorate in the physical sciences, natural sciences, mathematics or engineering, and must show clear and definite promise of becoming outstanding leaders in scientific research. One- to three-year appointment; salary: $43,008/year; application deadline: mid-December each year. For additional information write to Mail Stop P-290, Los Alamos National Laboratory, Los Alamos, New Mexico 87545. An Affirmative Action/Equal Opportunity Employer.

Massachusetts Institute of Technology. C.L.E. Moore Instructorships in Mathematics. Offered by the Department of Mathematics at the Massachusetts Institute of Technology. Open to mathematicians with doctorates who show definite promise in research. The base salary will be at least $25,800, and the teaching load is six hours per week in one semester and three hours per week in the other. Appointments are for one year and are renewable for one additional year. Applicants please send (a) a vita; (b) a description of the research in your thesis and other work you have done (1-3 pages); and (c) the research which you plan for next year. Application should be sent, by December 31 if possible, to the Department of Mathematics, Room 2-263, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139. M.I.T. is an Equal Opportunity Employer.

Mathematical Sciences Research Institute. The Institute will award about 20 yearlong research fellowships with starting date August or September 1986 for new and recent Ph.D.’s. The stipend will be at least $26,000. The year 1986-1987 features a single enlarged program in number theory with connections to algebraic geometry, but some awards will be made in other areas, so applications from candidates in all fields are welcome. Formal application forms are not used, but a sheet giving suggestions on how to apply is available on request. Write to the Mathematical Sciences Research Institute, 1000 Centennial Drive, Berkeley, California 94720. Files must be complete by January 1, 1986.

Mellon Fellowship Program. The Program in Science, Technology, and Society at MIT invites proposals from scientists, engineers, and physicians for several one year study fellowships on the relationships of science, technology, or medicine with society. Ph.D. or equivalent in science or engineering is desirable. Partial or full stipend. Deadline: February 1, 1986. For more information write: Deborah Wilkes, Mellon Fellowship Committee, E51-128, MIT, Cambridge, Massachusetts 02139. MIT is an equal opportunity/affirmative action employer.

The Michigan Society of Fellows. Horace H. Rackham School of Graduate Studies, The University of Michigan. The Michigan Society of Fellows was founded in 1970 through grants from the Ford Foundation and Horace H. Rackham Graduate School for the purpose of promoting the highest degree of excellence in the arts, sciences and professions. The objective of the program is to support individuals selected for scholarly accomplishment and professional promise. We invite applications from qualified candidates for 4 three-year postdoctoral fellowships at The University of Michigan. Candidates should be at the beginning of their professional careers, not more than three years beyond completion of their degrees. The Ph.D. degree or comparable professional degree, received prior to appointment, is required. Fellows are appointed as Assistant Professors/Postdoctoral Scholars with departmental affiliations. They spend the equivalent of one academic year teaching; the balance of time is devoted to their own scholarly research and creative work. Applications will be screened by faculty in relevant University of Michigan departments. Final selections will be made by the Senior Fellows of the Society. Four new Fellows will be selected for three-year terms beginning September 1, 1986. The initial stipend will be $18,000 with annual increments of $1,000. Completed applications are due by November 14, 1985. Please send requests for application materials to Michigan Society of Fellows, 3030 Rackham Building, The University of Michigan, Ann Arbor, Michigan 48109-1070 (313-763-1259).

National Center for Atmospheric Research. Advanced Study Program. Postdoctoral Fellowships are offered for highly qualified atmospheric scientists, and scientists from related disciplines, who wish to continue basic research in the atmospheric sciences. Appointments are for a one-year period with a possible extension for an additional year. Stipends are $22,000 for recent recipients of the Ph.D. and are adjusted annually in June. The application deadline is January 28. Inquiries should be sent to Betty Wilson, Administrator, Advanced Study Program, NCAR, P.O. Box 3000, Boulder, Colorado 80307.

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National Research Council. **Ford Foundation Postdoctoral Fellowships for Minorities.** Administered by the National Research Council, these fellowships are sponsored by the Ford Foundation. Applicants must be U.S. citizens who are members of one of the designated minority groups (American Indians and Alaskan Natives–Eskimo or Aleut, Black Americans, Mexican Americans/Chicanos, or Puerto Ricans), who are engaged in college or university teaching, and hold a doctoral degree. Tenure of the one-year fellowship provides postdoctoral research experience at an appropriate nonprofit institution of the Fellow’s choice. The deadline for the submission of applications is January 17, 1986. Further information and application materials may be obtained from the Fellowship Office, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

National Research Council. **Research Associateship Programs.** These programs provide scientists and engineers opportunities for postdoctoral research, free from administrative duties, in a variety of scientific disciplines and fields of specialization. The programs are conducted in cooperation with selected federal organizations with laboratories at approximately sixty-five geographic locations in the United States. Most programs are open to senior investigators as well as recent Ph.D.’s. Most are also open to foreign nationals as well as U.S. citizens. Applications for these competitive awards will be received by the National Research Council until January 15, 1986. Appointments will be made in the spring. In some programs additional deadlines are April 15 and August 15 with awards announced in July and November respectively. Stipends will vary according to the type of appointment, but will not be less than $26,350. Further information and application materials can be obtained from Associateship Programs (JH 608-D3), National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

National Science Foundation. **Computer Science Research.** Grants support research concerned with such topics as theoretical foundations of computer science; software systems science, software engineering, intelligent systems, and computer systems design. Guidelines on eligibility and proposal preparation are available in “Grants for Scientific and Engineering Research.” For this brochure and additional information write: Division of Computer Research, National Science Foundation, 1800 G Street, N.W., Washington, D.C. 20550.

National Science Foundation. **Mathematical Sciences Postdoctoral Research Fellowships.** (With Research Instructorship Option). The format of this fellowship program has been changed significantly to provide the recipient with increased flexibility in the manner in which he or she can perform as a Fellow. In particular, the stipend portion of the awards will consist of support for two nine-month academic-years and six summer months over three summers. The awardee will have two options for the academic years’ stipend: as full-time support for any eighteen academic year months in a three-year period (the Research Fellowship Option), or as a combination of full-time and half-time support over a period of three academic years, usually as one academic year full-time and two academic years half-time (the Research Instructorship Option). The stipend will be paid at the rate of $2,500 per full-time month or $1,200 per half-time month, for a total of $57,600 for the eighteen academic-year months and six summer months. Deadline for applications is November 15, 1985; awards will be announced in early February 1986. Applications will be accepted in core mathematics, applied mathematics, and statistics. For further details write to Alvin I. Thaler, Program Director for Special Projects, Mathematical Sciences Section, National Science Foundation, 1800 G Street, N.W., Washington, D.C. 20550.

Office of Naval Research. **Supports research over a wide range of areas including applied mathematics, numerical analysis, operations research, statistics and probability, and computer science. Proposals for research contracts and requests for information on ONR Programs should be addressed to: Mathematical Sciences Division, Office of Naval Research, Arlington, Virginia 22217.**

OTA Congressional Fellowship Program. The Office of Technology Assessment is seeking qualified candidates from academia, private industry and the public sector for its Congressional Fellowship Program. Up to six Fellows will be selected for a 1-year appointment in Washington, D.C. beginning in September 1985. The program is open to men and women of all disciplines who have demonstrated exceptional competency in the physical or biological sciences, engineering, law, economics, environmental and social sciences, or public policy. Candidates must have completed research and training at the doctoral level, or have equivalent experience. Salaries will range from $35,000–$41,000 per year, based on the Fellow’s current salary and/or training and experience. In some instances a Fellow may accept a salary supplement from his or her parent...
institution. For application information contact Congressional Fellowships, Personnel Office, Office of Technology Assessment, Congress of the United States, Washington, D.C. 20510.

**Rice University. Griffith Conrad Evans Instructorships.** Postdoctoral appointments for two to three years for promising research mathematicians with research interests in common with the active research areas at Rice. Applications should be in by 15 January 1986. Rice University is an Equal Opportunity/Affirmative Action Employer. Inquiries and applications should be addressed to Chairman, Evans Committee, Department of Mathematics, Rice University, Box 1892, Houston, Texas 77001.

**Rutgers University. Hill Assistant Professorships.** Offered for 1986-1987 by the Department of Mathematics at Rutgers, The State University of New Jersey, New Brunswick, to men and women of any age who will have received their Ph.D. by December 31, 1985, and who show definite promise in research in pure or applied mathematics. Applications from members of minority groups are welcome. Appointments are for three years. The starting salary is expected to be in excess of $25,000. Inquiries and applications should be addressed to Joseph D'Atri, Chairman, Department of Mathematics, Rutgers University, New Brunswick, New Jersey 08903. Applications received after January 15, 1986 may not receive full consideration.

**Sloan Foundation. Research Fellowships.** Unrestricted grants made to selected university scientists in the physical sciences, mathematics, applied mathematics, economics, and in neuroscience. Candidates must be members of the regular faculty, though not necessarily in a tenured position, at a recognized college or university in the United States or Canada. Candidates do not apply but are nominated by their department chairmen or other scientists. For information write to the Sloan Research Fellowships, Alfred P. Sloan Foundation, 630 Fifth Avenue, New York, New York 10111.

**Smithsonian Institution. Postdoctoral Fellowships.** Appointments to individuals possessing the Ph.D. or equivalent degree, and limited to individuals requiring research training in association with a member of the Institution's professional staff. Offered annually in the history of mathematics, for a period of from six months to two years. Approximately $18,000 stipend, plus research expense allowance and relocation allowance. Deadline for application is January 15th yearly for the following academic year. Further information and application forms may be obtained from the Office of Fellowships and Grants, Smithsonian Institution, Room 3300, L'Enfant Plaza, Washington, D.C. 20560.

**U.S. Department of Energy (DOE). Special University-Laboratory Cooperation.** Participants engage in laboratory-approved projects in a program designed to increase the interactions and flow of information between universities and DOE laboratories. Included is research in applied mathematics and computer science. Inquiries should be addressed to the Director at any of the following organizations: Associated Western Universities, 142 East 200 South (Suite 200), Salt Lake City, Utah 84111; Argonne Division of Education Programs, 9700 South Cass Avenue, Argonne, Illinois 60439; Brookhaven National Laboratory, Upton, New York 11973; Northwest College and University Association for Science (NORCUS), 100 Sprout Road, Richland, Washington 99352; Oak Ridge Associated Universities, Oak Ridge, Tennessee 37830.

**U.S. Department of Health and Human Services, National Institutes of Health,** supports postdoctoral training in specified areas of biomedical and behavioral research. Applicant must have earned an appropriate degree and arranged for appointment to an institution and acceptance by a sponsor who will supervise the training research experience. U.S. citizenship or lawful admittance to the U.S. for permanent residence is required. Announcements and application kits available from Office of Grants Inquiries, Division of Research Grants, National Institutes of Health, Bethesda, Maryland 20205. An enclosed self-addressed gummed mailing label will expedite handling.

**University of California, Irvine. Visiting Irvine Assistant Professorship 1985-1986.** The position enables mathematicians (of any age) beginning their career who show definite promise in research to participate in an environment of vigorous mathematical research and instruction. Appointment is for one year; can be renewed for second year. Annual salary: $25,500. Teaching duties comparable to those of regular faculty. Appointees are expected to direct seminars in their specialty. Applications and three letters of recommendation must be received by February 15, and should be accompanied by a curriculum vitae and an account of works in print or preparation, and a brief description of research plans. All enquiries and applications
should be sent to: The Irvine Visiting Assistant Professorships in Mathematics, Department of Mathematics, University of California, Irvine, California 92717. An Affirmative Action/Equal Opportunity Employer.

University of California, Los Angeles. Earle Raymond Hedrick Assistant Professorships in Mathematics. The Department of Mathematics, University of California, Los Angeles, will make one or two appointments for the year 1986-1987. These awards will be made to mathematicians with Ph.D.’s who show strong promise in research. The appointment will be for three years at an annual salary of $34,000, plus a research supplement of $3,778 for the first summer. The teaching load will be three hours per week for two quarters and six hours per week for one quarter. One course may be an advanced course in the candidate’s research area. Requests for application forms should be sent to the Faculty Search Committee, Department of Mathematics, University of California, 405 Hilgard Avenue, Los Angeles, California 90024. The deadline for applications is January 1, 1986. UCLA is an Equal Opportunity/Affirmative Action Employer.

University of California, San Diego. S. E. Warschawski Assistant Professorship. Special two-year position offered by the University of California, San Diego. The nine-month salary is $32,500. Candidates should possess a Ph.D. degree in mathematics or expect to receive one prior to September 1986. All areas will be considered. Selection will be based primarily on demonstrated research achievement. Teaching experience is desirable. To apply, have at least three letters of reference, vita and publications sent to “Faculty Search Committee”, C-012, Department of Mathematics, University of California, San Diego, La Jolla, California 92039. We expect to have referees write to us directly. All applications received by December 1, 1985 will receive thorough consideration. All supporting documents must be received no later than January 3, 1986. University of California, San Diego is an Equal Opportunity/Affirmative Action Employer.

University of California, Santa Barbara. Special Visiting Assistant Professorships 1986-1987. Several two-year positions involving research and a 2-2-1 teaching load with an anticipated salary of $28,000. Candidates must possess a Ph.D. degree by September 1986. Successful candidates must have a strong commitment to mathematical research and superior teaching ability. Applicants should send vitae and publication lists, and arrange for three letters of recommendation to be sent to: Professor James Robertson, Chairman, Department of Mathematics, University of California, Santa Barbara, California 93106. Applications must be received by January 15, 1986. UCSB is an Affirmative Action/Equal Opportunity Employer.

University of Chicago. Leonard Eugene Dickson Instructorships in Mathematics. Intended for men and women completing the doctorate in mathematics prior to autumn 1985. Appointment is for two years with an annual salary of at least $27,000, instruction averaging four hours a week. Application deadline is January 15, 1985. Further information may be obtained from the Dickson Secretary, Department of Mathematics, University of Chicago, 5734 University Avenue, Chicago, Illinois 60637.

University of Cincinnati. Charles Phelps Taft Postdoctoral Fellowships. These fellowships are intended to afford scholars who have demonstrated unusual ability for creative research the opportunity to enhance their education through additional study and research. Applicants must have been awarded the Ph.D. degree during the past five years or have completed all degree requirements by September 1 of the year in which the tenure will begin. Applications must include a research plan and the name of a University of Cincinnati faculty member, if known, with whom the applicant would like to study. Ten departments, including the Department of Mathematical Sciences, compete for three awards. Tenure is for one academic year and involves no teaching duties; however, teaching is allowed for additional compensation. Inquiries should be sent to the University Dean for Graduate Education and Research, Mail Location 627, University of Cincinnati, Cincinnati, Ohio 45221. The deadline for the complete application is February 1.

University of Michigan, Ann Arbor. T. H. Hildebrandt Research Assistant Professorships. Designed to provide mathematicians with favorable circumstances for the development of their research talents. Preference is given to persons of any age having their Ph.D. less than two years. Teaching load averages one and one-half courses per semester. The stipend for the academic year 1986-1987 will be determined later; there is a good possibility of additional income during the summer. Appointment is for three years. NSF postdoctoral fellowships may be held simultaneously with a further reduction in teaching load. Applicants should submit completed application form and request at least three letters of recommendation. Letters should contain comments on applicant’s mathematical promise, teaching ability, and personality. First
preference will be given to applications completed, and supported by three or more letters, prior to January 6. Appointments will be announced by the middle of February. Applications should be made to D. J. Lewis, Chairman, Department of Mathematics, University of Michigan, Ann Arbor, Michigan 48109-1003. Affirmative Action Employer.

University of Pittsburgh. Andrew Mellon Postdoctoral Fellowships. Intended to support the research and foster the professional development of scholars who give promise of achieving distinction in their fields. Applicants should submit a completed application form, a research proposal, three to ten pages long, a list of publications, and three letters of recommendation by January 15. The Fellows are expected to be in residence at the University of Pittsburgh and to engage in research during their period of appointment; they have no other formal responsibilities. Preference will be given to applicants who have completed all doctoral degree requirements by January 15. A basic stipend of $18,000 for eleven months, plus an allowance for traveling expenses (up to $200) and incidental costs (not to exceed $200), make up the award. Nine-month appointments are available for a stipend of $15,000. Applications may be obtained from the Director of Graduate Programs, Faculty of Arts and Sciences, University of Pittsburgh, Pittsburgh, Pennsylvania 15260.

University of Utah. Instructorship in Mathematics. Three or four 3-year instructorships are offered each year. Persons of any age receiving Ph.D. degrees in 1985 or 1986 are eligible. Applicants will be selected on the basis of ability and potential in teaching and research. Starting salary this year is $24,000 and cost of living increases are contingent on action by the State Legislature. Duties consist of teaching two courses throughout the academic year. Applications must include curriculum vitae, bibliography, abstract of thesis, list of graduate courses completed or transcripts and three letters of recommendation. Please send applications to Instructorship Committee, Department of Mathematics, University of Utah, Salt Lake City, Utah 84112.

University of Wisconsin, Madison. Van Vleck Assistant Professorship in Mathematics. Applications are invited from outstanding mathematicians (of any age) who are recent recipients of a doctorate. People are sought who will interact well with members of the department, who care about teaching, and who can contribute to the research and instructional programs. The regular teaching load is two courses per semester, with at least one in the applicant's specialty every other year. There is a high probability of additional income through research or teaching during summers between consecutive years of appointment. The salary will be dependent on experience and will be at least $25,000 per academic year. All positions are for specified two- or three-year terms. Deadline for applications is December 31, 1985. Application forms may be obtained by writing Thomas G. Kurtz, Chairman, Department of Mathematics, 223 Van Vleck Hall, University of Wisconsin, 480 Lincoln Drive, Madison, Wisconsin 53706.

Yale University. Josiah Willard Gibbs Instructorships. Offered to men and women with the doctorate who show definite promise in research in pure mathematics. Applications from women and members of minority groups are welcome. Appointments are for two years. The 1985-1986 salary is $26,500; an increase is expected for 1986-1987. The teaching load is kept light to allow ample time for research. If desired, part of the teaching duties may consist of a one-semester course at the graduate level in the general area of the instructor's research. Inquiries and applications should be addressed to the Gibbs Committee, Department of Mathematics, Yale University, Box 2155 Yale Station, New Haven, Connecticut 06520. Preference will be given to applications received before February 1986.

Travel and Study Abroad

The African-American Institute. Seeks to further African development and to strengthen understanding between the United States and Africa. For information about the several programs write the African-American Institute program representatives in twenty-one African countries, relevant African ministries or universities, or the Division of Education, African-American Institute, 833 United Nations Plaza, New York, New York 10017.

Alliance Française de New York. For U.S. Nationals, a limited number of scholarships for graduate study and research in France. Fields unrestricted. Scholarships are in the amount of $3,000 to $3,800. Applicants must have a working knowledge of French. For further information American students should write to Institute of International Education, Division of Study Abroad Programs, 809 United Nations Plaza, New York, New York 10017.
**American-Scandinavian Foundation.** Fellowships for study or research in Scandinavia (Denmark, Finland, Iceland, Norway, and Sweden). Applicants must be U.S. citizens or permanent residents and have completed their undergraduate education by the time the overseas project is to begin. Necessary language competence, financial need, and merit in pursuing the study program in Scandinavia are considered in making these awards. The deadline for completed applications is November 1. Write to the Exchange Division, The American-Scandinavian Foundation, 127 East 73rd Street, New York, New York 10021.

**Centro de Investigacion del IPN. Solomon Lefschetz Research Instructorships.** Offered to mathematicians with doctorates who show definite promise in research. Appointments are for one year, with possibility of renewal for a second year, with salary equivalent to that of an Assistant Professor at the Mathematics Department. An allowance for moving expenses is also made. A knowledge of Spanish is desirable, but not necessary. Deadline for applications is January 30. Inquiries or requests for applications should be addressed to: Lefschetz Instructorships, Mathematics Department, Centro de Investigacion del IPN, Apartado Postal 14-740, Mexico, D.F., Mexico, C.P. 07000. Phone 905-754-4466, Telex 017-72826 PPTME.

**Winston Churchill Foundation.** A scholarship program for graduate work in engineering, mathematics and science at Churchill College, Cambridge University. Application forms are available from representatives on campuses of colleges and universities participating in the program. For further information write to The Winston Churchill Foundation, P.O. Box 1240, Gracie Station, New York, New York, New York 10028.

**Lady Davis Fellowship Trust.** Fellowships for study and/or research at graduate or postdoctoral levels at the Hebrew University of Jerusalem and the Technion-Israel Institute of Technology, Haifa. Lady Davis Fellows will be selected on the basis of demonstrated excellence in their studies, promise of distinction in their chosen fields of specialization and qualities of mind, intellect and character. The Fellowships are tenable for a period of one year. They may be renewed for a second year and in special circumstances extended for a third year. They are intended to defray travel and tuition fees and to meet reasonable living expenses. Deadline for completed applications is December 1, 1985. Application forms can be obtained from the Lady Davis Fellowship Trust, P.O. Box 1255, Jerusalem, Israel.

**Lady Davis Visiting Professorships.** Lady Davis Visiting Professorships, for periods from one semester to a full academic year, are intended for candidates with the rank of Full or Associate Professor at their own institution. Such Visiting Professors are appointed after consultation with the appropriate Faculties of the Hebrew University of Jerusalem or the Technion-Israel Institute of Technology, Haifa. The grant includes a professorial salary and cost of travel. Deadline for completed applications is December 1, 1985. Application forms can be obtained from the Lady Davis Fellowship Trust, P.O. Box 1255, Jerusalem, Israel.

**Fulbright-Hays Program.** Fulbright and Other Grants for Graduate Study Abroad. For graduate study or research in any field in which the project can be profitably undertaken abroad. Applicant must be a U.S. citizen, hold a B.A. degree or the equivalent, and have language proficiency sufficient to carry out the proposed study and to communicate with the host country. If an applicant is already enrolled in a U.S. university, he must apply directly to the Fulbright Program Adviser on his campus. Unenrolled students may apply to the Institute of International Education. Further details may be obtained from the Study Abroad Programs Division, Institute of International Education, 809 United Nations Plaza, New York, New York 10017.

**Fulbright Program. Collaborative Research Grants.** United States Government grants available in all fields for teams of two or three graduate students or recent postdoctoral researchers for research abroad. Eligibility requirements include U.S. citizenship and a sufficient proficiency in both the written and spoken language of the host country to carry out the proposed research. Deadline for completed applications is January 16, 1986. Further details may be obtained from the Study Abroad Programs Division, Institute of International Education, 809 United Nations Plaza, New York, New York 10017.

**Fulbright Program. Postdoctoral Awards.** United States Government grants available annually in all fields for university lecturing and postdoctoral research abroad. Eligibility requirements include U.S. citizenship; for lecturing, college teaching experience; for research, a doctoral degree or recognized professional standing at the time of application. In certain cases a knowledge of

Minna-James-Heineman-Stiftung. Research Abroad. Grants are given to scientists of all nationalities to carry out research in foreign countries, thereby serving scientific knowledge and international cooperation. Awards are made for a maximum period of not more than one year with a maximum amount of 1,700-2,000 DM per month. The applicant must be a graduate, and applicants teaching at universities are preferred. The deadline for applications is January 15 each year. For details of application requirements and further information write to Minna-James-Heineman-Stiftung, Am Hohen Ufer 6, D-3000 Hannover 1, Federal Republic of Germany.

Alexander von Humboldt Foundation. Research Fellowships. Provides postdoctoral scholars with the opportunity of carrying out a research project at a university or other research institute within the Federal Republic of Germany including Berlin (West). Scholars of all nationalities and disciplines may apply. Selection is based exclusively on academic merit. Applicants must have completed their academic studies, have evidence of a degree equivalent to the doctorate (Ph.D., C.Sc., etc.), and for research in the humanities, have adequate knowledge of German. Furthermore they must present evidence of employment in independent research work at the university level, and have scholarly publications to her/his credit. Period of fellowship: 6 to 12 months (extension possible up to 24 months). Applications may be obtained from and returned directly to the Alexander von Humboldt Foundation, Jean-Paul-Strasse 12, D-5300 Bonn 2, Federal Republic of Germany. Additional scholarships for a German language course are available.

Indo-American Fellowship Program. 12 grants to be awarded to U.S. citizens for advanced research in India, for six- to ten-month periods during the academic year. In addition to a basic grant there are travel, dependent and research allowances. Also up to nine shorter grants (two- to three-months) for research and/or professional activity. Applications are encouraged from non-Indian specialists and for projects which include collaboration with Indian colleagues. Deadline for applications June 15 each year. For details write the Council for International Exchange of Scholars, Attention: Indo-American Fellowships Program, Eleven Dupont Circle, Washington, D.C. 20036.

International Research and Exchanges Board (I.REX). IREX administers academic exchange programs, open to advanced graduate students, postdoctoral scholars, and faculty members in all fields of study who are United States citizens, and who are affiliated with a North American college or university. Exchange agreements are in effect with Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania, Yugoslavia, and the USSR. Placements are made for one to ten months at universities or academy institutes. For more detailed information, write to the International Research and Exchanges Board, 655 Third Avenue, New York, New York 10017.

Italian National Research Council Fellowships for Foreign Citizens. The Italian National Research Council announces some fellowships (maximum period one year) for foreign mathematicians. The stipend is 1,200,000 Italian lire per month, plus travel expenses to and from the country of residence. Prospective applicants may write for details to: Alessandro Figa-Talamanca, C.N.R., via Santa Marta 13A, 50139 Firenze, Italy. In their letter they should include information concerning their curriculum, their research program, the names of the Italian mathematicians they would like to work with.

Kosciuszko Foundation. Graduate and Postgraduate Exchange with Poland. Open to U.S. citizens. Candidates must have at least a master's degree and a knowledge of the Polish language. Apply by November 15 for the following academic year. Write to Scholarship and Exchange Programs, Kosciuszko Foundation, 15 East 65th Street, New York, New York 10021.

Marshall Scholarships. Offered by the British Government to U.S. graduates; tenable at any university in the United Kingdom. Recipients of awards are required to take a degree at their British university. Fields unrestricted. Apply through British Consulates-General in the following regions (1) Northeast: Suite 4740 Prudential Tower, Prudential Center, Boston, Massachusetts 02199; (2) Mideast: 3100 Massachusetts Avenue, N.W., Washington, D.C. 20008; (3) South: Suite 912, 225 Peachtree Street, N.W., Atlanta, Georgia 30303; (4) Central: 33 North Dearborn Street,
National Academy of Sciences. For U.S. scientists who wish to commence visits from January 1987 to December 1987 in the USSR, Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania or Yugoslavia. Length of visit is one month (lecture, survey) or three to twelve months (research). Requirements are U.S. citizenship and a Ph.D. or its equivalent in the physical, biological, and behavioral sciences. All necessary expenses will be met by the NAS and the foreign academy, including salary reimbursement up to a predetermined maximum for long-term visits and paid expenses for accompanying family on visits of five months or more. For further information, write to the National Academy of Sciences, Office of International Affairs, USSR/EE, 2101 Constitution Avenue, N.W. (JH218), Washington, D.C. 20418.

National Science Foundation. Support for U.S. participation in seminars, cooperative research projects, and visiting scientist activities under bilateral programs with certain foreign countries. For information about these programs request NSF Guide to Programs from Forms and Publications, National Science Foundation, Washington, D.C. 20550, or write to Division of International Programs, National Science Foundation, Washington, D.C. 20550.

National Science Foundation. Travel awards for U.S. citizens who are either predoctoral students or individuals who have held a doctoral degree for seven years or less as of the starting date of the Institute, to attend North Atlantic Treaty Organization (NATO) Advanced Study Institutes in Europe. Applications are made to the appropriate NATO Institute Director who nominates eligible candidates. Information may be obtained by writing to the NATO Program, Directorate for Scientific and Engineering Personnel and Education, National Science Foundation, Washington, D.C. 20550.

Natural Sciences and Engineering Research Council of Canada. Visiting Fellowships. The Government of Canada offers Fellowships on behalf of the following Canadian Government Departments and Agencies: Agriculture Canada; Department of Communications–Communications Research Centre; Department of National Defence; Energy, Mines and Resources Canada; Environment Canada–Atmospheric Environment Service, Canadian Forestry Service, Environmental Conservation Service–Inland Waters Directorate, Lands Directorate, Fisheries and Oceans Canada–Atlantic Fisheries, Pacific and Freshwater Fisheries, Ocean Science and Surveys; Health and Welfare Canada–Health Protection Branch, Food Directorate, Environmental Health Directorate, Drugs Directorate, Laboratory Centre for Disease Control; National Museums of Canada–Museum of Natural Sciences; National Research Council Canada; Atomic Energy of Canada Limited. The annual value of the fellowships is $26,760, subject to Canadian income tax. The initial appointment is for one year, with a possibility of renewal for a second year. The applicant should hold a recent doctoral degree, or a master’s degree plus appropriate research experience. The closing date for applications is January 15 each year. Write to the Visiting Fellowships Office, Natural Sciences and Engineering Research Council of Canada, 200 Kent Street, Ottawa, Ontario, Canada K1A 1H5.

North Atlantic Treaty Organization. The NATO Science Committee has a Programme of Grants for Collaborative Research which provides financial aid for research projects aimed at stimulating, encouraging and facilitating scientific research in collaboration between scientists working in different member countries of the Alliance, thus promoting the flow of ideas and of experimental and theoretical methods across frontiers. Projects are supported for a limited period usually not exceeding five years, covering mainly travel and living expenses abroad for principal investigators visiting partner laboratories or for staff members collaborating on specific projects with laboratories abroad. Deadlines for applications are 31 March, 15 August and 30 November. Application forms and details of the awards together with information about the Science Committee's other programmes can be obtained from: Scientific Affairs Division, NATO, 1110 Brussels, Belgium.

North Atlantic Treaty Organization. Postdoctoral Fellowships. Awarded for nine- to twelve-month periods, for scientific study or work at appropriate nonprofit institutions in NATO countries, other than the U.S., or countries that cooperate with NATO. This program is for citizens or nationals of the U.S. Fellows receive a stipend of $18,000 for twelve-month tenure, plus dependency and travel allowances. Application deadline is November 1. For information and application material, write to NATO Program, Division of Research Career Development, National Science Foundation, Washington, D.C. 20550.
Royal Norwegian Council for Scientific and Industrial Research. Postdoctoral Fellowships. Fields: engineering and applied sciences. Studies can be carried out at the Universities of Oslo and Bergen, the Technical University of Norway, and at institutes for applied research in Oslo, Bergen, and Trondheim. English may be used at all institutes; German and French at some institutes. Deadline each year is December 1. Write to Royal Norwegian Council for Scientific and Industrial Research, Sognsvæien 72, P.O. Box 70, Tønsen, 0801 Oslo 8, Norway.

Weizmann Institute of Science. Feinberg Graduate School Postdoctoral Fellowships. The Fellowships are intended mainly for scientists who have recently obtained their Ph.D. degree. The Fellowships provide a 12-month stipend (with possible renewal for a second year), a small relocation allowance and a one-way air ticket. Round-trip airfare is provided if the Fellowship is extended for a second year. The annual stipend is adjusted periodically in accordance with living costs. Application forms and additional information may be obtained from the Feinberg Graduate School, The Weizmann Institute of Science, P.O. Box 26, Rehovot 76100, Israel. The review of applications is held twice a year, on March 15 and November 15.

Study in the U.S. for Foreign Nationals

Many of the programs in the Graduate Support and Postgraduate Support sections are also applicable to Foreign Nationals.

Alliance Française de New York. For French students, a limited number of scholarships for graduate study in the U.S.; fields unrestricted. Scholarships are in the amount of $2,000 to $3,000. Applicants must have a working knowledge of English. For further information, write to Commission Franco-Américaine d'Echanges Universitaires et Culturels, 9, rue Chardin, Paris, 75016, France.

American-Scandinavian Foundation. Scandinavian scholars are awarded graduate fellowships to study in the U.S. For information write to the appropriate society in Scandinavia cooperating with the American-Scandinavian Foundation (Danmark-Amerika Fondet, Nytorv 9, DK-1450 Copenhagen K, Denmark; Suomi-Amerikka Yhdistysten Liitto, Mecelininkatu 10 A 10, SF-001 00 Helsinki 10, Finland; Islenzk-Amerika Félagid, P.O. Box 7051, Reykjavik, Iceland; Norge-Amerika Foreningen, Drammensveien 20 C, Oslo 2, Norway; Sverige-Amerika Stiftelsen, Box 5280, S-102 46 Stockholm, Sweden), or to the Exchange Division, The American-Scandinavian Foundation, 127 East 73rd Street, New York, New York 10021.

Fulbright Program. Grants under the Fulbright Act for study, research, teaching and lecturing in the United States are available to nationals of many countries. Information regarding these opportunities may be secured from the Cultural Affairs Officer of the United States Embassy or from the binational Educational Commission or Foundation if there is one in the inquirer's own country. The number of grants for each academic year will depend on funds available.

Institute of International Education. Grants for study, training and research in the U.S. Open to nationals of most countries. IIE develops and administers exchange programs for a number of organizations and corporations, and administers U.S. Government grants under the Fulbright and other educational exchange programs of the U.S. Information Service. Information regarding these opportunities may be secured from the Cultural Affairs Officer of the U.S. Embassy or from the Binational Commission or Foundation if there is one in the inquirer's own country. Write to Foreign Fulbright Programs Division, IIE, 809 United Nations Plaza, New York, New York 10017.

International Research and Exchanges Board (IREX). Provides opportunities for foreign scholars and students to receive training and to conduct research at academic institutions in the United States. The sending country nominates its own participants to the exchanges, while the receiving country places the nominees at appropriate institutions of higher learning, normally for periods of a semester or an academic year. Soviet and East European scholars interested in the various exchange programs administered by IREX should consult the agencies in their own countries which administer the exchanges. These are: Department of Personal Scientific Exchange, Division of International Scientific-Technical Cooperation, State Committee for Science and Technical Progress, Slavyanska 8, Sofia, Bulgaria; Foreign Department, Ministry of Education of the Czech Republic, Karmelitska, 7, Prague 1, Czechoslovakia, or International Department, Ministry of Education of the Slovak Republic, Suvorovova 16, Bratislava, Czechoslovakia; Ministry for Higher and Technical Education of the German Democratic Republic, Marx-Engels Platz 2, 102 Berlin,
German Democratic Republic; International Cultural Institute, V. Dorottya utca 8, Budapest, Hungary; International Relations Department, Ministry of Science, Higher Education and Technology, ul. Miodowa 6/8, Warsaw, Poland; National Council for Science & Technology, Str. Roma 32-24, Bucharest, Romania; Federal Administration for International Scientific, Cultural, Educational, and Technical Cooperation, Kosancicev Venac 29, 11000 Belgrade, Yugoslavia; Department of Foreign Relations, Ministry of Higher and Specialized Secondary Education of the USSR, Lysinovskaya 51, Moscow, USSR, or Department of Foreign Relations, Academy of Sciences of the USSR, Leninski prospект 14, Moscow 117901, USSR. Write to Programs Officer, IREX, 655 Third Avenue, New York, New York 10017.

Kennedy Scholarships. For citizens of the United Kingdom, these grants are for graduate study at Harvard University or the Massachusetts Institute of Technology. Application deadline is October 25. Write to Secretary, Kennedy Memorial Trust, 16 Great College Street, London SWIP 3RX, England.

Kosciuszko Foundation. One-year grants to doctoral and postdoctoral students. Applicants must be Polish citizens and have excellent command of English. Apply by November 15 for the following academic year. Write to Scholarship and Exchange Programs, the Kosciuszko Foundation, 15 East 65th Street, New York, New York 10021.

Sources of Fellowship Information

Some of the publications listed below are available at school, or college and university libraries, or in the reference room of a good public library.

American Association of University Women. AAUW Educational Foundation Programs Office, 2401 Virginia Avenue, N.W., Washington, D.C. 20037.


Basic Facts on Foreign Study. A fact sheet on what to expect on a study-abroad program and where to find pertinent information; 1982, 6 pp.; single copies free, $10 per 100. Communications Division, Institute of International Education, 809 United Nations Plaza, New York, New York 10017. New edition planned for Spring 1985; single copies free, $15 per 100.

Chronicle Student Aid Annual, 1984. Catalog No. 502A. $16.50 plus $1.65 postage and handling. Revised annually. Chronicle Guidance Publications, Inc., Moravia, New York 13118. Provides information on about 1,350 financial aid programs available to undergraduate, graduate, and postgraduate students, including programs sponsored by private organizations and foundations, state and federal government sources, and national and international labor unions, both AFL-CIO affiliated and independent. A Subject Index gives easy access to programs for which a student is eligible.


Directory of Special Opportunities for Women. Listings of national, state, county, city and private organizations, associations, programs and agencies where women can find educational and career opportunities (290 pages). Garrett Park Press, Garrett Park, Maryland 20896. $18 prepaid.

Financial Aid for Minorities in Science. Financial assistance, scholarship and fellowship programs, resources for further information, 1981, Garrett Park Press, Garrett Park, Maryland 20896. $3.

The Foundation Center. The Foundation Center, 79 Fifth Avenue, New York, New York 10003, provides free library service through 165 libraries across the country and publishes information about U.S. foundations and the grants they award, including the biennial publication, Foundation Grants to Individuals, (4th edition, 1984, $18). Call toll-free 800-424-9836 for further information.


Fulbright-Hays Program. Information on grants for teaching in elementary and secondary schools, and colleges, may be obtained from the Teacher Exchange Branch, E/ASX, United States Information Agency, 301 Fourth Street, S.W., Washington, D.C. 20202.


Introduction to Education in the People’s Republic of China and U.S.-China Educational Exchanges, 1982. Contains an account of China’s educational system and information about educational exchange programs, for students, researchers and teachers. To obtain a copy for $1 postage and handling charges, or a list of additional Clearinghouse publications on U.S.-China educational exchanges, write to the U.S.-China Education Clearinghouse, 1860 Nineteenth Street, N.W., Washington, D.C. 20009.

International Research and Exchanges Board (IREX). Programs administered by IREX include exchanges for a semester or an academic year with the USSR and Socialist countries of Eastern Europe, grants to promote new exchanges, collaborative projects in the social sciences and humanities, preparatory fellowships and language programs. The IREX programs provide access at the predoctoral and postdoctoral levels to East European and Soviet universities and academies of sciences. For a program announcement describing the full range of IREX programs, write to the International Research and Exchanges Board, 655 Third Avenue, New York, New York 10017.


Private Sector Funding Available to Foreign Scholars and Students in the United States. Prepared by Ellen Wise Sivon, 1984. Lists private organizations offering awards to individual students and scholars for study primarily in the United States. Grant and fellowships indexed by field of study and academic level. Available from the National Association for Foreign Student Affairs, 1860 19th Street, N.W., Washington, D.C 20009. $2.95, plus $1.00 shipping.

Rhodes Scholarships. For U.S. citizens; tenable at Oxford University. Selection is made on four criteria: scholarship, character, leadership, and physical vigor. Information is available through the applicant’s college or university, or from the Rhodes Scholarship Office, Pomona College, Claremont, California 91711.

Scholarships, Fellowships and Loans News Service and Counselors Information Services. The Staff, Bellman Publishing Company, P.O. Box 164, Arlington, Massachusetts 02174-0164, published quarterly, $30 per year. Up-to-date information regarding student financial aid. Annotated bibliography of books and professional journals.

Selected List of Fellowship Opportunities and Aids to Advanced Education for United States Citizens and Foreign Nationals. Publications, National Science Foundation, 1800 G Street, N.W., Washington, D.C. 20550. Contains a list of fellowships available on the undergraduate, graduate, and postdoctoral levels plus a bibliography giving other sources of information on fellowships, scholarships, and loans.

Social Science Research Council. International Dissertation Research Fellowship Program. The program provides support to advanced doctoral candidates at U.S. universities for dissertation research in Africa; the Near and Middle East; East, South and Southeast Asia; Western Europe; Latin America, and the Caribbean. Full information on this program may be obtained by writing to the Social Science Research Council, Fellowships and Grants, 605 Third Avenue, New York, New York 10158.

Study Abroad, 1983–1986. Provides information on several hundred thousand study grants in over 100 countries for the years 1983–1986. Write to UNESCO: in the United States, UNIPUB, P.O. Box 1222, Ann Arbor, Michigan 48106; in Europe, Place de Fontenoy, Paris 7e, France. (1,104 pp., $14.50)

U.S. Information Agency (USIA). For information on USIA’s international educational and cultural exchange programs, including the Fulbright Program, write the Office of Public Liaison, U.S. Information Agency, 301 Fourth Street, S.W., Washington, D.C. 20547.

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Roger Howe

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