FOCUS

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U.S. Team Places Second in International Olympiad

Stephen B. Maurer

Spearheaded with a first prize finish by Waldemar Horwat, a recent U.S. citizen born in Poland, the U.S. team finished second in the 26th International Mathematical Olympiad (IMO), held in early July in Helsinki, Finland.

The U.S. team received 180 points out of a possible 252. (Each of six students tackled six problems, each worth 7 points.) Romania was first with 201. Following the U.S. were Hungary, 168; Bulgaria, 165; Vietnam, 144; USSR, 140; and West Germany, 139. Thirty-nine countries participated, up from 34 last year.

The exam this year was especially tough. For comparison, last year the USSR was first with 235 and the U.S. was tied with Hungary for fourth at 195. The U.S. contestants did very well on every problem this year except a classical geometry problem. On the other hand, the Eastern Europeans (except the Romanians) had trouble with a sequence problem which the U.S. team handled easily.

Individually, Horwat, from Hoffman Estates, Illinois, obtained 35 points. Jeremy Kahn, of New York City, also received a first prize with 34. All the other team members received second prizes: David Grabiner, Claremont, California; Joseph Keane, Pittsburgh, Pennsylvania; David Moews, Willimantic, Connecticut; and Bjorn Poonen, Winchester, Massachusetts. One student from Romania and one from Hungary obtained perfect scores. The top scorer for the USSR was female; she obtained a first prize with 36 points. Two other young women received second prizes.

The U.S. team was itself coached by a new team, Cecil

(continued on page 2)

Lynn A. Steen, MAA President, greeting the 1985 USAMO Winners in the Thomas Jefferson Room in the Diplomatic Reception area of the U.S. Department of State on June 4. Winners (from left to right) are: Waldemar Horwat, Joseph Keane, Jeremy Kahn, Bjorn Poonen, Zinkoo Han, John Overdeck, Yeh Ching-Tung, and John Dalbec.

New Orleans to Host Winter Joint Mathematics Meetings

The January 1986 Joint Mathematics Meetings will be held at the Hyatt Regency and the Superdome in New Orleans, Louisiana, January 9-11. The meetings will include the **69th Annual Meeting of the Mathematical Association of America**, and the **92nd Annual Meeting of the American Mathematical Society.**

The MAA meeting will feature various invited addresses, minicourses, and contributed paper sessions. See page 4 of this issue for more information about the contributed paper sessions. The deadline for submission of contributed papers is **September 30.**

Complete meeting information, including the meeting program, preregistration and housing forms, minicourse information and registration forms, and Employment Register information, will be mailed to all MAA members in the center section of the October issue of *FOCUS*. The deadline for preregistration for the meetings is **November 15.**

Invite a Friend to Join the MAA and Win a Trip to New Orleans! See page 4 for details.

U.S. Team *(continued from page 1)*

Rousseau of Memphis State University, and Gregg Patruno, a 1985 graduate of Princeton and a former USA Mathematical Olympiad winner and Putnam Fellow.

Keane First on USA Mathematical Olympiad

Top honors on the USA Mathematical Olympiad (USAMO), held last May, went to Joseph Keane. Waldemar Horwat, Jeremy Kahn, and Bjorn Poonen were also winners of this year's USAMO, the culmination of the three-examination competition which begins with the American High School Mathematics Examination and the American Invitational Mathematics Examination. (See *FOCUS*, May-June 1985). The four other USAMO winners were: John Dalbec, Youngstown, Ohio; Zinkoo Han, Brooklyn, New York; John Overdeck, Columbia, Maryland; and Yeh-Ching Tung, Saratoga, California.

As usual, the USAMO Winners were honored with due pomp and circumstance at a two-day ceremony in Washington, D.C. in early June. Keane was presented with the new Samuel L. Greitzer/Murray S. Klamkin Award. Then 24 top-scoring USAMO students went off to West Point for the Olympiad Training Program, where the U.S. IMO Team was chosen.

The November issue of the *College Mathematics Journal* will feature the IMO—the history of the IMO, in-depth interviews with U.S. team members and coaches, what a training session is like, and articles on the art of contest problem-solving, plus the problems and solutions from this year's exam.

A pamphlet containing the USAMO and IMO problems and solutions is available now, as are other contest materials. Inquiries should be directed to: Professor Walter E. Mientka, 917 Oldfather Hall, University of Nebraska, Lincoln NE 68588-0322. The minimum order is $4.

Stephen B. Maurer is Chairman of the American Mathematics Competitions. He is a member of the Department of Mathematics at Swarthmore College and a FOCUS Associate Editor.

First Announcement of International Congress Available

The First Announcement of the International Congress of Mathematicians (ICM-86), which will be held August 3-11, 1986, in Berkeley, California, may be obtained from: ICM-86, P.O. Box 6887, Providence, RI 02940. This Congress will be the first International Congress to be held in the United States since 1950.

The Second Announcement of ICM-86 will be available in November. It will describe all activites of the Congress in detail, and provide instructions on how to complete the pre-registration process and obtain accommodations. These materials will automatically be mailed to anyone requesting the First Announcement.

There will be no MAA Summer Meeting in 1986. However, the MAA Board of Governors will hold its regular summer meeting in Berkeley at the time of the Congress and MAA members are encouraged to attend the Congress.

Additional information about the Congress, particularly about meeting events of special interest to MAA members, will appear in future issues of *FOCUS*.

Conference Honors Young

A conference on "New Directions in Applied and Computational Mathematics" was held August 8-10, 1985, in Laramie, Wyoming, in honor of Gail S. Young on the occasion of his 70th birthday. The conference was sponsored by the Sloan Foundation, the National Science Foundation, and the Air Force Office of Scientific Research.

The conference focused on the mutual interaction among pure mathematics, applied mathematics, and computer science that is rapidly and dramatically changing the nature of all three disciplines. Among the eminent speakers on the program were: Thomas F. Banchoff, Brown University; Peter Hilton, SUNY Binghamton; Henry O. Pollak, Bell Communications Research; and Stephen Smale, University of California, Berkeley.

The conference concluded with a panel discussion of the implications for graduate and undergraduate education in mathematics. It is anticipated that the proceedings of the conference will be published.

FOCUS

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Chairman of the MAA Newsletter Editorial Committee: Ronald M. Davis, Northern Virginia Community College.

Readers are invited to submit articles, announcements, or Letters to the Editor for possible publication in *FOCUS*. All materials should be sent to the Editor at the MAA Headquarters in Washington, D.C.

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from the President's desk. . .

Lynn Arthur Steen, St. Olaf College

Do We Need Accreditation?

Calculus classes with 500 students; teaching loads of 15 hours per week; adjunct positions that outnumber permanent faculty; instructors who can understand but not speak basic English. Reports such as these—from my recent mail—lead many to suggest that the time has come for a system of accreditation for collegiate mathematics.

Twenty years ago undergraduate mathematics enjoyed a reasonable consensus on standards for curriculum and faculty. Effective informal standards emerged from the work of CUPM (Committee on the Undergraduate Program in Mathematics), and spurred by Sputnik the nation helped marshal resources to implement these standards.

Now the consensus is shattered just as mathematics is emerging in a leading role on the stage of international science and technology. U.S. students who enter college are typically in the lower quartile of their peers internationally. After four years of exceedingly diverse undergraduate study, U.S. students seeking to enter graduate school in mathematics score on average a full standard deviation below their international peers.

Advocates of accreditation argue that professionally endorsed standards are necessary to restore strength and credibility to undergraduate mathematics. Accreditation identifies to the public—to students, administrators, legislators, employers—those programs that meet appropriate professional standards. Properly implemented, an accreditation process will strengthen weak (or overburdened) departments at the same time as it builds credibility for those who receive the bachelor's degree in mathematics.

The value of professional accreditation can be seen in its impact on departments in fields with existing accreditation programs. It is not uncommon for new faculty lines and other budget resources to follow in the wake of accreditation reviews. Computer science is now beginning to accredit collegiate programs, so one can expect increasing pressure on mathematics programs—especially in small institutions—to shift resources to help meet computer science accreditation standards. Competition for resources in the absence of mathematics accreditation may be a very uneven battle.

Skeptics see accreditation as opening a hopeless morass of invidious comparisons. Mathematics programs in U.S. collegiate institutions are enormously diverse, both in purpose and in content. It is hard to imagine meaningful standards that would apply to all such programs. Some believe, as a consequence, that whatever standards emerge would weaken strong departments by undermining their case for continued high level of support. Others fear that appropriate standards would be too rigorous for small departments, thus devastating the morale and effectiveness of many programs.

If mathematics is to have accreditation, the task must be approached with intelligence and sensitivity. We would need first to build consensus on minimal standards for curriculum, for faculty, and for support services. Then we would need to find ways of expressing these standards that recognize institutional diversity and encourage legitimate innovation. And we would need an effective mechanism for review and implementation.

Will accreditation strengthen mathematics? Can we agree on standards? Is there an alternative to accreditation? What will happen if we set no standards? The questions surrounding proposals for accreditation are overwhelming. But so may be the problems for collegiate mathematics if we fail to take this issue seriously.

Putnam Competition Scheduled for December 7

The 46th Annual William Lowell Putnam Mathematical Competition will be held at participating institutions on Saturday, December 7, 1985. This competition is supported by the William Lowell Putnam Prize Fund for the Promotion of Scholarship and is administered by the Mathematical Association of America.

Any college or university in the United States or Canada may register eligible undergraduates for the Putnam Competition. Registration forms will be mailed in mid-September to institutions that participated in the 45th Competition. Other institutions that wish to enter undergraduates should request registration forms from: Professor L.F. Klosinski, Director, William Lowell Putnam Mathematical Competition, University of Santa Clara, Santa Clara, California 95053. Completed registration forms must be received by the Director no later than October 16.

from the Editor's mailbox . . .

Dear Editor:

I have to reply to some of Hilton's comments in "A Job on our Hands" in the May-June 1985 *FOCUS*. I enthusiastically support most of what Hilton has to say. I agree (with reservations) that "the only valid criterion of effective teaching . . . is a love of one's subject," although I fear that "love is enough" is no more valid in mathematics than in marriage. I worry mostly about the implications of Hilton's claim that "the characteristic way in which a mathematician expresses that love is by engaging in research." The fact is, like it or not, that not all mathematicians love to do research, and by no means all those who do are able to succeed at it. Nevertheless, these same mathematicians often can teach extremely well.

Research can interfere with teaching. It has been a common experience, not only of mine, that when I was all wrapped up in a piece of research I scanted my teaching, because there are only so many hours in a day. Contrariwise, if I was working intensively on preparing a lecture, or even on so pedestrian a task as trying to concoct a good examination, I came to feel that my current research was, after all, not so important that I couldn't neglect it.

Hilton might have admitted that one of the most serious obstacles to good teaching is the administrators' belief that published research is all that really counts. He says that "we know" that advancement depends not only "on research output but also on the individual's devotion to good teaching." I don't know any such thing. I have served as department chairman and as a member of my college's committee on promotion and tenure. In my experience, Hilton's principle is one to which only lip service is given (in most institutions). My college actually gives awards for excellence in teaching; but as a matter of observation, untenured people who receive these awards end up being fired a year or two later. Let us be honest, even if the truth is unpalatable.

If Hilton would substitute "scholarship" for "research", I would indeed expect that scholarship correlates positively with effective teaching; but scholarship means much more than just producing publishable results. It may also mean less: some distinguished scholars have published rather little.

R.P. Boas
Northwestern University

MAA to Hold Drawing for Free Trip for Two to New Orleans Meeting

Some time next fall a lucky MAA member will receive a telephone call with the happy news that he or she has won a FREE TRIP FOR TWO TO NEW ORLEANS for the MAA Annual Meeting. It could be you! Just return to MAA Headquarters the special Nomination Campaign form which will be sent to all MAA members in September.

The purpose of the Nomination Campaign is to encourage all MAA members to nominate friends and colleagues for membership in the MAA. Returning this form will automatically enter you in the October drawing. *Included in the prize will be round-trip air tickets to New Orleans for the winner and one guest, a hotel room (double) for the nights of January 9-11, the period of the 69th MAA Annual Meeting, and the meeting registration fee.*

It should be an exciting meeting. New Orleans is a fascinating city. So we hope that this valuable prize will encourage *every* member to nominate one, two, or a dozen friends or colleagues for membership.

This is not just a game with an attractive prize for the winner. Experience has taught us that the most effective invitation to join the MAA is one that comes from a friend or colleague. Each nominee will receive a personalized invitation mentioning (with permission, of course) the name of the MAA member who has issued the invitation.

This can be one of the most productive membership campaigns in the history of the MAA. It can help MAA grow stronger, and it can help more people enjoy the benefits which MAA provides its members.

It can also be fun. Please take a chance on a free trip to New Orleans and on a stronger MAA! Watch your mail for further information.

Three Contributed Paper Sessions Scheduled for New Orleans

Papers are being accepted on three topics in collegiate mathematics for presentation in contributed paper sessions at the MAA Winter Meeting in New Orleans, January 9-11, 1986. The topics and the organizers of the sessions are:

- "Fitting Discrete Mathematics into the Curriculum: Special Problems and Solutions for Small Colleges," Sheldon P. Gordon, Suffolk County Community College.
- "Technical Mathematics: Does the Supply Meet the Demand?" Cheryl Cleaves and Marjie J. Hobbs, State Technical Institute of Memphis.
- "Undergraduate Topology: Present Trends and Future Prospects," Stephen Willard, University of Alberta.

Presentations are normally limited to ten minutes, although selected contributors may be given up to twenty minutes.

Individuals wishing to submit papers for any of these sessions should send the following information to the MAA Washington Office (1529 Eighteenth Street, N.W., Washington, D.C. 20036) **by September 30:** (1) title; (2) intended session; (3) a one-paragraph abstract (for distribution at the meeting); (4) a one-page outline of the presentation; and (5) a list of special equipment required for the presentation (eg., slide or film projector).

This information will be sent to session leaders who will arrange for refereeing. Selection of papers will be announced by October 10. **Late papers will not be accepted.**

News from NSF

Increased Support for Undergraduate Education Under Consideration

A panel of the National Science Board, the policy-making body of the National Science Foundation (NSF), has begun a study to determine whether NSF should expand its education efforts in undergraduate science and mathematics education. Currently, the only undergraduate support available is $5 million for the College Science Instrumentation Program (see below). About $77 million is being spent annually on precollege and graduate school programs.

In the 1960's and 1970's NSF supported several undergraduate programs. However, these programs were dropped early in President Reagan's first term when Congress drastically reduced the NSF education budget.

At a recent meeting of the Board, the chairman of the panel, Homer A. Neal, Provost of the State University of New York at Stony Brook, stated that, while he believes the Foundation's education programs are now highly focused and well-targeted, they do not adequately address "the pressing needs at the undergraduate level." He said that his panel would attempt to assess the needs of undergraduate science and mathematics education through symposia and regional hearings, and would present its recommendations on NSF's role to the National Science Board by March 1986.

College Science Instrumentation Grants

NSF has made 203 awards totalling about $5 million to 172 institutions in the first year of the agency's College Science Instrumentation Program (CSIP). The awards were made to institutions in 40 states and Puerto Rico from among 1,348 proposals. Out of the 203 awards, 7 were in mathematics.

CSIP was established by the NSF to strengthen and support science and engineering instruction in predominantly undergraduate four-year colleges and universities.

Report Documents Dramatic Increase in Employment of Scientists and Engineers

Employment of scientists and engineers in the U.S. increased about 50 percent between 1976 and 1983, nearly twice as fast as that of all professional workers and about three times as fast as the overall work force, according to a newly released report by the National Science Foundation.

The 89-page report, titled "Science and Engineering Personnel: A National Overview," presents an overview of the employment status and other characteristics of U.S. scientists and engineers. It examines the status of women and racial-ethnic minorities engaged in science and engineering activities. It also contains a discussion of the dynamics of the science and engineering labor markets, including an assessment of the quality of precollege mathematics and science training.

Copies of the report (NSF 85-302) are available free from the Division of Science Resources Studies, National Science Foundation, 1800 G Street, N.W., Washington, D.C. 20550; (202) 634-4622.

Mathematical People Proving Popular

Mathematical People, a book of interviews of mathematicians by mathematicians which first appeared in *The Two-Year College Mathematics Journal* (now renamed *The College Mathematics Journal*), is proving to be immensely popular, both with mathematicians and with the general public. Published by Birkhäuser-Boston last April, it has already gone into a second printing.

Donald J. Albers, co-editor with Gerald Alexanderson, has appeared on several radio talk shows together with Constance Reid and Paul Halmos, who are featured in the volume.

Reviews of *Mathematical People* have appeared in the *New York Times*, the *Los Angeles Times*, the *San Francisco Chronicle* and many other newspapers. *Choice*, the principal review magazine for libraries, gave the book a rave review and recommended it for all libraries, noting particularly that it is "inspirational to young people."

The book was published in collaboration with the MAA. The MAA will receive a significant percentage of the royalties.

Copies of the book may be ordered from Birkhäuser-Boston, 380 Green Street, P.O. Box 2007, Cambridge, MA 02139. The list price is $24.95; the cost to MAA members is $17.50. The charge for postage and handling is $1.50. Visa and MasterCard accepted.

Albers and Alexanderson are now collaborating with Constance Reid on a sequel to *Mathematical People* which will feature interviews with Lipman Bers, Frederick Mosteller, George Dantzig, Hans Lewy, and other prominent mathematical people.

Section Involvement in State Educational Issues

Douglas W. Nance

Should Sections of the MAA get involved with state educational issues? The Executive Committee of the Michigan Section recently considered this question and decided that the time had come for our Section to become more active in attempts to influence our state legislators and educational agencies.

The issue with which we have become most actively involved is teacher certification. Currently, the State of Michigan has two levels of certification for teachers of mathematics, elementary (K-8) and secondary (7-12). The Michigan Department of Education and legislative bodies are considering a new level of certification for teachers of the middle grades. Proponents contend that it will solve the problem of elementary teachers poorly trained in specific areas being assigned to grade seven or grade eight classes in those areas. Opponents claim that additional levels of certification create problems in teacher assignment, especially for smaller schools in our state.

We have have not worked alone, but as a member of a coalition of subject-matter organizations. These organizations joined forces about 10 years ago in order to have a greater impact on educationally-related legislative issues and issues being considered by the Michigan Department of Education. The coalition consists of Executive Committee members of approximately fifteen organizations. It is charged with the responsibility of informing member organizations about, and reacting as a unified voice to, current issues.

In addition to working with the coalition, we have attended and spoken at hearings, arranged to be placed on legislator's mailing lists for educationally-related issues, written letters to legislators, reacted to various drafts of guidelines for middle-school certification, and worked closely with our state organization of teachers of mathematics.

Is your Section involved in educational issues at the state or national level? If not, should it be? Obviously, this is for each Section to decide. Also, Sections encompassing several states will have special problems.

Some issues which may be examined in your state(s) are certification standards, competency examinations, or high school graduation requirements. If you do decide to become active in these or other issues, the Michigan Section's experience suggests the following:

- Work together with other organizations—you will be more effective this way.
- Be aware of positions of other groups such as other academic disciplines, school administrators, and teachers' unions.
- Be aware of the pressures on state boards of education and legislators.
- Have patience.
- Be persistent.

Douglas W. Nance is the Vice-Chairperson of the Michigan Section of the MAA. He is a member of the Mathematics Department at Central Michigan University.

International Conference on Mathematics Education Held at University of Chicago

Charles A. Cable

Approximately 250 participants, including 24 foreign mathematicians and leading mathematics educators attended the International Conference on Mathematics Education held March 28-30 at the University of Chicago. Speakers for the conference included Hans Freudenthal of the Netherlands, Hiroshi Fujita from Japan, and Tamas Vargas from Hungary.

Izaak Wirszup, Professor of Mathematics at the University of Chicago, organized the conference on behalf of the University of Chicago School of Mathematics Project (UCSMP). UCSMP is a pilot program designed to improve mathematics in grades K-12. It is targeted for students of average ability and makes extensive use of calculators and microcomputers. The ultimate goal of UCSMP is to establish a model for mathematics education applicable to the vast majority of American students.

UCSMP is administered by a joint committee of faculty in the Department of Mathematics and the Department of Education at the University. Principal Investigators are Izaak Wirszup and Charles E. Bidwell. Activities fall into four components—elementary, secondary, resources development, and evaluation—each with its own director. Overall direction is given by Paul J. Sally, Jr., of the Department of Mathematics. The program has been in existence for nearly two years in fifteen Chicago area elementary and secondary schools, and is supported by the Amoco Foundation. The foundation has contributed two million dollars for the first two years of the six-year project.

The aim of the March conference was to provide a forum for the best thinking in mathematics and mathematics education on matters of critical importance to UCSMP and the advancement of new programs in the United States and other countries.

The conference was devoted primarily to two major topics closely connected with UCSMP: "Development of an Applications-Oriented Mathematics Curriculum" and "Innovative Instructional Strategies" (methods of teaching mathematics based on educational psychology and new research, including theory and practice of working with microcomputers, calculators, videotapes, films, games, and other aids).

Charles A. Cable is Chairman of the Department of Mathematics at Allegheny College.

A Mathematical Journey: London to Edinburgh and Back

The Department of Mathematics and Computer Sciences, Kean College of New Jersey, has announced that its international studies program for students, teachers, and supervisors of mathematics, "A Mathematical Journey: London to Edinburgh and Back," will be held from January 2-19, 1986.

Three undergraduate or graduate credits are available for eighteen days of experiencing the culture of Great Britain in a mathematical context through lectures, tours, and visits to museums, churches, and universities.

For complete information, contact Dr. Dorothy W. Goldberg, Chairperson, Department of Mathematics and Computer Sciences, Kean College of New Jersey, Union, New Jersey 07083.

People in the News

A professor emeritus of the University of Southern California is the first American to be named a winner of the prestigious Lobachevsky Prize. **Herbert Busemann** is one of the few mathematicians outside the Soviet Union ever to receive the prize. Named after Russian geometer Nikolai Ivanovich Lobachevsky (1793-1856), the prize is awarded every four years to an outstanding geometer.

Busemann, who has written five books and many papers, is receiving the prize for his book "The Geometry of Geodesics," published in 1955 and updated in 1970. The book outlines Busemann's radically innovative and purely geometric approach to solving geometric problems.

Michael Freedman, Professor of Mathematics at the University of California, San Diego, was one of the twenty-five recipients of grants from the MacArthur Foundation Fellows Program of the John D. and Catherine T. MacArthur Foundation.

The MacArthur Fellows Program endeavors to promote creativity by relieving chosen scholars and artists from financial constraints. Grants range from $128,000 to $300,000, depending on the age of the Fellow, and are allotted over a five-year period.

Freedman has proven the four-dimensional Poincaré conjecture, one of the most outstanding problems in topology. In addition, his work has involved taut submanifolds, surgery theorems, and knots.

Benoit Mandelbrot was awarded Columbia University's Barnard Medal at commencement exercises on May 15. The medal, which is awarded at five-year intervals "to such person . . . who shall have made such discovery in physical or astronomical science, or such novel application of science to purposes beneficial to the human race, as in the judgement of the National Academy of Sciences of the United States shall be deemed most worthy of the honor." Mandelbrot was cited for his theory of the fractal geometry of nature.

Mandelbrot is an IBM Fellow at the Thomas J. Watson Research Center in Yorktown Heights, New York. He is the author of *The Fractal Geometry of Nature* (W.H. Freeman, San Francisco, 1982) and is one of the mathematicians featured in the recent book *Mathematical People* (see page 5). He gave an invited talk at a joint MAA-AMS session in Laramie in August, "Fractal Geometry: Setting, Birth, and Growth." He also gave an MAA Weekend Workshop on fractals at Salisbury State College last June.

Katharine O'Brien was a recipient of the 1985 Deborah Morton Award of Westbrook College at its commencement exercises in May. The award is made to Maine women "who have achieved distinction for their civic, humanitarian, or cultural leadership, or for their notable success in their professions." O'Brien was honored for her career in mathematics teaching and for her poetry. In previous years she has received honorary degrees from Bowdoin College and the University of Maine.

I.M. Singer was awarded the National Medal of Science last February in ceremonies in the East Room of the White House. Singer was honored "for his inspired revival of differential geometry and its connection to analysis." From 1957 until his early retirement in 1979, Singer was a member of the faculty at the Massachusetts Institute of Technology. In 1979 he became the John D. MacArthur Professor of Mathematics at the University of California, Berkeley. According

(continued on page 8)

Budapest Semesters in Mathematics

Budapest Semesters in Mathematics, a new program initiated by Paul Erdös and László Lovász, provides a unique opportunity for North American undergraduates to study in Hungary, a country with a long tradition of excellence in mathematics, research, and education. Through this program, mathematics and computer science majors in their junior/senior years may spend one or two semesters in Budapest and study under the tutelage of eminent Hungarian scholar-teachers.

All courses are taught in English, and classes are held in small groups. Students receive individual attention. The instructors are members of Eötvös University and the Mathematical Institute of the Hungarian Academy of Sciences. Credits are transferable to American and Canadian universities. Living costs in Budapest are modest. Tuition is $1850 (U.S.) per semester.

For further information, write to: W.T. Trotter, Jr., Department of Mathematics, University of South Carolina, Columbia, SC 29208, or call László Babai, (312) 962-3487.

In Memoriam

Joseph W. Andrushkiw, Professor Emeritus of Seton Hall University, died December 17, 1984, at the age of 78. He was an MAA member for 32 years.

Leonard M. Blumenthal, Retired Professor Emeritus of the University of Missouri, died August 11, 1984, at the age of 84. He was an MAA member for 60 years.

David G. Bourgin, University of Houston, died November 8, 1984. He was an MAA member for 18 years.

Richard C. DiPrima, Rensselaer Polytech Institute, died September 10, 1984, at the age of 58. He was an MAA member for 34 years.

Henry E. Fettis, of Mountain View, California, died December 15, 1984 at the age of 68. He was an MAA member for 39 years.

Robert T. Gregory, Professor Emeritus of the University of Tennessee, died last year, at the age of 64. He was an MAA member for 35 years.

William L. Hart, Professor Emeritus of the University of Minnesota, died December 16, 1984, at the age of 92. He was an MAA member for 64 years.

Demetrios A. Kappos, Professor Emeritus of the University of Athens, Athens, Greece, died last year, at the age of 80. He was an MAA member for 20 years.

Harry R. Mathias, of Bowling Green, Ohio, died July 31, 1984. He was an MAA member for 57 years.

Cyril A. Nelson, Professor Emeritus of Rutgers University, died July 27, 1984. He was one of the 1045 charter members who organized the MAA in 1915.

Edward Rosenthall, of McGill University, Montreal, Quebec, Canada, died last year at the age of 68. He was an MAA member for 39 years.

Fredrick Sipinen, Oregon Institute of Technology, died May 5, 1984 at the age of 46. He was an MAA member for 18 years.

Mabel G. Whiting, of Santa Ana, California, died July 1984. She was one of the 1045 charter members who organized the MAA in 1915.

People *(continued from page 7)*

to S.S. Chern, (as quoted in the *Notices of the American Mathematical Society*), "I.M. Singer is a mathematician of great versatility and depth. He is best known for the Atiyah-Singer Index Theorem, one of the great mathematical achievements of the century."

University of Texas mathematics professor **James Vick** was named the Texas Professor of the Year last July by the Council for the Advancement and Support of Education in Washington, D.C.

Vick is an expert on algebraic and differential topology. He has been recognized many times for excellent teaching. He has won a student government teaching award, the Jean Holloway Teaching Excellence Award, an alumni teaching award, and the 1985 Amoco Foundation Outstanding Teaching Award.

Vick has served on many MAA committees. He was chairman of the committee that wrote the popular MAA pamphlets on how to teach college mathematics and on how to train teaching assistants in mathematics.

Calendar

National MAA Meetings

69th Annual Meeting, New Orleans, Louisiana, January 9-11, 1986.
70th Annual Meeting, San Antonio, Texas, January 23-25, 1987.
71st Annual Meeting, Atlanta, Georgia, January 8-10, 1988.
72nd Annual Meeting, Phoenix, Arizona, January 10-14, 1989.

Sectional MAA Meetings

Eastern Pennsylvania and Delaware, Temple University, Philadelphia, Pennsylvania, November 23, 1985.
Louisiana-Mississippi, in conjunction with the MAA New Orleans Meeting, January 10, 1985.
Maryland-D.C.-Virginia, Montgomery College, Rockville, Maryland, November 15-16, 1985.
New Jersey, Trenton State College, Ewing, New Jersey, November 9, 1985.
North Central, Lakehead University, Thunder Bay, Ontario, Canada, October 25-26, 1985.
Northeastern, Massachusetts Maritime Academy, Buzzards Bay, Massachusetts, November 22-23, 1985.
Ohio, University of Dayton, Dayton, Ohio, November 1-2, 1985.
Seaway, Rochester Institute of Technology, Rochester, New York, November 8-9, 1985.
Southern California, Harvey Mudd College, Claremont, California, November 9, 1985.

Other Meetings

September 1985

27-28. **Thirteenth Annual Mathematics and Statistics Conference**, Miami University. Theme: Statistics. Featured speakers include: Myles Hollander, Richard L. Scheaffer, and Ronald D. Snee. Contact: Robert L. Schaefer, Department of Mathematics and Statistics, Bachelor Hall, Oxford, OH 45056; (513) 529-5818.

27-28. **Twelfth Annual Student Conference of the Ohio Delta Chapter of Pi Mu Epsilon**, Miami University. Undergraduate mathematics and statistics students are invited to contribute papers and should send abstracts by September 16, 1985, to: Professor Milton Cox, Department of Mathematics and Statistics, Miami University, Oxford, OH 45056.

October 1985

7-11. **NSF/CBMS Regional Conference on Mathematical Stochastics of Species Abundance and Community Composition**, Oklahoma State University. Lecturer: G.P. Patil. Contact: Linda J. Willson, Department of Statistics, 203 Life Sciences East, Oklahoma State University, Stillwater, OK 74078; (405) 624-5684.

14-16. **1985 Annual Conference of the Association for Computing Machinery**, Denver, Colorado. Theme: "The Range of Computing: Mid-80's Perspective." Contact: William C. Healy, ACM '85 General Chairman, Marathon Oil Company, P.O. Box 269, Littleton, CO 80160; (303) 794-2601, Ext. 345.

16-18. **Everett Pitcher Lecture Series**, Lehigh University. Lecturer: Sir Michael Atiyah, F.R.S. Contact: Department of Mathematics, Lehigh University, Bethlehem, PA 18015; (215) 861-3745.

20-24. **Frontiers of the Mathematical Sciences: 1985**, Courant Institute of Mathematical Sciences. Purpose: To celebrate Courant's fiftieth anniversary. Speakers will include: M. Atiyah, C. Fefferman, S. Hildebrandt, M.O. Rabin, I.M. Singer, and S.T. Yau. Contact: Frontiers of Mathematical Science: 1985, Courant Institute of Mathematical Sciences, 251 Mercer Street, New York, NY 10012.

26-28. **Association for Women in Mathematics Symposium in Honor of Sonia Kovalevskaia**, Harvard University. Marking the 15th Anniversary of AWM and the 25th Anniversary of the Mary Ingraham Bunting Institute of Radcliffe College. The Symposium will have two components: the first on the development of modules in applied mathematics for secondary schools, and the second on the mathematical heritage of Sonia Kovalevskaia. Lecturers will include: Mark Alder, Patricia Bauman, Nancy Kopell, and Jean Taylor. Contact: Margaret Munroe, AWM, Box 178, Wellesley College, Wellesley, MA 02181.

28-30. **SIAM 1985 Fall Meeting, Arizona State University**, Tempe, Arizona. Contact: SIAM, 117 South 17th Street, Suite 1405, Philadelphia, PA 19103; (215) 564-2929.

November 1985

22-24. **Microcomputers and Basic Skills in College**, New York City. Contact: Geoffrey Akst, City University of New York, Office of Academic Affairs, 535 E. 80th Street, New York, New York 10021, (212) 794-5425.

23-27. **Sixth Interamerican Conference on Mathematical Education**, Guadalajara, Jalisco, Mexico. Contact: Alejandro Duenas or Gilberto Garcia, Monte Everest 1342, Colonia Independencia, 44340 Guadalajara, Jalisco, Mexico.

December 1985

7-9. **Canadian Mathematical Society Annual Winter Meeting**, University of Calgary. Contact: K. Salkauskas, Department of Mathematics and Statistics, University of Calgary, 2500 University Drive Northwest, Calgary, Alberta, Canada T2N 1N4.

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