NUMERICAL ANALYSIS
edited by
Gene H. Golub and Joseph Oliger
Lecture Notes from the Short Course
sponsored by the AMS, Atlanta, January 3–4, 1978

This is the collection of texts prepared by the lecturers of the Numerical Analysis Short Course given at the A.M.S. meeting in Atlanta, Georgia in January 1978. Computational linear algebra, optimization and the solution of nonlinear equations, the approximation of functions and functionals, and approximations for initial and boundary value problems for ordinary and partial differential equations are discussed. Methods such as the QR factorization, singular value decomposition, quasi-Newton and secant methods, finite difference, finite element and collocation methods are included in these discussions.

The subject matter was chosen to emphasize prominent research areas and attitudes in numerical analysis. These are introductory lectures on the subject matter for presentation to an audience of scientists from other areas or disciplines. Typically, there is an introduction to a given problem area and to techniques used, an application to applied problems, and a discussion of current research questions or directions.

Several trends in modern numerical analysis are discussed in these lectures. There has always been the quest to find the best way to do things. More realistic notions of "best" are evolving which incorporate the classical notions and realistic costs of producing the desired result. The discussion of good vs. best approximation is an example. More attention is being given to providing not only an answer, but a computed guarantee that it is a good answer—or a poor one. Easily computed and sharp a posteriori estimates are needed. The discussion of estimates of condition numbers is an example.

There is progress being made in algorithm design based on operator splittings which allow one to take advantage of being able to solve simpler subproblems very efficiently. Updating strategies for optimization and splitting methods for differential equations are examples.

These texts should be useful to the practicing users of numerical methods, programmers, scientists, and engineers who would like to know what progress is being made on the theoretical and developmental side of the subject. They should be useful to numerical analysts to review progress in areas other than their own, and to mathematicians in general who would like to understand what the concerns of numerical analysts are. The texts should be useful for the development of seminars and reading courses in the academic environment. Many will probably find the bibliographies of current work most useful.

THE LECTURERS AND TITLES

CLEVE MOLER, Three Research Problems in Numerical Linear Algebra
J. E. DENNIS, JR., A Brief Introduction to Quasi-Newton Methods
CARL De BOOR, The Approximation of Functions and Linear Functionals: Best vs. Good Approximation
JAMES M. VARAH, Numerical Methods for the Solution of Ordinary Differential Equations
JOSEPH E. OLIGER, Methods for Time Dependent Partial Differential Equations
GEORGE J. FIX, Variational Methods for Elliptic Boundary Value Problems

Publication: November 1978, iv + 135 pages
Hard Cover: List $14.00, AMS Member $10.50. CODE: PSAPM/22
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STATEMENT, Committee on Employment and Educational Policy ........ 522

ASSISTANTSHIPS and FELLOWSHIPS in the MATHEMATICAL SCIENCES in 1979–1980

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Current and prospective graduate students in mathematics and their advisors should be aware of employment prospects in the profession. Historically, the vast majority of Ph.D. mathematicians have pursued academic careers. In recent years, new Ph.D.'s in mathematics have typically had difficulty in finding academic employment. This is particularly true for those who studied "pure" mathematics. Because many departments are close to being fully tenured, it has become increasingly common for young mathematicians to find themselves looking for jobs again a few years after receiving their degrees. These nonretained Ph.D.'s often have great difficulty trying to find a second academic position. Careful studies made under the auspices of the AMS Committee on Employment and Educational Policy indicate that for a number of years to come, the number of openings for traditional academic employment in mathematics will be considerably smaller than the rate at which Ph.D.'s in pure mathematics are currently entering the job market.

Talented young people should not be discouraged from becoming mathematicians. Some academic positions will, of course, become available every year. In addition, there are career opportunities for mathematicians outside of the traditional academic environment. However, important career decisions should be based on a realistic assessment of employment prospects. More information will be found in the following articles: "Future Job Prospects for Ph.D.'s in the Mathematical Sciences" by Wendell Fleming, these Notices, December, 1975; "21st Annual AMS Survey, First Report," these Notices, October, 1977; "21st Annual AMS Survey, Second Report," these Notices, February, 1978; and "22nd Annual AMS Survey, First Report," these Notices, October, 1978.

Committee on Employment and Educational Policy

Lida K. Barrett          Hugo Rossi
Alan J. Goldman          Martha K. Smith
Arthur P. Mattuck        Robert J. Thompson
FOREWORD

The December issue of the Notices regularly contains an extensive report on departments with graduate programs in the mathematical sciences. This report customarily includes data on the number of degrees awarded, and information on support available for graduate students through fellowships and assistantships.

Beginning with the 1978 issue, the information about departments has been augmented in two ways over that given in earlier years.

Just below the deadline for applications, the number of full-time faculty members in the department is reported, as well as the number of those who have published a mathematical paper or book within the past three years. (These data extend the reports formerly published in the Mathematical Association of America’s Guidebook to Departments in the Mathematical Sciences, which ceased publication following the 1975 edition.) This information was added to the listings at the request of the Data Subcommittee of the Society’s Committee on Employment and Educational Policy (CEEP) in the belief that current figures on faculty size and mathematical publication may be useful to prospective graduate students.

Another recommendation of the CEEP Data Subcommittee was that this issue of the Notices contain a list of the departments which accept critical, historical, or expository theses for doctoral degrees in addition to, or in place of, the more traditional research theses. This list appears on page 583, following the list of assistantships and fellowships. Both of these lists are arranged in alphabetical order by states, followed by a listing of Canadian departments.

A postal strike in Canada appears to be at least partially responsible for the fact that fewer Canadian departments are listed than in past issues of this report. Further information on Canadian departments may be anticipated in the supplement to be published in the February 1979 issue of the Notices.

In addition to information for graduate students supplied by departments, this issue contains information on support for graduate study available from other sources, and information on support of postdoctoral study and research available from a variety of sources.

The final part of this issue contains, as usual, the annual index of abstracts of papers presented to the Society, as well as an index of the other material published in the Notices during 1978. LKD
The study of the topology of real algebraic curves in the plane and surfaces in space is a classical problem in algebraic geometry. In his 16th problem, Hilbert placed on Algebraic and Geometric Topology. Particular emphasis was placed on Algebraic K- and L-Theory, Surgery and Surgery Classifying Spaces, Group Actions on Manifolds, and 3 and 4 Manifold Theory.

The topics in Part 1 are: Algebraic K- and L-Theory; Surgery and its Applications; Group Actions.

Included in Part 2 are: Structure of Topological Manifolds; Low Dimensional Manifolds; Geometry of Differential Manifolds and Algebraic Varieties; H-Spaces, Loop Spaces, and CW Complexes; Problems.


These are for the most part reports of research in the area of algebraic topology and the overall effect is an overview of the subject at this time.

Volume XXXII, Parts 1, 2
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AMS TRANSLATIONS—SERIES 2
ISSN 0065-9290
NINE PAPERS ON HILBERT’S 16TH PROBLEM
D. A. Gudkov and G. A. Utkin

The study of the topology of real algebraic curves in the plane and surfaces in space is a classical problem in algebraic geometry. In his 16th problem, Hilbert singled out the case of nonsingular algebraic curves and surfaces. It is known that in studying the location of ovals of nonsingular curves difficulties are first encountered with sixth order curves. Similarly, in the study of the number, shape and location of pieces of nonsingular surfaces the difficulties begin with fourth order surfaces. Both cases were cited by Hilbert; but their investigation by Hilbert’s pupils, Grete Kahn and Klara Löbenstein, and by Karl Rohn did not yield substantial results. I. G. Petrovskii showed that a sixth order curve cannot consist of eleven ovals located outside one another. Furthermore, I. G. Petrovskii and O. A. Oleinik proved that a fourth order surface which consists entirely of ovals can contain at least ten ovals.

The idea of applying the concepts of roughness and degree of nonroughness to the study of algebraic curves was conceived by A. A. Andronov in 1948. In previous work, as well as in the present volume, the authors have attempted to carry out this idea. In particular, reexamination of the investigations of Kahn, Löbenstein and Rohn from this viewpoint has proved fruitful.

The present volume contains the solution of the classical problem concerning the location of ovals of a nonsingular sextic curve. Moreover, substantial results about the topology of a nonsingular fourth order surface are also presented. It also proved convenient to establish certain theorems about nonsingular algebraic curves and surfaces of arbitrary order.

The method employed in the investigation of the location of ovals of sixth order curves can also be applied to study the mutual disposition of the following: a curve of order five and a line; nonsingular curves of orders two and four; and a pair of cubic curves.

It would be interesting to determine whether a fourth order surface can consist of 11 pieces and/or have rank 13. There are examples, due to Rohn and Hilbert respectively, of a fourth order surface consisting of ten ovals and of a surface of rank 12.

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MATHEMATICAL SURVEYS
ISSN 0076-5376
SYMPLECTIC GROUPS
O. T. O’Meara

This volume, the sequel to the author’s Lectures on Linear Groups, is the definitive work on the isomorphism theory of symplectic groups over integral domains. Recently discovered geometric methods which are both conceptually simple and powerful in their generality are applied to the symplectic groups for the first time. There is a complete description of the isomorphisms of the symplectic groups and their congruence subgroups over integral domains. Illustrative is the theorem PSPn(0) = PSPn1(0) if R = n1 and 0 for dimensions ≥4. The new geometric approach used in the book is instrumental in extending the theory from subgroups of PSPn(±6) where it was known to subgroups of PSpd where it is new. There are extensive investigations and several new results on the exceptional behavior of PSOn in characteristic 2.

The author starts essentially from scratch (even the classical simplicity theorems for PSpd are proved) and the reader need be familiar with no more than a first course in algebra.

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ASSISTANTSHIPS AND FELLOWSHIPS
IN THE MATHEMATICAL SCIENCES IN 1979–1980

The list of assistantships and fellowships at universities includes 411 departments of mathematics, applied mathematics, statistics, computer science, and related mathematical disciplines; these represent 310 colleges and universities. Institutions in the United States are listed alphabetically by state, followed by Canadian institutions.

Abbreviations used in the section on graduate study

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
- A&NT ............. Algebra and Number Theory
- G&T .................... Geometry and Topology
- L ..................... Logic
- A&FA .................... Analysis and Functional Analysis
- F ..................... Probability
- S ................. Statistics
- CS ................ Computer Science
- OR ................ Operations Research
- AM ................ Applied Mathematics
- ME ................ Mathematics Education

Under the SERVICE REQUIRED column, hours per week section:

- Contact hours

I. Graduate Study at Universities

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ALABAMA

Alabama State University, Montgomery 36101
DEPARTMENT OF MATHEMATICS
Wallace Maryland, Jr., Chairman
Teaching Assistantship (5) 2075.40 9 146/qtr, 15

Auburn University, Auburn 36830
DEPARTMENT OF MATHEMATICS
Ben Fitzpatrick, Jr., Head
Teaching Assistantship (35) 3420–4050 9 600 **
University Fellowship (1) 2000 9 600
*Assistantship: 3/10/79; Fellowship: 3/15/79.
**Five contact hours or thirteen hours if not teaching.

University of Alabama in Huntsville 35807
DEPARTMENT OF MATHEMATICS
F. Lee Cook, Chairman
Teaching Assistantship (6) 3600–4544 9

*Late applications considered if positions are still available.
| TYPE | STIPEND | TUITION | SERVICE REQUIRED | DEGREES AWARDED |
|------|---------|---------|------------------|-----------------
|      | of financial assistance | amount in dollars | 9 or 12 months | if not included in stipend (dollars) | hours per week | type of service |
|      | with number anticipated 1979–1980 | | | | | |
| University of Alabama (Tuscaloosa), University 35486 | | | | | | |
| DEPARTMENT OF MATHEMATICS | | | | | | |
| C. Hobby, Chairman | | | | | | |
| Fellowship (3) | 9 | | | | | |
| Teaching Assistantship (22) | 3100–3700 | 9 | 20 | | Teaching |
| Research Assistantship (1) | 9 | | | | | |
| Applications due: 4/15/79 | Faculty 27; Published 14 | Bachelor's by inst. 2481 |
| | Bachelor's by dept. 22 |
| | Master's by dept. 4 |
| ALASKA | | | | | | |
| University of Alaska, Fairbanks 99701 | | | | | | |
| DEPARTMENT OF MATHEMATICS | | | | | | |
| Tom Head, Chairman | | | | | | |
| Teaching Assistantship (2 or 3) | 5364–5628 | 9 | | | | |
| Applications due: Open | Faculty 12; Published 5 |
| Bachelor's by inst. 177 |
| Bachelor's by dept. 4 |
| ARIZONA | | | | | | |
| Arizona State University, Tempe 85281 | | | | | | |
| DEPARTMENT OF MATHEMATICS | | | | | | |
| Harvey A. Smith, Chair | | | | | | |
| Teaching Assistantship (42) | 4050–5400 | 9 | .275/sem. | 6” | Teaching |
| Applications due: 3/1/79 | Faculty 42; Published 25 |
| Bachelor's by inst. 4394 |
| Bachelor's by dept. 21 |
| Master's by dept. 15 |
| Ph.D. (1975–1978 incl.) | A&FA 1, P 1, AM 1, ME 1. Total: 4 |
| Northern Arizona University, Flagstaff 86011 | | | | | | |
| DEPARTMENT OF MATHEMATICS | | | | | | |
| Richard D. Meyer, Chairman | | | | | | |
| Teaching Assistantship (4) | 3700 | 9 | 250/sem. | 13 | Teaching |
| Applications due: 4/15/79 | Faculty 24; Published 5 |
| Bachelor's by inst. 1200 |
| Bachelor's by dept. 25 |
| Master's by dept. 8 |
| University of Arizona, Tucson 85721 | | | | | | |
| DEPARTMENT OF APPLIED MATHEMATICS | | | | | | |
| R.E. O'Malley, Jr., Chairman | | | | | | |
| Fellowship (2) | varies | 9 | | | | |
| Teaching Fellowship (2) | varies | 9 | 275/sem. | | 3 |
| Teaching Assistantship (10) | varies | 9 | 275/sem. | | 6 |
| Research Assistantship (15) | varies | 9 | 275/sem. | | |
| Applications due: 2/15/79 | Faculty 30; Published 30 |
| Bachelor's by inst. 3358 |
| Bachelor's by dept. 1200 |
| Master's by dept. 25 |
| ARKANSAS | | | | | | |
| Arkansas State University, State University 72467 | | | | | | |
| DEPARTMENT OF MATHEMATICS AND PHYSICS | | | | | | |
| J.L. Linnstaedter, Chairman | | | | | | |
| Teaching Assistantship (8) | 2925 | 9 | | | 3 | Teaching |
| Applications due: 4/1/79 | Faculty 18; Published 6 |
| Bachelor's by inst. 800 |
| Bachelor's by dept. 20 |
| Master's by dept. 5 |
| University of Arkansas, Fayetteville 72701 | | | | | | |
| DEPARTMENT OF MATHEMATICS AND STATISTICS | | | | | | |
| James E. Scroggs, Chairman | | | | | | |
| Teaching Assistantship (36) | 3400–3700 | 9 | 6” | | Teaching |
| Applications due: 3/15/79 | Faculty 47; Published 35 |
| Bachelor's by inst. 3358 |
| Bachelor's by dept. 27 |
| Master's by dept. 4 |
| Ph.D. (1975–1978 incl.) | A&NT 2, G&T 1, A&FA 1, P 1, AM 1, Total: 6 |
| University of Arkansas for Medical Sciences, Little Rock 72201 | | | | | | |
| DEPARTMENT OF BIOMETRY | | | | | | |
| Robert C. Walls, Head | | | | | | |
| Research Assistantship (2) | 3800–4200 | 12 | 20 | | Research |
| Applications due: 7/15/79 | Faculty 5; Published 4 |
| Bachelor's by dept. 1 |
| Bachelor's by dept. 8 |
| Master's by dept. 11 |

*#460 for 9 months, out-of-state tuition waived.
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*Two weeks prior to beginning of semester.

**For a three unit class.
Claremont Graduate School, Claremont 91711

DEPARTMENT OF MATHEMATICS
Robert C. James, Chairman
Applications due: 2/15/79
Ph.D. (1975-1978 incl.)
Bachelor's by dept. 7
Master's by dept. 2
Ph.D. (1975-1978 incl.)
Total: 6

Fellowship (10) 1400-2400 9
Tuition Waivers (10)

Loyola Marymount University, Los Angeles 90045

DEPARTMENT OF MATHEMATICS
W. Scott Wright, Chairman
Applications due: 4/15/79
Ph.D. (1975-1978 incl.)
Bachelor's by inst. 560
Bachelor's by dept. 5
Master's by dept. 2

Scholarship (2) 150-300 9
Teaching Assistantship (25) 4350-5000 9
85/sem., 6 Teaching

San Diego State University, San Diego 92182

DEPARTMENT OF MATHEMATICS
E. L. Deaton, Chairman
Applications due: 4/15/79
Ph.D. (1975-1978 incl.)
Bachelor's by inst. 4808
Bachelor's by dept. 65
Master's by dept. 13

Teaching Fellowship (10-12) 2700-3400 9
97/sem.,* 3-6 Teaching

*Nonresidents and foreign students pay an additional $57 per unit.

San Jose State University, San Jose 95192

DEPARTMENT OF MATHEMATICS
John Mitchem, Chairman
Applications due: 4/15/79
Ph.D. (1975-1978 incl.)
Bachelor's by inst. 3600
Bachelor's by dept. 64
Master's by dept. 15

Teaching Assistantship (25) 85/sem., 6 Teaching

San Francisco University, San Francisco 94305

DEPARTMENT OF MATHEMATICS
Robert Osserman, Chairman
Applications due: 4/15/79
Ph.D. (1975-1978 incl.)
Bachelor's by inst. 1648
Bachelor's by dept. 27
Master's by dept. 19
Ph.D. (1975-1978 incl.)
A&NT 1, A&FA 2, AM 2.
Total: 27

Graduate Assistantship (40)* 3020-3510 9
*Graduate Assistants serve for one quarter as Teaching Fellows, for one quarter as Course Assistants, and for one quarter as Research Assistants.
**3 contact hrs./week teaching for one quarter; 6 contact hrs./week assisting for one quarter and one quarter research with no formal duties.

**3 contact hrs./week teaching for one quarter; 6 contact hrs./week assisting for one quarter and one quarter research with no formal duties.

DEPARTMENT OF MATHEMATICS
Robert C. James, Acting Chairman
Applications due: 3/1/79
Ph.D. (1975-1978 incl.)
Bachelor's by inst. 1648
Bachelor's by dept. 71
Master's by dept. 19
Ph.D. (1975-1978 incl.)
OR 27, Total: 27

Graduate Assistantship (40) 3020-3510 9

*9 units paid.

CLAREMONT GRADUATE SCHOOL

The Ph.D. program allows specialization in applied mathematics, functional analysis, applied probability, topology, and other areas. The M.A. programs in applied mathematics, scientific computing, and statistics/operations research are designed to provide training and experience on which one can base a career. Practical experience is an important part of each program and is accomplished through the Mathematics Clinic, which provides work on substantial problems from industry. For students interested in industrial employment, this experience has proved to be far more relevant than that of a teaching assistant. Our alumni with Clinic experience have obtained excellent positions. An article, "An Innovative Approach to Realism within an Academic Environment" by Jerome Spanier (Amer. Math Monthly, Dec. 1976), describes this real-world component of applied mathematics training in Claremont.

A substantial number of tuition waivers (about $3200) are available along with fellowship support, especially in the M.A. program. A low student-faculty ratio permits the faculty to provide close attention to the particular needs and progress of each student. Resources include a very good library and computer facilities. Claremont has a desert climate, but is 20 miles from ski slopes and 40 miles from the beach.

For information write to: Mathematics Department
Claremont Graduate School, Claremont, California 91711
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University of California, Berkeley 94720

DEPARTMENT OF MATHEMATICS
E. Kobayashi, Chairman

- Fellowship (44): 500–5895.50
- Teaching Assistantship (96): 53382–5382
- Research Assistantship (28): 4248–4284

*Fellowship: 12/1/78; Assistantship: 2/1/79.

University of California, Davis 95616

DEPARTMENT OF MATHEMATICS
D. G. Mead, Chairman

- Fellowship (2): 3200
- Teaching Assistantship (23): 5382
- Associateship (2): 5430
- Community Teaching Fellowship (5): 5382
- Remedial Teaching (5)*
- Reading Assignments (5)*

*Stipend and hours vary with extent of duties.

University of California, Los Angeles 90024

DEPARTMENT OF MATHEMATICS
T. W. Gamelin, Chair

- Fellowship (11): 3450–5855
- Teaching Fellowship (12): 5382–6300
- Teaching Assistantship (50): 5382–6300
- Community Teaching Fellowship (6): 5382

*Applications due: 1/15/79

DEPARTMENT OF SYSTEM SCIENCE
J. W. Carlyle, Chairman

- Fellowship (2): 2700–3000
- Teaching Assistantship (2): 5382–5940
- Research Assistantship (6): 5.43–6.24
- Nonresident Tuition Waiver (2): 3810

*Applications due: 2/15/79

**Rates per hour.

UNIVERSITY OF CALIFORNIA — BERKELEY

DEPARTMENT OF MATHEMATICS

At least one tenure track faculty position anticipated, pending budgetary approval, effective Fall 1979 (rank to be determined by qualifications), in the areas of algebra, analysis, applied mathematics, foundations, or geometry. Applicants should have demonstrated potential in research and teaching.

Send by January 15, 1979, curriculum vitae, list of publications, and a few selected reprints or preprints. Also ask three people to send letters of recommendation to:

Professor Robin Hartshorne — Vice Chairman for Faculty Appointments
Department of Mathematics
University of California, Berkeley
Berkeley, California 94720

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*In 1978-79 all graduate students (resident and nonresident) pay per quarter $255. Nonresident graduate students pay per quarter $635 tuition in addition to the above $255.

**Fees and/or Tuition.

University of California, Santa Barbara 93106

DEPARTMENT OF MATHEMATICS

Charles A. Akemann, Chairman

Fellowship (3) 3360 9 * 6 Teaching
Teaching Assistantship (33) 5650 9 15 Research A&NT 5, G&T 1, A&FA 2, Total: 6
Research Assistantship (2) 5650 9 6 Teaching
Community Teaching Fellowship (4) 5650 9

*$1905 for all out-of-state students only.

University of California, Santa Cruz 95064

DEPARTMENT OF INFORMATION SCIENCES

H.D. Huskey, Chairman

Fellowship (1) 4127 9 * 20
Teaching Assistantship (8) 5382 9 * 20
Research Assistantship (1) 4266 9 * 20

*Nonresident pays per quarter: $635 tuition, $275, 50 fees.

GRADUATE MATHEMATICS AT LA JOLLA, CALIFORNIA

PROGRAMS: M.S. and Ph.D. degrees are offered in all major fields of pure mathematics, probability, statistics and numerical analysis. Masters Degree program in Applied Mathematics: a special one to two year course of study in applied and computational mathematics.

FINANCIAL AID: Regents Fellowships (approximately $400 per month for 9 months plus fees)
Research Assistantships (approximately $472 per month)
Teaching Assistantships (approximately $598 per month for 9 months)
*San Diego Fellowship (approximately $400 per month plus fees)

Department of Mathematics

UNIVERSITY OF CALIFORNIA, SAN DIEGO

La Jolla, California 92093

*For educationally disadvantaged students.

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

Graduate study in this department can lead to a Masters degree in pure or applied mathematics or the Doctor of Philosophy in mathematics. Emphasis areas in computer science and statistics are available at both the Master's and Doctoral level.

The Mathematics faculty is actively involved in research in the areas of functional analysis, classical analysis, algebra, linear and multilinear algebra, number theory, geometry, topology, probability and statistics, computer science, applied mathematics.

Assistantships and Fellowships (to $5700) are available for the 1979-80 year.

This beautiful seaside campus is within one of the world's largest cultural and research centers.

Write to Graduate Committee Chairperson, Dept. of Mathematics, Univ. of Calif., Santa Barbara 93106.

Pursuant to Federal and State Laws, UCSB is an equal opportunity/affirmative action employer. Inquiries about the University's policies may be directed to Raymond Huerta, (805) 961-2089.
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<td>Gerhard Ringel, Chairman</td>
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<td>Wolfgang Schmidt, Chairman</td>
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<td>University of Denver, Denver 80210</td>
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<tr>
<td>DEPARTMENT OF STATISTICS AND OPERATIONS RESEARCH</td>
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<td>Darl D. Bien, Chairman</td>
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<td>George B. Miller and Stephen A. Bacon, Chairmen</td>
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invites applications for graduate study toward the Ph. D. and M. A. degrees. Small classes, frequently in the form of seminars and tutorials, ensure individual attention. Wesleyan has excellent facilities for graduate students, an outstanding library and a location convenient to New York, New Haven and the Boston-Cambridge areas.


Applications and inquiries should be addressed to

CHAIRMAN, GRADUATE COMMITTEE — DEPARTMENT OF MATHEMATICS

WESLEYAN UNIVERSITY, MIDDLETOWN, CONNECTICUT 06457

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WESLEYAN UNIVERSITY
DEPARTMENT OF MATHEMATICS

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Applications and inquiries should be addressed to

CHAIRMAN, GRADUATE COMMITTEE — DEPARTMENT OF MATHEMATICS

WESLEYAN UNIVERSITY, MIDDLETOWN, CONNECTICUT 06457

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532
## DISTRICT OF COLUMBIA

### American University, Washington 20016

**DEPARTMENT OF MATHEMATICS, STATISTICS AND COMPUTER SCIENCE**  
Mary Gray, Chair

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*Applications due: 3/31/79  Faculty 22; Published 14  Bachelor's by inst. 2000  Bachelor's by dept. 30  Master's by dept. 17  Ph.D. (1975–1978 incl.) A&NT 2, G&T 1, A&FA 2, S 17, AM 1. Total: 23 |

### Catholic University of America, Washington 20064

**DEPARTMENT OF MATHEMATICS**  
John Welch, Chairman

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### George Washington University, Washington 20052

**DEPARTMENT OF MATHEMATICS**  
T. P. G. Liverman, Chairman

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**DEPARTMENT OF OPERATIONS RESEARCH**  
Donald Gross, Chairman

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*Applications due: 3/1/79  Faculty 9; Published 9  Bachelor's by inst. 838  Bachelor's by dept. 32  Master's by dept. 5  Ph.D. (1975–1978 incl.) OR 13. Total: 13 |

**DEPARTMENT OF STATISTICS**  
S.W. Greenhouse, Chairman

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*Applications due: 2/15/79  Faculty 11; Published 4  Bachelor's by inst. 838  Bachelor's by dept. 3  Master's by dept. 5  Ph.D. (1975–1978 incl.) OR 13. Total: 13 |

### Howard University, Washington 20059

**DEPARTMENT OF MATHEMATICS**  
James A. Donaldson, Chairman

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*Applications due: 4/1/79  Faculty 25; Published 13  Bachelor's by inst. 929  Bachelor's by dept. 2  Master's by dept. 1 |

## FLORIDA

### Florida Atlantic University, Boca Raton 33431

**DEPARTMENT OF MATHEMATICS**  
Tomas P. Schonbek, Chairman

<table>
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<th>TUITION SERVICE REQUIRED</th>
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*Applications due: 4/1/79  Faculty 10; Published 8  Bachelor's by inst. 1368  Bachelor's by dept. 9  Master's by dept. 3 |

### Florida Institute of Technology, Melbourne 32901

**DEPARTMENT OF MATHEMATICAL SCIENCES**  
D.R. Clutterham, Head

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*Applications due: 3/19/79  Faculty 11; Published 3  Bachelor's by inst. 287  Bachelor's by dept. 3  Master's by dept. 25 |

### Florida State University, Tallahassee 32306

**DEPARTMENT OF MATHEMATICS**  
C.W. McArthur, Chairman

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**DEPARTMENT OF STATISTICS**  
Myles Hollander, Chairman

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*Applications due: 2/1/79  Faculty 17; Published 3  Bachelor's by inst. 3826  Bachelor's by dept. 7  Master's by dept. 19  Ph.D. (1975–1978 incl.) OR 5, S 7, OR 4. Total: 16 |
Florida Technological University, Orlando 32816

DEPARTMENT OF MATHEMATICS AND STATISTICS
Joby Milo Anthony, Chairman

Teaching Assistantship (2) 3600 9 22/hr. 20 Teaching

University of Florida, Gainesville 32611

DEPARTMENT OF MATHEMATICS
A. R. Bednarek, Chairman

Fellowship (3) 3120 9 * 6 C Teaching
Teaching Assistantship (40) 3900-5400** 9 * 6 C Teaching
Research Assistantship (1) 3000-3600 9

* $32 per credit hour for all graduate courses, except research hours.
** 1/2-time.

University of Miami, Coral Gables 33124

DEPARTMENT OF MATHEMATICS
Edward L. Reiss, Chairman

Fellowship (2) 2000-3500 9 Research
Teaching Assistantship (21) 3300-3700 19

University of North Florida, Jacksonville 32216

DEPARTMENT OF MATHEMATICAL SCIENCES
W. H. Caldwell, Chairman

Teaching Assistantship (2) 3000-3600 9

University of West Florida, Pensacola 32504

DEPARTMENT OF SYSTEMS SCIENCE
Jim Miller, Chairman

Fellowship (2) 750 9 22/hr.
Research Assistantship (2) 2048 9

GEORGIA

Augusta College, Augusta 30904

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
Jerry Sue Townsend, Chairman

Teaching Assistantship (1) 2400 9

Emory University, Atlanta 30322

DEPARTMENT OF MATHEMATICS
Trevor Evans, Chairman

Teaching Assistantship (14) 3500 9 Waived 10 Teaching or assisting faculty member

Georgia Institute of Technology, Atlanta 30332

DEPARTMENT OF INFORMATION AND COMPUTER SCIENCE
Henry S. Valk, Acting Director

Applications due: 2/1/79
Faculty 16; Published 9
Bachelor's by inst. 446
Bachelor's by dept. 1

Applications due: 2/15/79
Faculty 16; Published 13
Bachelor's by inst. 558
Bachelor's by dept. 9
Master's by dept. 6

Applications due: 5/30/79
Faculty 8; Published 3
Bachelor's by dept. 180
Master's by dept. 1

Applications due: 6/1/79
Faculty 12; Published 2
Bachelor's by inst. 446
Bachelor's by dept. 1

Applications due: 2/1/79
Faculty 16; Published 9
Bachelor's by inst. 1336
Bachelor's by dept. 22
Master's by dept. 54
Ph. D. (1975-1978 incl.) CS 7, Total: 7

Applications due: 2/1/79
Faculty 16; Published 9
Bachelor's by inst. 1336
Bachelor's by dept. 22
Master's by dept. 54
Ph. D. (1975-1978 incl.) CS 7, Total: 7
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<td>*Some increase expected for 1979–80. **Depends on credit hours taken. Amount listed is maximum.</td>
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University of Georgia, Athens 30602

DEPARTMENT OF MATHEMATICS
J. C. Cantrell, Head

Teaching Assistantship (10) 3550–5067 9 236/qtr., 12 Teaching
Nonteaching Assistantship (6) 3550–3700 9 236/qtr., 12 Grading

DEPARTMENT OF STATISTICS AND COMPUTER SCIENCE
Carl F. Kossack, Head

Teaching Assistantship (9) 3798 9 15/hr., 13

HAWAII

University of Hawaii at Manoa, Honolulu 96822

DEPARTMENT OF INFORMATION AND COMPUTER SCIENCES
W. Wesley Peterson, Chairman

Teaching Assistantship (1) 4512–5040 9 20 Teaching, consulting
Research Assistantship (3) 5592–5892 11 20 Research

DEPARTMENT OF MATHEMATICS
Jack Williamson, Chairman

Teaching Assistantship (11) 4512–5049 9 Exempt 3–4 C Teaching

DEPARTMENT OF PUBLIC HEALTH SCIENCES
C. S. Chung, Director

Teaching Assistantship (1) 4512–4700 9 20 Teaching

IDAHO

Boise State University, Boise 83725

DEPARTMENT OF MATHEMATICS
William P. Mech, Head

Teaching Assistantship (1) 3001 9 6 Teaching

Idaho State University, Pocatello 83209

DEPARTMENT OF MATHEMATICS
W. Lyle Cook, Chairman

Fellowship (5) 3150 9 4 C Teaching
Teaching Assistantship (5) 3600 9 4 C Teaching
*Late applications will be considered.

University of Idaho, Moscow 83843

DEPARTMENT OF MATHEMATICS
L. E. Bobisud, Chairman

Teaching Assistantship (11) 3600–4400 9 546/yr., 6 Teaching

ILLINOIS

DePaul University, Chicago 60614

DEPARTMENT OF MATHEMATICS
Lawrence Gluck, Chairman

Teaching Assistantship (5) 2400–3000 9 15
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536
Southern Illinois University, Carbondale 62901

DEPARTMENT OF MATHEMATICS  
Alphonse Baartmans, Chairman  

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*Late applications will be accepted. **$78-$95 fees per semester.

Southern Illinois University-Edwardsville 62025

DEPARTMENT OF MATHEMATICS, STATISTICS AND COMPUTER SCIENCES  
H. K. Wilson, Chairman

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University of Chicago, Chicago 60637

DEPARTMENT OF MATHEMATICS  
Paul J. Sally, Jr., Chairman  

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*Foreign: 1/1/79; Domestic: 2/1/79.

University of Illinois at Chicago Circle, Chicago 60680

DEPARTMENT OF MATHEMATICS  
Philip Dwinger, Head

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*Fellowship: 2/1/70; Assistantship: 8/1/79.

University of Illinois at Urbana-Champaign, Urbana 61801

DEPARTMENT OF MATHEMATICS  
Paul T. Bateman, Head  

<table>
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*First consideration.

Western Illinois University, Macomb 61455

DEPARTMENT OF MATHEMATICS  
J. Burlak, Chairman  

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**MATHEMATICS AT NORTHWESTERN UNIVERSITY**

The Mathematics Department of Northwestern University invites applications for graduate study from qualified applicants interested in the Ph.D. degree.

The Mathematics Faculty is strongly research oriented. A Ph.D. program may be pursued in the areas of algebra, algebraic geometry and topology, classical and modern analysis, global analysis, ordinary and partial differential equations, probability and statistics. In addition a number of faculty have strong interests in applied work.

The department is of medium size so that the students enjoy a great deal of contact with the faculty. Further inquiries should be addressed to

Professor Allen Devinatz  
Department of Mathematics, Lunt Hall  
Northwestern University  
Evanston, Illinois 60201
<table>
<thead>
<tr>
<th>UNIVERSITY</th>
<th>DEPARTMENT OF MATHEMATICAL SCIENCES</th>
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<td>Ball State University, Muncie 47306</td>
<td>Teaching Assistantship (24) 2800 9 55/qtr. 4 c Teaching Computer Center (8) 2800 9 55/qtr. 20</td>
<td>Applications due: *</td>
<td>Bachelor's by inst. 2486 Bachelor's by dept. 52 Master's by dept. 45</td>
<td>*Open but desired by March 1.</td>
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<td>Indiana State University, Terre Haute 47809</td>
<td>Teaching Assistantship (8) 2000-2300 9 13/hr. 4 c</td>
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<td>Bachelor's by inst. 2000 Bachelor's by dept. 50</td>
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<tr>
<td>Indiana University, Bloomington 47401</td>
<td>Teaching Assistantship (110) 4000-5000 9 ** 15-20 Teaching, assisting, grading Research Assistantship (1) 4000-4400 9 ** 15-20 Research Summer Teaching Fellowship (15) 500 2 ***</td>
<td>Applications due: 3/1/79</td>
<td>Bachelor's by inst. 1001 Bachelor's by dept. 42 Master's by dept. 21 Ph.D. (1975-1978 incl.) A&amp;NT 3, A&amp;FA 7, F4, S3, AM 1, Total: 18</td>
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<tr>
<td>Indiana University-Purdue University at Indianapolis 46205</td>
<td>Teaching Assistantship (2) 3000-3500 10 * 20 Teaching Research Assistantship (2) 3500-4000 10 * 20 Research</td>
<td>Applications due: 5/79</td>
<td>Bachelor's by inst. 2200 Bachelor's by dept. 13 Master's by dept. 13</td>
<td>*Not more than $200 per semester.</td>
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<td>Purdue University, West Lafayette 47907</td>
<td>Teaching Assistantship (60) 3900-4500 12 70/sem. 6 c Teaching Assistantship (35) 3600-4200 12 70/sem. #</td>
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<td>*Fellowship: 2/1/79; Assistantship: 3/1/79, **Determined by university-wide competition, ***Most of these stipends are likely to be increased by Fall 1979, #35 for summer session,</td>
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<td>S.D. Conte, Head</td>
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538
IOWA

Drake University, Des Moines 50311

DEPARTMENT OF MATHEMATICS
Wayne Woodworth, Chairman

Teaching Assistantship (6) 2200-2500 9

*Late applications accepted,

Iowa State University, Ames 50011

DEPARTMENT OF COMPUTER SCIENCE
R. M. Stewart, Chairman

Teaching Assistantship (34) 3900-5000 9 125/qtr. 3C Teaching
Research Assistantship (10) 3600-5400 12 125/qtr. 20 Research

DEPARTMENT OF MATHEMATICS
Wilfred E. Barnes, Head

Teaching Assistantship (36) 3960-4140* 9 143* 5-6 Teaching

*Current rates, some increase is expected,

DEPARTMENT OF STATISTICS
H. A. David, Head

Teaching Assistantship (21) 455/mo.-525/mo. 9 143/qtr. 20 Teaching, service
Research Assistantship (26) 425/mo.-525/mo. 12 143/qtr. 20 Research, service

PACE (10)*

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

University of Iowa, Iowa City 52242

DEPARTMENT OF COMPUTER SCIENCE
Ted Sjoerdsma, Chairman

Fellowship (1) 5400 9 85-409 20 *
Teaching Assistantship (12) 5400 9 85-409 20 Teaching
Research Assistantship (6) 5400 9 85-409 20 Research

*Special TRF Program. During four years, some teaching, some research, some fellowship,

DEPARTMENT OF MATHEMATICS
Eugene W. Johnson, Chairman

Teaching Assistantship (30) 4900-5400 9 429 (9 or more hours) 20 Teaching

Computer Science at the University of Iowa

The University of Iowa offers graduate programs leading to the M.S. and Ph.D. degrees in Computer Science. Areas of faculty interest include architecture, artificial intelligence, computation theory, data structures, database systems, design and analysis of algorithms, operating systems, parallel processing and programming languages.

The Computer Science Department has its own Burroughs 1700. An excellent terminal facility within the Mathematical Sciences Division provides access to the campus-wide CDC CYBER 70/71 and IBM 360/65. (Upgrade of campus-wide computer expected 1979-1980.)

Financial aid is available to qualified students in the form of Research or Teaching Assistantships. For detailed information and application forms write to:

Chairperson of the Graduate Committee
Department of Computer Science
The University of Iowa
Iowa City, Iowa 52242

539
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*All graduate students are eligible for these including teaching assistants.

**Graduate Studies in Statistics**

The Department of Statistics offers graduate study leading to the Master of Science degree and the Doctor of Philosophy degree. The Program of Study combines basic training in statistical methods and theory with an opportunity to participate in the practical applications of statistics through the Statistical Laboratory.

Stipends for nine-month teaching and research assistantships start at $4000 with a 12-month graduate research assistant starting at $4800. Graduate assistants pay in-state fees (currently $17 per credit hour) with teaching assistants receiving an $80 fee reduction.

Further information and application for admission and financial support may be obtained from: Dr. Arthur D. Dayton, Head Department of Statistics Kansas State University Manhattan, Kansas 66506

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Wichita State University, Wichita 67208

DEPARTMENT OF MATHEMATICS
John J. Hutchinson, Chairperson
Teaching Assistantship (10) 3500 9 17/hr. 3–5

Applications due: 3/1/79 Bachelor's by inst. 1805
Faculty 25; Published 6 Bachelor's by dept. 15
Master's by dept. 4

KENTUCKY

Eastern Kentucky University, Richmond 40475

DEPARTMENT OF MATHEMATICAL SCIENCES
Marijo LeVan, Acting Chairman
Teaching Assistantship (6) 2700–3000 9 5 or 6

Applications due: 3/1/79 Bachelor's by inst. 1613
Faculty 16; Published 6 Bachelor's by dept. 9
Master's by dept. 3

Morehead State University, Morehead 40351

DEPARTMENT OF MATHEMATICS
Glenn E. Johnston, Head
Teaching Assistantship (4) 2400 9 20 Teaching

Applications due: 5/1/79 Bachelor's by inst. 900
Faculty 15; Published 8 Bachelor's by dept. 11
Master's by dept. 6

University of Kentucky, Lexington 40502

DEPARTMENT OF MATHEMATICS
Roger Wets, Chairman
Teaching Assistantship (4) 4745 9 Remitted 6 Teaching

Applications due: 2/2/79 Bachelor's by inst. 2598
Faculty 54; Published 54 Bachelor's by dept. 10
Master's by dept. 8

DEPARTMENT OF STATISTICS
R.L. Anderson, Chairman
Teaching Assistantship (5) 3400–3900 9 313/sem.
Teaching Fellowship (1) 6000 12 313/sem.
Research Assistantship (2) 4500 9 313/sem.

Applications due: * Bachelor's by inst. 2598
Faculty 15; Published 14 Bachelor's by dept. 6
A&NT 2, G&T 3, A&FA 3, OR 1, AM 2, Total: 11
S 9, Total: 9

University of Louisville, Louisville 40208

DEPARTMENT OF MATHEMATICS
Roger H. Geeslin, Chairman
Teaching Assistantship (4) 4745 9 Remitted 6 Teaching

Applications due: 3/15/79 Bachelor's by inst. 1241
Faculty 13; Published 3 Bachelor's by dept. 14
Master's by dept. 8

Western Kentucky University, Bowling Green 42101

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
Robert C. Bueker, Chairman
Teaching Assistantship (7) 2400–3300 9 275/sem.

Applications due: 3/1/79 Bachelor's by inst. 1097
Faculty 30; Published 4 Bachelor's by dept. 27
Master's by dept. 6

LOUISIANA

Louisiana State University, Baton Rouge 70803

DEPARTMENT OF COMPUTER SCIENCE
Walter G. Rudd, Chairman
Teaching Assistantship (4) 4000–4800 9 425* Teaching

Applications due: 3/15/79 Bachelor's by inst. 6000
Faculty 10; Published 5 Bachelor's by dept. 30

DEPARTMENT OF QUANTITATIVE METHODS
W.W. Thompson, Jr., Chairman
Teaching Assistantship (4) 3800–4600 9 20 Teaching

Applications due: 3/15/79 Bachelor's by inst. 6000
Faculty 11; Published 8 Bachelor's by dept. 15
Master's by dept. 5

Ph.D. (1975–1978 incl.) S 3, OR 2, Total: 5

541
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**TULANE UNIVERSITY**


GRADUATE STUDENTS: Thirty, all Ph.D. students, with teaching responsibilities of three hours per week. (The Department also participates in an interdisciplinary Master's Degree in Applied Mathematics. For information on this program, write to Professor S. C. Cowin, Department of Biomedical Engineering, Tulane University.)

FACILITIES: We have an outstanding library in the same space as graduate student and faculty offices. The atmosphere encourages informal, intense cooperation between graduate students and faculty. Tulane is located in cosmopolitan New Orleans. For detailed information, write for the brochure Mathematics at Tulane.
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| **APPLY TO:** Chairman, Graduate Committee  
Department of Mathematics  
UNIVERSITY OF MARYLAND BALTIMORE COUNTY  
Baltimore, Maryland 21228 |

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Bachelor's by inst. 2193  
Bachelor's by dept. 4  
Master's by dept. 9  
Ph. D. (1975-1978 incl.)  
A&NT 2, S 3, AM 1.  
Total: 6 |

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<tr>
<th><strong>University of Maine at Orono 04469</strong></th>
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<td><strong>DEPARTMENT OF MATHEMATICS</strong></td>
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<tr>
<td>Gary Haggard, Chairman</td>
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| Applications due: 4/1/79  
Faculty 32; Published 16  
Bachelor's by inst. 1198  
Bachelor's by dept. 16  
Master's by dept. 4 |

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<td><strong>Johns Hopkins University, Baltimore 21218</strong></td>
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<td>Alan Ross, Chairman</td>
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<td>Roger A. Horn, Chairman</td>
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<td>Teaching Fellowship (20)</td>
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| Applications due: 1/30/79  
Faculty 9; Published 9  
Bachelor's by inst. 546  
Bachelor's by dept. 20  
Master's by dept. 3  
Ph. D. (1975-1978 incl.)  
S 1, OB 7, Other 8. Total: 16 |

| **DEPARTMENT OF MATHEMATICS** |
| J. H. Sampson, Chairman |
| Teaching Assistantship (16) | 3000-3300 | 9 | 4500 | 2 |
| Applications due: 3/15/79  
Faculty 16; Published 16  
Bachelor's by inst. 546  
Master's by dept. 3 |

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<th><strong>University of Maryland, Baltimore County, Baltimore 21228</strong></th>
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<td>Yen-Mow Lynn, Chairman</td>
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<td>Research Assistantship (1)</td>
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Faculty 21; Published 15  
Bachelor's by inst. 674  
Bachelor's by dept. 13  
Master's by dept. 5  
Ph. D. (1975-1978 incl.)  
AM 2. Total: 2 |
University of Maryland, College Park 20742

DEPARTMENT OF MATHEMATICS
William E. Kirwan, Chairman
Fellowship (1) 4050-5000 10 Research
Teaching Assistantship (119) 4050-5000 10 Teaching, grading
*Resident: $60 per credit; nonresident: $95 per credit.

DEPARTMENT OF MEASUREMENT AND STATISTICS
Robert W. Lissitz, Chairman
Teaching Assistantship (3) 4050 9
Interns (5) 2500-6000 9

MASSACHUSETTS

Boston College, Chestnut Hill 02167

DEPARTMENT OF MATHEMATICS
R. R. Carroll, Chairman
Teaching Fellowship (10) 3000 9
Scholarship (1) 9

Boston University, Boston 02215

DEPARTMENT OF MATHEMATICS
Robin E. Esch, Chairman
Teaching Fellowship (24) 3500 9
Research Assistantship (6) 4000-6500 9
Scholarship (4) Tuition 9

Brandeis University, Waltham 02154

DEPARTMENT OF MATHEMATICS
Edgar Brown, Chairman
Fellowship (10) 4000 9

Clark University, Worcester 01610

DEPARTMENT OF MATHEMATICS
Robert W. Kilmoyer, Jr., Chairman
Teaching Assistantship (5) 2800-3000 9

Harvard University, Boston 02115

DEPARTMENT OF BIOSTATISTICS
Frederick Mosteller, Chairman
Fellowship (11) 2300-4600 9 4600
Teaching Assistantship (12)** 5 or 10
Research Assistantship (10)** 9 or 12
*For applying students, simultaneously with application for admission; for returning students, 4/1/79.
**Teaching and Research Assistants are paid as pre-doctorals a minimum of $5.25 per hour for a maximum of 10 hrs. per week through a range, depending on the year of their study, up to a maximum as a post-doctoral at a rate of $8.50 per hour for a maximum of 40 hours per week.

Harvard University, Cambridge 02138

DEPARTMENT OF STATISTICS
Arthur P. Dempster, Chairman
Teaching Assistantship (14) 990-1200* 5
Research Assistantship (6)** 9
Scholarship (3)** 9
*1977-1978 rates,
**Stipend amount not known at this time.
Massachusetts Institute of Technology, Cambridge 02139

DEPARTMENT OF MATHEMATICS
Kenneth Hoffman, Head

Fellowship (20)
2925 9
3900 12

Teaching Assistantship (47)
4500 9

Research Assistantship (7)
8595 9

Tuition
6 Teaching
16 Grading

Service Required
16 Research

Stipend
Applications due: 1/15/79
Faculty 80; Published 60
Bachelor's by inst. 1083
Bachelor's by dept. 72
Master's by dept. 5
Ph. D. (1975-1978 incl.)
A & N T 10, G & T 11, L 9,
A & F A 11, P 3, OR 1,
AM 7, Other 24. Total: 76

Tuition Service Required
if not included in stipend (dollars)
hours per week
type of service

Applications due: 1/15/79
Faculty 80; Published 60
Bachelor's by inst. 1083
Bachelor's by dept. 72
Master's by dept. 5
Ph. D. (1975-1978 incl.)
A & N T 10, G & T 11, L 9,
A & F A 11, P 3, OR 1,
AM 7, Other 24. Total: 76

Northeastern University, Boston 02115

DEPARTMENT OF MATHEMATICS
Maurice Gilmore, Chairman

Teaching Assistantship (31)
3000-3300 9

Tuitionship (7)
Tuition only

Applications due: 3/15/79
Faculty 40; Published 25
Bachelor's by inst. 2300
Bachelor's by dept. 15
Master's by dept. 12
Ph. D. (1975-1978 incl.)
A & N T 2, G & T 2, A & F A 2,
AM 2. Total: 8

Southeastern Massachusetts University, North Dartmouth 02747

DEPARTMENT OF MATHEMATICS
Anthony J. John, Chairman

Teaching Assistantship (2)
3000 9

Applications due: 4/1/79
Faculty 14; Published 3
Bachelor's by inst. 899
Bachelor's by dept. 22
Master's by dept. 2

University of Lowell, Lowell 01854

DEPARTMENT OF MATHEMATICS
Alan Doerr, Chairperson

Teaching Assistantship (4)
3200-3600 9

Applications due: 8/15/79
Faculty 35; Published 15
Bachelor's by inst. 1800
Bachelor's by dept. 50
Master's by dept. 25

University of Massachusetts, Amherst 01003

DEPARTMENT OF COMPUTER AND INFORMATION SCIENCE
Robert M. Graham, Chairman

Fellowship (2)
3000 9

Research Assistantship (35)
3600-4000 9

Applications due: 2/1/79
Faculty 12; Published 7
Bachelor's by inst. 4003
Bachelor's by dept. 10
Master's by dept. 20
Ph. D. (1975-1978 incl.)
C S 8. Total: 8

DEPARTMENT OF MATHEMATICS AND STATISTICS
Edward A. Connors, Head

Fellowship (3)
3300 12

Teaching Assistantship (44)
3800-4000 9

N. S. F. (1)
3900 12

Applications due: 2/1/79
Faculty 65; Published 47
Bachelor's by inst. 4003
Bachelor's by dept. 27
Master's by dept. 8
Ph. D. (1975-1978 incl.)
A & N T 1, G & T 3, A & F A 3,
P 1, S 1, AM 1, Other 2. Total: 12

University of Massachusetts at Boston 02125

DEPARTMENT OF MATHEMATICS
Bernice L. Auslander, Chairman

Teaching Fellowship (5)
3000-3500 9 Waived 3c Teaching

Applications due: 4/15/79
Faculty 25; Published 16
Bachelor's by inst. 864
Bachelor's by dept. 25

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Graduate Program in Mathematics
Department of Mathematics, College of Arts and Sciences
University of Massachusetts at Boston
Harbor Campus Boston, Massachusetts 02125

545
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<td>Andrews University, Berrien Springs 49104</td>
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<td>Harold T. Jones, Chairman</td>
<td>Faculty 5</td>
<td>Bachelor's by dept.</td>
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<td>Central Michigan University, Mount Pleasant 48859</td>
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<td>Faculty 33; Published 7</td>
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<td>*1978–79: $39 per semester hour plus $20 registration fee per semester.</td>
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<td>Michigan State University, East Lansing 48824</td>
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<td>DEPARTMENT OF MATHEMATICAL AND COMPUTER SCIENCES</td>
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<td>Faculty 39; Published 14</td>
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<td>3600</td>
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<td>21</td>
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**PH.D. IN ANALYSIS AND STATISTICS**

**MICHIGAN STATE UNIVERSITY**

The Departments of Mathematics and Statistics/Probability would like to announce a new joint Ph.D. program. Students will be expected to take a balanced program in analysis and statistics/probability. They may write a thesis in either department. Financial assistance is available to qualified students. For further information, write to:

CHAIRMAN
Graduate Affairs Committee
Department of Mathematics (or Statistics and Probability)
Michigan State University
E. Lansing, MI 48824
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Current research leading to the Ph.D. is being conducted in a wide
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In addition to their stipend, Graduate Assistants and Fellows are
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married and single students. For further information write

Professor B.J. Eisenstadt, Chairman
Department of Mathematics
Wayne State University
Detroit, Michigan 48202
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**MINNESOTA**

**Mankato State University, Mankato 56001**

DEPARTMENT OF MATHEMATICS  
C. Dean Alders, Chairman  
Teaching Assistantship (3-5)  
2500–3750 9

Applications due: 6/1/79  
Faculty 15; Published 2

Bachelor’s by inst. 1000  
Bachelor’s by dept. 100

Master’s by dept. 4

**St. Cloud State College, St. Cloud 56301**

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE  
Howard A. Bird, Chairperson  
Teaching Assistantship (2)  
2400–2800 9

13.65/hr. 4  
Teaching

Applications due: 3/15/79  
Faculty 28; Published 2

Bachelor’s by inst. 1517  
Bachelor’s by dept. 30

Master’s by dept. 2

**University of Minnesota, Minneapolis 55455**

DEPARTMENT OF COMPUTER SCIENCE  
J.B. Rosen, Head  
Fellowship (3)  
5000–7000 12

2  
Teaching

Applications due: 2/15/79  
Faculty 14; Published 11

Bachelor’s by inst. 6703  
Bachelor’s by dept. 50

Master’s by dept. 10

Ph.D. (1975–1978 incl.)

CS 6. Total: 6

Research Assistantship (5)  
5200 9;12

1000  
15–20

Research

DEPARTMENT OF MATHEMATICS  
Willard Miller, Jr., Head  
Fellowship (4)  
3900 9

Applications due: 2/15/79  
Faculty 76; Published 68

Bachelor’s by inst. 6703  
Bachelor’s by dept. 58

Master’s by dept. 13

Ph.D. (1975–1978 incl.)

Research Assistantship (1)  
4761 9

31/hr. 4  
Teaching

Research

SCHOOL OF STATISTICS

Seymour Geisser, Director

Fellowship (3)  
3900 9

Applications due:*  
Faculty 19; Published 19

Bachelor’s by inst. 6703  
Bachelor’s by dept. 8

Master’s by dept. 4

Ph.D. (1975–1978 incl.)

S 9. Total: 9

*Fellowship: 2/1/79; Assistantship applications are considered at any time but normal filing date for the coming academic year is 2/15/79.

**MISSISSIPPI**

**Jackson State University, Jackson 39217**

DEPARTMENT OF MATHEMATICS  
Roosevelt Gentry, Head  
Fellowship (8)  
2200* 12

15

Teaching

Applications due: 4/1/79  
Faculty 24; Published 13

Bachelor’s by inst. 1000  
Bachelor’s by dept. 8

Master’s by dept. 8

*Plus tuition.

**Mississippi State University, Mississippi State 39762**

DEPARTMENT OF MATHEMATICS  
T.A. Atchison, Head  
Fellowship (16)  
5054 9

408 20

Teaching

Applications due: 3/15/79  
Faculty 28; Published 6

Bachelor’s by inst. 1983  
Bachelor’s by dept. 13

Master’s by dept. 2

MATHEMATICS AT MINNESOTA

The University of Minnesota offers graduate programs leading to the M.S. and Ph.D. degrees. There are 75 full time faculty members and almost all areas of mathematics are well represented. In recent years there have been fewer than two graduate students per faculty member. Excellent library facilities and ample office space are available in the mathematics building. Financial aid is available to qualified students in the form of Graduate Fellowships, and Teaching Assistantships. For further information write to:

Professor Howard Jenkins  
Associate Head, School of Mathematics  
UNIVERSITY OF MINNESOTA  
Minneapolis, Minnesota 55455

548
University of Mississippi, University 38677

DEPARTMENT OF MATHEMATICS
Eldon L. Miller, Chairman
Fellowship (2) 3600-5000 9 353.50 6 Teaching
Teaching Assistantship (15) 4200-4400 9 353.50 6 Teaching

Applications due: 4/79
Faculty 18; Published 3
Bachelor's by inst. 1175
Bachelor's by dept. 16
Master's by dept. 6
Ph. D. (1975-1978 incl.)
A&NT 1, Other 1. Total: 2

University of Southern Mississippi, Hattiesburg 39401

DEPARTMENT OF COMPUTER SCIENCE
Danny R. Carter, Chairman
Teaching Assistantship (3) 2200 9 330/sem. 12
Research Assistantship (2) 3400 9 20

Applications due: 3/15/79
Faculty 11; Published 5
Bachelor's by inst. 2000
Bachelor's by dept. 70
Master's by dept. 8

University of Central Missouri State University, Warrensburg 64093

DEPARTMENT OF MATHEMATICS
H. Keith Stumpf, Head
Teaching Assistantship (6) 2100-4200 9 Teaching

Applications due: 3/30/79
Faculty 17; Published 4
Bachelor's by inst. 1510
Bachelor's by dept. 24
Master's by dept. 13
Ph. D. (1975-1978 incl.)
A&NT 3, G&T 3, A&FA 1, S 1. Total: 8

Northeast Missouri State University, Kirksville 63501

DEPARTMENT OF MATHEMATICS
Dale Woods, Head
Teaching Assistantship (10) 6000 12 Teaching
Scholarship (8) 500-2000 9

Applications due: 5/1/79
Faculty 14; Published 3
Bachelor's by inst. 800
Bachelor's by dept. 18
Master's by dept. 5

St. Louis University, St. Louis 63103

DEPARTMENT OF MATHEMATICS
Raymond W. Freese, Chairman
Teaching Assistantship (10) 3000 9 Teaching

Applications due: 3/1/79
Faculty 11; Published 4
Bachelor's by inst. 1156
Bachelor's by dept. 26

Southeast Missouri State University, Cape Girardeau 63701

DEPARTMENT OF MATHEMATICS
Harold W. Hager, Chairman
Teaching Assistantship (3) 2600 9

Applications due: 3/1/79
Faculty 18; Published 4
Bachelor's by inst. 1100
Bachelor's by dept. 12

University of Missouri-Columbia 65211

DEPARTMENT OF MATHEMATICS
C.M. Petty, Chairman
Teaching Assistantship (55) 4007-4440* 9 339/sem. 6 Teaching

Applications due: 3/15/79
Faculty 28; Published 25
Bachelor's by inst. 3475
Bachelor's by dept. 22
Master's by dept. 12
Ph. D. (1975-1978 incl.)
A&NT 3, A&FA 1, AM 1. Total: 5

University of Missouri-Kansas City 64110

DEPARTMENT OF MATHEMATICS
Paul Lieblin, Chairman
Teaching Assistantship (10) 3800-4000 9 339/sem. 5-6 Teaching

Applications due: 3/15/79
Faculty 14; Published 9
Bachelor's by inst. 1100
Bachelor's by dept. 12
Ph. D. (1975-1978 incl.)
A&NT 1, G&T 2, A&FA 2. Total: 5

Missouri
**University of Missouri-Rolla 65401**

**DEPARTMENT OF COMPUTER SCIENCE**
John W. Hamblen, Chairman
- Fellowship (6) 1000 9
- Teaching Assistantship (17) 4500 9
- Research Assistantship (2) 4500 9

**DEPARTMENT OF ENGINEERING MECHANICS**
Peter G. Hansen, Chairman
- Teaching Assistantship (6*) 4500 9

*Half time.

**DEPARTMENT OF MATHEMATICS**
O.R. Plummer, Acting Chairman
- Teaching Assistantship (36) 4500-5000 9

Applications due: 3/1/79 Faculty 13
Bachelor's by inst. 750
Bachelor's by dept. 59
Master's by dept. 29
Ph.D. (1975-1978 incl.) OR 2, CS 1, Total: 3

Applications due: Open Faculty 14; Published 6
Bachelor's by inst. 750
Bachelor's by dept. 8
Master's by dept. 5
Ph.D. (1975-1978 incl.) A&NT 1, G&T 3, A&FA 1,
S 2, CS 2, Other 1. Total: 10

*Plus tuition.

**Washington University, St. Louis 63130**

**DEPARTMENT OF COMPUTER SCIENCE**
Jerome R. Cox, Jr., Chairman
- Research Assistantship (6) 6660* 9
  * 1978-1979 figures.

Applications due: 2/15/79 Faculty 8; Published 2
Bachelor's by inst. 1150
Bachelor's by dept. 22
Master's by dept. 6
Ph.D. (1975-1978 incl.) AM 1, Total: 1

Applications due: 2/15/79 Faculty 22; Published 18
Bachelor's by inst. 1150
Bachelor's by dept. 14
Master's by dept. 3
Total: 9

**DEPARTMENT OF MATHEMATICS**
Robert H. McDowell, Chairman
- Fellowship (6) 3200-3300* 9
- Teaching Fellowship (9) 3200-3300* 9
- Teaching Assistantship (3) 3200-3300* 9
- Research Assistantship (3) 3200-3300* 9

Self-supporting (I)

Applications due: 1/31/79 Faculty 23; Published 16
Bachelor's by dept. 18
Master's by dept. 5

**Montana State University, Bozeman 59717**

**DEPARTMENT OF MATHEMATICS**
Kenneth Tiahrt, Chairman
- Teaching Assistantship (15) 3700-5800 10
- Research Assistantship (2) 3700-5800 10

Applications due: 1/31/79 Faculty 23; Published 16
Bachelor's by dept. 18
Master's by dept. 5

**Montana**

**DEPARTMENT OF MATHEMATICS**

**UNIVERSITY OF MISSOURI-ROLLA**

**PROGRAMS:** M.S. AND PH.D. PROGRAMS IN PURE AND APPLIED MATHEMATICS AND STATISTICS.

**STIPENDS:** GRADUATE TEACHING ASSISTANTSHIPS CARRY A STIPEND OF $4250 TO $5000.

**WRITE:** O. R. PLUMMER
DEPARTMENT OF MATHEMATICS
UNIVERSITY OF MISSOURI-ROLLA
ROLLA, MO. 65401
University of Montana, Missoula 59812

DEPARTMENT OF MATHEMATICS
Don O. Loftsgaarden, Chairman

Teaching Assistantship (20) 3100-3500 9 * 5-6 Teaching

Applications due: 4/1/79
Faculty 20; Published 15

Bachelor's by inst. 1245
Bachelor's by dept. 6
Master's by dept. 4
Ph.D. (1975-1978 incl.)
A&NT 1, G&T 2, A&FA 3, S 1, Other 2. Total: 9

Applications due: 4/1/79
Faculty 10; Published 2

Bachelor's by inst. 1200
Bachelor's by dept. 40
Master's by dept. 1

Kearney State College, Kearney 68847

DEPARTMENT OF MATHEMATICAL STATISTICS AND
COMPUTER SCIENCE
L. M. Larsen, Chairman

Teaching Assistantship (2) 2500 9 5

Applications due: 4/1/79

Bachelor's by inst. 3000
Bachelor's by dept. 25
Master's by dept. 15

University of Nebraska, Lincoln 68588

DEPARTMENT OF COMPUTER SCIENCE
George Nagy, Chairman

Teaching Assistantship (11) 3500-4000 9 650 18 Teaching

Applications due: 4/15/79
Faculty 15; Published 10

Bachelor's by inst. 3000
Bachelor's by dept. 55
Master's by dept. 12
Ph.D. (1975-1978 incl.)
A&NT 3, A&FA 4, AM 1, Total: 8

University of Nebraska at Omaha 68182

DEPARTMENT OF MATHEMATICS AND COMPUTER
SCIENCE
Margaret P. Gessaman, Chairman

Teaching Assistantship (4) 3435 9 * 6 Teaching

Applications due: 4/15/78

Bachelor's by inst. 1900
Bachelor's by dept. 25
Master's by dept. 5

*Resident: $21 per credit hour; nonresident: $57 per credit hour.

Ph.D. in Mathematical Sciences at the UNIVERSITY OF MONTANA

This program for the advanced training of college mathematics teachers and other mathematical "generalists" has been developed with the 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. It provides opportunity for traditional or non-traditional thesis work, within pure mathematics or in interdisciplinary projects. For details, please write for the "Ph.D. Packet" to

Chairman, Graduate Committee
Mathematics Department, University of Montana
Missoula, Montana 59812
### UNIVERSITY OF NEVADA - LAS VEGAS

Graduate study programs for a M.S. degree are offered with courses leading to specialization in the following areas: ALGEBRA, APPLIED STATISTICS, COMPUTER SCIENCE, DIFFERENTIAL EQUATIONS, FOUNDATIONS, FUNCTIONAL & NUMERICAL ANALYSIS, OPERATIONS RESEARCH, PROBABILITY THEORY, REAL & COMPLEX VARIABLES and TOPOLOGY.

Excellent computing facilities are available for research. The Department of Mathematics, through an active faculty, offers graduate students both an unusual amount of personal attention and a lively research atmosphere. A number of invigorating research seminars in various fields are held during each academic year. Application forms for admission to the Graduate College and for Assistantship may be obtained from the Chairman, Department of Mathematics, University of Nevada, Las Vegas, Nevada 89154.
NEW JERSEY

Fairleigh Dickinson University, Madison 07940

DEPARTMENT OF MATHEMATICS AND PHYSICS
H. Elkholy, Chairman
Teaching Fellowship (2) 3000 9

Fairleigh Dickinson University, Teaneck 07666

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
Donald Bein, Chairperson
Teaching Fellowship (7) 3000-4000 9

Montclair State College, Upper Montclair 07043

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
Robert Garfunkel, Chairman
Teaching Assistantship (6) 3000 9

New Jersey Institute of Technology, Newark 07102

DEPARTMENT OF MATHEMATICS
Henry Zatzkis, Chairman
Teaching Assistantship (1) 3600

Princeton University, Princeton 08540

DEPARTMENT OF MATHEMATICS
Robert C. Gunning, Chairman
Fellowship (30) 1700-5400 9
Teaching Assistantship (11)* 3400-4000 10
Research Assistantship (12)* 3100-3800 10
*Most assistants 1/2 teaching, 1/2 research.

DEPARTMENT OF STATISTICS
G.S. Watson, Chairman
Teaching Assistantship (1) 1700-2000 9
Research Assistantship (4) 3300-3800 9

Rutgers University, New Brunswick 08903

DEPARTMENT OF COMPUTER SCIENCE
Saul Amarel, Chairman
Fellowship (6) 5000 9
Teaching Assistantship (35) 4400-4900 9
Research Assistantship (15) 4400-4900 9
Other (2) Tuition 9

DEPARTMENT OF MATHEMATICS
Daniel Gorenstein, Chairman
Fellowship (6) 5000 9
Teaching Assistantship (45) 4377-4814 9
Research Assistantship (15) 4377-4814 9

Applications due: 3/1/79
Faculty 9; Published 1
Bachelor's by inst. 462
Bachelor's by dept. 5
Master's by dept. 1

Applications due: 4/15/79
Faculty 14; Published 6

Applications due: Open
Faculty 31; Published 14
Bachelor's by inst. 1882
Bachelor's by dept. 57
Master's by dept. 52

Applications due: 3/15/79
Faculty 25; Published 10
Bachelor's by inst. 542
Bachelor's by dept. 5
Master's by dept. 2

Applications due: 2/15/79
Faculty 46; Published 40
Bachelor's by inst. 1054
Bachelor's by dept. 21
Master's by dept. 9
Ph. D. (1975-1978 incl.)
A&NT 6, G&T 8, L 2,
A&FA 14, Other 4. Total: 34

Applications due: 6/1/79
Faculty 27; Published 27
Bachelor's by inst. 5970
Bachelor's by dept. 60
Master's by dept. 51
Ph. D. (1975-1978 incl.)
CS 4, Total: 4

Applications due: 3/1/79
Faculty 90; Published 80
Bachelor's by inst. 5970
Bachelor's by dept. 50
Master's by dept. 8
Ph. D. (1975-1978 incl.)
A&NT 9, G&T 11, L 5,
A&FA 11, AM 1, Other 1.

UNIVERSITY OF NEW HAMPSHIRE


M. E. Munroe, Chairman
Department of Mathematics, Kingsbury Hall
Durham, N.H. 03824
<table>
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<th>TYPE</th>
<th>STIPEND</th>
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<td>C. Franke, Chairperson</td>
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<td>Eastern New Mexico University, Portales 88130</td>
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<td>Richard J. Griego, Chairman</td>
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<td>*For first year graduate students.</td>
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<td>Adelphi University, Garden City 11530</td>
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<td>Donald I. Hammer, Chairman</td>
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<td>*Full tuition waiver.</td>
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The Doctoral Program in Mathematics of The City University of New York

is at the Graduate School and University Center Building of CUNY in mid-Manhattan, opposite the Public Library and Bryant Park.

Advanced students have office space and there is an excellent departmental library. The student body is small enough to facilitate close contact with the staff. Financial aid in the form of fellowships, research assistantships, lectureships is available.

Currently, the staff consists of Edgar A. Feldman, Executive Officer; Louis Auslander; Gilbert Baumslag; Isaac Chavel; Harvey Cohn; Eldon Dyer; Joan Dyer; David Fried; Alex Heller; Alan J. Hoffman; Raymond Hoobler; Richard E. Isaac; Stanley Kaplan; Linda Keen; Alan J. Konheim; Joseph Lewittes; Edwin E. Moise; Martin Moskowitz; Burton Randol; Harry E. Rauch; Joseph Roitberg; Richard Sacksteder; Raymond M. Smullyan; Michael Shub; Philip Wolfe; Alphonse T. Vasquez.

For a description of courses currently offered and other information, write to the

Executive Officer in Mathematics
The Graduate School
THE CITY UNIVERSITY OF NEW YORK
33 West 42nd Street New York, New York 10036

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**Table: Financial Assistance**

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<td>City University of New York, Brooklyn College, Brooklyn 11210</td>
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<td>DEPARTMENT OF MATHEMATICS</td>
<td>Lester L. Gavurin, Chairman</td>
<td>Teaching Assistantship (2)</td>
<td>6350–8775</td>
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<td>DEPARTMENT OF MATHEMATICS</td>
<td>Jonah Mann, Chairman</td>
<td>Fellowship (1)</td>
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<td>Edgar A. Feldman, Executive Officer</td>
<td>Fellowship (7)</td>
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<td>DEPARTMENT OF MATHEMATICS</td>
<td>Thomas Jambois, Chairman</td>
<td>Scholarship (1)</td>
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<td>Part-time Lecturership (2)</td>
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**Degrees Awarded**

Academic year 1977–1978

Bachelor's by inst. 3045
Bachelor's by dept. 32
Master's by dept. 11
Bachelor's by inst. 1906
Bachelor's by dept. 39
Master's by dept. 3
Ph. D. (1975–1978 incl.)
A&N 5, G&T 2, L 1,
A&F 2, P 3, AM 11.
Total: 24
Bachelor's by inst. 1408
Bachelor's by dept. 26
Master's by dept. 3

City University of New York, Queens College, Flushing 11367

DEPARTMENT OF COMPUTER SCIENCE
John Moyne, Chairman

Teaching Assistantship (3) 22/hr. 9 3-6 These are Teaching Assistantships.
Research Assistantship (1) 5000 12

DEPARTMENT OF MATHEMATICS
Joseph Hershenov, Chairman

Teaching Assistantship (6) 2700-6350 9 * 4-8 Teaching

*Resident: $75 per credit; nonresident: $95 per credit.

Clarkson College of Technology, Potsdam 13676

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
A. C. Newell, Chairman

Teaching Assistantship (20) 4500-6000 9
Research Assistantship (2) 4500-6000 9

Columbia University, New York 10027

DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE
M. C. Teich, Chairman

Fellowship (6) 3000 9
Teaching Assistantship (15) 2400 9 20 Teaching
Research Assistantship (15) 4600 12 20 Research
Readers (2) 600-750 9 1/2 tuition 10 Teaching
Graders (6) 600-750 9 Full tuition 10 Teaching

DEPARTMENT OF MATHEMATICAL STATISTICS
Howard Levene, Chairman

Fellowship (11) 3525 9 Exempt 10 Teaching, assisting
Research Assistantship (4) 4700 9 Exempt 27 Research

DEPARTMENT OF MATHEMATICS
Gary Bass, Chairman

Fellowship (33) 3525-3600 9 **

*Late applications considered to March 12, 1979.
**Students are accepted as Ph.D. candidates only. All graduate students are currently granted 4 years of support with tuition exemption. Students are required to serve as teaching assistants for 2 of the 4 years.
***All supported students are officially designated as Fellows. However, of those Fellows, 7 per academic year receive their stipends through the NSF in the form of a Graduate Research Assistantship.

Cornell University, Ithaca 14853

CENTER FOR APPLIED MATHEMATICS
John E. Dennis, Acting Director

Applications due: 1/15/79* Bachelor's by inst. 2995
Faculty 1; Published 2

Applications due: None Bachelor's by inst. 2995
Faculty 6; Published 5

*For new students.

BIOMETRICS UNIT
Daniel L. Solomon, Chairman

Fellowship (1) 3000 12
Teaching Assistantship (7) 3400-4100 9 15 Teaching
Research Assistantship (7) 1847-1942 3 15

DEPARTMENT OF COMPUTER SCIENCE
Juris Hartmanis, Chairman

Fellowship (4) 3600-4600 9 5200
Teaching Fellowship (1) 3600-4600 9 5200
Teaching Assistantship (24) 3400-3600 9 5200 15
Research Assistantship (6) 3400-3600 9 5200 15

*Fellowship: 1/15/79; Assistantship: 2/15/79.

556
DEPARTMENT OF MATHEMATICS  
Clifford J. Earle, Chairman  
Fellowship (4)  
3000–3600 9  
Teaching Assistantship (45)  
3400–3600 9  
Research Assistantship (8)  
3000 9  
Applications due: 2/1/79  
Faculty 42; Published 34  
Type of Service Required:  
Ph.D. (1975–1978 incl.)  
A&NT 7, G&T 3, L 6,  
A&FA 2, P 7, S 1, AM 1.  
Total: 27

Fordham University, New York 10458  
DEPARTMENT OF MATHEMATICS  
Edward W. Brande, Chairman  
Fellowship (1)  
3000–4000 9  
Scholarship (5)  
3000 9  
Applications due: 2/1/79  
Faculty 16; Published 14  
Type of Service Required:  
Ph.D. (1975–1978 incl.)  
G&T 1, A&FA 4. Total: 5

Long Island University, C. W. Post College, Greenvale 11548  
DEPARTMENT OF MATHEMATICS  
Elliott Bird, Chairman  
Assistantship (4)  
1800 9  
Applications due: 4/25/79  
Faculty 15; Published 11  
Type of Service Required:  
Bachelor's by inst. 1435  
Bachelor's by dept. 12  
Master's by dept. 6

New York University—Courant Institute of Mathematical Sciences, New York 10012  
DEPARTMENT OF COMPUTER SCIENCE  
Peter D. Lax, Director, Courant Institute of Mathematical Sciences  
Robert B.K. Dewar, Chairman, Department of Computer science  
Teaching Assistantship (12)  
3800–4000 9  
Research Assistantship (20)  
4050 9  
Applications due: 1/12/79  
Faculty 13; Published 10  
Type of Service Required:  
Bachelor's by inst. 876  
Bachelor's by dept. 22  
Master's by dept. 34

Polytechnic Institute of Brooklyn, Brooklyn 11201  
DEPARTMENT OF MATHEMATICS  
Harry Hochstadt, Chairman  
Teaching Fellowship (10)  
2000–2400 9  
Applications due: 3/1/79  
Faculty 20; Published 10  
Type of Service Required:  
Bachelor's by inst. 411  
Bachelor's by dept. 12  
Master's by dept. 10

Rensselaer Polytechnic Institute, Troy 12181  
DEPARTMENT OF MATHEMATICAL SCIENCES  
R. C. DiPrima, Chairman  
Teaching Assistantship (34)  
3700–4400 9  
Research Assistantship (8)  
3700–4400 9  
Applications due: 2/15/79  
Faculty 31; Published 26  
Type of Service Required:  
Bachelor's by inst. 883  
Bachelor's by dept. 12  
Master's by dept. 50

DEGREES AWARDED  
Academic year  
1977–1978  
Bachelor's by inst. 2995  
Bachelor's by dept. 40  
Master's by dept. 6

POLYTECHNIC INSTITUTE OF BROOKLYN  
Graduate Study in Mathematics  
LOCATION: Brooklyn Campus, and Long Island Center at Farmingdale, Long Island, New York.  
DEGREES: M.S. and Ph.D.  
FIELDS: Applied Mathematics, Algebra, Analysis, Probability, Statistics, etc.  
AVAILABLE MINOR OPTIONS: Applied Mechanics, Aerospace Engineering, Electrophysics, Communication Theory, Automatic Control, Network Theory, Physics, etc.  
FELLOWSHIPS: Teaching, Research.  
Write for information to: Dean of Graduate School or Department of Mathematics  
Polytechnic Institute of Brooklyn  
333 Jay Street  
Brooklyn, New York 11201
<table>
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<th>TYPE</th>
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<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<td>amount in dollars</td>
<td>if not included in stipend (dollars)</td>
<td>hours per week</td>
<td>type of service</td>
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<td>9 or 12 months</td>
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<td><strong>Financial Assistance</strong></td>
<td>(with number anticipated 1979–1980)</td>
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</table>

St. John's University, Jamaica 11439

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
Richard C. Morgan, Chairman

Teaching Assistantship (9) 2500–2700 9

State University College at Cortland 13045

DEPARTMENT OF MATHEMATICS
T. O'Loughlin, Chairman

Teaching Assistantship (1) 2500–3000 9

*Resident: $1400; nonresident: $1800.

State University College at Fredonia 14063

DEPARTMENT OF MATHEMATICS
Frank R. Olson, Chairman

Teaching Assistantship (2) 2400 9

State University of New York at Albany 12222

DEPARTMENT OF MATHEMATICS AND STATISTICS
Edward S. Thomas, Chairman

Fellowship (30)** 4300 9

Teaching Assistantship (19) 3500–3900 9

Summer Research Assistantship (10) 500–1000 2

Departmental Fellowship (4) 3500–3900 9

*Late applications will be considered,
**Competitive.

STATE UNIVERSITY OF NEW YORK AT ALBANY

The Department of Mathematics and Statistics offers individualized graduate study leading to the M.A. and Ph.D. degrees.

Master of Arts studies are offered in mathematics, statistics, biostatistics, actuarial mathematics and mathematics for secondary school teaching.

Study leading to the Ph.D. is offered in many areas of mathematics, including complex analysis, functional and harmonic analysis, algebra and algebraic geometry, geometric topology, differential equations, probability and statistics.

The newly enlarged faculty in statistics provides opportunity for doctoral study which combines mathematics and theoretical statistics with applications. Examples of recent applications have included estimating the money supply, modelling to improve care of critical injuries, evaluating new cancer therapies, and measuring pollution effects on lake fish.

Graduate students at all levels are given opportunities for individual growth by working closely with faculty and fellow students on a variety of theoretical and applied projects.

Financial aid is available to qualified students at all levels.

For further information please write to:

DIRECTOR OF GRADUATE STUDIES
Department of Mathematics and Statistics
State University of New York at Albany
Albany, NY 12222

(An Equal Opportunity Employer)
STATE UNIVERSITY OF NEW YORK AT BUFFALO

SUNY/Buffalo has an active program in graduate mathematics leading to both M.A. and Ph.D. degrees. Doctorates are offered in algebra, real and complex analysis, differential equations, applied mathematics, functional analysis, logic, number theory, and topology. Interdisciplinary work, especially in mathematical biology, is being expanded and encouraged.

Assistantship support has recently been increased to a maximum of $5,100/year (minimum $3,100). Duties involve lecturing and conducting recitation sections, as well as some paper grading. The university also offers both three year graduate fellowships at $5,000/year and one year fellowships at $3,750. Assistantships, as well as fellowships, carry full tuition waivers.

For additional information and application forms, write to:

Director of Graduate Studies—Department of Mathematics
STATE UNIVERSITY OF NEW YORK AT BUFFALO
Diefendorf Hall — Buffalo, New York 14214

STATE UNIVERSITY OF NEW YORK AT BUFFALO

The Department of Mathematics expects to award George William Hill and Emmy Noether Research Instructorships for 1979-80. Applicants should be recent or prospective Ph.D.’s whose degrees will be completed by September 1, 1979, each appointment being for two years. The twelve-month stipend, beginning September 1979, is $16,200 including generous staff benefits. Teaching load will total two one-semester courses during the twelve-month period.

Upon expiration of the two-year appointment, priority consideration for a two-year appointment as assistant professor will be given and will be based upon success and potential in both research and teaching. Each applicant should prepare a summary of his or her post-high school educational background, as well as a sketch of past and projected research activity, and should request at least four mathematicians to send letters of recommendation. Application forms are available upon request. Applications and supporting letters should be sent to

Chairman, Department of Mathematics
SUNY at Buffalo, 106 Diefendorf Hall, Buffalo, New York 14214

so as to arrive by January 20, 1979. SUNY at Buffalo is an Equal Opportunity/Affirmative Action Employer. We are interested in identifying prospective minority and woman candidates. No person in whatever relation with SUNY/Buffalo shall be subject to discrimination on the basis of race, ethnic background, national origin, religion, color, age, sex or condition of handicap.
State University of New York at Stony Brook 11794

DEPARTMENT OF MATHEMATICS
Irwin Kra, Chairman

Applications due:* Bachelor's by inst. 2500
Teaching Fellowship (2-4) Faculty 37; Published 32 Bachelor's by dept. 24
6000 Master's by dept. 20
12-4 Teaching, Teaching Assistantship (40-45) 5000-3900 Ph. D. (1975-1978 incl.)
9-4 Teaching, *Assistantship; 3/1/79; Fellowship; 2/1/79 for first round of offers.
Research Assistantship (12) 9-4 Teaching, Total: 25

*Several students do and will hold a Fellowship in addition to their teaching assistantship.

Syracuse University, Syracuse 13210

SCHOOL OF COMPUTER AND INFORMATION SCIENCE

Warren Semon, Dean

Applications due: 3/1/79 Bachelor's by inst. 2486
Fellowship (2) Faculty 15; Published 9 Bachelor's by dept. 14
4000 Master's by dept. 34
9 Teaching, Research Assistantship (4) 4400 Bachelor's by inst. 2486
20 Teaching, Research Assistantship (2) 4400 Ph. D. (1975-1978 incl.)
9 15 Research, DEPARTMENT OF MATHEMATICS
3700 CS 18, Total: 18
 Bachelor's by dept. 11
Faculty 22; Published 20 Bachelor's by dept. 6
3600-4000 9 Master's by dept. 7
15 Research, Gail S. Young, Chairman
Research Assistantship (22) 3600-4000 9 Bachelor's by inst. 1063
3700 Bachelor's by dept. 35

DEPARTMENT OF MATHEMATICS
Faculty 23; Published 20
Applications due: 2/15/79
Gail S. Young, Chairman
Ph. D. (1975-1978 incl.)
Fellowship (10)* 1000 A&NT 2, G&T 2, L 1,
9 3 Teaching, Total: 10
Teaching Assistantship (25)* 1600-4000 9 Ph. D. (1975-1978 incl.)
3 Teaching, Scholarship (10)
6 Teaching

*Several students do and will hold a Fellowship in addition to their teaching assistantship.

University of Rochester, Rochester 14627

DEPARTMENT OF COMPUTER SCIENCE
Jerome A. Feldman, Chairman

Applications due: 3/1/79 Bachelor's by inst. 1063
Fellowship (22) Faculty 11; Published 11 Bachelor's by dept. 6
3600-4000 9 Master's by dept. 7
15 Research, Research Assistantship (22) 3600-4000 9 Bachelor's by inst. 1063
3700 Bachelor's by dept. 35

DEPARTMENT OF MATHEMATICS
Faculty 23; Published 20
Applications due: 2/15/79
Gail S. Young, Chairman
Ph. D. (1975-1978 incl.)
Fellowship (10)* 1000 A&NT 3, G&T 3, L 1,
9 3 Teaching, Total: 10
Teaching Assistantship (25)* 1600-4000 9 Ph. D. (1975-1978 incl.)
3 Teaching, Scholarship (10)
6 Teaching

*Several students do and will hold a Fellowship in addition to their teaching assistantship.

University of Rochester, Rochester 14627

DEPARTMENT OF STATISTICS
W. J. Hall, Chairman

Applications due: 2/15/79 Bachelor's by inst. 1063
Teaching Assistantship (12) Faculty 7; Published 7 Bachelor's by dept. 11
2200-4000 9 Master's by dept. 9
12-15 Teaching, Research Assistantship (2) 2000-7000 9-12 Bachelor's by inst. 1063
12-30 Teaching, Tech Associateship (1) 4200 9 Ph. D. (1975-1978 incl.)
20 6 Teaching

*Several students do and will hold a Fellowship in addition to their teaching assistantship.

East Carolina University, Greenville 27834

DEPARTMENT OF MATHEMATICS
Robert C. Shock, Chairperson

Applications due: 3/1/79 Bachelor's by inst. 1949
Robert C. Shock, Chairperson
Faculty 36; Published 9 Bachelor's by dept. 14
2500 Master's by dept. 10
9 * Teaching
Teaching Fellowship (22) 2500 9 * 5 Teaching
Research and Office Institutional
Computer and Office Institutional
Research (4) 2500 9 * 15 Assist in
Research
Lab or OIR

* $520 per year in-state; $2240 per year (out-of-state); $950 per year (special talent tuition, out-of-state).
<table>
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<td>Teaching Assistantship (60) 4500-5200 9 560 15-20 Teaching</td>
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<td>Master's by dept.</td>
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<td>Ph. D. (1975-1978 incl.)</td>
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<td>A&amp;NT 5, G&amp;T 1, A&amp;FA 3, CS 1, AM 2, Total: 12</td>
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</table>

DEPARTMENT OF MATHEMATICS AND SCIENCE EDUCATION
Herbert E. Speece, Head
Teaching Assistantship None confirmed at this time.

DEPARTMENT OF OPERATIONS RESEARCH
Salah E. Elmaghrab, Director
Applications due: 2/1/79 Faculty 6; Published 4
Fellowship (1) 4800-5200 9 425 20 Research Ph. D. (1975-1978 incl.)
Teaching Assistantship (4) 3400-4500 9 425 20 Teaching OR 5, Total: 5
Research Assistantship (6) 3400-4500 9 425 20 Research
*
* See catalog.

University of North Carolina, Chapel Hill 27514
DEPARTMENT OF BIOSTATISTICS
James E. Grizzle, Head
Applications due: 3/15/79 Faculty 33; Published 36
Fellowship (31)* 3900 12 20 Research Ph. D. (1975-1978 incl.)
Research Assistantship (19) 6118-7802 12 20 Research S 5, Other 1, Total: 6
* All fellowships are for continuing students.

DEPARTMENT OF MATHEMATICS
William W. Smith, Chairman
Applications due: 2/1/79 Faculty 32; Published 26
Fellowship (1)* 3000-4500 525/yr. Research Ph. D. (1975-1978 incl.)
Teaching Fellowship (2)* 5050 9 525/yr. **
Research Assistantship (23) 4300-5500 9 525/yr. ***
Research Assistantship (1)* 3000 9 525/yr. Research A&NT 1, G&T 1, A&FA 3, Other 1, Total: 6
University Grant in Astronomy (1)* 4500 525/yr.

* Amount is usually supplemented with partial teaching assistantship.
** Teach one course per semester.
*** Teach one course per semester; assist one course.

DEPARTMENT OF OPERATIONS RESEARCH
Jon W. Tolle, Chairman
Applications due: 3/1/79 Faculty 8; Published 8
Fellowship (3-5) 3500-4000 9 266/sem. 0-5 Ph. D. (1975-1978 incl.)
Teaching Assistantship (10-15) 3300-4200 9 266/sem. 5-10 OR 3, Total: 3
Research Assistantship (5) 3600-4200 9 & 12 266/sem. 10

NORTH CAROLINA STATE UNIVERSITY
The department of mathematics offers programs of study leading to M.S. and Ph.D. degrees in pure and applied mathematics. A graduate faculty of more than fifty represents a wide variety of research interests with particular strength in applicable mathematics and in the application of mathematics to current problems. Active cooperation with the Schools of Engineering, Agriculture and Life Sciences, and with other departments in the School of Physical and Mathematical Sciences results in a climate particularly favorable to the development of an appreciation for and an understanding of applied mathematics. This cooperation is in part cemented with joint faculty appointments with computer science, operations research, biomathematics, physics, statistics, and mathematics education.
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

The Department of Mathematics
P. O. Box 5548, Raleigh, N. C. 27650

561
University of North Carolina, Charlotte 28223

DEPARTMENT OF MATHEMATICS
J. F. Schell, Chairman

Teaching Assistantship (6) 3500 9 505* 6 6 Teaching

*For out-of-state residents tuition is $2335 per academic year.

University of North Carolina at Greensboro 27412

DEPARTMENT OF MATHEMATICS
E. E. Posey, Head

Teaching Assistantship (18) 3200 9 350 6

Wake Forest University, Winston-Salem 27109

DEPARTMENT OF MATHEMATICS
Ivey C. Gentry, Chairman

Fellowship (4) 4600 9 3000
Teaching Assistantship (2) 6500-6700 9 3000
Scholarship (4) 3000 9 3000

Western Carolina University, Cullowhee 27823

DEPARTMENT OF MATHEMATICS
Charles J. Martin, Head

Teaching Assistantship (6) 3000-4000 9 * 3-4 3-4 Teaching

*In-state: $155 per semester; out-of-state: $1024 per semester, with some waivers.

NORTH DAKOTA

North Dakota State University, Fargo 58102

DEPARTMENT OF MATHEMATICAL SCIENCE
Leonard Shapiro, Chairman

Teaching Assistantship (8) 3300-3600 9 20 Teaching
C. S. Internship (3) 3000-7000 12 510 20 Research

OHIO

Bowling Green State University, Bowling Green 43403

DEPARTMENT OF APPLIED STATISTICS AND OPERATIONS
RESEARCH
Robert A. Patton, Chairman

Teaching Assistantship (6) 3400 9 15-20 Tutoring

DEPARTMENT OF COMPUTER SCIENCE
David L. Fulton, Chair

Teaching Assistantship (6) 3400 9 20
Research Assistantship (7) 3400 9 20

UNIVERSITY OF NORTH CAROLINA

The Department of Mathematics offers programs leading to the degrees Master of Arts, Master of Science, and Doctor of Philosophy. 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. Financial assistance is available and can be obtained by writing to address below.

Faculty members are active in research especially in the fields of classical analysis, algebra, combinatorics, differential geometry, dynamical systems, algebraic topology, foliation theory, and algebraic geometry.

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

Equal Opportunity/Affirmative Action Employer

562
The Department of Mathematics and Statistics offers master's and Ph.D. programs in mathematics and statistics, a Master of Arts in Teaching program, and a master's program in applied statistics. Each student's course of study is tailored to his or her individual needs and career objectives. Send requests to:

Dr. L. David Sabbagh
Department of Mathematics and Statistics
Bowling Green State University
Bowling Green, Ohio 43403
Kent State University, Kent 44242

DEPARTMENT OF MATHEMATICS
O. P. Stackelberg, Chairman

Fellowship (1) 3200 9 5 Teaching
Teaching Fellowship (9) 4300-4500 9 5 Teaching
Teaching Assistantship (19) 3600-3700 9 10 Research
Research Assistantship (1) 4400 12

Applications due: 3/1/79*

*Late applications will be considered.

Miami University, Oxford 45056

DEPARTMENT OF MATHEMATICS AND STATISTICS
S. E. Bohn, Professor

Teaching Assistantship (24) 3600 9 18-20

Applications due: 3/15/79

Ohio State University, Columbus 43210

DEPARTMENT OF COMPUTER AND INFORMATION SCIENCE
Lee J. White, Acting Chairman

Fellowship (15) 3600 12 15-20 Teaching
Teaching Assistantship (47) 3600-5700 9,12 20 Research
Research Assistantship (15) 3375-5400 9,12 20 Program­­ming
Computer Center (3) 4500-5000 12 20 Program­­ming

Ohio College Library Center (OCLC) (2) 4200-4500 12

Applications due: 2/1/79

THE OHIO STATE UNIVERSITY

The Department of Mathematics at The Ohio State University offers a number of Fellow­ships and Teaching Assistantships for qualified graduate students. The Fellowship stipend ranges from $3600 to $4500 for the academic year, plus $1000 for the summer. The Teaching Assistantship stipend ranges from $3600 to $4680 for the academic year. Both Fellowships and Assistantships include a waiver of tuition fees. An assistant during the academic year may register for courses in the following summer without payment of fees whether or not he is awarded an additional summer teaching assistantship. Each financial aid offer to a new graduate student will carry an additional grant for the 1979 Summer Quarter of $1000 plus tuition fees and no teaching duties.

A teaching assistant at Ohio State assists with only one course at the calculus or pre­­calculus level. This assignment involves four to six classroom contact hours per week, plus other duties such as preparation, grading, and consultation with students for a total of no more than 20 hours per week.

Graduate programs leading to the M.S. degree are available in theoretical mathematics, applied mathematics, or interdisciplinary studies. Graduate programs leading to the Ph. D. degree are offered in Algebra, Analysis, Applied Mathematics, Combinatorial Analysis, Functional Analysis, Geometry, Logic, Number Theory, Probability and Ergodic Theory, and Topology.

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

Chairman — Department of Mathematics — The Ohio State University
231 W. 18th Avenue — Columbus — Ohio 43210

Applications for fellowships should be submitted by February 15, 1979. Applications for assistantships will be considered through July 1, 1979.
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<td>Joan Leitzel, Acting Chairman</td>
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<td>Summer Stipend (50)***</td>
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<td><strong>DEPARTMENT OF STATISTICS</strong></td>
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<td>D.R. Whitney, Chairman</td>
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<td>D.O. Norris, Chairman</td>
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<td><strong>University of Akron, Akron 44325</strong></td>
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<td>K.R. Meyer, Chairman</td>
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<td>DIVISION OF EPIDEMIOLOGY AND BIOSTATISTICS</td>
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<td><strong>University of Dayton, Dayton 45469</strong></td>
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<td>John McCloskey, Chairman</td>
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Wright State University, Dayton 45435

DEPARTMENT OF COMPUTER SCIENCE
J. Brandeberry, Chairman
Teaching Assistantship (12) 3300-3400 9 7/ct., hr. 20
Applications due: 3/1/79 Bachelor's by inst. 1086
DEPARTMENT OF MATHEMATICS
Edgar A. Rutter, Chairman
Teaching Assistantship (10) 3300-3400 9 7/ct., hr. 16 Teaching**
Applications due: 3/1/79 Bachelor's by inst. 1086

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

Youngstown State University, Youngstown 44555

DEPARTMENT OF MATHEMATICAL AND COMPUTER SCIENCES
Dean B. Brown, Chairman
Applications due: Open Bachelor's by inst. 30
Teaching Assistantship (3) 2900 9 210 Bachelor's by dept.
Scholarship (2) 2900 9 210

Oklahoma State University, Stillwater 74074

DEPARTMENT OF COMPUTING AND INFORMATION SCIENCES
J. Richard Phillips, Chairman
Applications due: 3/1/79 Bachelor's by inst. 2393
Teaching Assistantship (11) 3735 9 * 20 Bachelor's by dept.
*$17.50 undergraduate; $20,75 graduate.

DEPARTMENT OF MATHEMATICS
Shair Ahmad, Chairman
Applications due: Open Bachelor's by inst. 2393
Teaching Assistantship (51) 3735-3915 9 20,75/ct., hr. 5-6 Teaching
*$17.50 undergraduate; $20,75 graduate.

DEPARTMENT OF STATISTICS
J. Leroy Folks, Chairman
Applications due: 3/1/79 Bachelor's by inst. 2393
Teaching Assistantship (9) 3735-3915 9 * 20 Bachelor's by dept.
*Ph.D. (1975-1978 incl.)
A&NT 1, G&T 2, A&FA 4, CS 1, ME 2. Total: 10

University of Oklahoma, Norman 73019

DEPARTMENT OF MATHEMATICS
Morris L. Marx, Chairman
Applications due: 2/1/79 Bachelor's by inst. 2301
Teaching Fellowship (1-2) 4600-5000 9 20,75/ct., hr. 4-6 Teaching
Teaching Assistantship (30) 3600-4000 9 20,75/ct., hr. 6 Teaching
*Ph.D. (1975-1978 incl.)
A&NT 3, G&T 4, CS 1, ME 2. Total: 10

The Department of Mathematics offers a flexible program leading to the Master of Science degree. Concentrations are available in Applied Mathematics, Computer Science, Pure Mathematics, and Statistics. Classes are small and there is ample opportunity for close contact between students and faculty. Excellent library and computing facilities are easily accessible. Financial assistance is available.

WRIGHT STATE UNIVERSITY

Further information and application forms may be obtained from:

GRADUATE COMMITTEE
DEPARTMENT OF MATHEMATICS
WRIGHT STATE UNIVERSITY
DAYTON, OH 45435

566
University of Tulsa, Tulsa 74104

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*Late applications considered if funds are available.

Oregon State University, Corvallis 97331

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University of Oregon, Eugene 97403

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Pennsylvania

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Carnegie-Mellon University, Pittsburgh 15213

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Clarion State College, Clarion 16214

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Oregon State University, Corvallis 97331

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University of Oregon, Eugene 97403

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Pennsylvania

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Carnegie-Mellon University, Pittsburgh 15213

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Clarion State College, Clarion 16214

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Drexel University, Philadelphia 19104

DEPARTMENT OF MATHEMATICAL SCIENCES
Loren N. Argabright, Head

Teaching Assistantship (20) 3300-4300 9
Research Assistantship (2) 3300-4300 9

Applications due: 3/15/79
Faculty 28; Published 17
6 Teaching
20 Research

Ph.D. (1975-1978 incl.)
A&FA 3, Total: 3

Duquesne University, Pittsburgh 15219

DEPARTMENT OF MATHEMATICS
Charles F. Sebesta, Chairman

Teaching Assistantship (4) 2136 9 Waived 6-8

Applications due: 3/15/79
Faculty 9; Published 2

Bachelor's by dept. 4
Master's by dept. 4

Edinboro State College, Edinboro 16444

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
Ronald G. Baker, Chairperson

Research Assistantship (1) 2400 12

Applications due: 3/30/79
Faculty 25; Published 7

Bachelor's by inst. 38
Bachelor's by dept. 14
Master's by dept. 15

Indiana University of Pennsylvania, Indiana 15701

DEPARTMENT OF MATHEMATICS
M. Woodard, Chairman

Teaching Assistantship (5) 1300-2705 9

Applications due: 3/1/79
Faculty 36

Bachelor's by inst. 25
Bachelor's by dept. 7
Master's by dept. 15

Kutztown State College, Kutztown 19530

DEPARTMENT OF MATHEMATICS
Edward W. Evans, Chairman

Teaching Assistantship (1) 2700 9 Remitted Max. * of 20

Applications due: 4/1/79
Faculty 17; Published 5

Bachelor's by inst. 38
Bachelor's by dept. 14
Master's by dept. 15

Lehigh University, Bethlehem 18015

DEPARTMENT OF MATHEMATICS
Gilbert Stengle, Chairman

Fellowship (1-2) 3000 9
Teaching Assistantship (26) 3500 9

Applications due: 2/15/79*
Faculty 22; Published 19
4 Teaching

Ph.D. (1975-1978 incl.)
A&NT 9, A&FA 2, Other 1.
Total: 10

Pennsylvania State University, University Park 16802

DEPARTMENT OF COMPUTER SCIENCE
Jonathan Goldstine, Acting Head

Fellowship (2) 4032 9
Teaching Assistantship (30) 4032-5040 9
Research Assistantship (6) 4032-5040 9
Summer Support (15) 672-1680 3

Applications due: 2/15/79*
Faculty 24
6 Research
20 Teaching
20 Teaching
10-20 Teaching

Ph.D. (1975-1978 incl.)
A&NT 9, L 3, A&FA 2, AM 1, ME 1. Total: 16

DREXEL UNIVERSITY

The Department of Mathematical Sciences offers graduate programs leading to the M.S. and Ph.D. degrees. The M.S. degree is available under two basic options, Applied Mathematics and Computational Mathematics. Both programs are "professionally oriented" in the sense that they are primarily intended to prepare students for employment as practicing applied mathematicians and computer specialists in business, industry, or government. The Ph.D. program is primarily concentrated in the areas of analysis, applied mathematics, and computational mathematics. Financial aid is available through teaching and research assistantships which provide academic year stipends of from $3300 to $4300 plus a waiver of tuition and fees. Applicants may request further information from:

Graduate Recruiting Chairman
Department of Mathematical Sciences
Drexel University
Philadelphia, Pennsylvania 19104

568
**DEPARTMENT OF STATISTICS**

William L. Harkness, Head

Teaching Assistantship (6) 4200-4800 9 4-5c

Applications due; 2/15/79 Bachelor's by inst. 8250
Faculty 12; Published 12 Master's by dept. 6

Ph. D. (1975-1978 incl.)
S 12. Total: 12

Shippensburg State College, Shippensburg 17257

**DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE**

James L. Sieber, Chairman

Teaching Assistantship (2) 2700 9 20 Support

Applications due; Open Bachelor's by inst. 889
Faculty 18; Published 2 Bachelor's by dept. 24

Master's by dept. 31

Temple University, Philadelphia 19122

**DEPARTMENT OF MATHEMATICS**

Albert Schild, Chairman

Fellowship (2) 4000 12
Teaching Assistantship (17) 3600-4800 9
Research Assistantship (6) 3600-4000 9
Scholarship (2)

Applications due; 3/15/79 Bachelor's by inst. 3359
Faculty 52; Published 33 Bachelor's by dept. 13

Ph. D. (1975-1978 incl.)
A&NT 5, G&T 1, A&FA 6,
P 2, S 3. Total: 17

Master's by dept. 3

University of Pennsylvania, Philadelphia 19104

**DEPARTMENT OF MATHEMATICS**

C. T. Yang, Chairman

Fellowship (2) 2500* 9
Teaching Fellowship (23) 3600* 9
Karcher Fellowship (1) 4000** 9

Applications due; 2/1/79 Bachelor's by inst. 1166
Faculty 29; Published 29 Bachelor's by dept. 20

Ph. D. (1975-1978 incl.)
A&NT 5, G&T 1, A&FA 6,
Other 1. Total: 10

Master's by dept. 5

**DEPARTMENT OF STATISTICS**

D. F. Morrison, Chairman

Teaching Fellowship (6-7) 3700-3900 9 10 Teaching

Applications due; 2/1/79 Bachelor's by inst. 1166
Faculty 16 Master's by dept. 2

Ph. D. (1975-1978 incl.)
S 5. Total: 5

**TEMPLE UNIVERSITY, PHILADELPHIA**

The Department of Mathematics, Temple University, invites applications for a number of fellowships and assistantships available to support study toward the M.A. and Ph.D. in Mathematics. Graduate offerings include course work, seminars, and thesis guidance in a broad spectrum of mathematical areas, among them: Algebra, Group Theory, Number Theory, Geometry, Topology, Probability and Statistics, Analysis, and Functional Analysis, as well as a variety of options in Applied and Applicable Mathematics. The program is further enriched by a series of regular colloquia talks presented by visiting lecturers.

**GRADUATE FACULTY**

Dr. Orin Chein (Group Theory), Dr. Francis Christoph (Topology), Dr. Fred Cohen (Topology), Dr. Bruce Conrad (Topology), Dr. Raymond Coughlin (Algebra), Dr. Martin Eisen (Probability, Applied Math.), Dr. Ivan Erdeyi (Functional Analysis), Dr. Janos Galambos (Probability), Dr. Robert Gordon (Algebra), Dr. Marvin Grossman (Functional Analysis), Dr. Emil Grosswald (Analytic Number Theory, Analysis), Dr. Peter Hagis, Jr. (Number Theory), Dr. David Hill (Differential Equations), Dr. Marvin Knopp (Analysis, Number Theory), Dr. Samuel Kotz (Math. Stat., Information Theory), Dr. V. S. Krishnan (Topology, Algebra), Dr. Diane Laison (Functional Analysis), Dr. Seymour Lipschutz (Group Theory), Dr. Nicholas Macri (Functional Analysis), Dr. Jatinder Mehta (Stat.), Dr. Theodore Mitchell (Functional Analysis), Dr. William Nathan (Topology), Dr. Donald Newman (Analysis, Number Theory), Dr. Eli Passow (Analysis, Approx. Theory), Dr. John Paulos (Logic), Dr. Hala Pflugfelder (Algebra), Dr. Herbert Putz (Topology), Dr. K. Raghunandan (Math. Stat., Stochastic Process.), Dr. Louis Raymon (Analysis, Approx. Theory), Dr. Daniel Reich (Analysis), Dr. Michael Rich (Algebra), Dr. Albert Schild (Complex Analysis, Operations Research), Dr. John Schiller (Analysis), Dr. Thomas Slook (Functional Analysis), Dr. R. Srinivasan (Statistics), Dr. Leon Steinberg (Analysis, Appl. Math.), Dr. Maria A. Wurster (Analysis), Dr. David Zitarelli (Algebra, Hist. of Math.).

For further information and applications for admission and financial support write to:

Dr. Albert Schild, Chairman
Department of Mathematics
Temple University
Philadelphia, Pa. 19122
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<td><strong>University of Puerto Rico, Mayaguez 00708</strong></td>
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<td>Darrell W. Hajek, Director</td>
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<td>Teaching Assistantship (5)</td>
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<td>DIVISION OF APPLIED MATHEMATICS</td>
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<td>W. Freiberger, Chairman</td>
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<td>Fellowship (6)</td>
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<td>2850–3250*</td>
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<td>Research Assistantship (4)</td>
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<td>James T. Sedlock, Chairman</td>
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<td>Teaching Assistantship (2)</td>
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<td>University of Rhode Island, Kingston 02881</td>
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<td>DEPARTMENT OF COMPUTER SCIENCES AND EXPERIMENTAL STATISTICS</td>
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<td>William J. Hemmerle, Chairman</td>
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*Additional full-time summer compensation.
Clemson University, Clemson 29631

DEPARTMENT OF MATHEMATICAL SCIENCES

John Fulton, Head

Teaching Assistantship (55) 4290–6500 12
Programming Assistantship (12) 4550–5200 12

*$14 per hour (6–9 hours).

Applications due: 3/1/79
Faculty 45; Published 27
Bachelor's by inst. 1704
Bachelor's by dept. 32
Master's by dept. 12

SOUTH CAROLINA

Medical University of South Carolina, Charleston 29403

DEPARTMENT OF BIOMETRY

M. Clinton Miller, III, Chairman

Fellowship (3) 12000 12
Research Assistantship (1) 10000 12

Applications due: 3/1/79
Faculty 11; Published 11
Bachelor's by inst. 198
Master's by dept. 6

University of South Carolina, Columbia 29208

DEPARTMENT OF MATHEMATICS, COMPUTER SCIENCE AND STATISTICS

Robert M. Stephenson, Chairman

Teaching Assistantship (18) 3200–4800 9
Staff Assistantship (6) 4800 12

Applications due: 3/1/79
Faculty 46; Published 35
Bachelor's by inst. 2320
Bachelor's by dept. 51
Master's by dept. 32

Winthrop College, Rock Hill 29733

DEPARTMENT OF MATHEMATICS

Edward P. Guettler, Chairman

Nonteaching Assistantship (1) 2000 9

Applications due: 5/15/79
Faculty 11; Published 2
Bachelor's by inst. 466
Bachelor's by dept. 8
Master's by dept. 4

SOUTH DAKOTA

South Dakota School of Mines & Technology, Rapid City 57701

DEPARTMENT OF MATHEMATICAL SCIENCES

Dean C. Benson, Head

Teaching Assistantship (6) 2900 9

Applications due: 4/1/79
Faculty 9; Published 5
Bachelor's by inst. 324
Bachelor's by dept. 5
Master's by dept. 3

University of South Dakota, Vermillion 57069

DEPARTMENT OF MATHEMATICS

Wayne W. Gutzman, Chairman

Teaching Assistantship (6) 2300–2400 9

Applications due: 4/1/79
Faculty 14
Bachelor's by inst. 713
Bachelor's by dept. 24

TENNESSEE

East Tennessee State University, Johnson City 37601

DEPARTMENT OF MATHEMATICS

Lester C. Hartsell, Chairman

Teaching Assistantship (4) 2205–2340 9

Applications due: 4/1/79
Faculty 17; Published 2
Bachelor's by inst. 1624
Bachelor's by dept. 10

Memphis State University, Memphis 38152

DEPARTMENT OF MATHEMATICAL SCIENCES

Stan Franklin, Chairman

Teaching Assistantship (35) 4000–5000 9

Applications due: 4/1/79
Faculty 30; Published 20
Bachelor's by inst. 2905
Bachelor's by dept. 28
Master's by dept. 21

Middle Tennessee State University, Murfreesboro 37132

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

Harold S. Spraker, Chairman

Teaching Assistantship (10) 2290–2480 9

Applications due: 4/1/79
Faculty 19; Published 4
Bachelor's by inst. 1116
Bachelor's by dept. 16
Master's by dept. 10

Tennessee Technological University, Cookeville 38501

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

Ralph C. Boles, Chairman

Teaching Assistantship (7) 2385–2610 9

Applications due: Open
Faculty 21; Published 8
Bachelor's by inst. 900
Bachelor's by dept. 6
Master's by dept. 1

571
University of Tennessee, Knoxville 37916

DEPARTMENT OF COMPUTER SCIENCE
Robert Todd Gregory, Head
Teaching Assistantship (17) 3700–4000 9 Waived Teach two courses

DEPARTMENT OF MATHEMATICS
Lida K. Barrett, Head
Fellowship (1) 3000 12
Teaching Assistantship (55) 3656–4302 9 Waived 6 Bachelor's by dept.

Vanderbilt University, Nashville 37235

DEPARTMENT OF MATHEMATICS
Richard R. Goldberg, Chairman
Teaching Assistantship (22) 3900 9 Waived 6 Bachelor's by dept.

Texas

Baylor University, Waco 76703

DEPARTMENT OF MATHEMATICS
H. L. Rolf, Chairman
Teaching Assistantship (3) 2000–3000 9 3–6 Teaching 12 Bachelor's by dept.
Research Assistantship (5) 1800–2500 9 Bachelor's by dept.

East Texas State University, Commerce 75428

DEPARTMENT OF MATHEMATICS
Dale R. Bedgood, Head
Teaching Assistantship (10) 3483 9 150 6 sem. hrs.

Lamar University, Beaumont 77710

DEPARTMENT OF MATHEMATICS
Richard A. Alo', Head
Teaching Assistantship (6) 4000 9 300* 20 Bachelor's by dept.
*Tuition and fees.

Midwestern University, Wichita Falls 76308

DEPARTMENT OF MATHEMATICAL SCIENCES
Louie C. Huffman, Chair
Teaching Assistantship (6) 3200 9 101.50 6 Bachelor's by dept.

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

The Department of Mathematics offers M.A., M.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.A. and M.S. candidates. Research assistantship support up to $7,500 is available on departmental grants or with the Oak Ridge National Laboratory. Fellowship support up to $3,000 plus tuition remission and teaching assistantship support ranging from $3,654 to $5,460 plus tuition remission are available to qualified students. The Department is energetically engaged in research. It has 46 graduate faculty and 9 visiting faculty this year. Major fields of research include algebra and number theory, analysis (classical, functional, harmonic), applied mathematics, mathematical ecology, matrix theory, numerical algebra, numerical analysis, numerical partial differential equations, integral and ordinary differential equations, 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, economics, education, electrical engineering, engineering mechanics, nuclear engineering, and physics. The Department maintains close contact with the Oak Ridge National Laboratory and the Tennessee Valley Authority.

For information write to: Dr. Lida K. Barrett, Head, Department of Mathematics, University of Tennessee, Knoxville, Tennessee 37916
North Texas State University, Denton 76203

DEPARTMENT OF MATHEMATICS
John Ed Allen, Chairman

Teaching Fellowship (10) 4000-5000 9 6  

Applications due: 3/15/79  Faculty 18; Published 12  
Bachelor's by inst. 3123  Bachelor's by dept. 8  
Bachelor's by dept. 4  Ph.D. (1975-1978 incl.)  
G&T 1, A&FA 3. Total: 4

Pan American University, Edinburg 78539

DEPARTMENT OF MATHEMATICS
John Spellmann, Head

Teaching Assistantship (4) 3690 9 113/sem. 6c  
Applications due: 6/1/79  Faculty 18; Published 9  
Bachelor's by inst. 974  Bachelor's by dept. 7  
Master's by dept. 2

Rice University, Houston 77001

DEPARTMENT OF MATHEMATICAL SCIENCES
Richard Tapia, Chairman

Fellowship (3) 5500-6000 9 10  
Scholarship (7) 2500 9 10  
Applications due: 3/15/79  Faculty 10; Published 10  
Bachelor's by inst. 415  Bachelor's by dept. 35  
Master's by dept. 5  Ph.D. (1975-1978 incl.)  
S 3, OR 1, CS 3, AM 1, Other 3. Total: 11

DEPARTMENT OF MATHEMATICS
R.O. Wells, Jr., Chairman

Fellowship (15) 3550-4000* 9 6  
Research Assistantship (4) 4000-4400* 12 6  
Scholarship (8) 9 9  
Applications due: 3/15/79  Faculty 16; Published 15  
Bachelor's by inst. 415  Bachelor's by dept. 29  
Ph.D. (1975-1978 incl.)  
A&NT 1, G&T 3, A&FA 2. Total: 6

*$2500 tuition awarded in addition to stipend.

Southern Methodist University, Dallas 75275

DEPARTMENT OF COMPUTER SCIENCE
David W. Matula, Head

Teaching Assistantship (7) 3150-3600 9 * 20  
Research Assistantship (3) 3150-3600 9 * 20  
Applications due: 4/1/79  Faculty 7; Published 5  
Bachelor's by inst. 1289  Bachelor's by dept. 10  
Master's by dept. 20  Ph.D. (1975-1978 incl.)  
CS 5. Total: 5

*Any in excess of 9 semester hours per semester.

NORTH TEXAS STATE UNIVERSITY
DEPARTMENT OF MATHEMATICS

The Department of Mathematics, with a faculty of 18, offers graduate courses of instruction leading to the M.A., M.S., and Ph.D. degrees in mathematics. The department has positions for 24-30 teaching fellows who teach two three-hour classes each semester. The library currently subscribes to 572 mathematical journals, has 388 complete runs, and 729 journal titles represented. The research and teaching interests of the faculty are varied so that the students studying for a graduate degree are able to take substantial courses in core areas of mathematics as well as gain significant exposure to applied areas. The faculty establishes a close working relationship with the students in order to enhance the learning and doing of mathematics, and to lead the student to the frontier of important mathematical research.

TEACHING FELLOWSHIP STIPEND

$4000 for students without a master's degree  $4400 for students with a master's degree

The department will also award four special MERIT TEACHING FELLOWSHIPS which will pay $600 more than the regular teaching fellowship.

Committee on Teaching Fellowships: John W. Neuberger, Paul W. Lewis, R. Daniel Mauldin, W. D. Appling, David F. Dawson

Write to: John Ed Allen, Chairman of Mathematics Department

Bachelor's by inst. 1289  Bachelor's by dept. 10  
Master's by dept. 20  Ph.D. (1975-1978 incl.)  
CS 5. Total: 5
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<th>DEPARTMENT OF MATHEMATICS</th>
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<td>Richard K. Williams, Chairman</td>
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<td>Teaching Fellowship (8)</td>
<td>Faculty 13; Published 6</td>
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<td>4000–4300* 9 130/sem.hr. 6 Teaching</td>
<td>*=Plus tuition.</td>
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<td>DEPARTMENT OF OPERATIONS RESEARCH AND ENGINEERING AND MANAGEMENT</td>
<td>Applications due: 3/1/79</td>
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<td>1289</td>
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<tr>
<td>U.N. Bhat, Chairman</td>
<td>Bachelor's by dept.</td>
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<td>Teaching Assistantship (3)</td>
<td>Faculty 6; Published 6</td>
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<td>3150–4050 9</td>
<td>Ph.D. (1975–1978 incl.), OR I, Other 1, Total: 2</td>
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<td>Research Assistantship (4)</td>
<td>20 Teaching, research</td>
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<td>2700–6300 9</td>
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<td>D.B. Owen, Chairman</td>
<td>Bachelor's by dept.</td>
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<td>4300–7834 9</td>
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<td>4300–7834 9</td>
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<td>6100–9634 12</td>
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<td>Scholarship (4)</td>
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Southwest Texas State University, San Marcos 78666

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<th>Bachelor's by inst.</th>
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<td>Robert Northcutt, Chairman</td>
<td>Bachelor's by dept.</td>
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<td>Teaching Assistantship (10–14)</td>
<td>Faculty 35; Published 9</td>
<td>Master's by dept.</td>
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<td>4500–4650 9 142/sem. 9 Teaching</td>
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Stephen F. Austin State University, Nacogdoches 75962

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<td>W.I. Layton, Chairman</td>
<td>Bachelor's by dept.</td>
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<td>Teaching Fellowship (14)</td>
<td>Faculty 22; Published 11</td>
<td>Master's by dept.</td>
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<td>1800–3600 9 ** 6</td>
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*As early as possible, **$145 per semester for 12 hours.

Texas A & I University, Kingsville 78363

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<th>DEPARTMENT OF MATHEMATICS</th>
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<th>Bachelor's by inst.</th>
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<td>Virgil C. Kowalik, Acting Head</td>
<td>Bachelor's by dept.</td>
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<td>Teaching Assistantship (8)</td>
<td>Faculty 16; Published 3</td>
<td>Master's by dept.</td>
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<td>4020 9 * 20 Teaching or 6</td>
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*Resident; $127 for nine hours; nonresident; increment is waived for those teaching six hours or more (1978).

Texas A & M University, College Station 77843

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<th>DEPARTMENT OF MATHEMATICS</th>
<th>Applications due: 3/1/79*</th>
<th>Bachelor's by inst.</th>
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<td>C.J. Maxson, Acting Head</td>
<td>Bachelor's by dept.</td>
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<td>Teaching Assistantship (75)</td>
<td>Faculty 63; Published 53</td>
<td>Master's by dept.</td>
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<td>4050–4869 9** 60 6–8 Recitation selections and related duties</td>
<td>Ph.D. (1975–1978 incl.), A&amp;NT 1, G&amp;T 1, A&amp;FA 1, Other 1, Total: 4</td>
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*Late applications will be considered, **May be extended for summer,

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<th>DEPARTMENT OF OPERATIONS RESEARCH AND ENGINEERING AND MANAGEMENT</th>
<th>Applications due: Open</th>
<th>Bachelor's by inst.</th>
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<td>W.B. Smith, Director</td>
<td>Bachelor's by dept.</td>
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<td>Fellowship (1)</td>
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<td>Master's by dept.</td>
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<tr>
<td>Teaching Assistantship (23)</td>
<td>200 20 Teaching</td>
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<tr>
<td>4050–4500 9* 200 20 Research</td>
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<tr>
<td>Research Assistantship (6)</td>
<td>4050–4500 9* 200 20 Teaching related</td>
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<td>Nonteaching Graduate Assistantship (GANT) (7)</td>
<td>4050–4500 9* 200 20 Teaching related</td>
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*Continuation through summer usually available,

Texas Tech University, Lubbock 79409

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<th>Applications due:*</th>
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<td>Paul Nelson, Acting Chairman</td>
<td>Bachelor's by dept.</td>
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<td>Teaching Assistantship (40)</td>
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<td>Master's by dept.</td>
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<td>Part-time Instructor with Master's Degree (15)</td>
<td>6–8 Teaching and fees</td>
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<tr>
<td>4000–4600 9 ** 6 Teaching and fees</td>
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*No formal deadline, Desirable filing date for fall is 4/1/79, **$4 per semester hour or minimum of $50.

University of Houston, Houston 77004

<table>
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<th>DEPARTMENT OF MATHEMATICS</th>
<th>Applications due: 3/1/79*</th>
<th>Bachelor's by inst.</th>
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<td>G.J. Etgen, Chairman</td>
<td>Bachelor's by dept.</td>
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<td>Teaching Fellowship (35)</td>
<td>Faculty 42; Published 32</td>
<td>Master's by dept.</td>
<td>11</td>
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*Late applications considered if funds available,
University of Texas at Arlington 76019

DEPARTMENT OF MATHEMATICS
V. Lakshmikantham, Chairman

Teaching Assistantship (30) 3276-3924 9 145-173/sem. 6 Teaching

Applications due: 3/1/79 Faculty 41
Bachelor's by inst. 2109
Bachelor's by dept. 44
Master's by dept. 9
Ph.D. (1975-1978 incl.) A&FA 2, S 1. Total: 3

University of Texas at Austin 78712

DEPARTMENT OF MATHEMATICS
James W. Daniel, Chairman

Teaching Fellowship (2-3) 5000 Faculty 64; Published 55
Teaching Assistantship (90) 3500-4250 9 200 6^ Recitation sections and related duties

Applications due: 3/1/79 Bachelor's by inst. 9975
Bachelor's by dept. 76
Master's by dept. 14

University of Texas at Dallas, Richardson 75080

DEPARTMENT OF MATHEMATICAL SCIENCES
George Kimeldorf, Head

Teaching Assistantship (25) 3618-4131 9* 50/sem. ** 20 Teaching
Research Assistantship (5) 3267-3735 9* 50/sem. ** 20 Research

*12 possible.
**plus approximately $150 for fees.

University of Texas at El Paso 79968

DEPARTMENT OF MATHEMATICS
John A. Narvarte, Chairman

Teaching Assistantship (6) 3900 9 15 Non-teaching

Applications due: 4/1/79 Bachelor's by inst. 1444
Bachelor's by dept. 18
Master's by dept. 4

UNIVERSITY OF HOUSTON
(Central Campus)

DEPARTMENT OF MATHEMATICS

is seeking applicants for new faculty positions available at the beginning of the academic year 1979–1980:

1. A senior position (Professor) in Applied Mathematics.
2. A junior position (Assistant Professor, tenure-track) in all areas of Mathematics.

Strong recommendations will be required. Salaries open to negotiation. Please send applications with vitae, resumes, references, and lists of publications to:

PROFESSOR A. LELEK — CHAIRMAN, RECRUITING COMMITTEE
DEPARTMENT OF MATHEMATICS
UNIVERSITY OF HOUSTON, HOUSTON, TX 77004

The University of Houston is an equal opportunity employer.

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GRADUATE STUDY IN MATHEMATICS

Master's Degree with emphasis on Mathematics or Statistics

- Small classes and individual attention
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A component of the University of Texas System, UT El Paso is located in a major metropolitan center on the Mexican border. Within easy driving distance are mountainous wilderness areas, ski resorts and national forests.

FOR INFORMATION WRITE: Department of Mathematics
The University of Texas at El Paso
El Paso, Texas 79968

This University is an Equal Opportunity Institution.
淹他握是的康，工科。的，

**University of Texas at San Antonio 78285**

**DIVISION OF MATHEMATICS, COMPUTER SCIENCE AND SYSTEM DESIGN**

Stan Wayment, Director

- **Teaching Assistantship (6–8)**
  - Amount: 4000
  - Tuition: 9
  - Service Required: 50
  - Type of Service: 6
  - Stipend: Faculty 21; Published 21

**UTAH**

**Brigham Young University, Provo 84602**

**DEPARTMENT OF STATISTICS**

H. G. Hilton, Chairman

- **Fellowship (1)**
  - Amount: 6800
  - Tuition: 10
  - Service Required: 600/yr.
  - Type of Service: 20
  - Ph.D.

- **Teaching Assistantship (7)**
  - Amount: 5100
  - Tuition: 12
  - Service Required: 1800/yr.
  - Type of Service: 20

- **Research Assistantship (2)**
  - Amount: 7000
  - Tuition: 12
  - Service Required: 600/yr.
  - Type of Service: 20

**University of Utah, Salt Lake City 84112**

**DEPARTMENT OF MATHEMATICS**

Hugo Rossi, Chairman

- **Teaching Fellowship (23)**
  - Amount: 4750–5200
  - Tuition: 9
  - Service Required: 4–8

- **Teaching Assistantship (10)**
  - Amount: 4750–5050
  - Tuition: 9
  - Service Required: 4–8

**Utah State University, Logan 84322**

**DEPARTMENT OF APPLIED STATISTICS AND COMPUTER SCIENCE**

R. L. Hurst, Chairman

- **Teaching Assistantship (4)**
  - Amount: 1800–3600
  - Tuition: 9
  - Service Required: 201

**DEPARTMENT OF MATHEMATICS**

Lawrence O. Cannon, Head

- **Teaching Assistantship (15)**
  - Amount: 3000–5100
  - Tuition: 9
  - Service Required: 201

**VERMONT**

**University of Vermont, Burlington 05405**

**DEPARTMENT OF MATHEMATICS**

Donald E. Moser, Chairman

- **Teaching Assistantship (11)**
  - Amount: 3400
  - Tuition: 9
  - Type of Service: 6

**DEPARTMENT OF STATISTICS AND BIOSTATISTICS PROGRAMS**

David Sylwester, Director

- **Teaching Fellowship (2)**
  - Amount: 3400
  - Tuition: 9
  - Service Required: 20

- **Research Assistantship (3)**
  - Amount: 4450
  - Tuition: 9
  - Service Required: 1150

- **Traineeship (1)**
  - Amount: 3900
  - Tuition: 12

- **Research Fellowship (1)**
  - Amount: 3900

- **Wages (1)**
  - Amount: 4,50/hr.

**VIRGINIA**

**College of William and Mary, Williamsburg 23185**

**DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE**

William G. Poole, Jr., Chairman

- **Teaching Assistantship (9)**
  - Amount: 3750
  - Tuition: 9
  - Service Required: 10–20

- **Research Assistantship (5)**
  - Amount: 3750
  - Tuition: 9–11

**George Mason University, Fairfax 22030**

**DEPARTMENT OF MATHEMATICS**

John A. Oppelt, Chairman

- **Fellowship (1)**
  - Amount: 2000
  - Tuition: 9
  - Service Required: 768/yr.

- **Teaching Assistantship (1)**
  - Amount: 3300
  - Tuition: 9
  - Service Required: 768/yr.

*Full-time in-state tuition based on $32/credit hour; out-of-state tuition: $62/credit hour.*
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### MASTERS IN THE MATHEMATICAL SCIENCES

#### MATHEMATICS, COMPUTER SCIENCE, STATISTICS

#### APPLIED MATHEMATICS, MATHEMATICS EDUCATION

The Department of Mathematical Sciences at Virginia Commonwealth University offers a flexible program tailored to the needs of individual students. Students may work toward the M.S. degree in mathematical sciences with concentration in computer science, statistics, mathematics, applied mathematics or in combinations of these areas, or toward the M.Ed. degree in mathematics education.

For further information write:

**Dr. James Deveney**

Department of Mathematical Sciences

Virginia Commonwealth University

Richmond, Virginia 23284
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东方华盛顿州立学院，切尼

数学与计算机科学

Robert H. Dalia, 主任

助教职位（2-3）

1978-79年的数据。

大学华盛顿，西雅图

生物数学组

Richard A. Kronmal, 主任

奖学金（25）

**教学助理职位（14）

研究助理职位（18）

专业培训

*加上学费。此外，允许从其他来源获得最高收入1500美元。

**学费超过6个学分：居民247美元，非居民912美元。

**研究生学费和非居民学费超过6个学分。

计算机科学

Robert W. Ritchie, 主任

教学助理职位（4）

研究助理职位（10）

*根据需要更改。

数学

Robert Phelps, 主任

教学助教职位（1）

研究助理职位（2）

*4至6小时的课程加上办公室时间及准备时间。

西维吉尼亚大学，亨廷顿

数学

Steven Hatfield, 代理主任

助教职位（5-10）

*根据需要更改。

西维吉尼亚州立大学，摩根敦

数学

I. D. Peters, 主任

助教职位（18）

*根据需要更改。

西维吉尼亚州立大学，列克星敦

数学

Michael H. Hahn, 主任

助教职位（1）

*根据需要更改。

弗吉尼亚州立大学，列克星敦

数学

James A. Cochran, 主任

研究助理职位（2）

*根据需要更改。

西维吉尼亚州立大学，查尔斯顿

数学

Steven A. McMillan, 主任

助教职位（10）

*根据需要更改。

西维吉尼亚州立大学，查尔斯顿

数学

Robert W. Chaney, 主任

助教职位（5）

*根据需要更改。

西维吉尼亚州立大学，查尔斯顿

数学

Robert R. Fullington, 主任

助教职位（10）

*根据需要更改。

西维吉尼亚州立大学，查尔斯顿

数学

Richard E. Tipton, 主任

助教职位（10）

*根据需要更改。

578
Marquette University, Milwaukee 53233

DEPARTMENT OF MATHEMATICS AND STATISTICS

W. E. Lawrence, Chairman

Teaching Assistantship (10) 3400-5800 9 C Teaching
Research Assistantship (2) 3400 9 Research
Scholarship* 2400 9
Tuition Scholarship** 100-600

*Limited number available.
**24 hours available; usually given as 1-3 hours per student each semester and in summer session.

University of Wisconsin, Madison 53706

DEPARTMENT OF COMPUTER SCIENCES

L. H. Landweber, Chairman

Fellowship (5) 5868 9-12 1145 20 Teaching
Teaching Assistantship (40) 5850-6225 9 1145 15 Teaching
Research Assistantship (20) 4608 12 1145 20 Research

Applications due: 2/15/79
Bachelor's by inst. 1380
Bachelor's by dept. 26
Master's by dept. 7

DEPARTMENT OF MATHEMATICS

Joshua Chover, Chairman

Fellowship (10) 4680** 9 1145
Teaching Assistantship (150) 4680-7466** 9 1145 16-24 Teaching
Research Assistantship (40) 4608-5628** 9-12 1145 20 Research

Applications due: *
Bachelor's by inst. 4954
Bachelor's by dept. 28
Master's by dept. 38

*Assistantship: 12/30/78; Fellowship: 2/15/79.
**All rates are 1978-79 values. All are expected to rise for 1979-80.

DEPARTMENT OF STATISTICS

G. K. Bhattacharyya, Chairman

Fellowship (2-3) 4860 9 1185
Teaching Assistantship (28) 5850-6159 9 1185 20 Teaching
Research Assistantship (22) 4604.73 9 1185 20 Research

Applications due: 1/15/79
Bachelor's by inst. 4954
Bachelor's by dept. 21
Master's by dept. 21

University of Wisconsin-River Falls 54022

DEPARTMENT OF MATHEMATICS

Lillian Gough, Chairman

Teaching Assistantship (4) 2800-3200 9 960/yr. 8 Tutoring

Applications due: 3/1/79
Bachelor's by inst. 340
Bachelor's by dept. 26
Master's by dept. 3

University of Wyoming, Laramie 82071

DEPARTMENT OF COMPUTER SCIENCE

Henry R. Bauer, III, Acting Head

Teaching Assistantship (3) 3852 9

Applications due: 3/15/79
Bachelor's by inst. 1165
Bachelor's by dept. 9

DEPARTMENT OF MATHEMATICS

A. Duane Porter, Acting Head

Teaching Assistantship (19) 3852-5136 9

Applications due: 2/15/79
Bachelor's by inst. 1165
Bachelor's by dept. 26
Master's by dept. 4
Ph. D. (1975-1978 incl.) Total: 3

DEPARTMENT OF STATISTICS

D. A. Anderson, Acting Head

Teaching Assistantship (7) 1926-3852 9
Research Assistantship (4) 1926-3852 9

Applications due: 2/15/79
Bachelor's by inst. 1165
Bachelor's by dept. 26
Master's by dept. 4
Ph. D. (1975-1978 incl.) S 2. Total: 2

WISCONSIN

Applications due: 2/15/79
Bachelor's by inst. 1380
Bachelor's by dept. 26
Master's by dept. 7

Applications due: 1/15/79
Bachelor's by inst. 4954
Bachelor's by dept. 28
Master's by dept. 38

Applications due: 2/15/79
Bachelor's by inst. 4954
Bachelor's by dept. 45
Master's by dept. 27
Ph. D. (1975-1978 incl.) Total: 52

Applications due: 1/15/79
Bachelor's by inst. 4954
Bachelor's by dept. 3
Master's by dept. 21

Applications due: 2/15/79
Bachelor's by inst. 2087
Bachelor's by dept. 12
Master's by dept. 13

Applications due: 3/1/79
Bachelor's by inst. 340
Bachelor's by dept. 26
Master's by dept. 3

Applications due: 2/15/79
Bachelor's by inst. 1165
Bachelor's by dept. 9

Applications due: 2/15/79
Bachelor's by inst. 1165
Bachelor's by dept. 4
Master's by dept. 1
Ph. D. (1975-1978 incl.) A&NT 1, G&T 1, Other 1. Total: 3

Applications due: 2/15/79
Bachelor's by inst. 1165
Bachelor's by dept. 2
Master's by dept. 4
Ph. D. (1975-1978 incl.) S 2. Total: 2

579
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## CARLETON UNIVERSITY

OTTAWA, CANADA

The Department of Mathematics offers programmes leading to M. Sc. and Ph.D. degrees in *Mathematics, Statistics* or *Probability Theory* both on a part-time and full-time basis. A number of Scholarships and Teaching/Research Assistantships ranging in value from $3500 to $7500 are available for qualified applicants. The Department also offers a cooperative Master's Program in *Statistics* in collaboration with Agencies of the Federal Government of Canada. Carleton's presence in Canada's capital has permitted the department to maintain a close relationship with researchers in such Federal Government Agencies as Statistics Canada, National Research Council, Environment Canada and Agriculture Canada. Areas of concentration of the Graduate Program include *Algebra and Number Theory, Analysis, Geometry and Topology, Applied Mathematics, Information Science, Pure and Applied Probability and Statistics*. For additional information and application forms, write to:

Graduate Supervisor – Department of Mathematics
Carleton University
Ottawa, Ontario, Canada K1S 5B6

580
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<td>Master's by dept.</td>
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<tr>
<td>University of Manitoba, Winnipeg, Manitoba R3T 2N2</td>
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<td>DEPARTMENT OF STATISTICS</td>
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<td>B. K. Kale, Head</td>
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<tr>
<td>Teaching Assistantship (4)</td>
<td>1600–3600</td>
<td>9</td>
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<tr>
<td>University of Ottawa, Ottawa, Ontario K1N 6N5</td>
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<td>W. D. Burgess, Chairman</td>
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<tr>
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<td>12</td>
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<td>University of Regina, Regina, Saskatchewan S4S 0A2</td>
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<tr>
<td>Teaching Assistantship (2)</td>
<td>3700*</td>
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<td>University of Saskatchewan, Saskatoon, Saskatchewan S7N OW0</td>
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<td>University of Toronto, Toronto, Ontario M5S 1A1</td>
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| *Citizen: $840; Visa: $2040,
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<td>University of Victoria, Victoria, British Columbia V8W 2Y3</td>
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University of Waterloo, Waterloo, Ontario N2L 3G1

FACULTY OF MATHEMATICS
W. F. Forbes, Dean

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University of Western Ontario, London, Ontario N6A 5B9

DEPARTMENT OF MATHEMATICS
D. Borwein, Head

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<td>**Tutoring, proctoring, marking, research.</td>
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York University, Downsview, Ontario M3J 1P3

DEPARTMENT OF MATHEMATICS
Martin E. Muldoon, Chairman

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<td>Master's by dept. 10</td>
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*Canadian citizen or immigrant: $765; Foreign: $2000.

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Univ California, Davis
Mathematics
Univ California, Los Angeles
System Science

COLORADO
Univ Northern Colorado, Greeley
Mathematics
D.A., Ed.D.

CONNECTICUT
Yale Univ, New Haven
Computer Science
Statistics

DISTRICT OF COLUMBIA
American Univ, Washington
Mathematics, Statistics
and Computer Science

FLORIDA
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Statistics
Univ Miami, Coral Gables
Mathematics

IDAHO
Idaho State Univ, Pocatello
Mathematics

ILLINOIS
Illinois State Univ, Normal
Mathematics
Univ Chicago, Chicago
Mathematics
Univ Illinois, Chicago Circle
Mathematics
Univ Illinois, Urbana
Mathematics

INDIANA
Indiana Univ, Bloomington
Mathematics

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Ph.D.

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Mathematics
Ph.D.
Washington Univ, St. Louis
Computer Science
Other

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Mathematics
Ph.D.

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Dartmouth Coll, Hanover
Mathematics
Ph.D.

NEW JERSEY
Rutgers Univ, New Brunswick
Statistics
Ph.D.

NEW YORK
Adelphi Univ, Garden City
Mathematics
Other
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CUNY, Graduate School, New York
Mathematics
Ph.D.
Ph.D.
Clarkson Coll of Technology, Potsdam
Mathematics
Ph.D.
D.A.
Cornell Univ, Ithaca
Biometrics
Ph.D.
Ph.D.
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Mathematics
Ph.D.
Syracuse Univ, Syracuse
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Ph.D.
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Statistics
Ph.D.

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OHIO
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Computer and Information Sciences
Ph. D.
Ohio Univ, Athens
Mathematics
Ph. D.
Univ Cincinnati, Cincinnati
Mathematical Sciences
D. A., Other
Univ Toledo, Toledo
Mathematics

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Mathematics
Statistics

Pennsylvania
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Mathematics
Pennsylvania State Univ, University Park
Mathematics
Temple Univ, Philadelphia
Mathematics
Univ Pittsburgh, Pittsburgh
Mathematics
Biostatistics
Mathematics and Statistics

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Biometry

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Ph. D.

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Mathematics
Ph. D.
Univ Texas, Austin
Mathematics
Ph. D.

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State Univ, Blacksburg
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II. Stipends for Study and Travel

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American Association for the Advancement of Science. Summer Employment. Provides support for up to twenty outstanding graduate students in the social and natural sciences as intern reporters, researchers and production assistants in the mass media for 10-12 weeks during the summer of 1979. (Exceptional undergraduate or postdoctoral students will also be considered.) Interns will work for radio and television stations, newspapers and magazines and will have their travel expenses and stipends paid by the AAAS. Interns will have the opportunity to: observe and participate in the process by which events and ideas become news items; improve their communication skills by describing, within the constraints of a particular medium, complex technical subjects in a manner understandable by lay people; and, increase their understanding of editorial decision-making and the manner in which information is effectively disseminated. Each intern will: attend an orientation and evaluation session in Washington, D.C.; normally begin the 10-12 week 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 Intern Program, American Association for the Advancement of Science, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036.

American Indian Fellowships. A program for Native Americans enrolled in a graduate or professional program in the fields of law, medicine, business, engineering, forestry, or a field related to one of these five areas. Write to Indian Fellowship Program, U.S. Office of Education, Office of Indian Education, 400 Maryland Avenue, S.W., Washington, D.C. 20202.

Ames Laboratory. Graduate Assistantships. Areas of interest include computer languages, programming systems for command and control, adaptive and self-organizing logic systems with application to control processes, numerical analysis, differential and integral equations, special function theory, and applied mathematics. Direct inquiries to Dr. R. S. Hansen, Director, Ames Laboratory, Iowa State University, Ames, Iowa 50011.

Associated Western Universities (AWU). AWU is a contractor for the U. S. Department of Energy, providing stipends and other necessary renumeration 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 write to Associated Western Universities, Inc., 136 East South Temple, Suite 1005, Salt Lake City, Utah 84111.

Battelle Memorial Institute, Pacific Northwest Laboratory. Mathematics efforts in support of a number of on-going 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.

California State Graduate Fellowships. The state offers fellowships to cover tuition and fees only, for residents of California who attend accredited graduate or professional schools located in California. Write to Director, California Student Aid Commission, 1410 Fifth Street, Sacramento, California 95814. The 1979 deadline to apply is February 5, 1979.

Center for Naval Analyses. Summer Employment. CNA, operated under contract with the University of Rochester, 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, 1401 Wilson Boulevard, Arlington, Virginia 22209.
Courant Institute. *Fellowships and Assistantships.* Awards are made for predoctoral study in applied mathematics, mathematical physics, and computer science. Typically, awards are $3,600 for the academic year plus tuition, and are renewable. Deadline for applications is January 15, 1979. Applications can be obtained from the Fellowship Committee, Courant Institute of Mathematical Sciences, New York University, 251 Mercer Street, New York, New York 10012.

Danforth Graduate Fellowships. Approximately one hundred fellowships are awarded annually to U.S. citizens committed to careers in college and university teaching, and dedicated to a life of service guided by moral or ethical values; in subject-matter specializations likely to be taught in an undergraduate liberal arts curriculum, and for pursuit of the Ph.D. at an accredited U.S. university of the Fellow's choice. Fellowships are for one year, with the possibility of renewal for up to four years, and include up to $4,000 for tuition and fees plus a modest living stipend. Twenty-five percent of the fellowships are expected to be awarded to Blacks, Mexican-Americans, Native Americans (including American Indians, Eskimos, Aleuts, and Native Hawaiians), and Puerto Ricans. Applicants may be college seniors or Ph.D. students, and must be nominated by campus Liaison Officers. The deadline for completed applications is December 15, 1978. Detailed information is available from the Danforth Graduate Fellowship Program, Danforth Foundation, 222 South Central Avenue, St. Louis, Missouri 63105.

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 jet propulsion and fluid mechanics, write to the Director of Graduate Studies, Mechanical and Aerospace Engineering, Princeton University. Those interested in elasticity, fluid mechanics and thermodynamics in the engineering field, can write for information from the California Institute of Technology.

Fannie and John Hertz Foundation Fellowships. Offered on the basis of academic and research performance, recommendations, and personal 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; Courant Institute of Mathematical Sciences, New York University; Georgia Institute of Technology; Massachusetts Institute of Technology; Polytechnic Institute of New York; Rensselaer Polytechnic Institute; Rice University; University of Rochester; Stanford University; Texas A & M University; and Vanderbilt University. Application deadline is December 1. Applicants should contact the Office of the Graduate Dean at these institutions, or write directly to the Hertz Foundation, P. O. Box 2230, Livermore, California 94550.

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 Richard E. Kramer, Jr., 1285 Boston Avenue, Bridgeport, Connecticut 06602.

Graduate Women in Science. See Sigma Delta Epsilon.

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. The stipend will be $3,900 for a 12-month period, plus applicable tuition and fees for one year. Application deadline is March 1, 1979, for the award period September 1, 1979—August 31, 1980. For application materials write: Hubert H. Humphrey Fellowship Program, U. S. Arms Control and Disarmament Agency, Washington, D.C. 20451.

Hughes Aircraft Company Fellowships. Master's and Doctoral Fellowships are awarded on a nationwide competitive basis to highly qualified individuals for study at selected universities. The Master's Fellowships are mostly of the work-study type. Deadline for applications is February 1. Write to Hughes Aircraft Company, Centinela and Teale Streets, Culver City, California 90230.

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Johns Hopkins University. School scholarships 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.

Kappa Kappa Gamma Fraternity. Fellowships. Awards of $500—$750 for graduate study in all fields. These are open to women who are citizens of the United States or Canada and who have received a Bachelor's degree or will obtain it prior to July 1 of the year in which the awards are made. This degree must be from an institution where a chapter of Kappa Kappa Gamma is located or graduate work must be taken on a campus where a chapter is located. Awards are made entirely on a competitive basis without regard to fraternity affiliation. A candidate must be a person with high scholastic standing who is outstanding in some form of activity and who has made a real contribution to the life of her alma mater. She should have a well-outlined plan for graduate activity, have a definite goal in prospect, and know what use she expects to make of her work in the future. Applications must be completed before February 15. Forms are available from Dr. Miriam Locke, Chairman of Fellowships, Kappa Kappa Gamma Fraternity, 1715 Fourth Street, Tuscaloosa, Alabama 35401.

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. Opportunity for graduate students working toward master's and doctoral degrees in scientific fields, including mathematics, to use DOE installations at Oak Ridge, Center for Energy & Environment Research, Puerto Rico, Savannah River Laboratory, and Savannah River Ecology Laboratory for thesis research. The annual stipend payment, applicable for all levels, is $4,000, with allowances: $1,000 for spouse and child, $1,500 for spouse and 2 or more children. An additional $1,000 allowance for unusual situations of urgent need is available. U.S. citizenship is required. About twenty-five appointments are awarded annually. Inquiries may be addressed to University Programs, Oak Ridge Associated Universities, P. O. Box 117, Oak Ridge, Tennessee 37830.

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 not more than one year of graduate study. Stipends of $3,900 for a 12-month tenure ($325 per month), regardless of level of study. No dependency allowances. Education allowance paid to U.S. fellowship institution; tuition and fees to foreign fellowship. Scores attained on the Graduate Record Examinations (GRE) are used in evaluation of applicants. Application deadline November 30, 1978. Further information and application materials may be obtained from the Fellowship Office, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

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, Mexican American/Chicano, or Puerto Rican. The stipend for 1979-1980 is $3,900 for 12-month tenures, plus tuition allowance. The deadline for applications is December 8, 1978. Application materials may be obtained from the Fellowship Office, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

Science Faculty Professional Development Program. See description in Postgraduate Support section.

Office of Naval Research. Supports research over a wide range of areas including mathematics, operations research, statistics and probability, information systems, and fluid dynamics. For information write: The Director, Mathematical and Information Sciences Division, Office of Naval Research, Arlington, Virginia 22217.

RCA Fellowships. Grants are limited to graduate study in electrical engineering, electronics, journalism and solid-state physics. Candidates are selected by appropriate officials at Columbia U., Cornell U., U. of Illinois, U. of Minnesota, Northwestern U., Pennsylvania State U., Princeton U. and Rutgers U. Although appointments are for one year, RCA Fellows are eligible for reappointment. Grants include payment of full tuition costs, stipend, and an unrestricted grant to the university department in which the Fellow is studying. For further information, write to the university.
Sigma Delta Epsilon, Graduate Women in Science, Inc. Awards are available on a competitive basis to women 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 marital status. 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, January 15). 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., 1346 Connecticut Avenue, N.W., Room 1102, Washington, D.C. 20036. An individual may apply for only one of the two awards. The applicant should indicate to which type of award her inquiry is addressed.

Smithsonian Institution. Predoctoral Fellowships. Appointments to students recommended by universities where they 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, and a seminar. Stipends are available; tuition will be waived. For further information, write to Professor E. A. Connors, Head, Department of Mathematics and Statistics, University of Massachusetts, Amherst, Massachusetts. Applicants should generally have a master's degree, but not a Ph.D; 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 E. A. Connors, Head, Department of Mathematics and Statistics, University of Massachusetts, Amherst, Massachusetts 01003.

Woodrow Wilson Women's Studies Research Grants. Grants of up to $1,000 are available for students at graduate schools in the United States who have completed all pre-dissertation requirements. These grants are designed to encourage original and significant research about women on such topics as the evolution of women's role in society and particularly contemporary America, women in history, the education of women, the psychology of women, and women as seen in literature. Forms and further information are available from the Woodrow Wilson National Fellowship Foundation, Women's Studies Program, Box 642, Princeton, New Jersey 08540. The deadline for receipt of applications is November 1.

Zonta International. Amelia Earhart Fellowship Awards. For women holding a bachelor's degree in a science accepted as preparatory for advanced study in an aerospace-related science or engineering. Recipients will be granted $5,000, and past recipients may apply for renewed grants. Applications must be filed by January 1, 1979 for the 1979-1980 awards. Write to Zonta International, 59 East Van Buren Street, Chicago, Illinois 60605.

POSTDOCTORAL SUPPORT

Air Force Office of Scientific Research. Research Contracts and Grants. Mathematicians and scientists in the information or mathematical sciences are encouraged to submit proposals through their organizations, for research support. It would be helpful if proposals to be considered for a given fiscal year, which begins on October 1, were submitted six months prior to that date. Recipients of support are not required to be U.S. citizens. Research areas of interest include physical mathematics, probability, statistics, and logistics, numerical analysis, system science, control theory, and information science. Research proposals should be forwarded to the Director of Mathematical and Information Sciences, Air Force Office of Scientific Research, Builing 410, Bolling AFB, Washington, D.C. 20332.

American Association of University Women. American Fellowships. Awards dissertation and postdoctoral fellowships to women who are U.S. citizens and who have achieved distinction or promise of distinction in their fields of scholarly work. Grants are for a twelve-month duration with stipends varying from $3,500 to $9,000. Fellowships at the dissertation level are to be used for the final year
of doctoral work, while those at the postdoctoral level are for a full-time postdoctoral research project. The application deadline is December 15. Forms may be obtained from the Educational Foundation Programs Office, AAUW Educational Foundation, 2401 Virginia Avenue, N.W., Washington, D.C. 20037.

**American Mathematical Society Research Fellowship.** *Postdoctoral Fellowships.* Open to citizens or permanent residents of a country in North America. Intended to support Research Fellows for one year and awarded on the basis of mathematical merit. Awards for 1979-1980 are to be $11,000 each plus $500 for expenses; application deadline for 1979-1980 awards is December 31, 1978. For further information and application forms write to Dr. William J. LeVeque, Executive Director, American Mathematical Society, P. O. Box 6248, Providence, Rhode Island 02940.

**American Philosophical Society.** Postdoctoral research grants of small amounts according to need, for candidates with Ph.D. or equivalent to aid specific research projects. Tenable abroad and in U.S. An application must reach the Society's office at least *eight weeks* in advance of the meeting at which it is to be considered. The Committee on Research meets on the first Friday of February, April, June, October, and December. For information write to the American Philosophical Society, 104 South Fifth Street, Philadelphia, Pennsylvania 19106.

**American Society for Engineering Education.** *NASA-ASEE Summer Faculty Fellowships.* Engineering programs in research and design in collaboration with the National Aeronautics and Space Administration; for U.S. citizens who are faculty or research members, preferably with two years of teaching experience. Stipends are $400/week for ten or eleven weeks, plus travel allowance. Application deadline is February 1. For information write to NASA-ASEE Summer Faculty Fellowships, American Society for Engineering Education, Suite 400, One Dupont Circle, N.W., Washington, D.C. 20036.

**American Society for Engineering Education.** *USAF-ASEE Summer Faculty Research Programs.* To learn whether these programs are available for 1979 write to USAF-ASEE Summer Faculty Research Program, American Society for Engineering Education, Suite 400, One Dupont Circle, N.W., Washington, D.C. 20036.

**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, a list of publications, and three letters of recommendation. 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. A basic stipend of $10,000 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 $8,200. Applications may be obtained from the Director of Graduate Programs, Faculty of Arts and Sciences, University of Pittsburgh, Pittsburgh, Pennsylvania 15260.

**Argonne National Laboratory.** Predoctoral, postdoctoral, and visiting scientist appointments in mathematics and computer science with an emphasis on applied analysis and numerical mathematics. Summer appointments available at undergraduate through visiting scientist levels. Contact: Richard J. Royston, Director, Applied Mathematics Division, Argonne National Laboratory, Argonne, Illinois 60439.

**Benjamin Peirce Lectureships.** Harvard University. Rank of Assistant Professor. The appointments are for three years with a starting salary of $15,000 (for the nine-month academic year) and can be augmented during the summer by teaching at summer school or by work on a research contract if funds are available. The teaching commitment is six hours a week, including a graduate course on a subject of the lecturer's choice, if desired. Application forms may be obtained by writing to the Chairman, Benjamin Peirce Lectureships, Department of Mathematics, Harvard University, 1 Oxford Street, Cambridge, Massachusetts 02138. Applications must be filed by January 9, 1979. Harvard is an Equal Opportunity/Affirmative Action Employer.

**Brookhaven National Laboratory.** The Applied Mathematics Department of Brookhaven National Laboratory, operated by Associated Universities, Inc., under contract with the U.S. Dept. of Energy, from time to time offers a limited number of Research Associate appointments to Ph.D's. These are salaried positions, as distinguished from postdoctoral fellowships or stipends, and are limited to a total of three years. Large scale digital computing facilities, including a CYBER 70/76 and two CDC 6600 computing systems, are available for use by the appointees. Some areas of interest to the Department are probability and statistics, linear operator theory, differential and integral
equations, numerical analysis and approximation theory, mathematical programming, and computer science. Inquiries should be directed to: Department Chairman, Applied Mathematics Department, Brookhaven National Laboratory, Upton, Long Island, New York 11793.

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 $16,750, and the teaching load is six hours per week in one semester and three hours per week in the other. The appointments are annual but renewable for one additional year. Applications should be filed, by December 30 if possible, on forms obtained from the Department of Mathematics, 2-263, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139. M.I.T. is an Equal Opportunity Employer.

Congressional Science Fellowship. Sponsored jointly by the AMS-MAA-SIAM in cooperation with the AAAS, the fellowship offers a stipend of $18,000 for one year spent working on the staff of a congressman, a congressional committee or in the congressional Office of Technology Assessment. The applicant should be at the postdoctoral level, have a broad scientific and technical background, and have a strong interest in the uses of the mathematical and other sciences in the solution of societal problems. Further information on the general program can be obtained on request from Dr. Richard Scribner, Director, AAAS Congressional Science Fellow Program, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036. Applications with three letters of recommendation should be received by 15 February 1978 by the Conference Board of the Mathematical Sciences, 1500 Massachusetts Avenue, N.W., Suite 457-8, Washington, D. C. 20005.

Courant Institute. Instructorships in Mathematics. Open to mathematicians (of any age) who are recent recipients of doctor's degrees 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 $15,500. 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, 1979. 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 1979-1980 must be submitted before January 1, 1979. 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.

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 Mr. John R. Eriksson, Policy Development and Program Review, Bureau for Program and Policy Coordination, Agency for International Development, Department of State, Washington, D.C. 20523.

E. R. Hedrick Assistant Professorships in Mathematics. Department of Mathematics, University of California, Los Angeles, will make two appointments for the year 1979-1980. These awards will be made to mathematicians with Ph.D.'s who show strong promise in research. The appointment will be for two years at an annual salary of $17,900, plus a summer research supplement of $2,500. 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 Chairman, Department of Mathematics, University of California, 405 Hilgard Avenue, Los Angeles, California 90024. The deadline for applications is January 15, 1979. UCLA is an Equal Opportunity Employer.

G. C. Evans Instructorships. Postdoctoral appointments for two-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 1979. Rice University is an Equal Opportunity/Affirmative Action Employer. Inquiries and applications should be addressed to Professor R. O. Wells, Jr., Chairman, Department of Mathematics, Rice University, Houston, Texas 77001.

IBM Thomas J. Watson Research Center. Mathematical Sciences Department Postdoctoral Fellowships. These fellowships provide scientists of outstanding ability an opportunity to advance their scholarship while members of the Mathematical Sciences Department at the Research Center. The Department provides an atmosphere of basic research in pure and applied mathematics in an industrial context. A candidate will be expected to have a doctorate. The duration of each fellowship will be eleven months. Generally the stipend will be in the range of $22,000–$28,000, depending on qualifications. Completed applications should be received by January 15, 1979. At most two fellowships will be awarded. Notification will be made by March 15, 1979. Write to Director, Mathematical Sciences Department, IBM Thomas J. Watson Research Center, P. O. Box 218, Yorktown Heights, New York 10598.

IPA-DOT Research Fellow Program. The Intergovernmental Personnel Act provided for a temporary exchange of personnel between institutions of higher education and the U.S. Department of Transportation (DOT) for work of mutual concern and benefit. Assignments of up to one year are made at various locations in the DOT to do research on transportation and/or transportation-related problems. These problems involve complex issues concerning modal operations, intermodal conflicts, and the overall tenor of national transportation. The Research Fellow Program calls for proposals from qualified full-time faculty members at accredited universities or colleges about specific research areas of long-term problems which are defined by DOT and which need detailed study. For further information write to the U.S. Department of Transportation, Office of University Research, Research and Special Programs Directorate, Washington, D. C 20590.

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 two-year renewable appointments. Inquiries should be addressed to the Director, ICASE, Mailstop 132C, NASA Langley Research Center, Hampton, Virginia 23665.

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 1979–1980. 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 January 15, 1979. An Equal Opportunity/Affirmative Action Employer.

J. Willard Gibbs, Instructorships. Offered by Yale University 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 1978-1979 salary is $15,500; an increase is expected for 1979-1980. The teaching load is kept light so as 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 1979.

Jacob David Tamarkin Instructorships. Offered by Brown University to promising mathematicians. Appointments are for three years, with a salary of $13,750 for the academic year. Additional summer support can be arranged. Teaching load is six hours per week and consists of courses of more than routine interest. An applicant should have completed the doctorate by the time the appointment is to begin. In addition to a letter expressing interest in a Tamarkin Instructorship, the applicant should have three letters of recommendation sent to the Department of Mathematics by January 1, 1979. Women and members of minority groups are encouraged to apply. Applicants should write to the Chairman, Department of Mathematics, Brown University, Providence, Rhode Island 02912.
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 of the Philippines. Application deadline: October 1. Approximately 300 awards are made, averaging approximately $15,600 in 1978. For more information write to Gordon N. Ray, President, John Simon Guggenheim Memorial Foundation, 90 Park Avenue, New York, New York 10016.

John Wesley Young Research Instructorships. Two instructorships are normally awarded by Dartmouth College each year. Teaching duties average six hours per week and are of a varied and nonroutine nature. The academic-year stipend of $14,500 is supplemented by a resident summer research fellowship of $2,000. Appointments are for two years and are not renewable. Applicants should write to Richard H. Crowell, Chairman, Department of Mathematics, Dartmouth College, Hanover, New Hampshire 03755 (Attention: RECRUITING). Applicants are advised to apply promptly, and no later than February 15, 1979.

Lawrence Berkeley Laboratory. Occasional postdoctoral research appointments. Topics of special interest include: numerical solution of partial differential equations, mathematical programming, energy system applications, environmental and economic modeling, analysis and computer graphic display of multidimensional data, and critical path methods. Inquiries should be directed to Dr. Paul Concus, Lawrence Berkeley Laboratory, Building 90, Room 3108, University of California, Berkeley, California 94720.

Lawrence Livermore 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 Robert M. Lee (L-61), Computation Department, Lawrence Livermore Laboratory, University of California, Livermore, California 94550.

L. E. Dickson Instructorships in Mathematics. Intended for men and women completing the doctorate in mathematics prior to 1979. Appointment is for two years with an annual salary of $17,000; instruction averaging four hours a week; supplementary summer salary can usually be arranged. Application deadline is January 12, 1979. Further information may be obtained from the Chairman, Department of Mathematics, University of Chicago, Chicago, Illinois 60637.

Los Alamos Scientific Laboratory. Offered to U.S. citizens holding the Ph.D., with research opportunities in computer science, numerical science, and applied mathematics. A limited number of postdoctoral appointments are available for one year, subject to renewal for a second year. Los Alamos Scientific Laboratory is an equal opportunity employer. Write to Employment Office, Los Alamos Scientific Laboratory, University of California, P. O. Box 1663, Los Alamos, New Mexico 87545.

Los Alamos Scientific Laboratory. J. Robert Oppenheimer Research Fellowships. Candidates must be recipients of a doctorate in the physical sciences, natural sciences, mathematics or engineering. One- to three-year appointments; salary is $22,500. For additional information write to Employment Office, Los Alamos Scientific Laboratory, P. O. Box 1663, Los Alamos, New Mexico 87545.

Mathematics Research Center. A limited number of visiting research appointments at all levels from postdoctoral up, in areas of applicable or applied mathematics interpreted in a broad sense, but including analysis, numerical analysis and computing, probability and statistics, and operations research. The postdoctoral appointments offer Ph.D.'s working in areas of applicable mathematics an opportunity to broaden their contact with applications. Qualifications include outstanding research ability or potential, as attested to by leading mathematicians in the candidate's field. The University of Wisconsin is an equal employment opportunity institution (Title IX/Title VI). For information write Professor Ben Noble, Director, Mathematics Research Center, University of Wisconsin—Madison, Madison, Wisconsin 53706.

National Aeronautics and Space Administration. Research Grants. Through grants and contracts to educational and nonprofit institutions and industries, NASA sponsors research in fundamental and applied mathematics related to space science and engineering problems. Unsolicited proposals should be submitted to the University Affairs Office, Code LU-16, National Aeronautics and Space Administration, Washington, D. C. 20546.
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 $17,500 for recent recipients of Ph.D. The application deadline is January 15. Inquiries should be sent to Maurice Blackmon, Chairman, Advanced Study Program, NCAR, Boulder, Colorado 80307.

National Research Council. Research Associateship Programs. These programs provide scientists and engineers opportunities for postdoctoral research on problems 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. Applications for these competitive awards will be received by the National Research Council until January 15, 1979. Appointments will be made in the spring. Stipends, which are subject to income tax, will vary according to the type of appointment, but will not be less than $18,000. Further information and application materials can be obtained from the Associateship Office (JH 606-M), 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 Research." For this brochure and additional information write: Computer Science Section, Division of Mathematical and Computer Sciences, National Science Foundation, 1800 G Street, N.W., Washington, D.C. 20550.

National Science Foundation. National Needs Postdoctoral Fellowships. Approximately 100 fellowships for postdoctoral research and study concerned with national needs. Open to U.S. citizens or nationals with doctorates in science. The $12,000 stipend ($1,000 per month) provides for twelve months of study and research at any appropriate U.S. or foreign institution. Deadline for filing applications is early November. Applications may be obtained by writing the Fellowship Office, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

National Science Foundation. Research and Travel Grants. Proposals are accepted at any time, but in order to insure full consideration, proposals requesting research support which is to begin prior to September 1, 1979, should be in the hands of the Foundation six months prior to the desired starting date of such support, but not later than October 25, 1978. Application for travel assistance should be made well in advance (at least five months) of the time of the scheduled travel. Instructions for the preparation of proposals, contained in a booklet entitled "Grants for Scientific Research" may be obtained upon request from the Mathematical Sciences Section, National Science Foundation, Washington, D.C. 20550.

National Science Foundation. Science for Citizens Program. Public Service Science Residencies are awarded to enable scientists and engineers to undertake up to a year's activities with citizen groups and other appropriate organizations in need of their expertise. Residents receive a stipend of $18,000 for a 12-month tenure, with current salary matched up to a maximum of $25,000; interns receive a $6,000 stipend for a 12-month tenure. The deadline for applications is March 15. Requests for information should be directed to Office of Science for Citizens, Science Education Directorate, National Science Foundation, Washington, D.C. 20550.

National Science Foundation. Science Faculty Professional Development Program. Training opportunities for three to twelve month tenures in academic or nonacademic organizations for teachers of science, mathematics, or engineering in universities, colleges, or junior and community colleges. Approximately 100 awards will be made to faculty who are citizens or nationals of the United States, have at least a baccalaureate, have had four or more years of full-time teaching experience, and hold an academic appointment in a United States college or university. Support includes stipend, travel allowance, and an assistance allowance to the tenure organization. The application deadline is December 4, 1978. Application materials can be obtained from the Faculty-Oriented Programs, Division of Scientific Personnel Improvement, National Science Foundation, Washington, D.C. 20550.

Office of Naval Research. Supports research over a wide range of areas including mathematics, operations research, statistics and probability, information systems, and fluid dynamics. Proposals for research contracts and requests for information on ONR Programs should be addressed to: The Director, Mathematical and Information Sciences Division, Office of Naval Research, Arlington, Virginia 22217.
Oskar Morgenstern Distinguished Fellowship at Mathematica. The grant enables a member of the academic or research staff of a university, an official of the U.S. government, or a researcher elsewhere, to spend sabbatical leave at Mathematica. Applicants are expected to have achieved significant accomplishments in at least one of several areas, including computer programming languages, information management, operations research methods and applications, economic theory, economic and social policy analysis, survey research methodology, arms control, and national defense policy. Information may be obtained from President Tibor Fabian, Mathematica, Inc., P. O. Box 2392, Princeton, New Jersey 08540.

OTA Congressional Fellowships. The Office of Technology Assessment, an agency of the U.S. Congress, selects several Congressional Fellows each year for a fellowship period of one year. Candidates must have completed research and training at the doctoral level, or have equivalent experience as judged by the selection committee. The program is open to men and women in all disciplines of science and technology and related policy or research activities, and provides a challenging work experience through participation in policy analyses for the Congress involving the effects of technological applications. Application deadline is July 30 for the following fall. Salary is based on the Fellows’ current salary and/or training and experience. Application information can be obtained from: Congressional Fellowships, Office of Technology Assessment, Congress of the United States, Washington, D.C. 20510.

Sloan Foundation. Unrestricted grants made to selected university scientists in the physical sciences (including mathematics) and in neuroscience. Candidates in the physical sciences 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. In neuroscience, postdoctoral fellows as well as those in junior faculty positions will be considered. Candidates do not apply but are nominated by their department chairmen or other scientists. For information write to the Alfred P. Sloan Foundation, 630 Fifth Avenue, New York, New York 10020.

Smithsonian Institution. Postdoctoral Fellowships. Appointments to individuals possessing the Ph.D. or equivalent degree, and limited to those individuals requiring research training in association with a member of the Institution’s professional staff. Offered annually in the history of mathematics, usually for a period of from six months to one year. Twelve thousand dollars stipend, plus research expense 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, Room 3300, L’Enfant Plaza, Smithsonian Institution, Washington, D.C. 20560.

State University of New York at Buffalo. George William Hill and Emmy Noether Research Instructorships for 1979-1980. Applicants should be Ph.D.’s whose degrees will be completed by September 1, 1979. All areas of pure and applied mathematics will be considered. Each appointment is for two years. The twelve-month stipend, beginning September 1979, is $16,200 including generous staff benefits. Teaching load will total two one-semester courses during the twelve-month period. Upon expiration of the two-year appointment, priority consideration for a two-year (tenure-track) appointment as assistant professor will be given and will be based upon success and potential in both research and teaching. Each applicant should prepare a summary of his or her post-high school educational background, as well as a sketch of past and projected research activity, and should request at least four mathematicians to send letters of recommendation. Application forms are available upon request. Applications and supporting letters should be sent to the Chairman, Department of Mathematics, SUNY/Buffalo, 106 Diefendorf Hall, Buffalo, New York 14214, so as to arrive by January 20, 1979. SUNY/Buffalo is an Equal Opportunity/Affirmative Action Employer. We are interested in identifying prospective minority and woman candidates. No person in whatever relation with SUNY/Buffalo shall be subject to discrimination on the basis of race, ethnic background, national origin, religion, color, age, sex or condition of handicap.

T. H. Hildebrandt Research Assistant Professorships. Designed to provide mathematicians with favorable circumstances for the development of their research talents. Preference given to persons of any age having their Ph.D. less than two years. At least one appointment is expected to be available for the coming academic year. Teaching load averages one and one-half courses per semester; part of teaching load consists of an advanced course. Stipend at least $15,000 for academic year 1979-1980 with good possibility of additional income during the summer. Appointment is for three years. Applicants should submit completed application form and request at least three letters of recommendation. Letter 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 2. Appointments will be announced by the end of January. Applications should be made to Professor F. W. Gehring, Chairman, Department of Mathematics, the University of Michigan, Ann Arbor, Michigan 48109. Affirmative Action Employer.

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, 136 East South Temple (Suite 1005), Salt Lake City, Utah 84111; Argonne Center for Educational Affairs, 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, Education, and Welfare, 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 20014. An enclosed self-addressed gummed mailing label will expedite handling.

University of Wisconsin-Madison. Van Vleck Assistant Professorships in Mathematics for 1979-1980. We invite applications from outstanding mathematicians who are recipients of a doctorate. We are looking for people who will interact well with members of our department, who care about teaching, and who can contribute to our research and instructional programs. The regular teaching load is two courses per semester, with at least one in your 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 $16,000 per academic year. All positions are for specified two- or three-year terms. Application blanks may be obtained by writing Professor Joshua Chover, Chairman, Department of Mathematics, 213 Van Vleck Hall, University of Wisconsin, Madison, WI 53706. University of Wisconsin-Madison is an Equal Opportunity Employer.

Václav Hlavatý Research Assistant Professorships. Offered by the Department of Mathematics at Indiana University to mathematicians with doctorates who show definite promise in research. The appointment is for three years with an academic-year salary of at least $15,000. 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 $400 available for professional expenses, such as travel to meetings, supplies, publication costs, etc. Inquiries or requests for application forms should be addressed to Professor Morton Lowengrub, Chairman, Department of Mathematics, Swain Hall East, Indiana University, Bloomington, Indiana 47401. Preference will be given to applications received before January 1, 1979. Affirmative Action Employer.

TRAVEL AND STUDY ABROAD

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 and 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 German doctorate, and for research in the humanities, have adequate knowledge of German. Applications may be obtained from and returned directly to the Alexander von Humboldt Foundation, Jean-Paul-Strasse 12, D-5300 Bonn-Bad Godesberg, Federal Republic of Germany.

Alliance Française de New York. For U.S. Nationals, a limited number of scholarships for graduate study in France. Fields unrestricted. Scholarships are in the amount of $2,000. Applicants must have a working knowledge of French. For further information American students should write to Institute of International Education, Division of Study Abroad Program, 809 United Nations Plaza, New York, New York 10017.
American-Scandinavian Foundation. Fellowships for study in Scandinavia (Denmark, Finland, Iceland, Norway, and Sweden). Applicants must have completed their undergraduate education. Necessary language competence, financial need, and merit in pursuing the study program in Scandinavia are considered in making these awards. Completed application deadline is November 1. Write to the Exchange Division, The American-Scandinavian Foundation, 127 East 73rd Street, New York, New York 10021.

E. D. Bergmann Memorial Research Grants. Two grants awarded annually by the United States-Israel Binational Science Foundation to one American and one Israeli scientist, for research to be conducted in Israel. Support will be for a two-year period. Applicants must have completed their doctoral degrees and cannot be on the paid staff of any institution. Application forms and guidelines are available from the National Science Foundation, Division of International Programs (United States-Israel Binational Science Foundation), Washington, D.C. 20550, or from the United States-Israel Binational Science Foundation, P. O. Box 7677, Jerusalem. Application deadline is November 1 each year.

Fulbright-Hays Program. 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 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 Advisor on his campus. Unenrolled students may apply to the Institute of International Education. Further details may be obtained from the Study Abroad Programs, Institute of International Education, 809 United Nations Plaza, New York, New York 10017.

Fulbright-Hays 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 the language of the host country is required. Grants are generally tenable for one academic year in one designated country and include round-trip transportation for the grantee, maintenance allowance to cover living expenses of grantee and family, and a small incidental allowance to cover supplies and services essential to the project. Subject to the availability of funds, a supplemental dollar grant for lecturers in most non-European countries may be given. Scholars are invited to register for annual announcements published in March. Application deadlines are June 1 for Australia, New Zealand, and American Republics; July 1 for Africa, Asia, and Europe for grant periods twelve-eighteen months later. Write to Council for International Exchange of Scholars, Suite 300, 11 Dupont Circle, Washington, D.C. 20036.

Indo-American Fellowship Program. Twelve grants to be awarded to U.S. citizens for advanced research in India, for six- to ten-month periods during the academic year 1979-1980. In addition to a basic grant there are travel, dependent and research allowances. Also up to nine shorter grants (one- to six-months) for research and/or professional activity. Applications are encouraged for projects which include collaboration with Indian colleagues. Deadline for applications is November 1 each year. For details contact the Council for International Exchange of Scholars, Attention: Indo-American Fellowships Program, Eleven Dupont Circle, Washington, D.C. 20036.

Italian National Research Council Fellowships for Foreign Citizens. The Italian National Research Council announces five fellowships (maximum period one year) for foreign mathematicians. The stipend is 370,000 Italian Lire per month, plus travel expenses to and from the country of residence. Prospective applicants may write for details to: Alessandro Figà-Talamanca, C.N.R., via Santa Maria 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. They may also include a reference letter or have it sent directly.

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 January 15 for the following academic year. Write to Scholarship and Exchange Programs, Kosciuszko Foundation, 15 East 65th Street, New York, New York 10021.

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 or two years, and are intended to defray travel and tuition fees and to meet reasonable living expenses. Deadline for completed applications is January 1, 1979. 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 trimester (or 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—Institute of Technology, Haifa. The grant includes a professorial salary and cost of travel. Deadline for completed applications is November 30 for Hebrew University, December 31 for Technion. Application forms can be obtained from the Lady Davis Fellowship Trust, P. O. Box 1255, Jerusalem, Israel.

**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: 12 South 12th Street, Philadelphia, Pennsylvania 19107; (3) South: Suite 912, 225 Peachtree Street, N.W., Atlanta, Georgia 30303; (4) Midwest: 33 North Dearborn Street, Chicago, Illinois 60602; (5) Pacific: 9th Floor, 120 Montgomery Street, San Francisco, California 94104.

**Middle East and Africa Field Research Fellowship Program for Black Americans.** Applicant must be at dissertation level and have passed orals and comprehensives. The program provides opportunities for an extended research and training experience in the overseas setting. Write to Middle East and Africa Field Research Fellowship Program for Black Americans, National Fellowships Fund, Room 484, 795 Peachtree Street, N.E., Atlanta, Georgia 30308. The deadline for filing applications is January 5, 1979, for the 1979-1980 awards.

**National Academy of Sciences.** For U.S. scientists who wish to make visits beginning during the period September 1979 through August 1980 in the USSR, Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania or Yugoslavia. Visits of five to twelve months' duration are encouraged; a limited number of openings for one-month visits is also available. Requirements are U.S. citizenship and a Ph.D. or its equivalent in the mathematical sciences. All necessary expenses will be met by the NAS and the foreign academy; salary reimbursement up to a predetermined maximum and paid expenses for accompanying family on visits of five months or more. Application deadline is in November. For further information, write to the National Academy of Sciences, Commission on International Relations, USSR/EE, 2101 Constitution Avenue, Washington, D.C. 20418.

**National Research Council of Canada. Visiting Fellowships.** These fellowships are tenable in the laboratories of the following government departments and agencies: Agriculture Canada; Department of Communications-Communications Research Centre; Department of Energy, Mines & Resources; Department of the Environment-Atmospheric Environment Service, Environmental Management Service, Fisheries and Marine Service; Health and Welfare Canada; National Museums of Canada-Museum of Natural Sciences; Atomic Energy of Canada Limited; Air Pollution Control; National Defence; National Research Council of Canada. The closing date for applications is January 15. Write to the Natural Sciences and Engineering Research Council Canada, Ottawa, Canada K1A 0R6.

**National Science Foundation.** Support for U.S. participation in seminars, research projects, and visiting scientist activities under bilateral programs with certain foreign countries. For brochure about these and other NSF international programs write: Division of International Programs, National Science Foundation, Washington, D.C. 20550.

**National Science Foundation.** Summer travel grants for U.S. citizens who are advanced graduate students or within three years of the receipt of their Ph.D. to attend North Atlantic Treaty Organization (NATO) Advanced Study Institutes in Europe. Applications are made to the appropriate NATO Institute Director. Information may be obtained by writing to NATO Travel Awards, Division of Scientific Personnel Improvement, National Science Foundation, Washington, D.C. 20550.

**National Science Foundation.** Scientists and Engineers in Economic Development (SEED) Program. Specially funded by the Agency for International Development, the program will provide support for qualified U.S. scientists and engineers to apply their experience to specific problems of development in forty-one countries. Stipends of up to $1,500 per month awarded with research/teaching grants.
International travel grants also available. Limited to U.S. scientists and engineers with at least five years of postdoctoral or equivalent experience in teaching or research and who will return to their institutions on completion of the project. Proposals must be submitted before December 1, 1978 or June 1, 1979. Awards will be announced during April 1979 or October 1979. For more information, write to the Division of International Programs, National Science Foundation, Washington, D.C. 20550.

North Atlantic Treaty Organization. The NATO Science Committee has a Research Grants Programme 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 three years, covering mainly travel and living expenses abroad for principal investigators visiting partner laboratories or for staff members needing to acquire or provide expertise or special training in the partner laboratory(ies). Deadlines for applications are 15 January, 30 April and 15 September. The NATO Science Committee also makes a number of awards each year for training and education in fields in the systems science area. (1) Graduate Degree Apprenticeship in Systems Science. To enable beginning scientists to pursue graduate programmes leading to advanced degrees in fields in the systems science area (Systems Analysis, Operational Research, Management Science, Management Engineering, Systems Engineering, etc.) and also to obtain practical training in places where they will be exposed to real life problems. A normal grant is for three years, subject to satisfactory progress in each year, and is applicable to participating universities and institutions. Applicants should have first degree level of university education with very high scholastic achievement and a sound basic training in mathematics relevant to the systems field. The award is a yearly stipend to cover living expenses, tuition and other expenses, but not to exceed B.fr. 240,000 per year. (2) Study Visits. This programme is designed for scientists of NATO countries to make short visits to scientists and/or institutions in other NATO countries, with the objective of receiving expert advice in connection with a research project and a well-defined problem in the systems science area. (3) Visiting Experts. This programme is designed to help developing or newly formed systems science groups in NATO countries, which are active in fields in the systems science area and are in need of receiving advice or assistance from an expert in another country. It is applicable in cases where visiting scientists can make a substantial contribution to the work of the organization being visited. (4) Systems Science Prizes: The Systems Science Panel awards annual prizes for outstanding publications in systems science which have appeared in the preceding three-year period. Eligible publications must be proposed to the Scientific Affairs Division of NATO by editors or editorial boards of journals or by professional/scientific societies before 30 June of each year. Application forms and further details of these 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 six- 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 for citizens or nationals of the U.S. Fellows receive a stipend of $11,040 for twelve-month tenure, and dependency and travel allowances. Application deadline is early November. For information and application material, write to Division of Scientific Personnel Improvement, National Science Foundation, Washington, D.C. 20550.

Organization of American States. See entry in section on Study in the U.S. for Foreign Nationals.

The 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, Wesleyan University, Middletown, Connecticut 06457.

Rotary Foundation. Graduate Fellowships and Undergraduate Scholarships. One academic year of study abroad for the 1980-1981 year is available to outstanding men and women who are interested in world affairs and who can fulfill a dual role of scholar and “ambassador of good will.” Graduate fellowships and undergraduate scholarships cover full transportation, education, living, and miscellaneous expenses for one academic year, plus, in certain cases, a period of intensive language training in the study country prior to the commencement of the regular academic year. Awards are made for study in any field and are tenable in more than 151 countries in which there are Rotary Clubs. An applicant for a graduate fellowship must have obtained a bachelor’s degree or equivalent prior to the beginning of his fellowship year. An applicant for an undergraduate scholarship must
have completed two years of university level work but not have obtained a bachelor's degree prior to the beginning of his scholarship year. Application must be made through the Rotary Club nearest to the applicant's permanent residence not later than March 1, 1979.

Royal Norwegian Council for Scientific and Industrial Research. Postdoctorate 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 different 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, Gaustadalleen 30, Oslo, Norway.

Social Science Research Council. International Doctoral Research Fellowship Program. The program provides support to advanced doctoral candidates at U.S. and Canadian 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 10016.

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.

United States-India Exchange. Grants travel support to senior mathematicians of the United States for periods from two weeks to a few months, for work in India with Indian colleagues on projects of mutual interest. Applications should be submitted before March 15 for visits commencing after November 15 of the same year and September 15 for visits after May 15 of the following year. For information and application forms write to: U.S.-India Exchange of Scientists, Division of International Programs, National Science Foundation, Washington, D.C. 20550.

Weizmann Institute of Science. Feinberg Graduate School Postdoctoral Fellowships. The Fellowships provide a twelve-month stipend of approximately IL 113,000 per annum, a small relocation allowance and one-way economy class air fare. There is a possibility of renewal for a second year. The main areas of research are pure and applied mathematics; computer science and engineering; geophysics; and systems theory. Applications are considered twice a year, deadlines being November 15 and May 15. Application forms and additional information may be obtained from the Feinberg Graduate School, The Weizmann Institute of Science, Rehovot, Israel.

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 $1,500 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 Association of University Women. International Fellowships. Approximately thirty-five awards made to women of countries other than the U.S. for advanced study. An applicant must hold the equivalent of a bachelor's degree, be proficient in English and intend to return to her own country to pursue her professional career. Forms may be obtained from the University Women's Association or Federation in the applicant's country or the Cultural Affairs Officer of the U.S. Embassy. (U.S. address, Educational Foundation Programs Office, AAUW Educational Foundation, 2401 Virginia Avenue, N.W., Washington, D.C. 20037.) Application deadline is December 1 for subsequent academic year.

American-Scandinavian Foundation. Scandinavian scholars are awarded graduate fellowships to study in the U.S. For information write to the Exchange Division, The American-Scandinavian Foundation, 127 East 73rd Street, New York, New York 10021.
Fulbright-Hays Program. Grants under the Fulbright-Hays 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. (U.S. address: Council for International Exchange of Scholars, 11 Dupont Circle, Washington, D.C. 20036, for post-doctoral candidates; Study Abroad Programs Division, Institute International Education, 809 United Nations Plaza, New York, N.Y. 10017, for pre-doctoral candidates). The number of grants for each academic year will depend on funds available.

Institute of International Education. Open to nationals of most countries. Develops and administers exchange programs for a number of organizations and corporations, and administers U.S. Government grants under the Fulbright-Hays Act under the educational exchange program of the International Communication Agency. For information contact the Selection Committee in the candidate's own country (address may be obtained from the United States Embassy or Consulate).

Kennedy Scholarships. For citizens of the United Kingdom and Colonies, these grants are for graduate study at Harvard University or the Massachusetts Institute of Technology. Application deadline is October 18. Write to Secretary, Kennedy Memorial Trust, Association of Commonwealth Universities, 36 Gordon Square, London WC1H OPF, England.

Kosciuszko Foundation. One-year grants to doctoral and postdoctoral students. Applicants must be Polish citizens and have excellent command of English. Apply by January 15 for the following academic year. Write to Scholarship and Exchange Programs, The Kosciuszko Foundation, 15 East 65th Street, New York, New York 10021.

Organization of American States (OAS). Fellowships are available to citizens or permanent residents of OAS member countries for advanced study or research in another member country. For information write to Chief, Trainee Selection Unit, Organization of American States, Washington, D.C. 20006, U.S.A.

U.S.-India Exchange. Grants for Indian scientists invited to the U.S. by U.S. institutions. Information can be obtained from the Council of Scientific and Industrial Research (CSIR), New Delhi, India.

SOURCES OF FELLOWSHIP INFORMATION

Many of the publications listed below are probably available at school, or college and university libraries, or in the Reference Room of a good public library.


The Foundation Center, 888 Seventh Avenue, New York, New York 10019, publishes information about U.S. foundations, the grants they give and to whom they are awarded.

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Graduate Programs and Admission Manual (Published Annually). Educational Testing Service, P. O. Box 2606, Princeton, New Jersey 08540. Four volumes, $16 per set; Volume C (Physical Sciences, Mathematics, and Engineering), $4.


IREX, The International Research and Exchanges Board. Programs administered by IREX include exchanges for a semester or an academic year with the USSR and Eastern Europe, grants to promote new exchanges, collaborative projects in the social sciences and humanities, preparatory fellowships and language programs. For the Program Announcement write to the International Research and Exchanges Board, 110 East 59th Street, New York, New York 10022.


National Endowment for the Humanities. The Endowment operates through three programs. Information about the Endowment's fellowship programs which may be of particular interest may be obtained from Dr. James H. Blessing, Division of Fellowships, National Endowment for the Humanities, 806 15th Street, N.W., Washington, D.C. 20506.

S. Norman Feingold Scholarships, Fellowships, and Loans. Volume V, 1972: $17.00; Volume VI, 1977: $45.00 by S. Norman Feingold and Marie Feingold. Bellman Publishing Company, P. O. Box 164, Arlington, Massachusetts 02174. Detailed list of financial aid sources. Volume V has an improved index which facilitates finding awards. Volume VI follows the same format, but does not duplicate the earlier volume.

Scholarships, Fellowships and Loans News Service. The Staff, Bellman Publishing Company, P. O. Box 164, Arlington, Massachusetts 02174, published quarterly, $24.00 per year. Up-to-date information regarding student financial aid. Annotated bibliography of books and professional journals.

Selected List of Major Fellowship Opportunities and Aids to Advanced Education for United States Citizens. Publications Office, 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.


Study Abroad. $7.50. Write UNESCO, UNIPUB, 345 Park Avenue South, New York, New York 10010; in Europe, Place de Fontenoy, Paris 7e, France. Volume 22 will be available early in 1979.


U.S. College-Sponsored Programs Abroad: Academic Year. Gail A. Cohen, (ed.). Describes over 700 study-abroad programs, both undergraduate and graduate, conducted during the academic year by U.S. colleges and universities in countries around the world. Information on courses, costs, credits, housing, scholarships, and language of instruction. 1978. 174 pp. Annual. $5.00 (1979 edition available in March). Institute of International Education, 809 United Nations Plaza, New York, New York 10017.

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