Last year the following letter by the President of the Society was sent to all Ph.D. granting mathematics departments in the U.S. Because of the continued concern about the current employment situation for new Ph.D.'s, it is felt that this message bears repeating with a strong warning that the situation this year has not changed and prospects for the future do not appear any better.

November 11, 1975

Dear Colleague:

The Council of the American Mathematical Society, at its meeting on 19 August 1975, asked me to address a letter to all chairmen of mathematics departments which award the Ph.D. degree, concerning the present employment situation.

At present most graduate students working toward a Ph.D. in "pure" mathematics hope for an academic career, and it is likely that the vast majority of these Ph.D.'s will remain dependent on teaching for their long term employment.

You certainly know that new Ph.D.'s in mathematics have difficulties finding their first academic jobs, and that people have difficulties, perhaps even greater difficulties, in getting a second job. The AMS Committee on Employment and Educational Policy estimates, on the basis of careful studies, that for several years to come, the number of new long term positions in colleges and universities will be substantially lower than the current production rate of Ph.D.'s in "pure" mathematics. I refer you, for more precise information, to R. D. Anderson's "Doctorates and Jobs", Notices AMS, November 1974 and to Wendell Fleming's "Future Job Prospects for Ph.D. 's in the Mathematical Sciences", Notices AMS, December 1975.

While long term predictions in such matters are sometimes unreliable (the very optimistic predictions in the so-called COSRIMS Report of 1968 were also made by competent people on the basis of careful studies) we must face the present difficulties and the difficulties which we will certainly encounter in the foreseeable future, responsibly. We have responsibilities to our discipline, to our universities, and to our students.

The mathematical profession cannot (and I believe should not) set quotas for the number of people admitted to Ph.D. studies in order to insure economic security to all holders of the degree. Also, in order that American mathematics should not lose the momentum it now possesses, we must insure the steady influx of highly talented young people into research and teaching. Neither should the present economic difficulties weaken our efforts to attract into mathematics talented young people from groups hitherto underrepresented in scientific endeavor, such as women and blacks.

On the other hand, we owe our students complete candor. A young man or woman embarking on a program of graduate studies in mathematics should do so in full awareness of the economic difficulties he or she may face, and not expect the Ph.D. to guarantee a relatively easy way of making a living. I believe that this awareness will not deprive our profession of the best people. After all, most mathematicians now over 60 started their education under even bleaker economic conditions.

I urge you, in my name and in the name of the Council, to inform current and prospective graduate students of the employment situation as shown by the AMS studies and, equally important, of the employment record of recent Ph.D.'s from your own department.

To those students who, in spite of the poor employment prospects, are determined to become mathematicians and are qualified to do so, we owe an education which will maximize their chances of gainful professional employment. The Council of the AMS believes that all Ph.D. candidates in "pure" mathematics should be encouraged to achieve flexibility in their response to the employment situation. They can do so by also studying some branch of "applied" mathematics, or by developing in some other way a considerable breadth in their mathematical and scientific interest. I myself feel that this would, apart from all economic considerations, also make our students better mathematicians, and would even justify the lengthening of the time needed to achieve a Ph.D.

Sincerely yours,

Lipman Bers
President, AMS
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ASSISTANTSHIPS AND FELLOWSHIPS IN MATHEMATICS IN 1977–1978

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INDEX, Volume 23  . . . . . . . . . . . . . . . . . . . . . . . . . . A–734
While there is a great deal of debate on the merits of using electronic calculators, it is impossible to deny that they are here to stay. There are arguments on both sides of the issue of whether personal or student use of calculators is a desirable thing. Regardless of how one feels about this, information on what calculators are and do can be of value in making an informed decision on whether or not to buy a calculator or to require its use in the classroom. This article and survey will provide some basic information and will discuss some options available in small electronic calculators.

**General Comments.** This survey should be taken with a grain of salt. The information listed is provided by the manufacturers, and we do not, and indeed cannot, vouch for its accuracy nor completeness. Some of the models listed may be out of production even before this article appears. The trend of prices is down and capacity up, so listed prices may be too high. Discounts are available on many machines, although usually not on accessories such as battery chargers. Some listed calculators may be obsolete, with a cheaper later model (either listed or not) or another model doing more for less. If you wait for maximum capacity at minimum price, you will probably never buy a calculator. If you wish to make a calculator purchase, decide what features you really want and what price you are willing to pay, and when they are available be willing to take the plunge. Roughly comparable machines need not be comparably priced, so once the decision to purchase has been reached, time spent weighing strengths and weaknesses of each appropriate machine versus its cost is time well spent.

Different machines have different feels, different display visibility (can two people sitting side by side see the display?), and different operating characteristics. Key action varies, and in some cases may tend to create multiple entries or cause rapid wearing out. A positive 'click' helps. Some machines are able to take physical punishment better than others. Like most things, calculators may have physical defects such as parts of the display that don't light, keys that don't work, and card readers that don't read cards. Careful thought about how the machine is to be used and time spent testing several options and individual machines before final selection can be of great value. You cannot protect yourself from all problems, but doing elementary tests on a machine before selecting it and giving some thought to warranties may help. In addition, many suppliers will permit a week or longer trial period for an expensive calculator. That can be a tremendous advantage. Also, ask the dealer what his experience has been on returns for the model in question. If a new model has just been put on the market, it may well have a defect in some built-in routine which the manufacturer will correct in later versions of that model. A reliable manufacturer will correct such defects in a machine returned under warranty (even if the return of the machine has nothing to do with the bug) and may be willing to correct an out-of-warranty calculator on the owner's request.

You can save yourself problems by not buying a new model for the first few months it is on the market. Let others discover the bugs.

**Function Options.** A basic calculator does the arithmetic operations of +, - , x, ÷ in a fixed point mode. For just that, many very inexpensive models are on the market, and an article of this sort is superfluous if that is the kind of machine you want. Simply shop around. More powerful calculators introduce additional functions, scientific notation as well as fixed point, and memory. The presence of one or more memory registers greatly increases the power of the calculator. Many include a scientific package consisting of common and natural logs, exponentials, powers and roots, and trigonometric and inverse trigonometric functions. The trigonometric mode, degrees and/or radians, should be checked when considering such a calculator. Sin (π) = .0548 is correct to four digits in degree mode, but hardly the answer you'd expect on a calculus test. In a calculus class, one would probably want these scientific functions. Polar-rectangular coordinate conversions are available. For the statistically minded, there are calculators with built-in mean and standard deviation keys and/or linear regression, etc.

Special financial calculators have things such as present values as built-in functions. The particular statistical and/or financial functions selected vary greatly from machine to machine. Some calculators have integer part and fractional part functions which are useful for doing number theory and generating random numbers. Almost all of these functions can be imitated on a four function calculator, but using Taylor series to approximate functions or adding and subtracting a large power of 10 to truncate unwanted digits can be time consuming and lessen the utility of the calculator.

**Programming Capabilities.** In addition to built-in functions, some calculators enable the user to store a sequence of key strokes in program memory and then run through them automatically. Some can record these programs on magnetic cards for later use, saving time and eliminating the probability of error introduced by keying in a program every time it is run. A programmable calculator can easily be programmed to do complex multiplication with minimal button pushing. One can illustrate the convergence of a sequence such as \( a_1 = 1, a_{n+1} = 1/(1+a_n) \). In thirty iterations of this sequence, one top quality machine gave 12 digit accuracy. At least one advanced programmable can be programmed so that pushing one button will multiply two \( 4 \times 4 \) matrices in its memory.

There are limitations on calculator program-
grammed. A three-digit constant in a program
programming steps is small compared to a computer,
to a single step in program memory. For example,
even the precise number is not an indication
aware of them. First of all, the number of pro-
occupies three program steps. Some machines as-
sign one step in program memory to each key-
stroke; others merge some related keystrokes in-
to a single step in program memory. For example,
and the register
identification number 1 a second step. If there are
more than 10 registers, STO 0 1 may occupy three
steps. In other machines, STO 1 is contained in
one program step. Many calculators have one or
more second-function keys analogous to the upper
case key on a typewriter, so the remaining keys
can control more than one function. These may
or may not be merged. A transfer instruction may
take one step on one machine or up to four on an-
other. The availability of subroutines on some
machines can be a great asset, both for saving
space and for handling sequences of steps that are
logically subprograms. A subroutine return can be
initiated by a conditional branch on a prestored
number, but this takes space, indirect addressing
make the difference between an impossibly
long program and a manageable one, particularly
when subscripted variables are being handled.

The best way to ascertain programming ca-
pacity is to look at the instruction book for the
calculator you are considering, and to actually
"program in" a short test program involving stor-
age commands, comparisons and other transfers,
branching to and from subprograms, and upper
case keys. If you have done some programming
on a computer or on another calculator, studying
the owner's manual of the machine should
enable you to program in a trapezoidal rule inte-
gration or summation of a series or your favorite
short program. If you have never programmed be-
fore, the owner's manual will have programs you
can try. This will give you an idea of the number
of logical steps hidden behind the 49, 224, or other
number of steps in the charts. It will also give
you an idea of what kinds of program instructions
are available and how programs actually work.

A word of warning is in order. Calculators
are not computers, and besides having more
limited memory capacities, they are also much
slower. Let us assume you wish to compute

\[ \int \frac{1}{x} \, dx \]

by using Riemann sums with 1000 equal
subdivisions of the interval \([1, 2]\). A simple FOR-
TRAN program to do this might look like

```fortran
      S1 = 0,
      DO 100 I = 1, 1000
        100 S1 = S1 + 1. / (I + 1/1000.,)
      T = S1/1000,
      PRINT 1, T
      STOP
      1 FORMAT (X, E16.9)
      END
```

and would take very little time to compile and run
on even a slow computer. The author translated
that program to a programmable calculator which
merges only the second-function key. It took 43
programming steps. Running it took 9 1/2 minutes.
Reprogramming to consciously save time and
space reduced these figures to 8 minutes and 34
steps, and timing runs on minimal loops indicate
that is about minimum. You are not going to be
doing numerical integration with many subdivisions
on a programmable calculator unless you plan to
let it run for a long period of time. However, that
seeming drawback has its pedagogical advantages.
Since it is a time consuming matter to run a
great many iterations, students may well balk,
The professor can use this reaction to impress
on them the fact that they must think of what they
are doing when using numerical methods. For
example, although increasing the number of sub-
divisions mathematically increases accuracy,
umerically it may well decrease accuracy. In
the above program run on FORTRAN single pre-
cision with 7 significant digits, the estimated
roundoff error is of the same order of magnitude
as the theoretical error due to using Riemann
sums. More summands mean more roundoff
error. A Simpson's rule evaluation of

\[ \int f(x) \, dx \]

theoretically has an error at most

\[ \max \left| f^{(4)}(x) \right| \cdot \frac{b-a}{180} \left( \frac{b-a}{n} \right)^4 \]

where \( n \)
is the number of divisions. A single addition on
a machine with 12 digits accuracy has a predicted
error of \(10^{-k}\) where the 12th significant digit of
the largest summand is in position \(k\). These
errors add. For \(n = 1000\), much of the error in a
machine Simpson's rule integration is roundoff
error unless \(f^{(4)}(x)\) or \(b-a\) is very large. Let-
ting \(n = 100\) may well do better. That fact may
be difficult to appreciate, if it is so easy to run
off a program with many subdivisions that the stu-
dent is not forced to think of any trade-offs when
he or she runs a program.

Extremes aside, it can be disconcerting to
run a relatively short program and discover it
takes a surprising amount of time to run. You
might wish to get an idea of the basic timing cycle
of a machine before purchase. Program in the
simplest possible loop, such as adding one to it-
self 100 times, and time it. If appropriate, you
might also time the more involved functions, such
as sin or \(y^x\). If the machine uses labeled ad-
dressing, the search for the label may take a con-
siderable amount of time and you should bear this
in mind as you experiment.

The number of memory registers may also
play a greater role in a programmable than in a
nonprogrammable calculator, as a program can
make access to those registers much easier. For
example, programming can simplify matrix opera-
tions only if you have enough memory to store
your data, as well as enough programming steps.

Algebraic vs. RPN. Besides obvious consider-
ations such as functions available, memory reg-
isters, and programming capabilities, there is
another factor a potential calculator owner should
consider, namely the logic mode of operation of a
scientific calculator. There are two main types on
the market, algebraic and Reverse Polish Nota-
tion (RPN). Each has its strong points and weak-
nesses and its dedicated defenders. Algebraic
machines in addition may or may not have paren-
theses and may or may not have built-in algebraic hierarchy. I will give some discussion of these options. If you get a calculator, you will learn to use it regardless of the type, so this is not as significant a point as the others; however, its type can affect the ease and accuracy with which computations are performed. An extremely rough analogy for people with computer experience is that RPN is to algebraic with parentheses, as assembly language is to a compiler language. More precisely, using RPN logic one does a computation in the order necessary to get a desired result. Using algebraic with parentheses one keys in an expression as one would write it down (with some minor changes), and the calculator determines the order in which computations are actually performed.

As an example, the method of calculating \((\sin((2 + 3) \times (4 + 5)))^4\) will be considered for various notations. A casual reader may quickly skim the example or skip to the last paragraph of this section.

To handle this problem on an RPN machine, one proceeds as one would if no calculator were available. How do you do the test calculation manually? You first add 2 + 3 and set the result aside while you add 4 + 5, getting

\[
\frac{(\sin((2+3) \times (4+5)))^4}{5^9}
\]

Next you multiply these two results, take the sine, and raise the result to the 4th power. RPN logic has an automatic stack, usually with 4 registers, that handles the problem of setting the result aside, and then bringing it back for later computations.

In RPN logic, a function or operation always follows its argument(s). Thus, one does not key in 1 + 2 but rather 1 ENTER 2 +, where the ENTER tells the machine that you are finished with the preceding number. The stack automatically lifts when numbers are entered or recalled from memory and drops after a binary operation. For our test example, the keystrokes and state of the stack on one RPN machine are listed below. Blank registers contain 0, and the bottom register is visible. Degree mode is used, and only four digits are displayed, although more are kept and could be displayed.

```
2 ENTER 3 + 4 ENTER 5 + x SIN y^x
```

This indicates the automatic operation of the stack, and shows that the order of doing operations is from the inside out as one does manually, and not the way in which the expression is written. On the other hand, the result of any operation is immediately visible and if it doesn't look right you can check things out and correct them without affecting prior portions of the computation. There is no need to wait until the entire calculation is finished to discover it is all wrong. If you forget where you are, the stack can be rotated and the bottom two registers exchanged to give further information.

Some machines have a "last \(x^r\)" which will tell you what the contents of the display were before you did that last operation. The ability to see partial results immediately and to have the entire stack available for inspection is extremely valuable to many people, and well worth the effort required to learn the different rule of always putting binary operations, as well as single variable functions, after arguments. A word of warning—if you put \(n + 1\) entries into an \(n\) register stack, the first of them is lost out of the top of the stack with no warning to the user, and will not be there when the stack moves down. The stack is efficient once you get used to it, and it is extremely rare to wish it had a fifth register, but it does take a little time to get used to it. It is especially important to understand it when programming an RPN machine.

Algebraic machines, on the other hand, have expressions keyed in the way they are written—almost. Single variable functions follow their arguments as in RPN. On a machine with parentheses and full algebraic hierarchy, the keystrokes for our test problem and the display register (the only visible portion of the calculation) might be as follows.

```
( ( 2 + 3 ) \times ( 4 + 5 ) ) \sin \ y^x \ 4
```

Operations are not performed until another key such as \(=\), or the same or a lower level operation is pushed. Thus \(1 + 2 \times 3\) will have no visible arithmetic performed until \(=\) is hit, at which time 7 appears in the display. \(2 \times 3 + 4\) will compute 6 when \(+\) is hit. None of the parentheses in the above calculation of the test problem can be omitted without changing the number calculated, although some pairs can be replaced by \(=\), thus reducing keystrokes:

```
2 + 3 = \times \ ( 4 + 5 ) = \sin \ y^x \ 4 =
```
does the same thing in a less natural way. The hierarchy is the standard one as used in grade school and in FORTRAN, with parentheses inserted from left to right in operations of the same level. Indeed, one use of a programmable algebraic calculator is as an aid in debugging simple FORTRAN programs.

On an RPN machine you see partial results and the entire stack is usually accessible. That is not true for the algebraic machine. On the other hand, the algebraic machine works much closer to the way you write things down, with the exception that single argument functions appear to the right of their arguments. Moreover, if you overload the parentheses capability of the algebraic machine it may have a built-in error condition to inform you of this, so you can try to salvage what is in the stack. The "last x" option and/or an exchange of the last two entries is also available on some algebraic machines. Trying a few calculations on each type of machine will give you some feel for its method of operation. You can also try sample calculations suggested by the manufacturers in their ads. Bear in mind that these computations are intended to emphasize the advantages of the logic mode chosen by that manufacturer.

An instructor permitting the use of calculators in an examination must remember that these things have memories. A short while ago the problem of passing information in a program or data memory could be handled by insisting that students turn a calculator off before starting an exam or sharing the calculator. Now that doesn't work. There is at least one calculator on the market, with memory that is not lost when the machine is turned off. There are definite arguments in favor of such nonvolatile memory. You might want it to save your data, program, or even your checkbook balance for later use. You can also prolong battery life by turning off the machine, without losing either data or program.

Some calculators have a printer as an integral part; others can be attached to a separate printer. This can be of help in a variety of ways. If you wish to compute several Riemann sums by letting the calculator run all night, you can simply print out the results as they are obtained and go on to the next calculation with no human intervention necessary. If you wish to debug a program, it is helpful to be able to list it and work from printed copy, or to trace its operation. As mentioned before, some machines have magnetic card read-in and read-out for programs and/or data registers. This can be helpful for obvious reasons, but adds to expense. On the other hand, for Runge-Kutta solutions of differential equations or for matrix inversions, it can be invaluable. The user should be warned that card reading or writing can rapidly drain the battery.

Some machines have security cradles to lock them in place when no one is around. This may make them less stealable, but is no more than a hindrance to a potential thief. A hand-held calculator should not be left lying around.

Calculators come in various sizes. Some hand-helds fit comfortably into a pocket, others do not; but in general all are small enough for a purse or briefcase. An intermediate sized calculator with printer might fit in a briefcase, but be a little too large to hold comfortably in one hand while operating it with the other. Desk-top cal-
Calculators might have additional features not found in smaller models, but in general you pay for such features. If extra computing power is necessary and you are willing to pay for it, advances in microprocessors have led to moderately priced desk-top calculators with their own built-in computer-like qualities and with the ability to be used as remote access terminals to a large scale computer system or to have additional memory and system capabilities added on. These machines are a significant step above the handheld calculators in this survey in both capabilities and price. As with smaller calculators, the price is decreasing and the capabilities are increasing for these machines, but they are still expensive enough so that the interested purchaser can be expected already to have decided on the capabilities needed to be able to discuss them with the manufacturer directly.

**Bugs.** There seems to be a certain amount of concern among users and potential users of calculators about "bugs" or "glitches". These are strange quirks in the operation of the calculator. Many machines, even from leading manufacturers, have them. Most glitches have little practical significance, and you may only find out about them by accident or word of mouth. If one occurs in a routine you need, you must learn to circumvent it. In most cases, however, bugs will not significantly affect computations, and they do have their amusement value.

The author has observed one machine as it calculated \( \ln(e^4) = 1.02 \). I considered that serious enough not to experiment further with the machine in question. Another gross error on a machine that otherwise appeared accurate was a natural logarithm routine (and hence \( e^x \) routine), that treated powers of 1.01 as one less than they were, thus giving \( \exp(\ln(1.0201)) = 1.01 \). The manufacturer corrected that bug in later production of the model in question. A letter in *Electronics Design* tells of a machine, no longer being produced, which treated a number, but no binary operation enclosed in parentheses, as zero, thus getting 1 + (5) = 1.

Other bugs occur in top quality machines currently being produced. One machine claims \( \ln(1 + 10^{-10}) = 1 \times 10^{-98} \); if you perform an operation that changes that exponent, the calculator goes into some kind of internal loop that can be ended only by turning the machine off. You may be able to do most calculations with no problems on that machine, but you cannot approximate e by \( (1 + 10^{-10})^{10^{10}} \). One programmable machine declares that the reals are not linearly ordered by having -0 fail tests for both \( x \geq 0 \) and \( x < 0 \). You cannot test \( x \leq 0 \) by changing sign and testing \( x \geq 0 \) on this machine. Another calculator, claiming 12 digit accuracy computes \( \ln(1 + 10^{-6}) \) with only 6 digits of accuracy. You are better off with a Simpson's rule computation with two subdivisions. On one programmable machine, storage in a register that is not supposed to be there writes into program memory or into the arithmetic stack. The former problem leads to strange results when an unwary user runs a program. The latter may mean that arithmetic is incorrectly done, or can lead to weird displays which include single quotes, double quotes, and/or little squares. The manufacturer has pointed out how to convert these storage commands into a definite plus. When carefully used, the extra storage capabilities expand the capacity of the machine and can be extremely useful. Some machines have routines that are more accurate than others, and so avoid even much smaller errors than the computational glitches mentioned. If you really need a great deal of accuracy on single routines, that can be of value. Write down specific computations to the accuracy required, and then see if a given machine can produce that accuracy.

There are design features on some machines which may appear strange under certain circumstances. If you have a display that does not exhibit all digits in the display register and you compute a real number which appears to be 1.0, you should not expect to be able to take its arcsine, even if you think the number is slightly less than 1. The number computed may actually be slightly greater than 1. Some algebraic machines keep 13 digits in the display register and storage, but when a number is followed by a binary operation, the 13th digit is replaced by the operation. As a result, addition and multiplication do not commute, and \( 1/3 - 1/3 = -3 \times 10^{-13} \). This creates an observable error only when numbers being subtracted are relatively close together.

This last point deserves amplification. It is inherent in any numerical computation on a machine retaining only a fixed number of digits, that subtraction of numbers agreeing in the first few digits is a very inaccurate operation, and small errors can have very large consequences. Division by 0 gives an error condition. Division by \( 10^{-13} \) gives a multiplication by \( 10^{13} \). Multiplication of a large number by \( 10^{-13} \) gives a number that wouldn't be there if \( 10^{-13} \) were replaced by 0. A lot of inaccuracy and grief in running programs can be eliminated by never testing a computed number to see if it is zero unless it has been obtained by addition, subtraction, and/or multiplication of integers. You test if \(|x| |v|x| \leq \text{fuzz} \), where fuzz is a small number whose value you determine by the nature of the computation being performed. If so, set \( x = 0 \). The nonsense you may obtain otherwise is not a bug. It is a logical consequence of working with a finite machine rather than the precise infinite decimals of the pure mathematician. In numerical work, there is no real number zero.

**Aids to the classroom use of calculators.** In response to the announcement of this article in the October 1976 issue of the *School Science and Mathematics*, several people have informed the American Mathematical Society of items which might be helpful in using calculators in the classroom. This information may be of almost as much interest as the calculators themselves, and so is being passed on with the same comments about lack of verification of claims as for the calculators. Time has not permitted careful reading of the texts mentioned, so only capsule reviews will be offered.

Educational Calculator Devices, Inc., P.O. Box 974, Laguna Beach, California 92652 (telephone (714) 497-3600), manufactures a display unit in which they incorporate a Hewlett-Packard

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calculator with its usual display for the instructor and a display for students with a viewing angle of 130° and a viewing range of 60 feet. They offer a 15-day trial period, and purchase or leasing options.

There are at least two textbooks specifically aimed at the use of calculators in the classroom. Texts on computers in the calculus might also be modified for calculator use.

Calculator Calculus by George McCarty, Page-Flickin Publishing Company, Palo Alto, California (1975), is a text on calculus incorporating calculators (preferably with scientific functions but not necessarily programmable) as a tool to illustrate the limit process. This book might be a supplement to a standard calculus course providing the kind of input that is often obtained in a calculus-with-computers course. Some attention is paid to numerical errors and differing accuracies of algorithms. For example, numerical differentiation is done by taking several difference quotients and, for the same function several average difference quotients \((f(a+h) - f(a-h))/2h\). Truncation errors on numerical integration methods are mentioned. Without programming, one does not have to worry about excessive iterations introducing significant roundoff errors. These computations are intended to be peripheral to the main concern of the book, which is communicating the basic ideas of first-year calculus. The calculator manipulations are there to illustrate limits and to give concrete examples to help the student develop intuition about the calculus. The book has an annotated bibliography indicating additional aids to the instructor.


The Arithmetic Teacher, Vol. 23, No. 7 (November, 1976), is a special issue devoted to microcalculators. Several articles on the use of computers in calculus that have appeared in recent issues of the MAA Monthly are relevant.

For specific calculators there are Users' Groups. Hewlett-Packard has one for the 65 and the 67/97. Texas Instruments has one for its SR-52. These groups will send out newsletters and enable users to exchange programs for their machines. One correspondent who is a member of two similar clubs provides the following addresses: HP-65 Users' Club, 2541 W. Camden Place, Santa Ana, California 92704 and an SR-52 Users' Club, 9459 Taylorsville Road, Dayton, Ohio 45424.

The Notices welcomes debate on the pros and cons of using calculators in the classroom and invites readers to share their experiences with calculators or additional information on them through the letters column.

Acknowledgements. The author wishes to thank all those who responded to inquiries from the AMS or to the October Notices announcement for the time, effort, and information they contributed. Many of their suggestions have been incorporated into this article.
### PROGRAMMABLE CALCULATORS – HANDHELD OR PORTABLE

| Manufacturer | Model name and/or number | Price (approximate, December 1976) | Display or printer | Power source | Number of display digits | Number of internal digits | Memory register arithmetic | Memory register floating, both | Decimals (fixed, floating, both) | Maximum number of programming steps | "Store in register", 1, 2, or 3 steps | "Algebraic" level of parentheses | Additional capabilities (prior to 1976 footnotes) |
|--------------|--------------------------|-----------------------------------|--------------------|--------------|-------------------------|-------------------------|--------------------------|-------------------------------|----------------------------------|-----------------------------------|--------------------------------|-----------------------------------------------|
| APF Electronics, Inc. | Mark 90 | 48.00 | D 1 2 3 | FF 12 12 10 | Full | 72 2 4 | • | • | 1 2 | |
| Hewlett-Packard Co. | 25A | 145.00 | D 1 2 3 | FF 10 10 13 | Full | 49 1 | 4 | • | |
| | 25C | 195.00 | D 1 2 3 | FF 10 10 13 | Full | 49 1 | 4 | • | 6 | |
| | HP-67 | 450.00 | D 1 2 3 | FF 10 10 26 | Full | 224 1 | 4 | • | 9 | |
| | HP-97 | 750.00 | DP 1 2 3 | FF 10 10 26 | Full | 224 1 | 4 | • | 9 | |
| National Semiconductor Corp. | 4615 | 69.50 | D 1 2 3 | Fl 8 9 1 + | 100 | 1 | 3 | | | |
| | 7100 | 395.00 | D 1 2 3 | FF 10+2 | 12 537 | Full | 240 | 1 | 9 | • | • | 2,6/13 | |
| Texas Instruments, Inc. | SR-56 | 109.95 | D 1 2 3 | FF 10+2 | 13 10 | 100 | 2 | 9 | • | • | 1,8 | |
| | SR-52 | 299.95 | D 1 2 3 | FF 10+2 | 13 22 | 224 | 3 | 9 | • | • | 1,8 | |

For footnotes refer to end of charts.

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### PROGRAMMABLE CALCULATORS – DESKTOP

| Manufacturer | Model name and/or number | Price (approximate, December 1976) | Display or printer | Power source | Number of display digits | Number of internal digits | Memory register arithmetic | Memory register floating, both | Decimals (fixed, floating, both) | Maximum number of programming steps | "Store in register", 1, 2, or 3 steps | "Algebraic" level of parentheses | Additional capabilities (prior to 1976 footnotes) |
|--------------|--------------------------|-----------------------------------|--------------------|--------------|-------------------------|-------------------------|--------------------------|-------------------------------|----------------------------------|-----------------------------------|--------------------------------|-----------------------------------------------|
| Burroughs Corporation | C6203 | 595.00 | P 1 | FF 14 | 28 | 5 | Full | • | | 4 | |
| | C6451 | 695.00 | DP 1 | FF 12 | 24 | | | | | | | | |
| | C7201 | 1350.00 | P 1 | FF 14 | 26 | 16 | Full | 204 | 2 | • | • | • | |
| | C7202 | 1495.00 | P 1 | FF 14 | 26 | 16 | Full | 408 | 2 | • | • | • | |
| | C7203 | 1695.00 | P 1 | FF 14 | 26 | 16 | Full | 816 | 2 | • | • | • | |
| Canon USA, Inc. | SR-320 | 3395.00 | DP 1 | FF 14+2 | 500 | 4 | 5000 | 2 | 3 | • | • | 1 | |
| Olivetti Corporation of America | Logos 755 | 398.00 | DP 1 | FF 14 | 32 | 128 | 128 | • | | 1 | |
| Tektronix, Inc. | 4051 Graphic Display System | 7500.00 | D 1 | Fl 10 | 14 | 22K | Bytes | Full | • | • | • | 7 | |
| Texas Instruments, Inc. | SR-60 | 1695.00 | DP 1 | FF 20 | 480 | 9 | • | • | 9/11 | |
| Victor Comptometer Corp. | 4800 | 1895.00 | P 1 | FF 14 | 14 | 102 | Full | 1000 | 1 | • | • | |
| | 4900 | 2395.00 | P 1 | FF 14 | 14 | 202 | Full | 1792 | 1 | • | • | |
| Wang Laboratories, Inc. | 462 Advanced Statistical | 1200.00 | D 1 | Fl 13 | 13 | 24 | Full | 64 | 2 | • | • | |
| | 2200 Portable Computing System | 5400.00 | DP 1 | Fl 13 | 13 | 32 | 4K-32K | no limit | • | • | 5,7 | |

For footnotes refer to end of charts.
## Nonprogrammable Calculators – Handheld or Portable

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<th>Model name and/or number</th>
<th>Price (approximate, December 1976)</th>
<th>Display or printer</th>
<th>Power source</th>
<th>Decimal (fixed, floating, both)</th>
<th>Number of display digits</th>
<th>Number of internal digits</th>
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<th>Algebraic–level of parentheses</th>
<th>Reverse Polish Notation – stack size</th>
<th>Engineering slider functions (mean, standard deviation, etc.)</th>
<th>Statistical functions (interest, financial, etc.)</th>
<th>Additional capabilities (refer to numbered footnotes)</th>
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<td>29.95</td>
<td>D 1,2</td>
<td>Fl</td>
<td>8</td>
<td>1</td>
<td>+</td>
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<tr>
<td>Local Radio Shack Stores</td>
<td>65-663/EC495</td>
<td>39.95</td>
<td>D 2,3</td>
<td>FF</td>
<td>8+2</td>
<td>5</td>
<td>Full</td>
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</table>

For footnotes refer to end of charts.
## NONPROGRAMMABLE CALCULATORS—HANDHELD OR PORTABLE (Continued)

<table>
<thead>
<tr>
<th>Manufacturer (firm named will answer inquiries)</th>
<th>Model name and/or number</th>
<th>Price (approximate, December 1976)</th>
<th>Display or printer</th>
<th>Power source</th>
<th>Decimal (fixed, floating, both)</th>
<th>Number of display digits</th>
<th>Number of memories</th>
<th>Memory register arithmetic, +, -,..., directly into memory</th>
<th>Algebraic level of parentheses</th>
<th>Reverse Polish notation—stack size</th>
<th>Engineering slide-rule functions (means, standard form, units, angle, etc.)</th>
<th>Financial functions (interest, annuities, etc.)</th>
<th>Additional capabilities (refer to numbered footnote)</th>
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<tr>
<td>Sinclair Radionics, Inc. 115 East 57 Street New York, NY 10022 Sales Department</td>
<td>Cambridge Memory 12.95 D 2 Fl 8 9 1 Full</td>
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<td>Oxford Universal 19.95 D 1,2 Fl 8 9 1 Full</td>
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<td>Cambridge Scientific 24.95 D 2 Fl 8 9 1 Full</td>
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<td>Oxford Scientific 29.95 D 1,2 Fl 8 9 1 2</td>
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<tr>
<td>Summit—C. S. S. 182 West 2950 South Salt Lake City, Utah 84115</td>
<td>MCCR 29.95 D 2,3 Fl 9 1</td>
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<tr>
<td>Texas Instruments, Inc. P.O. Box 22283 Dallas, Texas 75222 Consumer Relations Dept.</td>
<td>TI-30 24.95 D 2,3 Fl 8 11 1 Σ 15</td>
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<td>SR-40 39.95 D 1,2,3 Fl 8 11 1 Σ 15</td>
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<td>TI-Business Analyst 49.95 D 1,2,3 Fl 8 11 1 Σ 15</td>
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<td>SR-50A 59.95 D 1,2,3 Fl 10+2 13 1 Σ</td>
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<td>SR-51A 79.95 D 1,2,3 Fl 10+2 13 3</td>
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<td>SR-51-II 79.95 D 1,2,3 FF 10 12 3 Full 9</td>
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<tr>
<td>Victor Comptometer Corp. Office Products 3900 N. Rockwell St. Chicago, IL 60618</td>
<td>104R 39.95 D 1,2,3</td>
<td>8 8 1 Full</td>
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<td>106 49.95 D 1,2,3 Fl 8 8 1</td>
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<td>107 69.95 D 1,2,3 Fl 10 1001 1 Full 2</td>
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<tr>
<td>226 125.00 D 1,2,3 FF 12 12 1 Full</td>
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</tbody>
</table>

Almost every calculator listed has more capabilities than the ones shown on the charts. The numbered notes are ones judged to be of particular interest.

1. Algebraic hierarchy.
2. Converter: currencies, metric, temperature, fractions, others.
3. Recharger optional.
4. Preprogrammed for time, weights, and measures.
5. Preprogrammed for financial functions.
6. Continuous memory: CMOS program memory which remembers programs and data even when turned off.
7. BASIC: CRT graphic display.
8. Optional PC-100 printer, 20 digits, $295.
10. The following companies provided information on nonprogrammable desk top calculators which are not included in the charts: Burroughs Corporation, Canon USA, Electronic Systems Corporation, Facit-Addo, Summit—C.S.S., Unisyn of America, Victor Comptometer Corp., Wang Laboratories. Information on these will be sent to any member who requests it. Write to the AMS Promotion Department.
11. Expandable to 1920 programming steps with optional module.
13. Expected to be available in March 1977.
ASSISTANTSHIPS AND FELLOWSHIPS
IN MATHEMATICS IN 1977–1978

The eighteenth Special Issue of these contains lists of assistantships and fellowships available in mathematics and related sciences for the academic year 1977–1978 for graduate study at universities and stipends available for travel and study.

The list of assistantships and fellowships at universities includes 439 departments of mathematics, applied mathematics, statistics, computer science, and related mathematical disciplines; these represent 321 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 in inst. . . . . . . Number of bachelor's degrees awarded by the institution
- Bachelor's by dept. . . . . . . Number of 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
- P&S . . . . . . . . . . . . Probability and Statistics
- CS . . . . . . . . . . . . . . Computer Science and Numerical Analysis
- AM . . . . . . . . . . . . . . Applied Mathematics

Under the SERVICE REQUIRED column, hours per week section:

- c . . . . . . . . . . . . . . . . . . Contact hours

I. For Graduate Study at Universities

<table>
<thead>
<tr>
<th>TYPE</th>
<th>STIPEND (amount in dollars)</th>
<th>TUITION (if not included, 9 or 12 months)</th>
<th>SERVICE REQUIRED (hours per week, type of service)</th>
<th>DEGREES AWARDED (Academic year 1975–1976)</th>
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<tr>
<td>DEPARTMENT OF MATHEMATICS AND PHYSICS</td>
<td>2700–3000</td>
<td>33/cr.</td>
<td>1 course</td>
<td>Bachelor's by inst. 450</td>
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<tr>
<td>Teaching Assistantship (2)</td>
<td>2700–3000</td>
<td>33/cr.</td>
<td>1 course</td>
<td>Bachelor's by dept. 5</td>
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<td>NDSL; Work Study; Guaranteed Loans (2)</td>
<td>Open</td>
<td>33/cr.</td>
<td>*</td>
<td>Master's by dept. 5</td>
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<tr>
<td>* 20 per week for Work Study.</td>
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<td>DEPARTMENT OF MATHEMATICS</td>
<td>3060–3330</td>
<td>183/qtr.</td>
<td>12 Teaching</td>
<td>Bachelor's by inst. 2942</td>
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<tr>
<td>L. P. Burton, Head</td>
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<td>Bachelor's by dept. 34</td>
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<tr>
<td>Teaching Assistantship (15)</td>
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<td>Master's by dept. 13</td>
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<tr>
<td>DEPARTMENT OF MATHEMATICS</td>
<td>4000–4400</td>
<td>230/qtr.</td>
<td>4c Teaching, tutoring</td>
<td>Bachelor's by inst. 800</td>
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<tr>
<td>Arthur C. Segal, Chairman</td>
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<td>Bachelor's by dept. 22</td>
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<tr>
<td>Teaching Fellowship (7–8)</td>
<td></td>
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<td>Master's by dept. 8</td>
</tr>
</tbody>
</table>

431
University of Alabama in Huntsville 35807

DEPARTMENT OF MATHEMATICS

Peter G. Casazza, Chairman

Applications due: 3/1/77*
Bachelor’s by inst. 500
Bachelor’s by dept. 20
Master’s by dept. 6

Teaching Assistantship (6) 3000-3600 9 4c
Tuition

Scholarship (2)

*Late applications considered if positions are still available.

— ALASKA —

University of Alaska, Fairbanks 99701

DEPARTMENT OF MATHEMATICS

Applications due: 3/15/77
Bachelor’s by inst. 300
Bachelor’s by dept. 5

Robert W. Brown, Head

Teaching Assistantship (5) 4842-5148 9 6 Teaching

— ARIZONA —

Arizona State University, Tempe 85281

DEPARTMENT OF MATHEMATICS

Applications due: 3/1/77
Bachelor’s by inst. 5948
Bachelor’s by dept. 43
Master’s by dept. 22

Nevin W. Savage, Chairman

Teaching Assistantship (41) 3750-4500 9 255/sem. 6c Teaching

Northern Arizona University, Flagstaff 86001

DEPARTMENT OF MATHEMATICS

Applications due: 4/1/77
Bachelor’s by inst. 1800
Bachelor’s by dept. 20
Master’s by dept. 6

Richard D. Meyer, Chairman

Teaching Assistantship (4) 2200-2900 9 200 13c Teaching

University of Arizona, Tucson 85721

DEPARTMENT OF MATHEMATICS

Applications due: 3/15/77
Bachelor’s by inst. 2486
Bachelor’s by dept. 26
Master’s by dept. 6

H. Rund, Head

Teaching Assistantship (29) 3510-4382 9 * 6c Teaching

* Residents: $225; nonresidents: $275.

— ARKANSAS —

Arkansas State University, State University 72467

DIVISION OF MATHEMATICS AND PHYSICS

Applications due: 3/1/77
Bachelor’s by inst. 953
Bachelor’s by dept. 27
Master’s by dept. 8

J. L. Linstaedter, Chairman

Teaching Assistantship (12) 1800-2475* 9 400 3** Teaching

* Increase expected.
** One 3 semester hour course or an equivalent amount of tutorial work.

University of Arkansas, Fayetteville 72701

DEPARTMENT OF MATHEMATICS AND STATISTICS

Applications due: 3/1/77
Bachelor’s by inst. 1583
Bachelor’s by dept. 15
Master’s by dept. 8

James E. Scroggs, Chairman

Teaching Assistantship (30) 3300-3500 9 360-400 6c Teaching

Research Assistantship (1) 1650 9 360-400 10 Research

— CALIFORNIA —

California Institute of Technology, Pasadena 91125

DEPARTMENT OF MATHEMATICS

Applications due: 2/15/77
Bachelor’s by inst. 179
Bachelor’s by dept. 179
Master’s by dept. 24
Ph. D. (1973-1976 incl.)

W. A. J. Luxemburg, Executive Officer

Fellowship (4) 3600 12 4c Teaching

Teaching Assistantship (18) 3450-4125 9

Research Assistantship (1) 3285 9

Research Assistantship (4)

DEPARTMENT OF APPLIED MATHEMATICS

Applications due: 2/15/77
Bachelor’s by inst. 179
Bachelor’s by dept. 179
Master’s by dept. 4
Ph. D. (1973-1976 incl.)

G. B. Whitham, Executive Officer

Fellowship (4) 2900-3600 12

Teaching Assistantship (13) 2760-4125 9

Research Assistantship (4) 2200-5795 9-12

12-15 Grading and teaching Research

Research Assistantship (1)

Total: 11

Ph. D. (1973-1976 incl.)

A&NT 1, A&FA 5, CS 1.

Total: 11

432
California Polytechnic State University, San Luis Obispo 93407

DEPARTMENT OF MATHEMATICS
Charles J. Hanks, Head
Graduate Assistantship (4) 1480 9 * 10c Tutoring
Part-Time Assistant Instructor (10) 2069 9 * 3c Teaching

*Registration fees $60-$70. In addition, nonresidents pay $32 per quarter up to a maximum of $480.

DEPARTMENT OF COMPUTER SCIENCE AND STATISTICS
Daniel F. Stubbs, Chairman
Teaching Assistantship (6) 2586-2829 9 150/yr. 3-4c Teaching

California State Polytechnic University, Pomona 91768

DEPARTMENT OF MATHEMATICS
Emil R. Herzog, Chairman
Teaching Assistantship (12) 2475-2600 9 * 3c Teaching

*Resident and nonresident fees for 12 or more units. In addition, nonresidents pay the following: less than 15 units $29/unit or fraction thereof; 15 or more units, $433/quarter ($1,299 maximum for academic year).

California State University, Fresno 93740

DEPARTMENT OF MATHEMATICS
Robert F. Arnold, Chairman
Graduate Assistantship (5) 2046-2238 9 101/sem. 12 Teaching

California State University, Fullerton 92834

DEPARTMENT OF MATHEMATICS
Michael H. Clapp, Head
Teaching Fellowship (4-6) 2230-2530 9 74-95 4 Teaching

California State University, Long Beach 90840

DEPARTMENT OF MATHEMATICS
F. A. Cohen, Chairman
Teaching Assistantship (25) 1551, 60-3103, 20 9 3-6c Tutoring

California State University, Los Angeles 90032

DEPARTMENT OF MATHEMATICS
Charles L. Clark, Chairperson
Teaching Assistantship (12) 3680-5000 12 66/qtr. * 4-6c Teaching

*Nonresidents add $32 per unit.

California State University, Northridge 91324

DEPARTMENT OF MATHEMATICS
William Watkins, Chairman
Teaching Assistantship (10) 4578, 30-5121, 40 10 77 20 Teaching

CLAREMONT GRADUATE SCHOOL

The Ph.D. program allows specialization in applied mathematics, functional analysis, topology, and other areas. M.A. programs in applied mathematics, scientific computing, statistics and operations research, and two-year-college teaching are designed to provide training and experience on which one can base a career in mathematical sciences; practical experience is an important part of each program, through a 'mathematics clinic' which provides work on substantial problems from industry (and some financial support for students), or through practice teaching at a nearby two-year college. An article, "An Innovative Approach to Realism within an Academic Environment" by Jerome Spanier (American Math. Monthly, Dec. 1976), describes the real-world component of applied mathematics training in Claremont.

Limited fellowship support and a substantial number of tuition waivers (about $2800) are available, especially in the M.A. program. The program is small and the experienced faculty can provide close attention to the particular needs and progress of each student. Claremont has a desert climate, but is 20 miles from mountain ski slopes and 40 miles from the beach. Facilities include a very good library and computer system.

For information write to: Mathematics Department
Claremont Graduate School, Claremont, California 91711

433
<table>
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<th>Type</th>
<th>Stipend</th>
<th>Tuition</th>
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<td>California State University, Sacramento 95819</td>
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<td>1975-1976</td>
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<td>Teaching Assistantship (4-6)</td>
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<td>6 Lab work</td>
<td>Bachelor's by inst. 3000</td>
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<td>* At least six weeks prior to beginning of semester.</td>
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<tr>
<td>Claremont Graduate School, Claremont 91711</td>
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<td>Fellowship (3)</td>
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<td>Tuition Waiver (7)*</td>
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<td>A&amp;T 1, L 1, A&amp;FA 3, P 1, AM 2. Total: 8</td>
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<td>*Available for M. A. students. Second-year students can expect cash stipends.</td>
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<td>Pacific Union College, Angwin 94508</td>
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<td>Bachelor's by inst. 217</td>
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<td>Richard Rockwell, Chairman</td>
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<td>Bachelor's by dept. 3</td>
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<td>2655 10</td>
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<td>San Diego State University, San Diego 92182</td>
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<td>Bachelor's by inst. 3650</td>
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<td>Edmund I. Deaton, Chairman</td>
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<td>Bachelor's by dept. 110</td>
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<td>Teaching Assistantship (25)</td>
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<td>Master's by dept. 14</td>
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<td>* Nonresidents pay an additional $43 per unit.</td>
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<td>Bachelor's by inst. 1345</td>
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<td>Franklyn B. Fuller, Chairman</td>
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<td>Teaching Fellowship (5-6)</td>
<td>2600-5200 9</td>
<td>97/sem.*</td>
<td>3-6 Teaching</td>
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<tr>
<td>Sonoma State College, Sonoma 94928</td>
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<tr>
<td>William J. Barnler, Chairman</td>
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<td>Bachelor's by dept. 17</td>
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<td>Assistantship * (3-5)</td>
<td>1034-2068 4 1/2-9</td>
<td>3 Teaching</td>
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<td>Master's by dept. 2</td>
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<td>*Applicants must be currently enrolled in Math. Dept. M. A. Program at this College.</td>
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<tr>
<td>Stanford University, Stanford 94305</td>
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<td>Bachelor's by inst. 1791</td>
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<tr>
<td>Ralph Phillips, Acting Chairman</td>
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<td>Bachelor's by dept. 66</td>
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<td>Fellowship (2)</td>
<td>2400-2600 9</td>
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<td>Master's by dept. 17</td>
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<td>2700-3100 9</td>
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<td>Ph. D. (1973-1976 incl.)</td>
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<td>* Graduate Assistants serve for one quarter as Teaching Fellows, for one quarter as Course Assistants, and for one quarter as Research Assistants. ** 3 contact hours per week teaching for one quarter; 6 contact hours per week assisting for one quarter; one quarter research with no formal duties.</td>
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GRADUATE TEACHING ASSISTANTSHIPS FOR FALL 1977

Stipends $1300 - 2600 per semester. Masters programs in pure and applied mathematics, computer science, teaching of mathematics.

Department of Mathematics
SAN JOSE STATE UNIVERSITY
San Jose, California 95192
<table>
<thead>
<tr>
<th>TYPE</th>
<th>STIPEND</th>
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<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
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<td>DEPARTMENT OF OPERATIONS RESEARCH</td>
<td>Applications due: 3/1/77</td>
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<tr>
<td>Arthur F. Veinott, Jr., Chairman</td>
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<td>Bachelor's by dept. 125</td>
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**University of California, Berkeley 94720**

**DEPARTMENT OF MATHEMATICS**

J. Kelley, Chairman

| Research Assistantship (88) | 5046-5127 | 9 | 233-868/qtr. ** | A&NT 20, G&T 31, L 8, |
| Research Assistantship (16) | 4050 | 9 | 233-868/qtr.** | A&FA 29, P 3, OR 1, |

* Fellowship: 12/1/76; Assistantship: 2/1/77.
** Some fellowships pay part of fees; some pay all. Some nonresident Assistants may receive waivers for 1 or 2 quarters of nonresident tuition part of fees, $635 per quarter.

**DEPARTMENT OF BIOSTATISTICS**

Chin Long Chiang, Chairman

| Teaching Assistantship (4) | 5127 | 9 | * | 20 |
| Research Assistantship (8) | 4050 | 9 | * | 20 |

* Residents: $697.50 per year; nonresidents: $2602.50 per year.

**GROUP IN LOGIC AND METHODOLOGY OF SCIENCE**

C. Chihara, Chairperson

Assistantships and Fellowships should be filed with the departments of Mathematics and/or Philosophy by dates set by those departments.

**DEPARTMENT OF STATISTICS**

Peter J. Bickel, Chairman

| Research Assistantship (25)*** | 2025 | 9 | 10 |

* Fellowships: 12/1/76; Assistantships: 1/15/77.
** Nonresidents subject to additional fee of $635/qtr.; some waivers available.
*** Most research Assistants also employed as Teaching Assistants concurrently.

**University of California, Davis 95616**

**DEPARTMENT OF MATHEMATICS**

David G. Mead, Chairman

| Fellowship (5) | 2700-2925 | 9 | 20 | Teaching Ph.D. (1973-1976 incl.) |
| Community Teaching Fellowship (4) | 5127 | 9 | 20 |

**THE UNIVERSITY OF CALIFORNIA AT BERKELEY**

Department of Mathematics

invites applications for a professorship in mathematics, starting date and salary negotiable. Very substantial achievement and capacity to furnish scientific leadership required. Breadth of mathematical interest is desired.

Equal opportunity employer with affirmative action program. Women and minority candidates are encouraged to apply.

Please communicate resume and publication list to:

Professor A. H. Taub
Vice Chairman for Faculty Appointments
Department of Mathematics
University of California, Berkeley
Berkeley, California 94720

435
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University of California, Irvine 92717

DEPARTMENT OF MATHEMATICS
Howard L. Resnikoff, Chairman

Fellowship (2) 3387 9 10 Teaching
Teaching Fellowship (2) 3387 9 10 Teaching
Teaching Assistantship (22) 5127 9 687 fees 20 Teaching

University of California, Los Angeles 90024

DEPARTMENT OF MATHEMATICS
Henry A. Dye, Chairman

Fellowship (6) 2700 9 684 reg. fee/yr.* Teaching
Teaching Fellowship (6) 5127-5628 9 684 reg. fee/yr. Teaching
Teaching Assistantship (48) 5127-5628 9 684 reg. fee/yr.* Research

* Tuition $1905 for nonresidents, A tuition waiver is usually received.

DEPARTMENT OF SYSTEM SCIENCE
J. W. Carlyle, Chairman

Fellowship (3) 2700 9 684 reg. fee/yr. Teaching
Teaching Assistantship (2) 10254 9 56/qr. Teaching
Research Assistantship (6) 5, 95/hr. 9 20 max Research

*Residents: $684; nonresidents: $2589.

University of California, Riverside 92502

DEPARTMENT OF MATHEMATICS
Albert R. Stralka, Chairman

Fellowship (3) 2700 9 684 reg. fee/yr. Teaching
Teaching Fellowship (11) 5127 9 227/qr. Teaching
Teaching Assistantship (12) 5127 9 227/qr. Teaching

THE UNIVERSITY OF CALIFORNIA AT BERKELEY

Department of Mathematics

invites applications for an assistant professor in any of the following fields: partial differential equations, several complex variables, topology, and algebraic geometry. Strong record in teaching and research required. Equal opportunity employer with affirmative action program. Women and minority candidates are encouraged to apply.

Send resume, reprints, preprints and/or thesis abstract. Have 3 letters of recommendation sent to:

Professor A. H. Taub
Vice Chairman for Faculty Appointments
Department of Mathematics
University of California, Berkeley
Berkeley, California 94720

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 $375 per month for 9 months plus fees)
Research Assistantships (approximately $450 per month)
Teaching Assistantships (approximately $570 per month for 9 months)
*San Diego Fellowships (approximately $575 per month for 12 months plus fees)

Department of Mathematics
UNIVERSITY OF CALIFORNIA, SAN DIEGO
La Jolla, California 92039

*For educationally disadvantaged American citizens.
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**COLORADO**

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**University of Colorado at Denver 80202**

DEPARTMENT OF MATHEMATICS  
Collin Hightower, Chairman

- **Teaching Assistantship (7)**  
  4000  9  350  6c  Teaching

Applications due: 4/15/77  
Bachelor's by inst. 326  
Bachelor's by dept. 12  
Master's by dept. 5

**University of Denver, Denver 80210**

DEPARTMENT OF MATHEMATICS  
William S. Dorn, Chairman

- **Fellowship (1)**  
  3000  9
- **Teaching Assistantship (10)**  
  3000-3200  9  20  Teaching
- **Research Assistantship (2)**  
  2520-2910  9  20  Research
- **Scholarship (5)**  
  9

Applications due: 4/1/77  
Bachelor's by inst. 878  
Bachelor's by dept. 13  
Master's by dept. 6

**University of Northern Colorado, Greeley 80639**

DEPARTMENT OF RESEARCH AND STATISTICAL METHODOLOGY  
Samuel R. Houston, Chairman

- **Teaching Assistantship (1)**  
  2244  9  191, 50*  576, 50**  20  Teaching and research

Applications due: 3/1/77  
Master's by dept. 6

* In-state students pay full tuition.  
** Out-of-state students have one-half of tuition waived.

**Western State College, Gunnison 81230**

DEPARTMENT OF MATHEMATICS  
William E. Dorgan, Chairman

- **Teaching Assistantship (1)**  
  1800  9  7.5

Applications due: 3/15/77  
Bachelor's by inst. 503  
Bachelor's by dept. 10  
Master's by dept. 1

* In-state: $170.11 per quarter; out-of-state: $491.11 per quarter.

--- CONNECTICUT ---

**Central Connecticut State College, New Britain 06050**

DEPARTMENT OF THEORETICAL MATHEMATICS  
Stephen A. Bacon, Chairman

- **Teaching Assistantship (1)**  
  1000/sem.  9  *  6  Teaching

Applications due: 6/1/77  
Bachelor's by inst. 1696  
Bachelor's by dept. 30  
Master's by dept. 1

* Tuition waived for two courses.

**University of Connecticut, Storrs 06268**

DEPARTMENT OF MATHEMATICS  
John V. Ryff, Head

- **Fellowship (10)**  
  600-800  9  *
- **Teaching Assistantship (16)**  
  3840-4700  9  *  6c  Teaching
- **Tuition Waiver (15)**  
  540-1230  *

Applications due: 5/1/77  
Bachelor's by inst. 3239  
Bachelor's by dept. 52  
Master's by dept. 5

* In-state: $270 per semester; out-of-state: $615 per semester.

DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE  
T. L. Booth, Associate Head

- **Teaching Assistantship (15)**  
  3840-4770  9  *  20  Teaching
- **Research Assistantship (9)**  
  3840-4770  9  *  20  Research
- **Scholarship (5)**  
  2000-2500  9  *

Applications due: 2/1/77  
Bachelor's by dept. 35  
Master's by dept. 24

* $375, 50-825, 50

DEPARTMENT OF STATISTICS  
Gottfried E. Noether, Head

- **Fellowship (2)**  
  2000-2500  9  750*  5  Teaching, grading
- **Teaching Fellowship (4)**  
  3000-3400  9  750*  10  Teaching, grading

Applications due: 3/15/77  
Bachelor's by inst. 3239  
Bachelor's by dept. 1  
Master's by dept. 4

* Non-New England States: $1250

**Wesleyan University, Middletown 06457**

DEPARTMENT OF MATHEMATICS  
Anthony W. Hager, Chairman

- **Teaching Assistantship (13)**  
  2750-3050  9  10  Assisting research
- **Summer Support (13)**  
  415  3  10

Applications due: 3/15/77  
Bachelor's by inst. 454  
Bachelor's by dept. 18  
Master's by dept. 1

* In-state: $170.11 per quarter; out-of-state: $491.11 per quarter.
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<td>George B. Seligman, Chairman</td>
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<td>Full or partial support available for most students.</td>
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**DISTRICT OF COLUMBIA**

American University, Washington 20016

DEPARTMENT OF MATHEMATICS, STATISTICS AND COMPUTER SCIENCE

David Crosby, Chairman

*Applications due: 2/1/77*

| Fellowship (2) | 2800 | 9 |                  |                  |                |                | Bachelor's by dept. 21 |
| Teaching Assistantship (10) | 2800 | 9 |                  |                  |                |                | Master's by dept. 11 |
| Research Assistantship (1) | 2800 | 9 |                  |                  |                |                | Ph. D. (1973--1976 incl.) |
| Scholarship (2) | 9 |                  |                  |                  |                |                | A&M T 2, A & FA 1, S 6, AM 2. Total: 11 |

*Class hours.*

**WESLEYAN UNIVERSITY**

DEPARTMENT OF MATHEMATICS

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 96457
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--- FLORIDA ---

**Florida Institute of Technology, Melbourne 32901**

**Graduate Teaching Assistantships**

**FLORIDA INSTITUTE OF TECHNOLOGY**

Melbourne, Florida
Near Kennedy Space Center, Disney World and Beaches

**MASTER OF SCIENCE DEGREES IN APPLIED MATHEMATICS, COMPUTER SCIENCE AND OPERATIONS RESEARCH**

Graduate Teaching Assistantships include stipend and all tuition. Duties consist of teaching one or two elementary Mathematics or Computer Science courses. Five quarters normally required to complete degree. 48 quarter hours including thesis. 54 quarter hours if no thesis is taken.
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**university of south florida**

The Department of Mathematics at the University of South Florida offers individualized graduate programs leading to the M.A. and Ph.D. degrees in most areas of pure and applied mathematics and statistics. Interdisciplinary programs with the colleges of engineering and medicine are also available.

The Graduate Program has a low student/teacher ratio with a young and active research faculty. The numerous seminars contribute to a stimulating environment for graduate study.

Teaching Assistantships are available for 1977-78. Stipends range from $3200 to $3800.

For information and application forms, write to:

**Dr. M. N. Manougian, Chairman**
**Department of Mathematics**
**university of south florida**
**tampa, florida 33620**

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**Atlanta University, Atlanta 30314**

**DEPARTMENT OF MATHEMATICS**
Johnny L. Houston, Chairman

| Fellowship (3) | 3000–3500 | 10 | 10 | Master's by dept. | 5 |
| Teaching Assistantship (5) | 1800–2500 | 10 | 15 | Bachelor's by inst. | 304 |
| Research Assistantship (2) | 2500–3500 | 10 | 10 | Bachelor's by dept. | 12 |
| Scholarship (5) | 1600–2000 | 10 | 5 | Master's by dept. | 2 |

**Augusta College, Augusta 30904**

**DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE**
Jerry Sue Townsend, Chairman

| Teaching Assistantship (1) | 2400 | 9 | 12/qtr. hr. | 15 | Teaching |
| Fellowship (1) | 5000 | 12 |           |     |          |
| Teaching Assistantship (35) | 3300–3780 | 9 | 225, 50/qtr.* | 5 | Teaching or Research Science |

**Emory University, Atlanta 30322**

**DEPARTMENT OF MATHEMATICS**
Trevor Evans, Chairman

| Teaching Assistantship (14) | 3300 | 9 | 10 | Teaching or Research Science |

**Georgia Institute of Technology, Atlanta 30332**

**SCHOOL OF MATHEMATICS**
John D. Neff, Director

| Fellowship (1) | 5000 | 12 | 12/qtr. hr. | 15 | Teaching |
| Teaching Assistantship (35) | 3300–3780 | 9 | 225, 50/qtr.* | 5 | Teaching or Research Science |

* Depends on credit hours taken, figure listed is maximum including all fees.

**DEPARTMENT OF INFORMATION AND COMPUTER SCIENCE**
Vladimir Slamecka, Director

| Fellowship (3)* | 5000 | 12 | 12/qtr. hr. | 15 | Teaching |
| Teaching Assistantship (4) | 3000–3600 | 12 | 225, 50/qtr. | 13 | Teaching |
| Research Assistantship (6) | 3000–3600 | 12 | 225, 50/qtr. | 13 | Research |
| Burroughs (M.S.) (2) | 3000 | 12 | 614, 50/qtr. | 12 | Research |
| America (M.S.) (1) | 3600 | 12 | 614, 50/qtr. | 12 | Research |
| IBM (Ph. D.) (1) | 3600 | 12 | 614, 50/qtr. | 12 | Research |
| Tuition Waiver (3) | 1556 | 12 | 225, 50/qtr. | 12 | Research |
| Traineeship (4)** | 3900 | 12 | 12/qtr. hr. | 15 | Teaching |

* Georgia Institute of Technology President's Fellowship awarded to first year Ph. D. students and exceptional masters students.
** HEW Biomedical Information and Computer Science Traineeships. Restricted to U.S. citizens and normally reserved for Ph. D. students.

**Georgia State University, Atlanta 30303**

**DEPARTMENT OF MATHEMATICS**
Jan List Boa!, Chairman

| Research Assistantship (4) | 1800 | 9 | 11/qtr. hr. | 9-12 | Directed research |

**DEPARTMENT OF INFORMATION SYSTEMS**
William W. Cotterman, Chairman

| Teaching Assistantship (2) | 800/qtr. | 12/qtr. hr. | 20 | Bachelor's by inst. | 1929 |
| Research Assistantship (5) | 600/qtr. | 12/qtr. hr. | 20 | Bachelor's by dept. | 25 |

* Previous quarter.

**University of Georgia, Athens 30602**

**DEPARTMENT OF MATHEMATICS**
James C. Cantrell, Head

| Teaching Fellowship (6) | 2966–3176 | 9 | 222 | 12 | Teaching |
| Teaching Assistantship (18) | 2966–3176 | 9 | 222 | 12 | Teaching |


442
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<th>TYPE</th>
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<th>TUITION</th>
<th>SERVICE REQUIRED</th>
<th>DEGREES AWARDED</th>
<th>Academic year</th>
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<td>West Georgia College, Carrollton 30117</td>
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<td>C. R. Pittman, Chairman</td>
<td>Teaching Assistantship (2)</td>
<td>1500</td>
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<td>University of Hawaii, Honolulu 96822</td>
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<td>Adolf Mader, Chairman</td>
<td>Teaching Assistantship (12)</td>
<td>4512–5040</td>
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<td>Idaho State University, Pocatello 83201</td>
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<td>Thomas L. Williams, Acting Chairman</td>
<td>Fellowship (2)</td>
<td>3000</td>
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<td>University of Idaho, Moscow 83843</td>
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<td>Howard E. Campbell, Chairman</td>
<td>Teaching Assistantship (11)</td>
<td>3700–4200</td>
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<td>Research Assistantship (4)</td>
<td>2400</td>
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<td>Alphonso J. DiPietro, Chairman</td>
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<td>Albert D. Otto, Chairman</td>
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<td>280/mo.</td>
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<td>Richard Van de Veld, Chairman</td>
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<td>2300</td>
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<td>3–6</td>
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DEGREES AWARDED

Academic year

Bachelor's by inst. 6085
Bachelor's by dept. 20
Master's by dept. 7

Bachelor's by inst. 662
Bachelor's by dept. 4
Master's by dept. 3

Bachelor's by inst. 3160
Bachelor's by dept. 50
Master's by dept. 3

Bachelor's by inst. 1581
Bachelor's by dept. 4
Master's by dept. 2

Bachelor's by inst. 1250
Bachelor's by dept. 27
Master's by dept. 2

Bachelor's by inst. 1300
Bachelor's by dept. 50
Master's by dept. 13

Bachelor's by inst. 328
Bachelor's by dept. 70
Master's by dept. 8

Bachelor's by inst. 838
Bachelor's by dept. 31
Master's by dept. 2
Northern Illinois University, DeKalb 60115

DEPARTMENT OF MATHEMATICAL SCIENCES
Donald B. McAllister, Chairman

- Fellowship (2): 2700-3000, 9
- Teaching Assistantship (35/18)*: 2700, 9
- Research Assistantship (2): 2700-3000, 9
- Summer Teaching: 600
- Assistantship (12/6)*: 2

* Numbers to left — mathematics; to right — computer science.

Northwestern University, Evanston 60201

DEPARTMENT OF MATHEMATICS
Daniel Zelinsky, Chairman

- Teaching Fellowship (34): 3000, 9

PROGRAM IN APPLIED MATHEMATICS
E. Cinlar, Chairman

- Fellowship (4): 2925-3825, 9
- Teaching Assistantship (6): 2700-3285, 9
- Research Assistantship (7): 3900, 12
- Scholarship (3)*: 9

* Tuition only.

Roosevelt University, Chicago 60605

DEPARTMENT OF MATHEMATICAL SCIENCES
Jack Silber, Chairman

- Teaching Assistantship (1): 2000, 9
- Scholarship (2): 9
- Assistant to Staff (1): 900, 9

Southern Illinois University, Carbondale 62901

DEPARTMENT OF MATHEMATICS
Alphonse Baartmans, Chairman

- Fellowship (2): 3322-3553, 11
- Teaching Assistantship (17): 3042-3321, 9
- Graduate Assistantship (5): 3718-4059, 11

- Late applications will be accepted.
- ** $52-$80 for fees per semester.

APPLIED MATHEMATICS AT NORTHWESTERN UNIVERSITY


Financial assistance is available in the form of fellowships, research assistantships, and teaching assistantships. All of these include a full tuition waiver. Interested individuals should address further inquiries to:

Professor Erhan Cinlar
Department of Engineering Sciences and Applied Mathematics
Northwestern University
Evanston, Illinois 60201
Southern Illinois University - Edwardsville 62025

DEPARTMENT OF MATHEMATICAL STUDIES
H. K. Wilson, Chairman

Teaching Assistantship (20) 3060–3330 9
Research Assistantship (1) 2430–3150 9

Applications due: 5/1/77
Bachelor’s by inst. 1064
Bachelor’s by dept. 50
Master’s by dept. 13

University of Chicago, Chicago 60637

DEPARTMENT OF MATHEMATICS
Felix E. Browder, Chairman

Fellowship (15) 7080 9
Teaching Fellowship (15) 7080 9
Research Assistantship (10) 7080 9
Scholarship (5) 3630 9
Lecturer (20) 5200 9

Applications due: 2/1/77
Bachelor’s by inst. 536
Bachelor’s by dept. 1
Master’s by dept. 4

University of Illinois at Chicago Circle, Chicago 60680

DEPARTMENT OF MATHEMATICS
Philip Dwingler, Chairman

Fellowship (3) 2500–3600 9&12
Teaching Assistantship (72) 3620 9
Scholarship (7) 3620 9

* Fellowships: 2/1/77; Assistantships: 8/15/77.

University of Illinois at Urbana-Champaign, Urbana 61801

DEPARTMENT OF MATHEMATICS
Paul T. Bateman, Head

Fellowship (12) 3000–5100 12
Teaching Assistantship (155) 2100–4200 9

Applications due: 2/15/77
Bachelor’s by inst. 5903
Bachelor’s by dept. 47
Master’s by dept. 44

Western Illinois University, Macomb 61455

DEPARTMENT OF MATHEMATICS
Larry Morley, Acting Chairman

Teaching Assistantship (10) 2610 9

Applications due: 4/15/77
Bachelor’s by inst. 2700
Bachelor’s by dept. 48
Master’s by dept. 9

INDIANA

Ball State University, Muncie 47306

DEPARTMENT OF MATHEMATICAL SCIENCES
Duane E. Deal, Chairman

Teaching Fellowship (18) 2800 9
Computer Center (6) 2800 9

Applications due: 6/1/77
Bachelor’s by inst. 2655
Bachelor’s by dept. 60
Master’s by dept. 57

Indiana State University, Terre Haute 47809

DEPARTMENT OF MATHEMATICS
Vesper D. Moore, Chairman

Teaching Assistantship (6) 1800–2200 9
Research Assistantship (4) 1800–2200 9

Applications due: 4/1/77
Bachelor’s by inst. 1400
Bachelor’s by dept. 50
Master’s by dept. 25

445
Indiana University, Bloomington 47401

DEPARTMENT OF MATHEMATICS
Maynard Thompson, Chairman

Applications due: 2/1/77
Bachelor's by inst. 7234
Bachelor's by dept. 44
Master's by dept. 22
Total: 41

Teaching Fellowship (12) 4250-4550 10 * 7-10 Teaching, assisting, grading
Teaching Assistantship (92) 3600-3800 10 ** 15-20 Teaching, assisting, grading
Research Assistantship (1) 3600 10 * 15-20 Teaching
Summer Assistantship (74) 400-900 2 *** 7-15 Teaching
Summer Teaching Fellowship (15) 500-600 2 *** 5 Teaching

* Usually accompanied by an Assistantship, which gives a full fee remission, except for $85 for general expenses (Health Center, etc.).
** $85 for general costs (Health Center, etc.) only.
*** Usually accompanied by an assistantship, which gives a full fee remission, except for $35 for general expenses (Health Center, etc.).

DEPARTMENT OF COMPUTER SCIENCE
Franklin Prosser, Chairman

Applications due: *
Bachelor's by inst. 7234
Bachelor's by dept. 44
Master's by dept. 22
Total: 41

Fellowship (1) 3000 9 **
Teaching Assistantship (28) 2500-3000 10 15 Teaching
Research Assistantship (1) 4000 12 20 Research

* February 1977 for Fall; November 1977 for Spring.
** In-state: $31 per credit hour; out-of-state: $69 per credit hour.

Indiana University—Purdue University at Indianapolis 46205

DEPARTMENT OF MATHEMATICAL SCIENCES
M. C. Gemignani, Chairman

Research Assistantship (5) 3800-4200 10 20

Purdue University, West Lafayette 47907

DEPARTMENT OF MATHEMATICS
Leonard D. Berkovitz, Head

Applications due: *
Bachelor's by inst. 4630
Bachelor's by dept. 118
Master's by dept. 62

Fellowship (5) 3600-4200 12 60/sem. Teaching
Teaching Assistantship (120) 3500-4100** 9 60/sem. 6C Teaching
Research Assistantship (4) 3000 12 60/sem.
Black Fellowship (2) 3600-4200 12 60/sem.

* Fellowships: 2/1/77; Assistantships: 3/15/77.
** $200 increase is anticipated.

DEPARTMENT OF COMPUTER SCIENCE
S. D. Conte, Head

Applications due: 3/1/77
Bachelor's by inst. 4630
Bachelor's by dept. 118
Master's by dept. 62

Fellowship (2) 3500-4000 12 60 Teaching
Teaching Assistantship (12) 3700-4300 9 60 20 Teaching
Research Assistantship (8) 3000-3500 9 60 20 Research

DEPARTMENT OF INDUSTRIAL ENGINEERING
W. L. Meier, Jr., Head

Applications due: 3/15/77
Bachelor's by inst. 4630
Bachelor's by dept. 118
Master's by dept. 62

Fellowship (5) 3000-3600 12 60/sem. Teaching
Teaching Assistantship (25) 3500-4100 9 60/sem. 20 Teaching
Research Assistantship (50) 4200-5000 12 60/sem. 20 Research

Masters Programs:
Applied Mathematics, Computer Science

with the opportunity to participate at the Indianapolis Center for Advanced Research thru Research Assistantships in work involving important contemporary problems

Regular M. S. and M. A. T. Programs also available with some Teaching Assistantships

Apply:
Chairman, Department of Mathematical Sciences, IUPUI
1201 E. 38th Street
Indianapolis, IN 46205

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<th>TYPE</th>
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<td><strong>Drake University, Des Moines 50311</strong></td>
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<td><strong>University of Iowa, Iowa City 52242</strong></td>
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<td>Eugene W. Johnson, Chairman</td>
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<td>Robert V. Hogg, Chairman</td>
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<tr>
<td>Fellowship (1)</td>
<td>4000</td>
<td>12</td>
<td>780</td>
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<tr>
<td>Teaching Assistantship (15)</td>
<td>4400-5000</td>
<td>9</td>
<td>780</td>
<td>Research</td>
</tr>
<tr>
<td>Research Assistantship (3)</td>
<td>4400-4700</td>
<td>9</td>
<td>780</td>
<td>Research</td>
</tr>
<tr>
<td>Teaching-Research</td>
<td>Fellowship (2)</td>
<td>4300-5000</td>
<td>12</td>
<td></td>
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<tr>
<td>* Joint with Mathematics and Computer Science. ** 20 or 6 contact hours or free on fellowship year.</td>
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</tbody>
</table>
University of Northern Iowa, Cedar Falls 50613

DEPARTMENT OF MATHEMATICS
David Duncan, Head
Graduate Assistantship (3) 2000 9 10-15 General duties

Fort Hays Kansas State College, Hays 67601

DEPARTMENT OF MATHEMATICS
Elton Beougher, Chairman
Fellowship (1) 350 9 300 10
Teaching Assistantship (1) 2100 9 300 20

Kansas State College of Pittsburg, Pittsburg 66762

DEPARTMENT OF MATHEMATICS
Helen F. Kriegsman, Chairman
Teaching Assistantship (5) 2286 9 * 6c
* $10 per credit hour. $45. 25 privilege fee.

Kansas State University, Manhattan 66506

DEPARTMENT OF MATHEMATICS
John E. Maxfield, Head
Teaching Assistantship (20) 3285-4185 9 458 4c Teaching

DEPARTMENT OF COMPUTER SCIENCE
Paul S. Fisher, Head
Teaching Assistantship (15) 2340-4500 9 14/hr.
Research Assistantship (10) 2340-5625 9 14/hr.

DEPARTMENT OF STATISTICS
Arthur D. Dayton, Head
Teaching Assistantship (4) 3600-4005 9 14/cr. 6c Teaching
Research Assistantship (2) 4000-5500 12 14/cr. 20 Research
Grant Monies (4-5) 3600-4800 9-12 14/cr. 20 Research

University of Kansas, Lawrence 66045

DEPARTMENT OF MATHEMATICS
Russell N. Bradt, Chairman
Fellowship (1) 3800-4200 9 25/hr. * 5-6c Teaching
* Approximately 10 tuition scholarships will be awarded,

DEPARTMENT OF COMPUTER SCIENCE
Victor L. Wallace, Chairman
Fellowship (1) 3200 9
Teaching Assistantship (19) 3750 9 25/sem.hr. 20
Research Assistantship (5) 3750 9 25/sem.hr. 20

Wichita State University, Wichita 67208

DEPARTMENT OF MATHEMATICS
John J. Hutchinson, Chairman
Teaching Assistantship (12) 3300 9 19, 85/cr.hr. 5c

University of Kentucky, Lexington, Kentucky 40506

DEPARTMENT OF MATHEMATICS
Emery B. Lane, Chairman
Teaching Assistantship (6) 2200-2400 9 3-5c Teaching

Murray State University, Murray 42071

DEPARTMENT OF MATHEMATICS
Jack D. Wilson, Acting Chairman
Teaching Assistantship (4) 2400 9 15

— KENTUCKY —

Eastern Kentucky University, Richmond 40475

DEPARTMENT OF MATHEMATICS
Applications due: Open
Bachelor's by inst. 1542
Bachelor's by dept. 16
Master's by dept. 3

Murray State University, Murray 42071

DEPARTMENT OF MATHEMATICS
Jack D. Wilson, Acting Chairman
Teaching Assistantship (4) 2400 9 15

Bachelor's by inst. 1080
Bachelor's by dept. 16
Master's by dept. 1
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<th>Type of Financial Assistance</th>
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<th>Service Required</th>
<th>Degrees Awarded</th>
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<td>Fellowship (5)</td>
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<td>9</td>
<td>265/semester, 6C</td>
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<td>Teaching Assistantship (40)</td>
<td>4000-4200</td>
<td>9</td>
<td>265/semester</td>
<td>Bachelor's by dept. 13</td>
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<tr>
<td>Research Assistantship (2)</td>
<td>3100-4000</td>
<td>9</td>
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<td>Master's by dept. 5</td>
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</tbody>
</table>

- University of Kentucky, Lexington 40506

- Department of Mathematics
  - John Mack, Chairman
  - Fellowship (5): 2/1/77; Assistantships: 3/1/77.

- Department of Computer Science
  - Applications due: 3/15/77

- Department of Statistics
  - Applications due: 3/15/77

- Western Kentucky University, Bowling Green 42101

- Department of Mathematics and Computer Science
  - Robert C. Basker, Chairman

- University of Louisville, Louisville 40208

- Department of Mathematics
  - Applications due: 3/15/77

- University of Louisville, Louisville 40208

- Department of Mathematics
  - Roger H. Geeslin, Chairman
  - Teaching Assistantship (5): 2/1/77; Assistantships: 4/1/77.

- University of Louisville, Louisville 40208

- Department of Mathematics
  - Applications due: 3/15/77

- University of Louisville, Louisville 40208

- Department of Mathematics
  - L. I. Wade, Chairman
  - Teaching Assistantship (35): 2/1/77; Assistantships: 5/1/77.

- University of Louisville, Louisville 40208

- Department of Mathematics
  - Walter Rudd, Chairman
  - Teaching Assistantship (2): 2/1/77; Assistantships: 5/1/77.

- University of Louisville, Louisville 40208

- Department of Mathematics
  - L. I. Wade, Chairman
  - Teaching Assistantship (35): 2/1/77; Assistantships: 5/1/77.

- University of Louisville, Louisville 40208

- Department of Mathematics
  - Walter Rudd, Chairman
  - Teaching Assistantship (2): 2/1/77; Assistantships: 5/1/77.

--- LOUISIANA ---

- Louisiana State University, Baton Rouge 70803

- Department of Mathematics
  - L. I. Wade, Chairman
  - Teaching Assistantship (35): 2/1/77; Assistantships: 5/1/77.

- Louisiana State University, Baton Rouge 70803

- Department of Mathematics
  - Walter Rudd, Chairman
  - Teaching Assistantship (2): 2/1/77; Assistantships: 5/1/77.

--- MURRAY STATE UNIVERSITY ---

MURRAY STATE UNIVERSITY

Chairperson

Qualified mathematicians are invited to apply for the position of chairperson, Department of Mathematics, College of Environmental Sciences. Position will be available by July 1977. Candidates should submit three letters of reference and résumé of vita, education, professional experience, and publications. Apply before January 1, 1977 to:

J. D. Wilson, Chairman, Search Committee
Department of Mathematics
Murray State University
Murray, Kentucky 42071

Murray State University is an Affirmative Action/Equal Opportunity Employer.
<table>
<thead>
<tr>
<th>Type</th>
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<th>Tuition</th>
<th>Service Required</th>
<th>Degrees Awarded</th>
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<tbody>
<tr>
<td>Dept. of Mathematics, Ruston 71270</td>
<td>4600</td>
<td>9</td>
<td>5 teaching weeks</td>
<td>Bachelor's by inst. 1249</td>
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<tr>
<td>Dept. of Mathematical Sciences, Lake Charles 70601</td>
<td>2400</td>
<td>9</td>
<td>6 teaching weeks</td>
<td>Bachelor's by inst. 659</td>
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<tr>
<td>Dept. of Mathematics, Thibodaux 70301</td>
<td>2500</td>
<td>9</td>
<td>6 teaching weeks</td>
<td>Bachelor's by inst. 564</td>
</tr>
<tr>
<td>Dept. of Mathematics, Hammond 70401</td>
<td>3000</td>
<td>9</td>
<td>6 teaching weeks</td>
<td>Bachelor's by inst. 1207</td>
</tr>
<tr>
<td>Dept. of Mathematics, New Orleans 70118</td>
<td>3000-3200</td>
<td>8</td>
<td>3-4 teaching weeks</td>
<td>Bachelor's by inst. 721</td>
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<tr>
<td>Dept. of Mathematics, New Orleans 70122</td>
<td>3000-3300</td>
<td>9</td>
<td>50/sem., 6 teaching weeks</td>
<td>Bachelor's by inst. 1146</td>
</tr>
<tr>
<td>Dept. of Mathematics, Monroe 71201</td>
<td>3000</td>
<td>9</td>
<td>6 teaching weeks</td>
<td>Bachelor's by inst. 1476</td>
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<tr>
<td>Dept. of Mathematics, Hammond 70401</td>
<td>3000</td>
<td>12</td>
<td>1456 research weeks</td>
<td>Master's by dept. 2</td>
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<tr>
<td>Dept. of Mathematics, Hammond 70401</td>
<td>3000-4000</td>
<td>12</td>
<td>1456 research weeks</td>
<td>Master's by dept. 12</td>
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</tbody>
</table>

**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 Mechanical 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.
University of Southwestern Louisiana, Lafayette 70501

DEPARTMENT OF MATHEMATICS*
Duane Blumberg, Chairman

<table>
<thead>
<tr>
<th>TYPE</th>
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<th>DEGREES AWARDED</th>
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<td>Fellowship (2)</td>
<td>3000, 9</td>
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<td>Teaching</td>
<td>Bachelor's by inst. 1550</td>
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<tr>
<td>Teaching Assistantship (23)</td>
<td>2400-3000, 9</td>
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<td>6</td>
<td>Bachelor's by dept. 10</td>
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*Includes Department of Statistics.

University of Maine at Orono 04473

DEPARTMENT OF MATHEMATICS
John C. Mairhuber, Chairman

<table>
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<tr>
<th>TYPE</th>
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<td>Fellowship (2)</td>
<td>3240, 12</td>
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<td>20</td>
<td>Bachelor's by inst. 1564</td>
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<td>Teaching Assistantship (10)</td>
<td>3000, 9</td>
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<td>Teaching section, Lab supervision</td>
<td>Bachelor's by dept. 34</td>
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<td>Scholarship (2)</td>
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<td></td>
<td>9</td>
<td>Master's by dept. 3</td>
</tr>
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</table>

Applications due: 4/1/77

— MARYLAND —

Johns Hopkins University, Baltimore 21218

DEPARTMENT OF MATHEMATICS
J. H. Sampson, Chairman

<table>
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<th>TYPE</th>
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<td>Teaching Assistantship (16)</td>
<td>2700, 9</td>
<td>3500</td>
<td>4C</td>
<td>Master's by dept. 1</td>
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DEPARTMENT OF BIOSTATISTICS
Alan Ross, Chairman

<table>
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<tr>
<td>Scholarship (2)</td>
<td>3900, 12</td>
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<td>4C</td>
<td>Master's by dept. 5</td>
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DEPARTMENT OF MATHEMATICAL SCIENCES
Roger A. Horn, Chairman

<table>
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<th>DEGREES AWARDED</th>
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<tr>
<td>Teaching Fellowship (20)</td>
<td>Varies, 9</td>
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<td>6-8</td>
<td>Ph. D. (1973-1976 incl.) AM 1, Total: 30</td>
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</table>

Applications due: 2/1/77

University of Maryland, Baltimore County, Baltimore 21228

DEPARTMENT OF MATHEMATICS
Yen-Mow Lynn, Chairman

<table>
<thead>
<tr>
<th>TYPE</th>
<th>STIPEND</th>
<th>TUITION</th>
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<th>DEGREES AWARDED</th>
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<tr>
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<td>3180-4480, 9</td>
<td></td>
<td>15</td>
<td>Bachelor's by inst. 672</td>
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</tbody>
</table>

Applications due: 3/31/77

— UNIVERSITY OF MARYLAND BALTIMORE COUNTY —

Graduate Study in Applied Mathematics Leading to M.S. and Ph.D. Degrees


TEACHING ASSISTANTSHIPS: $3180—$4480 with Remission of Fees

APPLY TO:
Chairman, Graduate Committee
Department of Mathematics
UNIVERSITY OF MARYLAND BALTIMORE COUNTY
Baltimore, Maryland 21228
University of Maryland, College Park 20742

DEPARTMENT OF MATHEMATICS*

J. K. Goldhaber, Head

Applications due: 2/1/77

Fellowship (2) 4000 12 ** 20 Teaching, Ph.D. (1973-1976 incl.)
Teaching Assistantship (120) 3180-4480 9 *** 20 grading Research
Research Assistantship (2) 3930-4480 9

* Students in the Applied Math Program should apply for financial aid to the
Department of Mathematics.
** Resident: $470 (9 hrs.); Nonresident: $785 (9 hrs.).
*** Resident: $315 (6 hrs.); nonresident: $525 (6 hrs.).

DEPARTMENT OF COMPUTER SCIENCE

Jack Minker, Head

Applications due: 2/1/77

Teaching Assistantship (30) 3180-4480 10 15-20 Teaching, Ph.D. (1973-1976 incl.)
Research Assistantship (10) 3180-5376 10-12 * 20 grading Research

* Resident: $50 per credit hour; nonresident: $85 per credit hour. Tuition
is usually remitted.

The Department of Mathematics at the
University of Maryland Baltimore County

invites applications for one position (probably at the level of Assistant Professor) either in Control Systems Science or in Numerical Methods for Partial Differential Equations, starting September 1977. Candidates should have a Ph.D., demonstrated potential for research and aptitude for teaching; postdoctoral research experience is preferred. The department offers a B.S. degree program in Mathematics, and M.S. and Ph.D. degree programs in Applied Mathematics. Applications, accompanied by vitae and the names of at least three references, should be sent by January 15, 1977 to:

Prof. Y. M. Lynn, Chairman
Department of Mathematics
University of Maryland Baltimore County
Baltimore, Maryland 21228

UMBC is an Equal Opportunity/Affirmative Action Employer

UNIVERSITY OF MARYLAND, COLLEGE PARK

GRADUATE STUDIES IN APPLIED MATHEMATICS

The Interdisciplinary Applied Mathematics Program is sponsored by eleven departments including Mathematics, Physics and Astronomy, Computer Science, the Units of the College of Engineering, Economics, and the College of Business and Management. The program involves seventy-five faculty members, and at present about fifty graduate students are enrolled. The M.A. and Ph.D. degrees are offered. Courses of study are flexible and combine Mathematics with areas of application. Students are assigned individual study advisory committees. Teaching assistantships are available through the Department of Mathematics.

For Information Write

Director, Applied Mathematics Program
University of Maryland
College Park, Maryland 20742
<table>
<thead>
<tr>
<th>TYPE of financial assistance</th>
<th>DEGREES AWARDED</th>
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<td>Academic year 1975-1976</td>
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<td>9 or 12 months</td>
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<tr>
<td>if not included in stipend (dollars)</td>
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<tr>
<td>hours per week</td>
<td></td>
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<tr>
<td>type of service</td>
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**Massachusetts**

### Boston College, Chestnut Hill 02167

DEPARTMENT OF MATHEMATICS  
G. G. Blodeau, Chairman  
Applications due: 2/15/77  
Bachelor's by inst.  
Master's by dept.

- **Teaching Fellowship (10)**  
  2600-2800  
  9

### Boston University, Boston 02215

DEPARTMENT OF MATHEMATICS  
Robin E. Esch, Chairman  
Applications due: 2/1/77  
Bachelor's by inst.  
Master's by dept.

- **Teaching Fellowship (18)**  
  3100  
  9

### Brandeis University, Waltham 02154

DEPARTMENT OF MATHEMATICS  
Maurice Auslander, Chairman  
Applications due: 2/1/77  
Bachelor's by inst.  
Master's by dept.

- **Fellowship (12)**  
  4000  
  9

### Clark University, Worcester 01610

DEPARTMENT OF MATHEMATICS  
R. W. Kilmoyer, Jr., Chairman  
Applications due: 2/20/77  
Bachelor's by inst.  
Master's by dept.

- **Teaching Assistantship (5-6)**  
  2800-3200  
  9

### Harvard University, Cambridge 02138

DEPARTMENT OF MATHEMATICS  
Shlomo Sternberg, Chairman  
Applications due: 1/1/77  
Bachelor's by inst.  
Master's by dept.

- **Fellowship (12)**  
  4000  
  12

### Massachusetts Institute of Technology, Cambridge 02139

DEPARTMENT OF MATHEMATICS  
Kenneth Hoffman, Head  
Applications due: 1/14/77  
Bachelor's by inst.  
Master's by dept.

- **Fellowship (23)**  
  2925  
  9

- **Teaching Assistantship (47)**  
  4005  
  9

- **Research Assistantship (9)**  
  7470  
  9

*Scholarship*

### Northeastern University, Boston 02159

DEPARTMENT OF MATHEMATICS  
Maurice Gilmore, Chairman  
Applications due: 3/15/77  
Bachelor's by inst.  
Master's by dept.

- **Teaching Assistantship (50)**  
  3000-3300  
  9

*Scholarship*

---

* 1976-77 amounts.
** Dollar amounts not known at this time.
Tufts University, Medford 02155

DEPARTMENT OF MATHEMATICS
George F. Leger, Chairman

Teaching Assistantship (3) 2900–3300 9 3800 3 Teaching
Scholarship (3) 3800 9

Applications due: 3/15/77
Bachelor's by inst. 1123
Bachelor's by dept. 35
Master's by dept. 4
Ph.D. (1973–1976 incl.)
A & N 1. Total: 1

University of Massachusetts, Amherst 01002

DEPARTMENT OF MATHEMATICS AND STATISTICS
Jin-Chen Su, Acting Head

Fellowship (2) 2800 12
Teaching Assistantship (46) 3600–4000 9

Applications due: 2/15/77
Bachelor's by inst. 4287
Bachelor's by dept. 39
Master's by dept. 8
Ph.D. (1973–1976 incl.)
P 1, S 1, Other 2. Total: 15

DEPARTMENT OF COMPUTER AND INFORMATION SCIENCE
Robert Graham, Chairman

Fellowship (2) 3000 9
Teaching Assistantship (9) 3600 9
Research Assistantship (22) 3600 9

Applications due: 2/1/77
Bachelor's by inst. 4287
Master's by dept. 19
Ph.D. (1973–1976 incl.)
CS 3. Total: 3

University of Massachusetts at Boston 02116

DEPARTMENT OF MATHEMATICS
Taffee T. Tanimoto, Chairman

Teaching Assistantship (4) 3000–3600 9

Applications due: 5/15/77
Bachelor's by inst. 862
Bachelor's by dept. 32
Master's by dept. 5

— MICHIGAN —

Andrews University, Berrien Springs 49104

DEPARTMENT OF MATHEMATICAL SCIENCES
Harold T. Jones, Chairman

Teaching Assistantship (3) 2600–2900 9 1380 10 Teaching

Applications due: 3/15/77
Bachelor's by inst. 263
Bachelor's by dept. 5
Master's by dept. 1

UMASS/BOSTON

Department of Mathematics
Master of Arts in Mathematics

Graduate studies leading to the Master’s Degree in Mathematics. Courses in independent study are offered in algebra, analysis, topology, geometry, probability and applied mathematics. Classes are scheduled in the late afternoon and early evening. Part time students are welcome and efforts are made to schedule classes to accommodate working students. Qualified applicants may be eligible for financial aid in the form of a number of teaching assistantships with remission of tuition fees.

For information write:

Graduate Program in Mathematics
Department of Mathematics, College of Liberal Arts
University of Massachusetts at Boston
Harbor Campus
Boston, Massachusetts 02125
<table>
<thead>
<tr>
<th>TYPE</th>
<th>STIPEND TUITION SERVICE REQUIRED</th>
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<tbody>
<tr>
<td><strong>DEPARTMENT OF MATHEMATICS</strong></td>
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</tr>
<tr>
<td>Edward H. Whitmore, Chairman</td>
<td><strong>Central Michigan University, Mount Pleasant 48858</strong></td>
<td><strong>Bachelors by inst.</strong> 2491</td>
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<tr>
<td>Fellowship (25)</td>
<td>2000–2500</td>
<td><strong>Bachelors by dept.</strong> 77</td>
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<td>Teaching Assistantship (12)</td>
<td>3150–3650 9 29/sem. hr. 6C</td>
<td><strong>Masters by dept.</strong> 15</td>
</tr>
<tr>
<td><strong>Eastern Michigan University, Ypsilanti 48197</strong></td>
<td></td>
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<tr>
<td>James H. Northey, Head</td>
<td>Applications due: 3/1/77</td>
<td><strong>Bachelors by inst.</strong> 2524</td>
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<tr>
<td>Graduate Assistantship (0–4)</td>
<td>3000–3200* 9 ** 20 Varies</td>
<td><strong>Bachelors by dept.</strong> 29</td>
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<td>* As of 1976–1977; in-state $33 per hour; out-of-state: $80 per hour; $20 registration fee.</td>
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<td><strong>Masters by dept.</strong> 13</td>
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<tr>
<td><strong>Michigan State University, East Lansing 48824</strong></td>
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<tr>
<td>J. E. Adney, Chairman</td>
<td>Applications due: 3/1/77</td>
<td><strong>Bachelors by inst.</strong> 28</td>
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<td>Scholarship (2)</td>
<td>500 9 700 10 Research</td>
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</tr>
<tr>
<td>Summer (15)</td>
<td>705–760 3 80 10 Research</td>
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<tr>
<td><strong>DEPARTMENT OF STATISTICS AND PROBABILITY</strong></td>
<td>Applications due: 3/1/77</td>
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<td>V. Mandrekar, Chairman</td>
<td><strong>Oakland University, Rochester 48063</strong></td>
<td><strong>Bachelors by inst.</strong> 1120</td>
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<td>Teaching Assistantship (14)</td>
<td>4158–4630 9 * 15</td>
<td><strong>Bachelors by dept.</strong> 29</td>
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<tr>
<td>Statistical Consultant (1)</td>
<td>9 20 Varies</td>
<td><strong>Masters by dept.</strong> 6</td>
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<tr>
<td>* Residents: $22 per credit; nonresidents: $43 per credit.</td>
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<tr>
<td><strong>University of Detroit, Detroit 48221</strong></td>
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</tr>
<tr>
<td>John M. Dwyer, Chairman</td>
<td><strong>University of Michigan, Ann Arbor 48109</strong></td>
<td><strong>Bachelors by inst.</strong> 2671</td>
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<td>Teaching Fellowship (5)</td>
<td>2000–3000 9 6 Teaching</td>
<td><strong>Bachelors by dept.</strong> 75</td>
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<td>9 6 Grading papers</td>
<td><strong>Masters by dept.</strong> 35</td>
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<td><strong>University of Michigan, Ann Arbor 48109</strong></td>
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<td>600–1600 9 1272–3300 Grading papers</td>
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<td>* Approximately 10 of these fellowships will be combination appointments.</td>
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<td><strong>Primarily for students in Actuarial Science.</strong></td>
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<td>*** Primarily for students of certain minority groups.</td>
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<td># Undergraduate students are also used in this category (approximately 1/2).</td>
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455
Wayne State University, Detroit 48202

DEPARTMENT OF MATHEMATICS
Bertram J. Eisenstadt, Chairman

Fellowship (4) 3000 9 Teaching
Teaching Assistantship (35) 3200–5500 9 ** 6 Teaching
* Late applications considered if positions are still available.
** Up to 8 hours per quarter.

Applications due: 3/1/77*
Bachelor’s by inst. 3288
Bachelor’s by dept. 20
Master’s by dept. 15

Western Michigan University, Kalamazoo 49008

DEPARTMENT OF MATHEMATICS
A. Bruce Clarke, Chairman

Fellowship (6) 3000–4000 8 33.50 cr./hr. 8
Teaching Assistantship (20) 3600 8 33.50 cr./hr. 6 Teaching
Spring/Summer Assistantship (25) 800–900 2 33.50 cr./hr. 6 Teaching

Applications due: * 3/3.
Bachelor’s by inst. 4000
Bachelor’s by dept. 75
Master’s by dept. 15

Bemidji State University, Bemidji 56601

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
Gerald J. Smith, Chairman

Teaching Assistantship (2) 2500 9 15 qtr. hr. 8

Mankato State University, Mankato 56001

DEPARTMENT OF MATHEMATICS
V. Dean Turner, Chairman

Teaching Assistantship (2) 2500–3333 9 * 10–14 Teaching

Applications due: 4/15/77
Bachelor’s by inst. 1340
Bachelor’s by dept. 39
Master’s by dept. 5

University of Minnesota, Minneapolis 55455

DEPARTMENT OF MATHEMATICS
J.C.C. Nitsche, Head

Fellowship (8) 3000–3500 9 Teaching
Teaching Fellowship (4) 5213–6880 9 2\frac{1}{2} Teaching
Teaching Assistantship (92) 4226–4757 9 633 4\frac{1}{2} Teaching
Research Assistantship (2) 4109 9 633

Applications due: 2/15/77
Bachelor’s by inst. 5\times 72
Bachelor’s by dept. 55
Master’s by dept. 9

DEPARTMENT OF BIOMETRY
M. Kjelsberg, Director

Applications due: 4/15/77
Bachelor’s by dept. 5
Master’s by dept. 10

DEPARTMENT OF COMPUTER SCIENCE
J. Ben Rosen, Head

Applications due: 2/15/77
Bachelor’s by inst. 5\times 72
Bachelor’s by dept. 35
Master’s by dept. 20

DEGREES AWARDED

1975–1978
Bachelor’s by inst. 3288
Bachelor’s by dept. 20
Master’s by dept. 15

MATHMATICS 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

456
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— MISSOURI —

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*MONTANA*

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*Varies, maximum of $94 per quarter.*
University of Montana, Missoula 59801

DEPARTMENT OF MATHEMATICS
William R. Ballard, Chairman

Teaching Assistantship (20) 2800–3200 9 * 20 Teaching

*Resident: $84; nonresident: $108.

Applications due: 4/1/77

Ph.D., (1973–1976 incl.) A&NT 1, A&FA 1, Other 1. Total: 3

University of Nebraska, Lincoln 68588

DEPARTMENT OF MATHEMATICS AND STATISTICS
David Skoug, Chairman

Teaching Assistantship (45) 3500–4400 9 20/cr.hr. 4 Teaching

Applications due: 3/1/77

Bachelor's by inst. 3000
Bachelor's by dept. 55
Master's by dept. 17

University of Nebraska at Omaha 68101

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

Teaching Assistantship (4) 3010 9 * 6 Teaching

Applications due: 4/15/77

Bachelor's by inst. 1900
Bachelor's by dept. 20
Master's by dept. 4

* Residents: $180 per semester; nonresidents: $486 per semester.

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 59801
University of Nevada, Las Vegas 89154

DEPARTMENT OF MATHEMATICS
S. Verma, Chairman
Teaching Assistantship (5) 3200-3400 9
** 6 Teaching
** $2 per credit; Student Union fees.

University of Nevada, Reno 89507

DEPARTMENT OF MATHEMATICS
E. M. Beesley, Chairman
Teaching Assistantship (3) 3200-3600 9

- NEW HAMPSHIRE -

Dartmouth College, Hanover 03755

DEPARTMENT OF MATHEMATICS
Richard H. Crowell, Chairman
Teaching Fellowship (16) 4000 12
Research Assistantship (1) 4000 12

University of New Hampshire, Durham 03824

DEPARTMENT OF MATHEMATICS
M. E. Munroe, Chairman
Fellowship (1) 3750 12
Teaching Assistantship (10) 3300 9
Scholarship (3) Tuition 9

- NEW JERSEY -

Fairleigh Dickinson University, Madison 07940

DEPARTMENT OF MATHEMATICS AND PHYSICS
H. A. Elkholy, Chairman
Teaching Fellowship (3) 3000 9

Fairleigh Dickinson University, Teaneck 07666

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
Donald Bein, Chairperson
Teaching Fellowship (8) 3000-4000 9

Kean College of New Jersey, Union 07083

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
Stanley H. Lipson, Chairman
Math Laboratory Assistant (1) 3600 9

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.
Montclair State College, Upper Montclair 07043

DEPARTMENT OF MATHEMATICS
Robert Garfunkel, Chairman
Teaching Assistantship (3) 2500 9

Princeton University, Princeton 08540

DEPARTMENT OF MATHEMATICS
Robert C. Gunning, Chairman
Fellowship (30) 1700-5400 9-12
Teaching Assistantship (11)* 3400-4000 10
Research Assistantship (12)* 2800-3500 10

*Most assistants 1/2 teaching, 1/2 research.

DEPARTMENT OF STATISTICS
G. S. Watson, Chairman
Teaching Assistantship (1) 3400 9
Research Assistantship (3) 2800 9

Rutgers University, New Brunswick 08903

DEPARTMENT OF MATHEMATICS
Daniel Gorenstein, Chairman
Teaching Assistantship (40) 3969-4365 9
Research Assistantship (12) 3969-4365 9

DEPARTMENT OF STATISTICS
Arthur Cohen, Chairman
Fellowship (1-1/2) 2500-5000 9
Teaching Assistantship (5) 3969-4365 9
Research Assistantship (4) 3969-4365 9

$5,000 GRADUATE FELLOWSHIP IN STATISTICS
(No Duties)

Also teaching and research ASSISTANTSHIPS starting at $3,969 plus free tuition.
Outstanding Doctoral and Master’s Program in Mathematical Statistics, Probability, and Applied Statistics.
For applications & information:

DEPARTMENT OF STATISTICS
RUTGERS UNIVERSITY
THE STATE UNIVERSITY OF NEW JERSEY
New Brunswick, New Jersey 08903

University of New Hampshire
M. E. Munroe, Chairman
Department of Mathematics, Kingsbury Hall
Durham, N.H. 03824

Graduate Programs in Mathematics

The Department of Mathematical Sciences offers programs leading to the degrees of M.S. and Ph.D. in pure and applied mathematics. The department is best known as a research center in abelian groups; however, the research interests of the faculty are diverse and specialization is available in most areas. Broadly based and applicable programs are encouraged. The department cooperates with a number of other departments; e.g., Computer Science, Experimental Statistics, and Industrial Engineering, in offering interdisciplinary programs.

Conferences

New Mexico State University has hosted a Holiday Mathematics Symposium annually since 1964. Recent principal speakers include S. Eilenberg, I. Kaplansky, G. Whitehead, E. Bishop, R. Bott, J. Tate, H. Chernoff, and G.C. Rota. The principal speaker for 1976 is R. Wightman, mathematical physics.

An abelian group theory conference will be held at New Mexico State University in December of 1976.

Facilities

The Department of Mathematical Sciences is located in Walden Hall, a three-story building containing offices, classrooms, departmental reading room, lounges for faculty and students, terminals for the IBM 360/65 computer, and a self-paced learning center. Private offices are assigned to each graduate student. Dormitory rooms ($200 per semester, double occupancy) and a variety of married student housing ($124 per month) are available.

The Graduate Faculty

D.M. Arnold: abelian groups
R.J. Bagby: real and harmonic analysis
J.D. DePree, Head: complex and functional analysis
E.D. Gaughan: analysis
J.B. Giever: algebraic topology, applied mathematics
D. G. Johnson: rings of continuous functions, mathematics education
D.J. Johnson: approximation theory
W.H. Julian: applied and constructive analysis
J.E. Krist: functional analysis
R.A. Knoebel: algebra
W.M. Krueger: algebraic topology
A.H. Kruse: foundations
J. Loustaunau: functional analysis
B. MacKichan: partial differential equations
M. Mandelker: rings of continuous functions, constructive analysis
R. Mines: algebra, constructive mathematics
G.S. Rogers: probability, statistics
C.C. Sherman: algebraic K-theory
C.W. Swartz: functional analysis
J.D. Thomas: applied mathematics, numerical analysis
W. Torrez: probability
R.H. Traxler: statistics
I.E. Vance: mathematics education
C.L. Walker: abelian groups
E.A. Walker: abelian groups
F.D. Williams: algebraic topology
R.J. Wisner: algebra, number theory, mathematics education
J.D. Zund: mathematical physics, geometry

Visiting Faculty

T. Coffee: applied analysis
G. Garfinkel: algebra
R. Hunter: abelian groups
M.A. Jacroux: statistics
M. LeBorgne: abelian groups
W.E. Terry: topology

Financial Support

The Department of Mathematical Sciences awards 23 teaching assistantships annually. Current stipends for the academic year range from $3790 to $3990. Teaching assistants are required to pay tuition charges (approximately $200 per semester). Some support is available during the summer.

Environment

New Mexico State University lies in the valley of the Rio Grande, adjacent to Las Cruces, New Mexico (population 50,000). It is 45 miles north of the twin cities of El Paso, Texas, and Juarez, Mexico, which have a combined population of nearly one million. The climate in Las Cruces is sunny and dry with warm days and cool nights. Ski resorts, lakes, extensive national forests and wilderness areas are within three hours driving time. The 9,000 ft. Organ Mountains, which offer an opportunity for hiking and excellent rock-climbing, are 15 miles from the university.

More Information

For further information about graduate study at New Mexico State University, and an application for financial assistance, write:

Chairman
Dept. of Mathematical Sciences
New Mexico State University
Las Cruces, New Mexico 88003.
<table>
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<tr>
<th>UNIVERSITY</th>
<th>DEPARTMENT</th>
<th>TYPE</th>
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<th>TUITION</th>
<th>SERVICE REQUIRED</th>
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<td>Teaching Assistantship (14)</td>
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<td>City University of New York, Graduate School, New York</td>
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**City University of New York, Hunter College, New York 10021**

**DEPARTMENT OF MATHEMATICS**
Barry M. Cherkas, Chairman

- Teaching Assistantship (17) 3960-4620 9 75/cr. 6-7 Teaching
- Scholarship (1) 500-800
- Part-time Lecturer (2) 6350-8175 9 75/cr. 6-8 Teaching

Applications due: 2/20/77

- Bachelor's by inst. 1705
- Bachelor's by dept. 39
- Master's by dept. 10

**City University of New York, Queens College, Flushing 11367**

**DEPARTMENT OF MATHEMATICS**
Joseph Hershenov, Chairman

- Teaching Assistantship (4) 1980-6350 9 * 3-8 Teaching

* New York City resident: $75 per credit; Noncity resident: $95 per credit.

Applications due: 4/1/77

- Bachelor's by inst. 3861
- Bachelor's by dept. 104
- Master's by dept. 4

**Columbia University, New York 10027**

**DEPARTMENT OF MATHEMATICS**
Hyman Bass, Chairman

- Fellowship (38) 3600-4000 9 or 11 *

* Students are accepted as Ph. D. candidates only. All graduate students currently granted 4 years of support with tuition exemption. Students required to serve as teaching assistants for 2 out of the 4 years.

Applications due: 1/10/77

- Bachelor's by inst. 1280
- Bachelor's by dept. 24
- Master's by dept. *

**DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE**
Omar Wing, Chairman

- Fellowship (6) 7227 9
- Teaching Assistantship (11) 6410-6510 9 *

Applications due: 1/1/77

- Bachelor's by inst. 1280
- Bachelor's by dept. 33
- Master's by dept. 52
- Ph. D. (1973-1976 incl.) CS 8, Other 25, Total: 33

**DEPARTMENT OF MATHEMATICAL STATISTICS**
Howard Levene, Chairman

- Fellowship (12) 3000 9 10 Teaching
- Graduate Research Assistantship (4) 3000 9 27 Research

Applications due: 1/10/77

- Bachelor's by inst. 1280
- Bachelor's by dept. 4
- Master's by dept. 5
- Ph. D. (1973-1976 incl.) F 3, S 6, OR 2, Total: 11

**Columbia University, Teachers College, New York 10027**

**DEPARTMENT OF MATHEMATICAL EDUCATION**
Bruce R. Vogeli, Chairman

- Assistantship (2) 3000 9 6/crs. free 20

Applications due: *

- Master's by dept. 25
- Ph. D. (1973-1976 incl.) Other 10, Total: 10

---

**THE DEPARTMENT OF MATHEMATICS**

**CLARKSON COLLEGE OF TECHNOLOGY**

**Graduate Study**

With individual attention, with active research faculty in a rapidly developing department, in excellent environment. Present research topics include: Prediction of Oil and Mineral Resources, Algorithms and Stability of Nonlinear Partial Difference Equations, Finite Elements, Software for PDE, Nonlinear Waves and Solitons, the Plasma Heating Problem, Interacting Markov Processes, Statistical Mechanics, Models of Vision, Asynchronous Parallel Computation, Theoretical Aspects of Computing Systems, etc. A special scholarship with a stipend of $6,000 per year for three years will be awarded to an outstanding student. Other Assistantships and Fellowships are also available.

**Write to:** Graduate Committee
Department of Mathematics
Clarkson College of Technology
Potsdam, NY 13676

**Applications completed by February 1, 1977 will be given early consideration.**
Cornell University, Ithaca 14853

DEPARTMENT OF MATHEMATICS
Clifford J. Earle, Chairman

Fellowship (4) 2700-3500 9
Teaching Assistantship (44) 3200-3400 9
Research Assistantship (8) 2700-3500 9

Applications due: 2/1/77
Bachelor's by inst. 2966
Bachelor's by dept. 44
Master's by dept. 6
Ph. D. (1973-1976 incl.) 20
A&NT 7, C&T 6, L 6, A&FA 4, P 5, S 1. Total: 29

CENTER FOR APPLIED MATHEMATICS
L. E. Payne, Acting Director

Fellowship (8) 3000 9
Research Assistantship (2) 2800

Applications due: 2/1/77
Bachelor's by inst. 2966
Master's by dept. 6
Ph. D. (1973-1976 incl.) AM 13, Total: 13

DEPARTMENT OF COMPUTER SCIENCE
Gerard Salton, Chairman

Fellowship (4) 3400-4400 9
Teaching Fellowship (1) 3400-4400 9
Teaching Assistantship (24) 3100-3300 9
Research Assistantship (8) 3100-3300 9

Applications due: 2/1/77
Bachelor's by inst. 9
Bachelor's by dept. 9
Ph. D. (1973-1976 incl.) 4100, Total: 15

Fordham University, New York 10458

DEPARTMENT OF MATHEMATICS
Yuh-ching Chen, Chairman

Fellowship (1) 2400-3600 9
Teaching Fellowship (4) 3000-4000 9
Teaching Assistantship (7) 2400-3600 9
Scholarship (10) 9

Applications due: 2/1/77
Bachelor's by inst. 1579
Bachelor's by dept. 29
Master's by dept. 2

Hofstra University, Hempstead 11550

DEPARTMENT OF MATHEMATICS
E. G. Ostling, Chairman

Fellowship Possibility of some support 3 Tutoring
Teaching Assistantship (2-5) 800-1600 9,16 Teaching

5 weeks in summer.

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 Alphonse T. Vasquez, Executive Officer; Louis Auslander, Michel L. Balinski; Gilbert Baumslag; Isaac Chavel; Harvey Cohn; Eldon Dyer; Joan Dyer; Edgar A. Feldman; Alex Heller; Alan J. Hoffman; Richard E. Isaac; Stanley Kaplan; Linda Keen; Joseph Lewittes; Edwin E. Moise; Martin Moskowitz; Burton Randol; Harry E. Rauch; Theodore J. Rivlin; Joseph Roitberg; Raymond Smullyan; Michael Shub; H. Peyton Young.

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
<table>
<thead>
<tr>
<th>TYPE OF FINANCIAL ASSISTANCE</th>
<th>AMOUNT</th>
<th>9 OR 12 MONTHS</th>
<th>IF NOT INCLUDED IN STIPEND</th>
<th>HOURS PER WEEK</th>
<th>DEGREES AWARDED</th>
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<td><strong>Long Island University, C. W. Post College, Greenvale 11548</strong></td>
<td>Teaching Assistantship (4)</td>
<td>1500-2000</td>
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<td>Bachelor's by dept. 15</td>
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<td>Master's by dept. 8</td>
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<td><strong>New York University—Courant Institute of Mathematical Sciences, New York 10012</strong></td>
<td>Fellowship (4)</td>
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<td>Scholarship (8)</td>
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<td><strong>DEPARTMENT OF COMPUTER SCIENCE</strong></td>
<td>Teaching Assistantship (5)</td>
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<td>12 Tutoring</td>
<td>Bachelor's by inst. 904</td>
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<td>Jacob T. Schwartz, Chairman</td>
<td>Research Assistantship (20)</td>
<td>3600</td>
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<td>Master's by dept. 33</td>
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<td>Harry Hochstadt, Chairman</td>
<td>Research Assistantship (7)</td>
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<td>* Award based on need.</td>
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<td><strong>St. John's University, Jamaica 11439</strong></td>
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<td>Edward J. Miranda, Chairman</td>
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<td>Master's by dept. 14</td>
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<td><strong>State University College at Buffalo 14222</strong></td>
<td>Teaching Assistantship (4)</td>
<td>2750</td>
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<td>Teach 1 course</td>
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<td>William T. Bailey, Chairman</td>
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<td>Bachelor's by dept. 22</td>
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<td>Master's by dept. 10</td>
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<tr>
<td><strong>State University College at Cortland 13045</strong></td>
<td>Teaching Assistantship (1 or 2)</td>
<td>2500 + tuition</td>
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<td>Thomas M. O'Loughlin, Chairman</td>
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<td>Master's by dept. 10</td>
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</table>

**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
STATE UNIVERSITY OF NEW YORK AT ALBANY

SUNY at Albany offers graduate courses in pure and applied mathematics toward the M.A. and Ph.D. degrees. The Master's program includes options in statistics and in teaching. Classes are small, and many opportunities exist for individual work with faculty members. The faculty is relatively young, highly active in research, and is known for its scholarly contributions to mathematics. Faculty-student seminars on current research are held each semester. There is a varied program of visiting mathematicians for colloquia and symposia. The library holdings in mathematics are excellent and contain over 200 current subscriptions to mathematical journals. The department's teletype terminals access the University's UNIVAC 1110.

Studies leading to the Ph.D. are offered in the following fields: algebra, algebraic geometry, algebraic topology, commutative algebra, complex analysis, differential topology, ergodic theory, functional analysis, function algebras, geometry, global analysis, harmonic analysis, number theory, partial differential equations, probability, real analysis, several complex variables, statistics, stochastic processes, summability, transformation groups.


For information on financial assistance and application procedures write to:

Graduate Chairman
Department of Mathematics
SUNY AT ALBANY
Albany, New York 12222

(An Equal Opportunity Employer)
<table>
<thead>
<tr>
<th>TYPE</th>
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<td>(with number anticipated 1977–1978)</td>
<td>amount in dollars</td>
<td>9 or 12 months</td>
<td>in stipend (dollars)</td>
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**State University of New York at Binghamton 13901**

**DEPARTMENT OF MATHEMATICAL SCIENCES**
Louis F. McAuley, Chairman

- **Teaching Fellowship (12)**: 1000–3900, 9
- **Teaching Assistantship (24)**: 2300–3900, 9
- **Research Assistantship (2)**: 3600–3900, 12

Applications due: 3/1/77

- Bachelor's by inst. 1399
- Bachelor's by dept. 47
- Master's by dept. 23
- Ph.D. (1973–1976 incl.)

**DEGREES AWARDED**

- Bachelor's by inst. 1399
- Bachelor's by dept. 47
- Master's by dept. 23
- Ph.D. (1973–1976 incl.)

**State University of New York at Buffalo, Amherst 14226**

**DEPARTMENT OF MATHEMATICS**
Richard E. Vesley, Acting Chairman

- **Fellowship (3–4)**: 3000–4000, 9 or 12
- **Teaching Assistantship (43)**: 3000–3300, 9

Applications due: 3/15/77

- Bachelor's by inst. 3321
- Bachelor's by dept. 60
- Master's by dept. 16
- Ph.D. (1973–1976 incl.)

**DEPARTMENT OF COMPUTER SCIENCE**
Anthony Ralston, Chairman

- **Fellowship (2)**: 3000–4000, 12
- **Teaching Assistantship (8)**: 3350–3700, 9
- **Research Assistantship (6)**: 3350–3700, 9
- **Graduate Assistantship (8)**: 3300–3700, 9

Applications due: 2/15/77

- Bachelor's by inst. 3321
- Bachelor's by dept. 31
- Master's by dept. 10
- Ph.D. (1973–1976 incl.)

**STATISTICAL SCIENCE DIVISION**
Marvin Zelen, Acting Director

- **Fellowship (1)**: 3000–4000, 12
- **Teaching Assistantship (8)**: 2000–3900, 9

Applications due: 2/15/77

- Bachelor's by inst. 3321
- Bachelor's by dept. 4
- Master's by dept. 1
- Ph.D. (1973–1976 incl.)

**DEPARTMENT OF MATHEMATICS**

**STATE UNIVERSITY OF NEW YORK AT ALBANY**

Applications are invited for the position of Professor of Mathematics beginning with the fall of 1977. Candidates should have achieved a distinguished reputation in research work and would be expected to provide strong leadership in the intellectual and professional activities of the Department. This is a regular faculty position and the salary is open. Preference will be given to candidates in the fields of major strength in the Department, which include algebra and algebraic geometry, complex analysis, functional analysis, real analysis and topology. SUNY is an Equal Opportunity/Affirmative Action employer.

Please send vita, publications, names of reference and other information to:

Professor Thomas H. MacGregor, Chairman
Department of Mathematics
State University of New York at Albany
Albany, NY 12222

**STATE UNIVERSITY OF NEW YORK AT BUFFALO**

Graduate Assistantships are available in various amounts (this year from $3000 to $3300) with remission of tuition. Duties may include lecturing, conducting recitation sections or grading papers. Also, SUNY at Buffalo offers graduate fellowships at $3000 for a one year appointment, and $4000 per year for a three year appointment, plus waiver of tuition. Last year three of these fellowships were awarded to students in the Department of Mathematics. A number of summer teaching appointments are customarily offered.

SUNY at 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. For additional information and application forms, write to:

Director of Graduate Studies—Department of Mathematics
STATE UNIVERSITY OF NEW YORK AT BUFFALO
4246 Ridge Lea Road—Amherst, New York 14226

468
State University of New York at Stony Brook 11794

DEPARTMENT OF MATHEMATICS
Irwin Kra, Chairman

Fellowship (10) 3200-3900 9
Teaching Assistantship (45) 2000-3900 9

DEPARTMENT OF COMPUTER SCIENCE
Aaron Finerman, Chairman

Fellowship (1) 4000 9
Teaching Assistantship (30) 3200 9
Research Assistantship (8) 3200 9

DEPARTMENT OF APPLIED MATHEMATICS AND STATISTICS
R. P. Srivastav, Acting Chairman

Fellowship (1) 4000 9
Teaching Fellowship (4) 1600-3200 9 0-900 10-20
Research Assistantship (2) 1000-3200 9 0-900 10-20
Scholarship (8) 1000 9
Afro-American Institute Grant (1) 4500 9

* Fellowships: 1/1/77; Assistantships: 3/1/77.

Syracuse University, Syracuse 13210

DEPARTMENT OF MATHEMATICS
Erik Hemmingsee, Chairman

Fellowship (2) 4000 9
Teaching Assistantship (25) 3160-4000 9

THE STATE UNIVERSITY OF NEW YORK AT STONY BROOK
DEPARTMENT OF MATHEMATICS

invites applications for an Associate Professorship in Mathematics (normally with
tenure) in any of the following fields: algebraic geometry, topology, several complex
variables, differential equations.

Substantial achievements in research and strong teaching record required.

SUNY — Stony Brook is an equal opportunity employer.

Send resume and publication list by January 15, 1977. Have at least three letters of
recommendation sent to:

Professor I. Kra, Chairman — Department of Mathematics
State University of New York, Stony Brook, New York 11794

STATE UNIVERSITY OF NEW YORK AT BUFFALO

The Department of Mathematics seeks applications for George William Hill and Emmy Noether Research Instructorships. Applicants should be recent or prospective Ph.D.'s whose degrees will be completed by September 1. 1977. One Research Instructorship is in Applied Mathematics and one in Pure Mathematics, with each appointment being for two years. The twelve-month stipend, beginning September 1977, 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 three mathematicians to send letters of recommendation. Application forms are available upon request. No one holding academic rank at SUNY at Buffalo is eligible to apply. Due to severe budget restrictions, no instructorships were awarded for 1976-78. Those who applied for 1976-78 will be considered in this year's competition upon request; such request should be accompanied by additional data where appropriate. Applications and supporting letters should be sent to

Chairman, Department of Mathematics
SUNY at Buffalo, 4246 Ridge Lea Road, Amherst, New York 14226

so as to arrive by January 20, 1977. 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 SUNYAB shall be subject to discrimination on the basis of age, color, national origin, race, religion, or sex.
SCHOOL OF COMPUTER AND INFORMATION SCIENCE

Applications due: 3/1/77

Warren Semon, Dean

Fellowship (1) 4000 9
Teaching Assistantship (4) 3340 9
Research Assistantship (4) 5700 12

University of Rochester, Rochester 14627

DEPARTMENT OF MATHEMATICS

Applications due: 2/77

Charles E. Watts, Chairman

Fellowship (10) 1000 9
Teaching Fellowship (25) 1200-3800 9
Scholarship (10)

DEPARTMENT OF COMPUTER SCIENCE

Applications due: 3/1/77

Jerome A. Feldman, Chairman

Fellowship (18) 3200 9
Research Assistantship (18) 6975 9
Scholarship (18)

* This is a new department; has not awarded any degrees.

DEPARTMENT OF STATISTICS

Applications due: 2/15/77

W. J. Hall, Chairman

Teaching Assistantship (16) 2200-4000 9
Research Assistantship (2) 3400 9
Scholarship (2)

Yeshiva University, New York 10033

Applications due: 2/15/77

DEPARTMENT OF MATHEMATICS

Stanley Sawyer, Chairman

Teaching Fellowship (11) 2400-3600 9
Research Assistantship (2) 2400-3600 9

DEPARTMENT OF MATHEMATICS

N.J. Rose, Head

Teaching Assistantship (15-20) 3800-4500 9
Research Assistantship (2) 2200-4900 9
Scholarship (2)

East Carolina University, Greenville 27834

Applications due: 3/1/77

Tullio J. Pignani, Chairman

Teaching Fellowship (13) 2250 9
Computer and Office Institutional Research (4) 2250 9

North Carolina State University, Raleigh 27607

Applications due: 2/17/77

D. D. Mason, Head

Fellowship (9) 3000 12
Teaching Assistantship (15) 3100-4500 9
Research Assistantship (1) 3600-4500 12

* $843/yr. (in-state); $2,490/yr. (out-of-state); $951/yr. (special talent) tuition (out-of-state)

* For Fall appointments.

** See catalog.
### University of North Carolina, Chapel Hill 27514

<table>
<thead>
<tr>
<th>Type</th>
<th>Stipend</th>
<th>Tuition</th>
<th>Service Required</th>
<th>Degrees Awarded</th>
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<td>Applications due: 2/1/77</td>
<td>Bachelor's by inst.</td>
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<td>William W. Smith, Chairman</td>
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<td>Bachelor's by dept.</td>
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<td>Teaching Fellowship (2)</td>
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<td>237 3C</td>
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<td>Teaching Assistantship (25)</td>
<td>2900-3150 9</td>
<td>237 3-6C</td>
<td>Teaching</td>
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<td>Research Assistantship (2)*</td>
<td>2500 9</td>
<td>237 12</td>
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*Amount may be supplemented with partial teaching assistantship.

### DEPARTMENT OF BIOSTATISTICS

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<td>Research Assistantship (9)</td>
<td>5518-6922 12</td>
<td>474/sems. 20</td>
<td>Research</td>
<td>Other 23, Total: 23</td>
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* All fellowships are for continuing students.

### DEPARTMENT OF COMPUTER SCIENCE

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<td>Frederick P. Brooks, Jr., Chairman</td>
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<td>Bachelor's by inst.</td>
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<td>Teaching Assistantship (12)</td>
<td>3840 9</td>
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<td>Research Assistantship (14)</td>
<td>3840 9</td>
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### DEPARTMENT OF OPERATIONS RESEARCH

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<td>Jon W. Tolle, Chairman</td>
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<td>Master's by dept.</td>
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<td>Fellowship (4)</td>
<td>3000 9</td>
<td>450/yr. 0-10</td>
<td>Research</td>
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<td>Teaching Assistantship (7)</td>
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<td>450/yr. 3C</td>
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<td>3000-4000 9</td>
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* For Fellowships.

### DEPARTMENT OF STATISTICS

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<td>Gordon Simons, Chairman</td>
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<td>Fellowship (4)</td>
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<td>Teaching Assistantship (10)</td>
<td>3200-3300 9</td>
<td>325 9C</td>
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<td>Research Assistantship (17)</td>
<td>3200-3300 9</td>
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<td>Scholarship (1)</td>
<td>4000 9</td>
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<td>Research</td>
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### University of North Carolina, Charlotte 28223

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<th>Type</th>
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<td>J. F. Schell, Chairman</td>
<td>Applications due: 3/1/77*</td>
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<td>1750-3500 9</td>
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<td>Ph. D. (1973-1976 incl.)</td>
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* Late applications considered if funds are available.


### University of North Carolina at Greensboro 27412

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<td>E. E. Posey, Head</td>
<td>Applications due: 4/1/77</td>
<td>Bachelor's by inst.</td>
<td>1260</td>
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<td>Teaching Assistantship (20)</td>
<td>3200 9</td>
<td>350 6C</td>
<td>Research</td>
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### Wake Forest University, Winston-Salem 27109

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<td>Ivey C. Gentry, Chairman</td>
<td>Applications due: 3/1/77</td>
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<td>625</td>
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<td>Fellowship (4)</td>
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<td>2500</td>
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<td>5750-5950 9</td>
<td>2500</td>
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### NORTH DAKOTA

#### North Dakota State University, Fargo 58102

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<td>Robert F. Tidd, Chairman</td>
<td>Applications due: 3/1/77</td>
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<td>Teaching Assistantship (6)</td>
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#### University of North Dakota, Grand Forks 58201

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471
Bowling Green State University, Bowling Green 43403

DEPARTMENT OF MATHEMATICS
W. L. Terwilliger, Chairman

Fellowship (4) 3000 12
Teaching Fellowship (10) 4410 9
Teaching Assistantship (12) 3242 9
Research Assistantship (1) 4410 12

DEPARTMENT OF COMPUTER SCIENCE
David L. Fulton, Chairman

Teaching Assistantship (4) 3241 9
Research Assistantship (9) 3241 9

DEPARTMENT OF QUANTITATIVE ANALYSIS AND CONTROL
Charles Mott, Chairman

Teaching Assistantship (6) 1700-3400 9

* Late applications accepted if positions are available.

Case Western Reserve University, Cleveland 44106

DEPARTMENT OF MATHEMATICS AND STATISTICS
S. Zacks, Chairman

Fellowship (4) 4950 9
Teaching Fellowship (5) 5760-6250 9
Scholarship (2) 2250 9

DEPARTMENT OF BIOMETRY
H. B. Houser, Chairman

Fellowship (6) 3000-3600 9
Research Assistantship (2) 3000-3600 9

Cleveland State University, Cleveland 44115

DEPARTMENT OF MATHEMATICS
Robert R. Stoll, Chairman

Teaching Assistantship (5) 2000-2500 9

John Carroll University, University Heights 44118

DEPARTMENT OF MATHEMATICS
Leo J. Schneider, Chairman

Teaching Assistantship (7) 2600 9

* Late applications considered if positions are available.

Kent State University, Kent 44242

DEPARTMENT OF MATHEMATICS
Olaf P. Stackelberg, Chairman

Fellowship (2) 3200 9
Teaching Fellowship (10) 4000-4300 9
Teaching Assistantship (20) 3300-3800 9

* Late applications considered.

KENT STATE UNIVERSITY

The Department of Mathematics at Kent State University is now accepting applications for Teaching Assistantships and Teaching Fellowships for the 1977-78 academic year. Stipends range from $3,300 plus tuition waiver to $4,300 plus tuition waiver.

The Department offers programs leading to the M.A. or M.S. degrees with areas of concentration in pure mathematics, applied mathematics, and mathematics for secondary teachers. The Doctor of Philosophy degree is offered in several areas which include numerical analysis, approximation theory, classical analysis, functional analysis, ring theory, general topology, geometric topology, complex analysis.

Completed applications should be received by March 1, 1977. However, late applications will be considered. Please direct all inquiries to:

Coordinator of Graduate Studies
Department of Mathematics 1A
KENT STATE UNIVERSITY
Kent, Ohio 44242
Miami University, Oxford 45056

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

Teaching Assistantship (25) 2760-3060 9 10, 50/sem. hr. 18

Ohio State University, Columbus 43210

DEPARTMENT OF MATHEMATICS
Joseph Landin, Chairman

Teaching Fellowship (50) 3000-4005 9

Teaching Assistantship (25) 2760-3060 9 10, 50/sem. hr. 18

Ohio University, Athens 45701

DEPARTMENT OF MATHEMATICS
Donald O. Norris, Chairman

Teaching Assistantship (22) 2900-3500 9

University of Akron, Akron 44304

DEPARTMENT OF MATHEMATICS AND STATISTICS
William H. Beyer, Head

Teaching Assistantship 18 2750-3500 9 15-20 Teaching

University of Cincinnati, Cincinnati 45221

DEPARTMENT OF MATHEMATICAL SCIENCES
E. P. Merkes, Head

Teaching Assistantship (6) 2800-3200 9

Scholarship (20) 12

* Late applications considered if funds are available,

University of Cincinnati Medical School, Cincinnati 45367

DIVISION OF EPIDEMIOLOGY AND BIOSTATISTICS
C. Ralph Buncher, Head

Scholarship (8-1) 2250-3000 9 and 12 *

* 2 at $1440 per year; 3 at $1640 per year; 2 at $3000 per year.

University of Dayton, Dayton 45469

DEPARTMENT OF MATHEMATICS
John McCloskey, Chairman

Teaching Assistantship (6) 2800-3200 9

Research Assistantship (1) 2980-3200 9

University of Toledo, Toledo 43606

DEPARTMENT OF MATHEMATICS
Simmie S. Blakney, Chairman

Teaching Assistantship (16) 3000-4000 9

Applications due: 3/1/77
Bachelor's by inst. 3000
Bachelor's by dept. 60
Master's by dept. 19

Applications due: 3/15/77
Bachelor's by inst. 3000
Bachelor's by dept. 60
Master's by dept. 19

Applications due: *
Bachelor's by inst. 6418
Bachelor's by dept. 38
Master's by dept. 43

Applications due: 2/15/77
Bachelor's by inst. 6418
Bachelor's by dept. 103
Master's by dept. 64

Applications due: 2/15/77
Bachelor's by inst. 6418
Bachelor's by dept. 103
Master's by dept. 64

Applications due: 2/15/77
Bachelor's by inst. 6418
Bachelor's by dept. 103
Master's by dept. 64

Applications due: 3/15/77
Bachelor's by dept. 2929
Bachelor's by dept. 38
Master's by dept. 12

Applications due: 3/1/77
Bachelor's by inst. 3320
Bachelor's by dept. 44
Master's by dept. 9

Applications due: 3/15/77
Master's by dept. 1

Applications due: 3/1/77
Bachelor's by inst. 1141
Bachelor's by dept. 16
Master's by dept. 4

Applications due: 3/15/77
Bachelor's by dept. 5
Master's by dept. 3

Applications due: 3/15/77
Ph. D. (1973-1976 incl.)
Total: 26

Applications due: 2/1/77
Ph. D. (1973-1976 incl.)
CS 26. Total: 26

Applications due: 2/15/77
Ph. D. (1973-1976 incl.)
S 17. Total: 17

Applications due: 2/15/77
Bachelor's by inst. 6418
Bachelor's by dept. 5
Master's by dept. 5

Applications due: 2/15/77
Bachelor's by inst. 6418
Bachelor's by dept. 5
Master's by dept. 5

Applications due: 2/15/77
Bachelor's by inst. 2929
Bachelor's by dept. 22
Master's by dept. 3

Applications due: 3/1/77
Ph. D. (1973-1976 incl.)
A&NT 2, G&T 2, A&FA 1, AM 1. Total: 6

Applications due: 3/15/77
Master's by dept. 1

Applications due: 3/15/77
Other 1. Total: 1

Applications due: 3/1/77
Bachelor's by dept. 1141
Bachelor's by dept. 16
Master's by dept. 4

Applications due: 3/15/77
Ph. D. (1973-1976 incl.)
G&T 3, A&FA 1, Other 1. Total: 5
DEPARTMENT OF OPERATIONS ANALYSIS
Andre Corbeau, Chairman
Teaching Fellowship (2) 2700 9 300/term 20
Research Assistantship (9) 1900 9 300/term 20

Wright State University, Dayton 45431
DEPARTMENT OF MATHEMATICS
K. K. Gorowara, Chairman
Teaching Assistantship (15) 3000 9 7/hr. 16 **

* Late applications considered if vacancies exist.
** Teaching and/or working in supplemental instruction program.

— OKLAHOMA —

Oklahoma State University, Stillwater 74074
DEPARTMENT OF MATHEMATICS
John Jewett, Chairman
Teaching Assistantship (60) 3375-3600 ** 9 300 5-6 C Teaching

* Late applications considered if vacancies exist.
** Stipends probably will be higher for 1977.

Department of Statistics
J. Leroy Folks, Chairman
Teaching Assistantship (9) 3375-3600 9 20 Teaching
Research Assistantship (2) 4800 12 20 Research

University of Oklahoma, Norman 73019
DEPARTMENT OF MATHEMATICS
Gene Levy, Chairman
Teaching Assistantship (40) 3400-3800 9 20, 75/cr. hr. 6 C

— OREGON —

Oregon State University, Corvallis 97331
DEPARTMENT OF MATHEMATICS
J. R. Brown, Chairman
Teaching Assistantship (30) 3500-4000 9 174 4 C Teaching

DEPARTMENT OF COMPUTER SCIENCE
Robert A. Short, Chairman
Teaching Assistantship (7) 3447-3852 9 52 15 Teaching, assisting

DEPARTMENT OF STATISTICS
Lyle D. Calvin, Chairman
Fellowship (6) 3900 12 3
Teaching Assistantship (6) 3060-3600 9 12-15
Research Assistantship (6) 3200-3900 9 12-15

474
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<td>9 or 12 months</td>
<td>If not included in stipend (dollars)</td>
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<td>Portland State University, Portland 97207</td>
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<td>University of Oregon, Eugene 97403</td>
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<td>Kenneth A. Ross, Acting Head</td>
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--- PENNSYLVANIA ---

Bryn Mawr College, Bryn Mawr 19010

DEPARTMENT OF MATHEMATICS
Frederic Cunningham, Jr., Chairman

Fellowship (1) | 2300 | 9
Teaching Assistantship (1 or 2) | 1950–3100 | 1/3 or 1/2 time
Scholarship (1) | 1800 |

Bucknell University, Lewisburg 17837

DEPARTMENT OF MATHEMATICS
David S. Ray, Chairman

Fellowship (2) | 900 | 9
Teaching Assistantship (5) | 2500 | 12 | Teaching |
Scholarship (3) | |

Carnegie-Mellon University, Pittsburgh 15213

DEPARTMENT OF MATHEMATICS
George Fix, Chairman

Teaching Assistantship (15) | 2700* |
Research Assistantship (6) | 3000* |

* Plus $3725 in tuition.

DEPARTMENT OF COMPUTER SCIENCE
J. F. Traub, Chairman

Research Assistantship (55) | 7625 | 3725 |

DEPARTMENT OF STATISTICS
Joseph B. Kadane, Chairman

Teaching Assistantship (12) | 2700*–2925* |
Scholarship ** | 1125 + tuition |

* Plus tuition.
** In lieu of teaching assistantship, at option of student.

Clairion State College, Clarion 16214

DEPARTMENT OF MATHEMATICS
S. Gendler, Chairman

Teaching Assistantship (4) | 1350–2700 | 10 | Teaching and research |

Drexel University, Philadelphia 19104

DEPARTMENT OF MATHEMATICAL SCIENCES
Loren N. Argabright, Head

Teaching Assistantship (20) | 3000–4000 | 9 |
Research Assistantship (3) | 3000–4000 |

Duquesne University, Pittsburgh 15219

DEPARTMENT OF MATHEMATICS
Robert G. McDermot, Chairman

Teaching Assistantship (4) | 2000 | 9 | 6 or 7 | |

475
Pennsylvania State University, University Park 16802

Applications due: 2/15/77

Department of Mathematics

Donald C. Rung, Head

Fellowship (4) 4104 9
Teaching Assistantship (30) 3852-4104 9

Applications due: 7/1/77

Department of Computer Science

Patrick C. Fischer, Head

Fellowship (2) 3852-4104 9
Teaching Assistantship (30) 3636-4536 9
Research Assistantship (6) 3852-4536 9
Summer Support (15) 642-1512 3

Applications due: 1/1/77

Shippensburg State College, Shippensburg 17257

Department of Mathematics and Computer Science

James L. Sieber, Chairman

Teaching Assistantship (2) 2705-2840 9

Applications due: Open

Temple University, Philadelphia 19122

Department of Mathematics

Albert Schild, Chairman

Fellowship (2) 4000 12
Teaching Assistantship (17) 3000-3400 9
Research Assistantship (6) 3000-3400 9
Scholarship (2) 9

Applications due: 3/1/77

DREXEL UNIVERSITY

The Department of Mathematical Sciences offers graduate programs leading to the M.S. and Ph.D. degrees. The M.S. program is oriented toward training for industrial employment and features a cooperative education option whereby students may spend up to six months working in an industrial environment. 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 and fellowships which carry academic year stipends from $3000 to $4000 plus a waiver of tuition and fees. Applicants should request further information from:

Dr. Loren N. Argabright, Head
Department of Mathematical Sciences
DREXEL UNIVERSITY
Philadelphia, Pennsylvania 19104
TEMPLE UNIVERSITY, PHILADELPHIA


A limited number of assistantships and fellowships is available. For further information and applications for admission and financial support write to:

Dr. Albert Schild, Chairman
Department of Mathematics
TEMPLE UNIVERSITY
Philadelphia, Pennsylvania 19122

UNIVERSITY OF PENNSYLVANIA

GRADUATE PROGRAM IN STATISTICS

TEACHING FELLOWSHIPS: ........................................... 9 months, $3,300—$3,600 plus tuition
UNIVERSITY FELLOWSHIPS: ........................................... minimum, $2,400 plus tuition and fees
APPLICATIONS: ......................................................... For admission forms and further information, please write to:

Director, Wharton Doctoral Programs
201 Vance Hall
UNIVERSITY OF PENNSYLVANIA
Philadelphia, Pennsylvania 19174
Telephone: (215) 243-4877
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<td>W. E. Deskins, Chairman</td>
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<td>University of Pittsburgh, Pittsburgh 15260</td>
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<td>Bing K. Wong, Chairman</td>
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<td>Brown University, Providence 02912</td>
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<td>Jonathan Lubin, Chairman</td>
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<td>University of Rhode Island, Kingston 02881</td>
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<td>Gerasimos Ladas, Chairman</td>
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<td>20 Research</td>
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* Additional full-time summer compensation beginning at $1,800.
THE MATHEMATICAL SCIENCES AT CLEMSON UNIVERSITY*

A coordinated program in core mathematics, statistics, operations research, and computing leading to a master of science degree attractive to industry and the academic community. Further study leads to a broad based doctorate in the mathematical sciences with research supervision available in the above disciplines with pure and/or applied emphasis.

Assistantship support is available beginning at $4030/12 months for either 10 hours teaching load per academic year or 20 hours/week work in the Division of Information Systems Development.

For information and application forms write to:

John Kenelly, Head
Department of Mathematical Sciences
CLEMSON UNIVERSITY
Clemson, SC 29631

*Program funded in part by National Science Foundation

“Alternatives in Higher Education” Grant #SED75-16576

Equal Opportunity/Affirmative Action Employer
Memphis State University, Memphis 38152
DEPARTMENT OF MATHEMATICAL SCIENCES
Stanley Franklin, Chairman
Teaching Assistantship (40) 2600–3600 9
Applications due: 3/1/77
Bachelor’s by inst. 2877
Bachelor’s by dept. 14
Master’s by dept. 21

Middle Tennessee State University, Murfreesboro 37130
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
Harold S. Spraker, Chairman
Teaching Assistantship (6) 2290 9
Applications due: 4/15/77
Bachelor’s by inst. 1427
Bachelor’s by dept. 30
Master’s by dept. 11

Tennessee Technological University, Cookeville 38501
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
Ralph C. Boles, Chairman
Teaching Fellowship (7) 2250–2450 9
Applications due: 4/15/77
Bachelor’s by inst. 900
Bachelor’s by dept. 15
Master’s by dept. 5

University of Tennessee, Knoxville 37916
DEPARTMENT OF MATHEMATICS
Lida K. Barrett, Head
Fellowship (2) 2600–3500 9
Applications due: 3/1/77
Bachelor’s by inst. 3648
Bachelor’s by dept. 52
Master’s by dept. 20
Ph. D. (1973–1976 incl.)
A&NT 6, G&T 1, A&FA 7,
Other 1. Total: 10

DEPARTMENT OF COMPUTER SCIENCE
Robert Todd Gregory, Head
Fellowship (3) 2250 9
Applications due: 2/18/77
Bachelor’s by inst. 3648
Bachelor’s by dept. 7
Master’s by dept. 16
Teaching Assistantship (14) 3450 9
15/qtr. 20

Vanderbilt University, Nashville 37235
DEPARTMENT OF MATHEMATICS
Richard R. Goldberg, Chairman
Fellowship (1) 3900 9
Applications due: 2/1/77
Bachelor’s by inst. 1003
Bachelor’s by dept. 71
Master’s by dept. 3
Ph. D. (1973–1976 incl.)
A&NT 6, G&T 1, A&FA 4,
Other 4. Total: 15
Teaching Assistantship (20) 3366 9
138, 58 6 sem.
hrs.

— TEXAS —

Baylor University, Waco 76703
DEPARTMENT OF MATHEMATICAL SCIENCES
Howard Rolf, Head
Teaching Assistantship (3) 1800–2500 9
Applications due: 3/15/77
Bachelor’s by dept. 34
Master’s by dept. 4
Research Assistantship (1) 2100 9
10
Graduate Assistantship (3) 1500–1800 9
10

East Texas State University, Commerce 75428
DEPARTMENT OF MATHEMATICS
Dale R. Bedgood, Head
Teaching Assistantship (10) 3366 9
Applications due: 3/15/77
Bachelor’s by inst. 1367
Bachelor’s by dept. 47
Master’s by dept. 19
138, 58 6 sem.
hrs.

Lamar University, Beaumont 77710
DEPARTMENT OF MATHEMATICS
Richard A. Alo', Chairman
Teaching Assistantship (8) 3600 9
Applications due: 3/15/77
Bachelor’s by inst. 1174
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Master’s by dept. 8
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Applications due: 5/1/77
Bachelor’s by inst. 420
Bachelor’s by dept. 16
Master’s by dept. 8

Applications due: 4/1/77
Bachelor’s by inst. 874
Bachelor’s by dept. 20
Master’s by dept. 1

Applications due: 3/15/77
Bachelor’s by inst. 577
Bachelor’s by dept. 13
Master’s by dept. 3

Applications due: 2/15/77
Bachelor’s by inst. 494
Bachelor’s by dept. 28
Master’s by dept. 7

Applications due: 3/30/77
Bachelor’s by inst. 1528
Bachelor’s by dept. 19
Master’s by dept. 6

Applications due: 3/31/77
Bachelor’s by inst. 1528
Bachelor’s by dept. 10
Master’s by dept. 17

Ph.D. (1973-1976 incl.)
SI, OR 1, CS 1, AM 1.
Total: 9

Ph.D. (1973-1976 incl.)
CS 7.
Total: 7

Bachelor’s by inst. 1455
Bachelor’s by dept. 10
Master’s by dept. 3

Ph.D. (1973-1976 incl.)
SI, Total: 9

Bachelor’s by inst. 1528
Bachelor’s by dept. 12
Master’s by dept. 12

Ph.D. (1973-1976 incl.)
SI, Total: 9

Bachelor’s by inst. 1528
Bachelor’s by dept. 12
Master’s by dept. 12

Ph.D. (1973-1976 incl.)
SI, Total: 9

Bachelor’s by inst. 1528
Bachelor’s by dept. 12
Master’s by dept. 12

Ph.D. (1973-1976 incl.)
SI, Total: 9

Bachelor’s by inst. 1528
Bachelor’s by dept. 12
Master’s by dept. 12

Ph.D. (1973-1976 incl.)
SI, Total: 9

$1,066.50 per semester.

Bachelor’s by inst. 436
Bachelor’s by dept. 12
Master’s by dept. 2

Bachelor’s by inst. 1528
Bachelor’s by dept. 19
Master’s by dept. 6

Bachelor’s by inst. 1528
Bachelor’s by dept. 10
Master’s by dept. 17

Ph.D. (1973-1976 incl.)
SI, Total: 7

Ph.D. (1973-1976 incl.)
SI, Total: 8

Ph.D. (1973-1976 incl.)
SI, Total: 9
Southwest Texas State University, San Marcos 78666

DEPARTMENT OF MATHEMATICS
Robert Northcutt, Chairman

Teaching Assistantship (6) 4162 9 100/sem. 15

Stephen F. Austin State University, Nacogdoches 75961

DEPARTMENT OF MATHEMATICS AND STATISTICS
W.I. Layton, Head

Teaching Assistantship (17) 1500–3000 9 ** 16 or 6
* As early as possible.
** $130 per semester for 12 hour load.

Texas A & I University, Kingsville 78363

DEPARTMENT OF MATHEMATICS
Virgil C. Kowalk, Chairman

Teaching Assistantship (6) 3726 9 * 20 Teaching

Texas A & M University, College Station 77843

DEPARTMENT OF MATHEMATICS
G.R. Blakley, Head

Teaching Assistantship (60) 3825 9 50/sem. 20
* Some late applications considered.

INSTITUTE OF STATISTICS
H.O. Hartley, Director

Teaching Assistantship (20) 3600–4500 9* 200/sem. 15-20 Teaching
Research Assistantship (14) 3600–4500 9* 200/sem. 15-20 Research

* Continuation through summer normally available.

Texas Christian University, Fort Worth 76129

DEPARTMENT OF MATHEMATICS
Landon A. Colquitt, Chairman

Fellowship (5) 2400–3400 12
Teaching Assistantship (7) 1900–2900 9
Scholarship (1) 6
Computer Traineeship (3) 2800–3200 9

The Department of Mathematics of Texas A & M University offers programs leading to the M.S. and Ph.D. degrees. A student has great flexibility in choosing a program. Faculty members are active in research in many fields of pure and applied mathematics from algebra to partial differential equations. The library and computing facilities are quite good. Financial assistance is available.

For more information write:

Department of Mathematics
Graduate Student Committee
TEXAS A & M UNIVERSITY
College Station, Texas 77843
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<td><strong>University of Texas at Arlington 76010</strong></td>
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483
**Brigham Young University, Provo 84602**

DEPARTMENT OF MATHEMATICS

Kenneth L. Hillam, Chairman

1/4 Teaching Assistantship (24) 1700 9 540-705/sem. 10
1/2 Teaching Assistantship (12) 3800 9
Research Assistantship (5) 1800 9 540-705/sem. 10
Scholarship (22) 200-1000 9 540-705/sem.

Supplementary Awards (Tuition) (2) 540-705/sem.

Applications due: 3/1/77

Bachelor's by inst. 3996
Bachelor's by dept. 35

**DEPARTMENT OF STATISTICS**

H. Gill Hilton, Chairman

Teaching Assistantship (6) 3750-4250 10 600/sem. 20
Research Assistantship (3) 3750-4250 10 600/sem. 20
Scholarship (2) 300-800 10

Applications due: 3/30/77

Bachelor's by inst. 3996
Bachelor's by dept. 1
Master's by dept. 7

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

DEPARTMENT OF MATHEMATICS

C. E. Burgess, Chairman

Teaching Fellowship (30) 4500-4950 9 6-7 C
Teaching Assistantship (10) 4500-4950 9

Applications due: 2/1/77

Master's by dept. 6
Ph.D. (1973-1976 incl.)
A & M 1, G & T 3, A & F 5,
P 1, Other 4. Total: 14

**Utah State University, Logan 84322**

DEPARTMENT OF MATHEMATICS

Lawrence O. Cannon, Chairman

Teaching Assistantship (15) 1500-4500 9 510/yr. 3-10 C Teaching

Applications due: 3/15/77

Bachelor's by inst. 1411
Bachelor's by dept. 15
Master's by dept. 5

**University of Vermont, Burlington 05401**

DEPARTMENT OF MATHEMATICS

R. James Schoonmaker, Chairman

Fellowship (5) 1000 9
Teaching Fellowship (11) 3200 9 6 C Teaching

Applications due: 3/1/77

Bachelor's by inst. 1745
Bachelor's by dept. 35
Master's by dept. 6
Ph.D. (1973-1976 incl.)
A & F 1, Other 1. Total: 2

**Biostatistics Program**

David Sylwester, Director

Teaching Fellowship (2)* 1600-3200 9 10-20 Teaching
Research Assistantship (3) 4100 9 600 20 Research
NIH (1) 3900 12
Hourly Wages (2) 1500-4500 9-12 600-1615 10-25 Research

* Statistics Program teaching fellowships available to Biostatistics students.

Applications due: 3/1/77

Bachelor's by inst. 1745
Bachelor's by dept. 2
Master's by dept. 2

**DEPARTMENT OF COMPUTER SCIENCE**

Applications due: 3/1/77

Bachelor's by inst. 1745
Bachelor's by dept. 5
Master's by dept. 2

**DEPARTMENT OF STATISTICS**

Applications due: 3/1/77

Bachelor's by inst. 1745
Bachelor's by dept. 2
Master's by dept. 2

**George Mason University, Fairfax 22030**

DEPARTMENT OF MATHEMATICS

John A. Oppelt, Chairman

Teaching Assistantship (2) 3400-3800 9 * 6 Teaching


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**DEGREES AWARDED**

- 1876-1878
  - Bachelor's by inst.
  - Bachelor's by dept.
  - Master's by dept.
  - Bachelor's by inst.
  - Bachelor's by dept.
  - Master's by dept.
  - Master's by dept.

  - Bachelor's by inst.
  - Bachelor's by dept.
  - Master's by dept.
  - Bachelor's by inst.
  - Bachelor's by dept.
  - Master's by dept.
  - Other 4.

- 1977-1978
  - Bachelor's by inst.
  - Bachelor's by dept.
  - Master's by dept.

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**Academic Awarded**

- Brigham Young University, Provo 84602
- University of Utah, Salt Lake City 84112
- Utah State University, Logan 84322
- University of Vermont, Burlington 05401
- George Mason University, Fairfax 22030

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**Applications due:**

- Brigham Young University: 3/1/77
- University of Utah: 3/30/77
- University of Vermont: 3/1/77
- George Mason University: 6/77
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<td>Fellowship (6)</td>
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<td>Fellowship (1)</td>
<td>3000</td>
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<td>Reuben Farley, Acting Chairman</td>
<td>Teaching Assistantship (9)</td>
<td>3000-3900</td>
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<td>Virginia Commonwealth University, Medical College of Virginia, Richmond 23298</td>
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<td>S. James Kilpatrick, Jr., Chairman</td>
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<td>DEPARTMENT OF STATISTICS</td>
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<tr>
<td>Graduate Assistantship (8)</td>
<td>430/mo.</td>
<td>239/qtr.</td>
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<td>Bachelor's by inst.</td>
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<tr>
<td>Jesse C. Arnold, Head</td>
<td>475/mo.</td>
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<td>Master's by dept.</td>
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</table>

**WASHINGTON**

Central Washington State College, Ellensburg 98926

DEPARTMENT OF MATHEMATICS

Applications due: 2/15/77

Robert Y. Dean, Chairman

Teaching Assistantship (5) | 3222 | 9 | * | 5 | Bachelor's by inst. | 1344 |

* Residents: $189 per quarter; nonresidents: $473 per quarter.

Eastern Washington State College, Cheney 99004

DEPARTMENT OF MATHEMATICS

Applications due: 3/1/77

Donald R. Horner, Chairman

Teaching Assistantship (3 or 4) | 1066/qtr. | 239/qtr. | 20 | Bachelor's by inst. | 3034 |

* All figures are estimates. No definite figures are now available.

** Residents: $189 per quarter; nonresidents: $473 per quarter.

---

485
University of Washington, Seattle 98195

DEPARTMENT OF MATHEMATICS
Jack Segal, Chairman

Fellowship (1) varies 12
Teaching Assistantship (62) 4645-5230 9 624 20* Teaching
Research Assistantship (4) 4200-4700 9 624 Research

* 4 to 6 hours in class plus office hours and preparation time.

DEPARTMENT OF BIOSTATISTICS
Donovan J. Thompson, Chairman

Fellowship (15) 3900 12
Teaching Assistantship (5) 515/mo.-548/mo. 9-12 208-547 20 Teaching
Research Assistantship (10) 467/mo.-494/mo. 9-12 208-547 20 Research

Applications due: Open
Bachelor’s by inst. 5841
Master’s by dept. 13
Ph. D. (1973-1976 incl.)
A&FT 2, G&T 8, A&FA 7,
P 1, S 2, CS 1, AM 1, Other 2, Total: 24

University of Washington, Eau Claire 54701

DEPARTMENT OF MATHEMATICS
Lawrence Wahlstrom, Chairman

Fellowship (1) 500 9 1550/yr.
Graduate Assistantship (1) 3110 9 1550/yr., 20

Applications due: 2/15/77
Bachelor’s by inst. 512
Bachelor’s by dept. 13
Master’s by dept. 1
Ph. D. (1973-1976 incl.)
A&F 2, G&T 8, A&FA 7,
P 1, S 2, CS 1, AM 1, Other 2, Total: 24

University of Wisconsin, Madison 53706

DEPARTMENT OF MATHEMATICS
Peter E. Ney, Chairman

Fellowship (15) 3600-4862 9-12 959 Full graduate load
Teaching Assistantship (160) 4662-5382 9 959 17-20 Teaching
Research Assistantship (5) 4005-4096 9-12 959 20 Research

Applications due: 2/15/76
Bachelor’s by inst. 4897
Bachelor’s by dept. 67
Master’s by dept. 22
Ph. D. (1973-1976 incl.)
A&FT 18, G&T 8, L 8, A&FA 21, P 6, AM 5, Other 3, Total: 69
<table>
<thead>
<tr>
<th>DEPARTMENT OF COMPUTER SCIENCES</th>
<th>Applications due: 1/15/77</th>
<th>Bachelor's by inst. 4897</th>
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<tbody>
<tr>
<td>R. L. Venerzy, Chairman</td>
<td>4248  20  9  16</td>
<td>Bachelor's by dept. 27</td>
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<td>Fellowship (4)</td>
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<td>Master's by dept. 44</td>
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<td>1/2 Teaching Assistantship (42)</td>
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<td>3/4 Teaching Assistantship (12)</td>
<td>3816  20  9  16</td>
<td>Teaching</td>
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<td>Research Assistantship (11)</td>
<td>4005  20  9  21</td>
<td>Research</td>
</tr>
<tr>
<td>Mathematics Research Center (1)</td>
<td>3900  20  9  21</td>
<td>Research</td>
</tr>
<tr>
<td>DEPARTMENT OF STATISTICS</td>
<td>Applications due: 1/15/77</td>
<td>Bachelor's by inst. 4897</td>
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<tr>
<td>J. Van Ryzln, Chairperson</td>
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<td>Research Assistantship (12)</td>
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<td>Project Assistantship (3)</td>
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<td>University of Wisconsin-Milwaukee 53201</td>
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--- WYOMING ---

University of Wyoming, Laramie 82071

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<td>Joseph Martin, Chairman</td>
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<td>Bachelor's by dept. 9</td>
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<td>Teaching Assistantship (18)</td>
<td>3600-4800  9</td>
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--- CANADA ---

Acadia University, Wolfville, Nova Scotia

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<th>Bachelor's by inst. 329</th>
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<tr>
<td>M. A. Taylor, Acting Head</td>
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<tr>
<td>Fellowship *</td>
<td>2800  65  9  6</td>
<td>Master's by dept. 1</td>
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*Number anticipated not known at this time.

Carleton University, Ottawa, Ontario

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<th>Bachelor's by inst. 1167</th>
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<td>D. A. Dawson, Chairman</td>
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<td>Bachelor's by dept. 26</td>
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<td>Fellowship (10)</td>
<td>1000-2100 12</td>
<td>Master's by dept. 10</td>
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<tr>
<td>Teaching Assistantship (30)</td>
<td>500-1800 9</td>
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<td>500-1000 12</td>
<td>A&amp;NT 3, G&amp;T 1, A&amp;FA 1, AM 1, Total: 6</td>
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<td>Scholarship (10)</td>
<td>500-1800 12</td>
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* Full-time; Qualifying year M.S. $700, September to April. M.S. first year and Ph. D. first and second year $322, 50; September to December. M.S. after first year and Ph. D. after second year $175, 65, September to December. Part-time: $136, 50 per full registered course, September to April.

Concordia University, Montreal, Quebec

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<th>Bachelor's by inst. 754</th>
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<td>Maurice Cohen, Chairman</td>
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<td>4000-5000 12 450</td>
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<td>Research Assistantship (5)</td>
<td>3500-5000 12 450</td>
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<td>Scholarship (6)</td>
<td>1000-5000 12</td>
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487
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<tr>
<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>9 or 12 months</td>
<td>If not included in stipend (dollars)</td>
<td>hours per week</td>
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<td>Dalhousie University, Halifax, Nova Scotia</td>
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<td>P. Stewart, Chairman</td>
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<td>Clement F. Kent, Chairman</td>
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<tr>
<td>McGill University, Montreal, Quebec</td>
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<tr>
<td>E. Rosenthall, Chairman</td>
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<td>C. R. Riehm, Chairman</td>
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<tr>
<td>N. R. Reilly, Chairman</td>
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<td>M. S. Klankin, Head</td>
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* Fees reduce to $20 per semester in second year of graduate studies.
** Fees reduce to $1,680 Research Assistantship.
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488
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<th>University of British Columbia, Vancouver, British Columbia</th>
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<td>Write for information to</td>
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<tr>
<td>Dean of Graduate School</td>
</tr>
<tr>
<td>University of Guelph</td>
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<tr>
<td>GUELPH, Ontario, Canada</td>
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Department of Mathematics and Statistics
University of Guelph, Guelph, Ontario

Degree: M.Sc.
Assistantships: Teaching, Research
Write for information to

Dean of Graduate School
University of Guelph
GUELPH, Ontario, Canada
University of Ottawa, Ottawa, Ontario

DEPARTMENT OF MATHEMATICS

W. D. Burgess, Chairman

Teaching Fellowship (6) 3000-5040 12 * 2-4 Teaching Ph. D. (1973-1976 incl.)
Research Fellowship (10) 3000 12 * 2 Teaching A&FA 1, Total: 1

University of Regina, Regina, Saskatchewan

DEPARTMENT OF MATHEMATICS

I. McDonald, Head Bachelor's by dept.

Teaching Fellowship (2) 4500 9 475 5 Teaching Ph. D. (1973-1976 incl.)

University of Saskatchewan, Saskatoon, Saskatchewan

DEPARTMENT OF MATHEMATICS

G. H. M. Thomas, Head

Teaching Fellowship (10) 3500 8* 520 3 Teaching or equivalent Ph. D. (1973-1976 incl.)

* Plus up to $1500 if research is continued throughout the summer months.

University of Toronto, Toronto, Ontario

DEPARTMENT OF MATHEMATICS

F. V. Atkinson, Chairman

Research Assistantship (15) 6000-6500 12 650 4 Tutoring Bachelor's by dept.
Scholarship (40) 5500-7500 12 650 A&NT 3, G&T 8, L 3, Ph. D. (1973-1976 incl.)

DEPARTMENT OF COMPUTER SCIENCE

J. N. P. Hume, Chairman

Fellowship (Open) (2) 3000-3400 12 * 4 Tutoring, marking Bachelor's by dept.
Teaching Assistantship (45) 1080-1240 9 * 4 Tutoring, marking, Research Ph. D. (1973-1976 incl.)
Research Assistantship (18) 4000-4500 12 * Bachelor's by dept.
Scholarship (8) 3750-5520 12 *

* Tuition not included, tuition fees for Canadian residents are currently $650. Fees for nonresidents have not yet been established.

University of Waterloo, Waterloo, Ontario

FACULTY OF MATHEMATICS

W. F. Forbes, Head

Teaching Assistantship (200) 825-3500 12 5-10 Teaching Bachelor's by dept.
Research Assistantship (125) 600-5500 12 5-10 Research Ph. D. (1973-1976 incl.)
Scholarship (41) 500-7250 12
Other (25) 500-5500 12

University of Western Ontario, London, Ontario

DEPARTMENT OF MATHEMATICS

D. Borwein, Head

Teaching Assistantship (21) 600-3200 8 ** 3-7 Tutoring, marking, proctoring Bachelor's by dept.
Research Assistantship (5) 400-1600 8 ** Bachelor's by dept.

* Students may hold both teaching assistantships and research assistantships concurrently.
** $2250 for students on visas; $880 for others.

University of Windsor, Windsor, Ontario

DEPARTMENT OF MATHEMATICS

F. W. Lemire, Chairman

Teaching Assistantship (24) 2700 9 320/term 10 Bachelor's by dept.
Research Assistantship (5) varies Ph. D. (1973-1976 incl.)

York University, Toronto, Ontario

DEPARTMENT OF MATHEMATICS

Martin E. Muldoon, Chairman

Teaching Assistantship (25) 2700 9 615 10 Teaching Bachelor's by dept.
Scholarship (2) 1350-2500 Bachelor's by dept.
II. Stipends for Study and Travel

GRADUATE SUPPORT

American Association for the Advancement of Science. Summer Employment. Supports up to eighteen outstanding graduate students in the social and natural sciences as intern reporters, researchers and production assistants in a variety of media for the summer of 1977. (Exceptional junior, senior 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 salaries paid by the AAAS. Interested students should have a faculty member submit a letter of nomination to the AAAS. In addition, the applicant should send a curriculum vitae, a list of three references, including office and home phone numbers and addresses, and should send a letter describing: (a) reasons for wanting to participate, (b) professional interests in the sciences, (c) beliefs about improving journalism by infusing it with natural and social science expertise, and, (d) how a scientist might benefit from exposure to the mass media. Also state preferences, if any, for print or broadcast journalism and, as participating news media will be scattered geographically, preferences for region will also be followed where practicable. The deadline for receipt of applications is 1 February 1977. Send application and letter of nomination to: Coordinator, Mass Media Intern Program, American Association for the Advancement of Science, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036.

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.

Battelle Memorial Institute, Pacific Northwest Laboratory. Mathematics efforts in support of a number of on-going Energy Research and Development Administration 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 NORCUS Program. Appointments also available at other ERDA contractor sites. Inquiries should be directed to NORCUS Office, Joint Center for Graduate Study, 100 Sprout Road, Richland, Washington 99352.

California State Scholarship and Loan Commission Graduate Fellowship Program. Offers fellowships, to cover tuition and fees only, for residents of California who attend certain graduate or professional schools located in California. Write to Director, California State Scholarship and Loan Commission, Fellowship Section, 1410 5th Street, Sacramento, California 95814.

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 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 Ms. Esther M. Rauch, Manager, Professional Staffing, Center for Naval Analyses, 1401 Wilson Boulevard, Arlington, Virginia 22209.

Danforth Foundation. Danforth Graduate Fellowships. One hundred fellowships 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 the undergraduate liberal arts curriculum, and for pursuit of the Ph.D. or other appropriate terminal degree at an accredited university of the Fellow's choice in the U.S. Fellowships are for one year, with the possibility of renewal for a total of four years, and include tuition and fees plus a modest living stipend. Twenty-five fellowships will be awarded to minority group applicants. Open to college seniors (who must be nominated by campus Liaison Officers), and to postbaccalaureate applicants. Deadline for completed applications is December 13, 1976. Detailed information is available from the Director, Danforth Graduate Fellowships, 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 write to the Department of Engineering, Columbia University; or the Director of Graduate Studies, Aerospace and Mechanical Sciences, Princeton University. Those interested in elasticity, fluid mechanics and thermodynamics in the engineering field, can write for information from 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. Tenable at the Department of Applied Science, University of California, Davis/Livermore; California Institute of Technology; Carnegie-Mellon University; Massachusetts Institute of Technology; Rensselaer Polytechnic Institute; Stanford University; Vanderbilt University; Polytechnic Institute of the City College of New York; University of Rochester; and the Courant Institute of Mathematical Sciences of New York University. Application deadline is November 1. Applicants should contact the Office of the Graduate Dean at their institutions, or write directly to the Hertz Foundation, 1281 Westwood Boulevard, Los Angeles, California 90024.

Federal Financial Aid Programs. Fields unrestricted. Students must be enrolled at least half-time in a participating postsecondary institution. The National Direct Student Loan (NDSL) and the College Work-Study (CWS) Programs are administered through the Financial Aid Officer at the student's institution, to whom applications must be made. The Guaranteed Student Loan Program enables the student to borrow directly from a bank or other participating lender. Information and application forms are available from schools, lenders, State Guarantee Agencies and from the Director, Office of Guaranteed Student Loans (OGSL) in Regional Offices of the U.S. Office of Education.

The Ford Foundation. Graduate Fellowships for Mexican Americans, Native Americans, and Puerto Ricans. Applicants must be U.S. citizens who have completed at least one year of graduate study, who plan a career in higher education, and plan to earn the doctoral degree in a U.S. graduate school. Write to Graduate Fellowships for Mexican Americans and Native Americans, Educational Testing Service, Box 200, Berkeley, California 94704, or to Graduate Fellowships for Puerto Ricans, Educational Testing Service, Box 2822, Princeton, New Jersey 08540.

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.

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 Scientific Education Office, Hughes Aircraft Company, World Way P.O. Box 90515, Los Angeles, California, 90009.

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 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, Box 1484, University, Alabama 35486.

National Direct Student Loan Program. See Federal Financial Aid Programs.

The National Fellowships Fund. Graduate Fellowships for Black Americans. Limited to black Americans who wish to study full-time for the doctoral degree and intend to enter into academic careers in the U.S. Write to The National Fellowships Fund, Suite 484, 795 Peachtree Street, N.E., Atlanta, Georgia 30308.

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 December 1, 1976. Further information and application
materials may be obtained from the Fellowship Office, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

National Science Foundation. (LOC). Local Course Improvement. Proposals are sought which request modest support for imaginative undergraduate science teaching projects. They are accepted only from U.S. two-year and four-year colleges and universities on behalf of their science faculties. Closing date is November 5, 1976. Inquiries should be addressed to: Division of Science, Education Resources Improvement, Directorate for Science Education, National Science Foundation, Washington, D.C. 20550.

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

National Science Foundation. National Needs Graduate Traineeship Program. Approximately fifteen three-year awards will be made to doctorate-granting institutions. Graduate students who are U.S. Citizens will be appointed by these institutions for stipends of $300 monthly. Deadline for institutions to apply is January 3, 1977. They should request the "Guide for Preparation of Proposals National Needs Graduate Traineeships" from: National Needs Graduate Traineeship Program, Division of Science Manpower Improvement, National Science Foundation, Washington, D.C. 20550.

New York State Regents War Service Scholarships for Veterans. Awards to New York State residents for part- or full-time study. Candidates must have served in regular, active status in the Armed Forces for some period between October 1, 1961 and March 29, 1973. Basis of awards is a competitive examination given each summer. Write to The Regents Examination and Scholarship Center, The New York State Education Department, Albany, New York 12234.

Oak Ridge National Laboratory, Associated Universities. Opportunity for graduate students working toward master's and doctoral degrees in scientific fields, including mathematics, to use ERDA installations at Oak Ridge National Laboratory, Puerto Rico Center for Energy and Environmental Research, Savannah River Laboratory, and Savannah River Ecology Laboratory for thesis research. An annual stipend payment of $3,600 is applicable for all levels. U.S. citizenship is required. About twenty-five appointments are awarded annually. Inquiries may be addressed to University Programs Office, Oak Ridge Associated University, P.O. Box 117, Oak Ridge, Tennessee 37830.

Office of Naval Research. Supports research over a wide range of areas including mathematics, operations research, statistics and probability, information systems, fluid dynamics and structural mechanics. 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, engineering physics, journalism and physics. Candidates are selected by appropriate officials in designated continental U.S. universities. 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 Educational Aid Committee, RCA Corporation, Cherry Hill, New Jersey 08101.

Sigma Delta Epsilon, Graduate Women in Science, Inc. Eloise Gerry Fellowships ($1,500 to $3,000) and Sigma Delta Epsilon Grant-in-Aid Fellowships ($750) are available to women who hold a degree from a recognized institution of higher learning and give evidence of outstanding ability and promise in scientific research. Applicants for both awards are required to submit a description of the research project, but the stipend may be applied to either research or course work, provided the latter is relevant to the research program. Appointments will be made irrespective of race, nationality, creed, or marital status. Application forms and further information can be obtained from Dr. Evelyn Murrill, Chairwoman SDE Fellowships Committee, Physical Sciences Division, Midwest Research Institute, 425 Volker Boulevard, Kansas City, Missouri 64110 and Dr. Bunny Clark, Chairwoman Eloise Gerry Fellowships Committee, 2501 Highland View Drive, Powell, Ohio 43065. Applications and credentials must be submitted by December 1, 1976 for the Gerry Fellowships and by February 1, 1977 for the SDE Grants-in-Aid Fellowships. Awards will be announced by May 1, 1977.

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 upon completion of which the award of the degree is anticipated. Offered annually in the history of mathematics, usually for a period of twelve months, but never for less than six months. $5,000 stipend, plus research expense allowance. The proposed project must be approved in advance by appointee's advisor, conducted within Smithsonian facilities, and must be related to research and interests of the Institution. Deadline for application is January 15th yearly for the following academic year. Further information and application forms may be obtained from the Office of Academic Studies, Smithsonian Institution, Washington, D.C. 20560.

University of Massachusetts. Sabbatical Lectureships. Available in the Department of Mathematics and Statistics, these lectureships are open to faculty members of four-year colleges, or universities without a Ph.D. program in mathematics, who wish to spend their sabbatical leaves at the University.

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of Massachusetts. Lecturers must have a master's degree in mathematics, but not a Ph.D.; will be required to teach one course per semester and will be expected to enroll in two courses and one seminar. Stipends of $4,000 are available; tuition will be waived. For further information, write to Professor J. C. Su, Acting Head, Department of Mathematics and Statistics, University of Massachusetts, Amherst, Massachusetts 01002.

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 $4,000, and past recipients may apply for renewed grants. Applications must be filed by January 1, 1977. 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, Building 410, Bolling AFB, Washington, D.C. 20332.

Air Force Systems Command. Postdoctoral and Senior Postdoctoral Research Associateships. Awards made in several fields, including mathematics. Tenable at several laboratories in the United States. Annual stipend for these appointments is $15,000 for the recent recipient of the doctorate with an adjustment made for the senior candidate. More details regarding this program may be obtained from the Associateship Office, JH 606, National Research Council, 2101 Constitution Avenue N.W., Washington, D.C. 20418. Deadline for submission of applications is January 15, 1977. Inquiries cannot be processed after January 10, 1977.

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 1977-1978 are to be approximately $10,500 each; application deadline for 1977-1978 awards is January 31, 1977. For further information and application forms write to Dr. Gordon L. Walker, 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.

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: James C. T. Pool, Associate Director, Applied Mathematics Division, Argonne National Laboratory, Argonne, Illinois 60439.

Army Research Office. Research grants and contracts for research in mathematics, information and computer sciences, electronics, engineering, and physical geosciences and biological sciences. Write to Technical Director, U. S. Army Research Office, P. O. Box 12211, Research Triangle Park, North Carolina 27709.

Australian Institute of Nuclear Science and Engineering. Research Fellowships. Fellowships are intended for scientists and engineers who have qualifications equivalent to the Ph. D. and are at a relatively early stage of an independent research career. Stipends are in the range of $11,000 to $15,000 per year (Australian currency), and the institute may contribute to travel costs to and from Australia.
A research project within the field of nuclear science and engineering of interest to the institute must be proposed in the nomination after agreement between the candidate and the nominating organization. Further information can be obtained from Executive Office, Australian Institute of Nuclear Science and Engineering, Private Mall Bag, Post Office, Sutherland N.S.W. 2232, Australia. Candidates must be nominated by an Australian university or the Australian Atomic Energy Commission. Closing dates are February 28 and August 31 each year, and all nominations received after one closing date will be considered together after the next closing date.


Benjamin Peirce Lectureships, Harvard University. Rank of Assistant Professor. The appointments are for three years with a starting salary of $12,700 (for the nine-month academic year) and annual increments of $500. This salary 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, Department of Mathematics, Harvard University, 1 Oxford Street, Cambridge, Massachusetts 02138. Applications must be filed by January 7, 1977. Harvard is an Equal Employment/Affirmative Action Employer.

Brookhaven National Laboratory, operated by Associated Universities, Inc., under contract with the U.S. Energy Research and Development Administration, 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 terms of one or two 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: Dr. R. B. Marr, Chairman, Applied Mathematics Department, Brookhaven National Laboratory, Upton, Long Island, New York 11973.

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 $14,750, 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 not later than January 3 on forms obtained from the Department, 2-173, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139. M.I.T. is an Equal Opportunity Employer.

Cottrell Research Grants. Awarded to help faculty members in the early years of their professional careers at degree-granting institutions conduct basic research of importance in the physical sciences and engineering. Support is normally given for items of direct expense to help initiate research. Although grants are usually made on a one-year basis, consideration may be given in certain circumstances to reapplication for additional support. Further information may be obtained from Research Corporation, Cottrell Research Grant Program, 405 Lexington Avenue, New York, New York 10017.

Courant Institute. Instructorships in Mathematics. Open to mathematicians with 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 $13,500. In addition, the Courant Institute may be able to offer support for research in residence during two summer months. Inquiries or requests for application forms should be addressed to the Committee on Instructorships, 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, 1977. N.Y. U. is an Equal Opportunity 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 1977--1978 must be submitted before January 1, 1977. Inquiries should be addressed to the Visiting Membership Committee, Courant Institute of Mathematical Sciences, New York University, 251 Mercer Street, New York, New York 10012. N.Y.U. is an Equal Opportunity Employer.

Department of State, Agency for International Development. Research grants for research projects and analytical studies on development problems and emphasizing food production, nutrition, health,
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. James R. Hoath, Policy Determination and Analysis, Bureau for Program and Policy Coordination, Agency for International Development, Department of State, Washington, D.C. 20523.

Energy Research and Development Administration. Supports research in the mathematical and computer sciences at universities and other institutions. Submit proposals to the Office of University Programs, Energy Research and Development Administration, Washington, D.C. 20545.

E. R. Hedrick Assistant Professorships in Mathematics, Department of Mathematics, University of California, Los Angeles, will make two or three appointments for the year 1977-1978. 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 $17,100, 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, 1977. UCLA is an Equal Opportunity Employer.

Feltman Research Laboratory. Dover, New Jersey. Postdoctoral and Senior Postdoctoral Research Associateships, open to U.S. citizens only. Awards made in several fields, including mathematics. Annual stipend for these appointments is $15,000 for the recent recipient of the doctorate with an adjustment made for the senior candidate. More details regarding this program and application materials may be obtained from the Associateship Office, JH 606, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418. Deadline for submission of applications is January 15, 1977. Inquiries cannot be processed after January 10, 1977.

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. Application blanks may be obtained from the Administrative Officer, Office of the 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, at the beginning of their careers, an opportunity to pursue and broaden their scholarship while in residence at the Research Center. A candidate will be expected to have not more than five years professional experience between receipt of a doctorate and commencement of the fellowship. The duration of each fellowship will be eleven months. Generally the stipend will be in the range of $19,000-$23,000, depending on qualifications. Completed applications should be received by January 15, 1977. At most two fellowships will be awarded. Notification will be made by March 15, 1977. Write to Director, Mathematical Sciences Department, IBM Thomas J. Watson Research Center, P. O. Box 218, Yorktown Heights, New York 10598.

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 1977-1978. 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 Office of the 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, 1977.

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 members of minority groups are welcome. Appointments are for two years at a salary of at least $14,000 for the academic year. Each recipient of a Gibbs Instructorship will be given an allowance of up to $250 toward the actual expense of moving household possessions to the New Haven area. 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 Chairman, Department of Mathematics, Yale University, Box 2155 Yale Station, New Haven, Connecticut 06520. Preference will be given to applications received before February 1977.

Jacob David Tamarkin Instructorships. Offered by Brown University to promising mathematicians. Appointments are for three years, with a salary of $11,000 for the academic year. Additional summer support can be arranged. Teaching load is usually light and consists of courses of more than six credits per semester. 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 15, 1977. 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. Applicant should be at least 30 years of age (exceptions are made) and engaged in scientific research. No academic degree is required, but the fellowships are on the advanced postdoctoral level. U.S. 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. Nominations are made by the Committee of Selection. Application deadline: October 1. Approximately 300 awards are made, averaging approximately $14,000 in 1976. For more information write to 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 non-routine nature. The academic-year stipend of $12,000 is supplemented by a 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).

Langley Research Center. 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 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 appointments. Inquiries should be addressed to Dr. James M. Ortega, Director, ICASE, Mailstop 132C, NASA-Langley Research Center, Hampton, Virginia 2365.

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.

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 Recruiting Department, 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; annual salary is $22,500. For additional information write to R. Lynn Wilson, Recruiting Supervisor, Division C, Los Alamos Scientific Laboratory, P.O. Box 1663, Los Alamos, New Mexico 87545.

L. E. Dickson Instructorships in Mathematics. Intended for men or women completing the doctorate in Mathematics during 1976–1977. Appointment is for two years with an annual salary of $15,500; instruction averaging four hours a week; supplementary summer salary can usually be arranged. Application deadline is January 1, 1977. Further information may be obtained from the Chairman, Department of Mathematics, University of Chicago, Chicago, Illinois 60637.

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. Postdoctoral and Senior Postdoctoral Resident Research Associateships. Open to individuals at the postdoctoral level who have the Ph.D., Sc. D. degree, or its training equivalent, or who have completed the requirements for one of these degrees. Open to U.S. citizens and to foreign nationals. Tenable at Ames Research Center, Moffett Field, California; Goddard Space Flight Center, Greenbelt, Maryland; Goddard Institute for Space Studies, New York City; Dryden Flight Research Center, Edwards, California; Jet Propulsion Laboratory, Pasadena, California; Langley Research Center, Hampton, Virginia; Lewis Research Center, Cleveland, Ohio; Johnson Space Center, Houston, Texas; Marshall Space Flight Center, Huntsville, Alabama; and

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 Office of University Affairs, Code PY, National Aeronautics and Space Administration, Washington, D.C. 20546.

National Bureau of Standards. Postdoctoral Research Associateships, open to U.S. citizens only. Awards are made in several fields, including mathematics. Tenable in the Gaithersburg, Maryland area and Boulder, Colorado. Annual stipend for these appointments is not less than $15,000. More details regarding this program may be obtained from the Associateship Office, JH 606, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418. Deadline for submission of applications is January 15, 1977. No materials will be distributed after January 10, 1977.

National Research Council. Research Associateship Programs. These programs afford qualified scientists and engineers opportunities for postdoctoral research on problems of their own choice in a variety of scientific disciplines and fields of specialization. The programs are conducted on behalf of and in cooperation with certain Federal organizations with laboratories at more than eighty geographic locations in the United States. Applications for these competitive awards will be received by the National Research Council until January 15, 1977. Appointments will be made in April for tenure to begin on or before July 1, 1977. Stipends, which are subject to income tax, will vary according to the type of appointment, but will not be less than $15,000. Further information and application materials can be obtained from the Associateship Office, JH 606-P, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

National Science Foundation. 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 provides for study and research at any appropriate U.S. or foreign institution. Deadline for filing applications is December 6, 1976. 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, 1977, should be in the hands of the Foundation six months prior to the desired starting date of such support, but not later than November 1, 1976. 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. 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 contact: Computer Science Section, Division of Mathematical and Computer Sciences, National Science Foundation, 1800 G Street, N.W., Washington, D.C. 20550.

National Science Foundation. Science Faculty Professional Development Program. Training opportunities for from three–twelve month tenures in academic or nonacademic organizations for teachers of science, mathematics, or engineering in universities, colleges, or junior and community colleges. Approximately 150 awards will be made to faculty who are citizens or nationals of the United States, have at least a baccalaureate, have had five 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 January 7, 1977. Application materials can be obtained from the Faculty–Oriented Programs Group, Division of Science Manpower 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 15, 1976. Awards will be announced during April 1977. For more information, write to the Office of International Programs, National Science Foundation, Washington, D.C. 20550.
Naval Research Laboratory. Postdoctoral Research Associateships, open to U. S. citizens only. Awards are made in several fields, including mathematics. Annual stipend for these appointments is $15,000. Applications must be postmarked not later than January 15, 1977. More details regarding this program may be obtained from the Associateship Office, JH 606, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

Naval Surface Weapons Center. Postdoctoral Research Associateships, open to U. S. citizens only. Awards are made in several fields, including mathematics. Tenable in Silver Spring, Maryland. Annual stipend for these appointments is not less than $15,000. More details regarding this program may be obtained from the Associateship Office, JH 606, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418. Deadline for submission of applications is January 15, 1977. No application material will be distributed after January 10, 1977.

Office of Naval Research. Supports research over a wide range of areas including mathematics, operations research, statistics and probability, information systems, fluid dynamics and structural mechanics. 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.

Sandia Laboratories. The Sandia Laboratories operated by Western Electric under contract with the U. S. Energy Research and Development Administration (ERDA) offer research opportunities in numerical mathematics, applied mathematics and mathematical systems analysis. Areas of special interest are numerical treatment of differential equations, special functions, statistics and applied combinatorics. A limited number of postdoctoral appointments are available for one year, renewable for a second year. There are also occasional openings for university faculty appointments in the summer. Interested U.S. citizens should apply to Dr. Gustavus J. Simmons, Manager, Applied Mathematics Department – 5120, Sandia Laboratories, Albuquerque, New Mexico 87115.

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, generally limited to those having received the degree within five years of commencing tenure at the Smithsonian and in all cases limited to 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 twelve months, but never for less than six months. $10,000 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 Academic Studies, Smithsonian, Washington, D.C. 20560.

Social Science Research Council. Citizenship: permanent residents of Canada or the United States. Training beyond that required for the Ph.D. degree, usually in a discipline different from that in which the degree was earned. Purpose is to improve quality of research in applicant's own discipline. Write to Social Science Research Council, Fellowships and Grants, 605 Third Avenue, New York, New York 10016.

State University of New York at Buffalo. The Department of Mathematics seeks applications for George William Hill and Emmy Noether Research Instructorships. Applicants should be Ph.D.’s whose degrees will be completed by September 1, 1977. One Research Instructorship is in Applied Mathematics and one in Pure Mathematics, with each appointment being for two years. The twelve-month stipend, beginning September 1977, 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 three mathematicians to send letters of recommendation. Application forms are available upon request. No one holding academic rank at SUNY at Buffalo is eligible to apply. Due to severe budget restrictions, no instructorships were awarded for 1976–1978. Those who applied for 1976–1978 will be considered in this year’s competition upon request; such request should be accompanied by additional data where appropriate. Applications and supporting letters should be sent to the Chairman, Department of Mathematics, SUNY at Buffalo, 4246 Ridge Lea Road, Amherst, New York 14226, so as to arrive by January 20, 1977. 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 SUNYAB shall be subject to discrimination on the basis of age, color, national origin, race, religion, or sex.
T. H. Hildebrandt Research Assistant Professorships. Designed to provide mathematicians with favorable circumstances for the development of their research talents. Preference given to those having their Ph.D. less than two years. Several appointments are 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 $14,000 for academic year 1977-1978 with good possibility of additional income during the summer. Appointment is for two years and implies consideration for regular faculty appointment thereafter. Applicants should submit completed application form and request at least three letters of recommendation. Letters should contain comments on applicant's mathematical promise, teaching ability, and personality. First preference will be given to applications completed, and supported by three or more letters, prior to January 15. Appointments will be announced early in February. Applications should be made to Professor J. G. Wendel, Associate Chairman, Department of Mathematics, The University of Michigan, Ann Arbor, Michigan 48109. Affirmative Action Employer.

U. S. Army Natick Laboratories. Postdoctoral and Senior Postdoctoral Visiting Scientists Research Associateships. Awards made in several fields, including mathematics. Tenable in Natick, Massachusetts. Annual stipends for these appointments begin at $15,000. Senior stipend variable. More details regarding this program may be obtained from the Associateship Office, JH 606, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418. Deadline for receipt of completed application in 1977 is January 15, with announcement of awards in April.

U. S. Army Research Office. The primary mission of the U. S. Army Research Office is the support of unclassified basic research in the mathematical, physical, engineering, environmental, and life sciences in the United States. Proposals for support are made by individual scientists or groups of scientists through their institutions or business offices. Support is given primarily through contracts or grants at educational institutions, research institutes, and industrial laboratories. For further information write to the Commanding Officer, U. S. Army Research Office, Box 12211, Research Triangle Park, North Carolina 27709.

U. S. Department of Health, Education, and Welfare, National Institutes for Health. Supports postdoctoral fellows. Research in specified health and health related areas, especially as related to health and disease. Applicant must have earned an appropriate degree and shown that his goal is a research career in the health related sciences. 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 20201. An enclosed self-addressed gummed mailing label will expedite handling.

U. S. Energy Research and Development Administration (ERDA), 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 ERDA laboratories. 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; Northwest College, University Association for Science, 100 Sprout Road, Richland, Washington 99352; Oak Ridge Associated Universities, Oak Ridge, Tennessee 37830; Savannah River Ecology Laboratory, Aiken, South Carolina 29801.


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 $13,500. 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 Maynard Thompson, Chairman, Department of Mathematics, Swain Hall East, Indiana University, Bloomington, Indiana 47401. Preference will be given to applications received before January 31, 1977. 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 German university or research institute. Scholars of all nationalities and disciplines may apply. Selection is based exclusively on academic merit. Applicants must have completed their academic studies and have evidence of a degree equivalent to the German doctorate, and have adequate knowledge of German, especially for research in the humanities. Applications may be obtained from and returned directly to the Alexander Von Humboldt Foundation, Schillerstrasse 12, D-5300 Bonn-Bad Godesberg, Federal Republic of Germany.

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Alliance Française de New York. For French and American students, a limited number of scholarships for graduate study in the U.S. and in France. Fields unrestricted. Scholarships are in the amount of $1,300 to $2,000. Applicants must have a working knowledge of French. For further information American students should write to Correspondence Unit, Institute of International Education, 809 United Nations Plaza, New York, New York 10017.

American Association of University Women. International Fellowships. Approximately thirty-five awards made to women of other countries for advanced study, except that awards are not made in the creative or performing arts. An applicant must hold the equivalent of a bachelor's degree, be proficient in English and intend to return to her own country. Forms may be obtained from the University Women's Association or Federation in the applicant's country or the Cultural Affairs Office 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. 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 December 1 (November 1 for Marshall Fellowships for Denmark). 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 within the past five years. 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 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 Correspondence Unit of Reference Services, 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 granted. Write to Council for International Exchange of Scholars, Suite 300, 11 Dupont Circle, Washington, D.C. 20036.

Graduate and Postgraduate Exchange with Poland. Open to American and Polish citizens. American candidates must have at least a master's degree and a knowledge of the Polish language. Polish candidates must have at least their master's degree and preferably their doctorate, plus sufficient knowledge of the English language. Polish citizenship is required for study in the United States; U.S. citizenship is required for study in Poland. Apply by January 15 for the following academic year. Write to Kosciuszko Foundation, 15 East 65th Street, New York, New York 10021.

Indo-American Fellowship Program. Ten grants to be awarded to U.S. citizens for advanced research in India, for a six- to ten-month period during the academic year 1977-1978. In addition to a basic grant there are travel, dependent and research allowances. Applications are encouraged for projects which include collaboration with Indian colleagues. Deadline for applications is November 15, 1976. For details contact the Council for International Exchange of Scholars (American Council on Education), Eleven Dupont Circle, Washington, D.C. 20036.

International Research and Exchanges Board (IREX). This board administers academic exchange programs, open to advanced graduate students, postdoctoral scholars, and faculty members in all fields of study who are United States citizens, and who are affiliated with a North American College or university. Exchange agreements are in effect with Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania, Yugoslavia, and the USSR. Placements are usually made for a semester or an academic year, but longer or shorter stays are possible by special arrangements. In addition to exchange fellowships, IREX offers ad hoc grants to promote new exchanges; grants for collaborative projects involving American scholars and their counterparts in Eastern Europe and the
USSR; and fellowships for preparatory area studies in the United States and Canada. For more detailed information, write to the International Research and Exchanges Board, 110 East 59th Street, New York, New York 10022.

Italian National Research Council Fellowships for Foreign Citizens. The Italian National Research Council announces fifteen fellowships (maximum period one year) for foreign mathematicians. The gross stipend is 280,000 Italian Lire per month, plus travel expenses to and from the country of residence. Prospective applicants may write for details: Alessandro Figa-Talamanca, C. N. R., via Santa Marta 13A, 50139 FIRENZE, Italy. In their letter they should include information concerning their curriculum, their research program, the names of the Italian mathematicians they would like to work with. They may also include a reference letter or have it sent directly.

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, 1977. Application forms can be obtained from the Lady Davis Fellowship Trust, P. O. Box 1255, Jerusalem, Israel.

LATF—Latin America and Asia-Pacific. Citizenship unrestricted. Applications for university teaching positions in Latin America and the Asia-Pacific region are now being accepted from natural and physical scientists and engineers with advanced degrees, or who are Ph.D. candidates. Mathematicians and computer scientists conversant in Spanish are especially encouraged to apply for openings in Latin America. These teaching fellowships are part of a service program designed to assist Latin American and Asian universities to develop more advanced technical and scientific programs. Salaries are thus geared to a moderate level rather than being competitive with North American salaries. A knowledge of Spanish is required for placement in Spanish-speaking areas. English is acceptable for Asia-Pacific areas. Inquiries should be addressed to Director of Academic Affairs, Latin American Teaching Fellowships, Fletcher School of Law and Diplomacy, Tufts University, Medford, Massachusetts 02155.

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) Midwest: 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.

National Academy of Sciences. For U.S. scientists who wish to make visits beginning during the period September 1977 through August 1978 in the USSR, Bulgaria, Czechoslovakia, 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. Postdoctorate 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. The closing date for applications is January 15. Write to the Postdoctorate Fellowships Office, Personnel Services Branch, National Research Council of Canada, Ottawa, Canada K1A OR6.

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.
North Atlantic Treaty Organization. The NATO Science Committee 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. 200,000 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. Application forms and further details of these awards together with information about the Science Committee's other programmes in the systems science area can be obtained from: Scientific Affairs Division, NATO, 1110 Brussels, Belgium.

North Atlantic Treaty Organization. Postdoctoral Fellowships. Awarded for nine- or 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., is designed primarily for individuals who have received their doctorates within the past five years. Fellows receive a stipend of $10,800 for twelve-month tenure, plus a dependency and travel allowance. Application deadline is November 29, 1976. For information and application material, write to Fellowship Section, Division of Science Manpower Improvement, National Science Foundation, Washington, D.C. 20550.

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 1978–1979 year is available to outstanding young 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, 1977.

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 January 1. Write to Royal Norwegian Council for Scientific and Industrial Research, Gaustadelen 30, Oslo, Norway.

Social Science Research Council. Foreign Area 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. 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 45,000 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, the next deadline being December 31, 1976. 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.

The African-American Institute. Seeks to further African development and to strengthen understanding between the United States and Africa. For information about the several programs contact African-American Institute program representatives in twenty-one African countries, relevant African ministries or universities, or The Africa-American Institute, 833 United Nations Plaza, New York, New York 10017, U.S.A.

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 $1,300 to $2,000. Applicants must have a working knowledge of English. For further information, write to Commission Franco-Américaine d’Échanges Universitaires et Culturels, 9, rue Chardin, Paris, 75016, France.

American-Scandinavian Foundation. Scandinavian scholars are awarded graduate fellowships to study in the U.S. For information write to the 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: Information Services, Institute of International Education, 809 United Nations Plaza, New York, New York 10017.) 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 Department of State. For Information contact the Selection Committee in the candidate’s own country (address may be obtained from the United States Embassy or Consulate).

International Research and Exchanges Board (IREX). Provides opportunities for foreign scholars and students to receive training and to conduct research at academic institutions in the United States. The sending country nominates its own participants to the exchanges, while the receiving country undertakes to place the nominees at appropriate institutions of higher learning, normally for periods of a semester or an academic year. Soviet and East European scholars interested in the various exchange programs administered by IREX should consult the agencies in their own countries which administer the exchanges. These are: Bulgarian Academy of Sciences, ul. "7 Noemvri", 1 Sofia, Bulgaria; Ministry of Education of the Czech Republic (Ministerstvo Skolstvi), Foreign Department, Karmelitska 7, Prague 1, Czechoslovakia; Ministry of Higher and Technical Education, Marx-Engels Platz 2, 102 Berlin, German Democratic Republic; Institute for Cultural Relations with Foreign Countries, V. Dorottya utca 8, Budapest, Hungary; Ministry of Science, Higher Education, and Technology, ul. Miodowa 6/8, Warsaw, Poland; National Council for Science and Technology, str. Roma 32-34, Bucharest, Romania; Federal Administration for International Scientific, Educational, Cultural, and Technical Cooperation, Kosančev Venac 29, 11000 Belgrade, Yugoslavia; Ministry of Higher and Specialized Secondary Education, Department of Foreign Relations, 11 Zhdanov Street, Moscow, USSR; Academy of Sciences, Leninškij Prospekt, 14, Moscow, V-17, USSR.

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 early November. Write to Secretary, Kennedy Memorial Trust, Association of Commonwealth Universities, 36 Gordon Square, London WC1H OPF, England.

Latin American Scholarship Program of American Universities (LASPAU). Participating countries: Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honchuras, Mexico, Nicaragua, Panama, Paraguay, Peru, and Venezuela. Scholarships are awarded for study in the United States at more than 200 participating U.S. colleges and universities, and recipients include those seeking both the Master’s and Ph.D. degrees. A candidate must be nominated by his or her Latin American university, have completed a university degree, preferably have had some teaching experience, present evidence of financial need, and sign a contract with
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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.

**American Council of Learned Societies.** A limited number of specialized research grants for post-doctoral research on the Soviet Union and Eastern Europe and grants for study of East European languages for advanced graduate students and postdoctoral faculty members are offered. Write to the American Council of Learned Societies, 345 East 46th Street, New York, New York 10017.


**Awards for Graduate Study and Research.** Dominion Bureau of Statistics, Education Division, Ottawa 3, Ontario, Canada.

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**Directory of Financial Aid in Higher Education—Africa,** available from the African Studies Association, 218 Shiffman Center, Brandeis University, Waltham, Massachusetts 02154, U. S.A.

**Eastman Kodak Fellowships and Scientific Awards.** For information concerning which universities and colleges Eastman Kodak has endowed write: The Secretary, Financial Aid Committee, Eastman Kodak Company, 343 State Street, Rochester, New York 14650.

**Educational and Cultural Exchange Opportunities,** Bureau of Educational and Cultural Affairs, U. S. Department of State, Washington, D.C. 20520, U. S. A.

**Exchange Programs with Eastern Europe and the Soviet Union for 1976-1977.** International Research and Exchanges Board (IREX), 110 East 59th Street, New York, New York 10022. Gives details on the programs administered by IREX which include exchanges for a semester or an academic year, short term grants to promote new exchanges and awards for support of collaborative projects.

**Fellowships and Grants.** Social Science Research Council, 605 Third Avenue, New York, New York 10016. Describes the programs of fellowships and grants offered by the Council and by the foreign area committees that it sponsors jointly with the American Council of Learned Societies.


National Endowment for the Humanities. The Endowment operates through four programs. Information about the Endowment's fellowship programs that 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, to be published February 1977. 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 will follow 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, $22.00 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. Fellowship Office, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418. 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.


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