
Mathematics People

Elections to the Royal Society of Canada

A number of mathematical scientists were elected this year to the Royal Society of Canada. Their names and affiliations are: MICHEL DELFOUR, University of Montreal; FRANÇOIS LALONDE, University of Quebec, Montreal; PIERRE MILMAN, University of Toronto; and RAYMOND REITER, University of Toronto.

—Allyn Jackson

Coxeter Receives the Companion of the Order of Canada

H. S. M. COXETER has received Companion of the Order of Canada. Created in 1967, the Order of Canada is the centerpiece of Canada's national honors system. It is a fraternity of merit that recognizes significant achievement in important fields of human endeavor. There are three levels of membership, with the Companion level being the highest and recognizing international service or achievement or national preeminence.

The citation for Coxeter reads: "Professor Emeritus at the University of Toronto, he is an internationally renowned mathematics scholar. Through his research, he has made a monumental contribution to the study of geometry by furthering its applications in mathematics, science, art, music, architecture, and crystallography. He has also written several significant publications in this field, and has influenced generations of teachers and students for more

than half a century." Coxeter's mathematical career spans more than seventy years and more than 200 publications. Many consider him to be Canada's most distinguished mathematician and one of the outstanding geometers in North America and the world.

Coxeter was born February 9, 1907, in Kensington, England. He received his B.A. in 1929 and his Ph.D. in 1931 from the University of Cambridge. He was a research fellow at Trinity College, Cambridge, from 1931 to 1936 and was also a Rockefeller Foundation Fellow (1932–1933) and a J. E. Proctor Fellow (1934–1935) at Princeton University. He has been at the University of Toronto since 1936 and retired in 1980. Coxeter has also held a number of visiting positions in the U.S., Europe, and Australia. He served as the president of the International Congress of Mathematicians (1974), of the Canadian Mathematical Congress (1962), and of Section III of the Royal Society of Canada. He also served as vice-president of the AMS (1969–1970).

Coxeter was named a fellow of the Royal Society of Canada (1947) and of the Royal Society, London (1950). He is also a member of a number of scholarly academies around the world. In 1995, he received the CRM/Fields Institute Prize from the Centre de Recherche Mathématique in Montreal and The Fields Institute in Toronto. That year he also received the Distinguished Service Award of the Canadian Mathematical Society.

—Allyn Jackson

Royal Society Fellows Named

In May the Royal Society elected forty new fellows. Among these are several who work in the mathematical sciences: COLIN CLARK, University of British Columbia; ROY JAY GLAUBER, Harvard University; EDWARD JOHN HINCH, Uni-

versity of Cambridge; PETER B. KRONHEIMER, Harvard University; BERNARD W. SILVERMAN, University of Bristol; and NEIL S. TRUDINGER, Australian National University. MARTIN D. KRUSKAL of Rutgers University was elected as a foreign member.

—from *Royal Society Announcement*

Hirzebruch Receives Lomonosov Medal

FRIEDRICH HIRZEBRUCH has received the M. Lomonosov Large Gold Medal of the Russian Academy of Sciences. This is the highest award of the Russian Academy of Sciences and is presented annually to two outstanding scientists, one from Russia and one from abroad. Hirzebruch was cited “for his outstanding contributions to the field of algebraic geometry and algebraic topology.” The awards ceremony took place during an academy meeting in late May, in which the laureates delivered lectures on topics of their choice.

Friedrich Hirzebruch has been a major figure in mathematics in Germany and internationally in this century. Born in Hamm, Westphalia, on October 17, 1927, he received his Ph.D. from the University of Münster under H. Behnke and also studied with Heinz Hopf at the Swiss Federal Institute of Technology in Zürich. After serving as an assistant at the University of Erlangen, he spent two years (1952–54) at the Institute for Advanced Study in Princeton. After a year in Münster he went to Princeton University for a year. In 1956 he became a professor at the University of Bonn. Hirzebruch is perhaps most famous for proving what is now known as the Hirzebruch-Riemann-Roch Theorem and for developing the theory of characteristic classes around it. Together with M. F. Atiyah and A. Grothendieck, Hirzebruch was one of the main architects of K-theory. In later years he made significant contributions to the theory of algebraic surfaces and 3-folds. Hirzebruch also had an important influence on the mathematical life in Germany by organizing the famous *Arbeitstagung* meetings since 1957 and by founding the Max-Planck-Institut für Mathematik in Bonn in 1981. He served as director of the Institute until 1995.

Mathematicians previously receiving the Lomonosov Medal include: A. Denjoy (1970), I. Vinogradov (1970), M. Keldysh (1975), M. Lavrentyev (1977), Bela Szökefalvi-Nagy (1979), N. Bogolyubov (1984), Sergei Sobolev (1988), and Jean Leray (1988).

Often called the founder of Russian science, Mikhail Vasilievich Lomonosov (1711–1765) was a chemist and astronomer. He is often said to have anticipated the kinetic theory of gases, for he regarded heat as a form of motion of particles. He was the first to observe the atmosphere of Venus and the first to record the freezing of mercury. An advocate for the study of chemistry in Russia, he especially emphasized the necessity to develop the field mathematically. Lomonosov’s contributions did not stop at the boundary of science. In addition to writing poetry and drama, he

was the author of the first history of Russia as well as an influential grammar text that reformed Russian literary language. He also established a factory for making colored glass and mosaics. Lomonosov helped to found the University of Moscow, which opened in 1755 and which now bears his name.

—Allyn Jackson

American Academy Elections

The American Academy of Arts and Sciences elected a number of new members in April. Those elected to the Mathematics Section are: GEORGE ANDREWS, Pennsylvania State University; ARTHUR DEMPSTER, Harvard University; VICTOR KLEE, University of Washington; JERROLD MARSDEN, California Institute of Technology; KENNETH RIBET, University of California, Berkeley; and GRACE WAHBA, University of Wisconsin. MARTIN GARDNER, the former editor of the “Mathematical Recreations” column for *Scientific American* and the author of a number of books, was elected to the Literature Section.

—from *American Academy Announcement*

Philip J. Davis Receives JPBM Communications Award

The Joint Policy Board for Mathematics (JPBM) has presented the JPBM Communications Award to PHILIP J. DAVIS. The award was made in July at the meeting of the Society for Industrial and Applied Mathematics (SIAM), held in Stanford, California.

The author of numerous books about mathematics, Davis is best known for *The Mathematical Experience* and *Descartes’ Dream*, both written with Reuben Hersh. The former won an American Book Award in 1983. Davis’s other nontechnical books include *The Thread: A Mathematical Yarn*; *Thomas Gray, Philosopher Cat*; *Thomas Gray in Copenhagen*; and *3.1416 and All That*. His latest book, *Mathematical Encounters of the Second Kind*, was published earlier this year by Birkhäuser.

In announcing the award, the JPBM said: “Philip Davis has been a prolific communicator of mathematics to the general public. His books have received praise for their clarity in communicating the spirit and content of mathematics to a non-mathematical audience. They exemplify the spirit of the JPBM Communications Award.”

Davis received his Ph.D. from Harvard University in 1950. He was chief of numerical analysis for the National Bureau of Standards for five years. In 1963 he joined the applied mathematics faculty at Brown University and is now professor emeritus. His area of research is numerical analysis and approximation theory. For the past decade Davis has been a freelance columnist for *SIAM News*. He is currently working on a book which explains to the ghost of

Thomas Jefferson—who loved mathematics—how mathematical knowledge has grown since Jefferson's day.

Previous recipients of the JPBM Communications Award are James Gleick, Hugh Whitmore, Ivars Peterson, Joel Schneider, Martin Gardner, and Gina Kolata. The JPBM is the public policy arm of the AMS, the Mathematical Association of America, and SIAM.

—from JPBM News Release

USA Team Places Fourth in International Olympiad

Competing against teams representing a record 82 countries, a team of six American high school students won six medals at the 38th International Mathematical Olympiad (IMO) held in Mar del Plata, Argentina, July 18–31, 1997, and tied for fourth place.

The top 10 teams and their scores (out of a possible 252 points) are: China (223), Hungary (219), Iran (217), U.S.A. (202), Russia (202), Ukraine (195), Bulgaria (191), Romania (191), Australia (187), and Vietnam (183).

The 1997 IMO team members are: CARL J. BOSLEY, Washburn Rural High School, Topeka, KS (Gold Medalist); NATHAN G. CURTIS, Thomas Jefferson High School for Science and Technology, Alexandria, VA (Gold Medalist); LI-CHUNG CHEN, Monta Vista High School, Cupertino, CA (Silver Medalist); JOHN J. CLYDE, New Plymouth High School, New Plymouth, ID (Silver Medalist); JOSH P. NICHOLS-BARRER, Newton South High School, Newton Center, MA (Silver Medalist); and DANIEL A. STRONGER, Stuyvesant High School, New York, NY (Silver Medalist).

Titu Andreescu, from the Illinois Mathematics and Science Academy in Aurora and the Head Coach and Leader of the Team, said: "We are very pleased with the performance of our students. Carl Bosley was among only four students out of the 460 participants who scored a perfect paper. All other team members performed very well, achieving gold or silver medals. We ran a very intense four-week training program preceding the competition and the hard work paid off. We are very happy that our team maintained its high ranking in the world competition this year."

The team was also accompanied by Professor Elgin Johnston from Iowa State University, who is Deputy of the Leader, and Professor Walter E. Mientka from the University of Nebraska-Lincoln as the Official U.S.A. Leader Observer.

A representative question which appeared on this year's IMO is as follows: An $n \times n$ matrix (square array) whose entries come from the set $S = \{1, 2, \dots, 2n - 1\}$ is called a silver matrix if, for each $i = 1, \dots, n$, the i th row and the i th column together contain all elements of S . Show that (a) there is no silver matrix for $n = 1997$, (b) silver matrices exist for infinitely many values of n .

The American Mathematics Competitions (AMC) is a program of the Mathematical Association of America, and the U.S.A. Mathematical Olympiad is an AMC activity spon-

sored by nine national mathematical sciences associations, including the AMS. Financial and program support is provided by the Army Research Office, the Office of Naval Research, Microsoft Corporation, the Matilda R. Wilson Fund, and the University of Nebraska-Lincoln.

—from JPBM News Release

Deaths

MARY BENNETT, professor at the University of Massachusetts, Amherst, died on March 15, 1997. Born January 30, 1940, she was a member of the Society for 32 years.

BENJAMIN R. CATO, professor emeritus at the College of William and Mary, died on June 15, 1997. Born August 24, 1925, he was a member of the Society for 43 years.

ISIDORE EISENBERGER, of Santa Clarita, California, died in 1985. Born October 2, 1909, he was a member of the Society for 28 years.

ROBERT W. FRUCHT, professor emeritus at Santa Maria University, Valparaiso, Chile, died on June 26, 1997. Born August 9, 1906, he was a member of the Society for 29 years.

W. N. HUFF, of Norman, Oklahoma, died on August 11, 1996. Born December 30, 1912, he was a member of the Society for 58 years.

ERNEST R. JOHNSTON, retired from Indiana University-Purdue University, died on February 7, 1997. Born February 9, 1907, he was a member of the Society for 44 years.

DANIEL C. LEWIS, professor emeritus at Johns Hopkins University, died June 19, 1997. Born August 14, 1904, he was a member of the Society for 67 years.

JENNY ROSENTHAL, of Mountville, Pennsylvania, died May 26, 1997. She was a member of the Society for 58 years.

CHIH-HAN SAH, professor at State University of New York, Stony Brook, died on July 22, 1997. Born August 16, 1934, he was a member of the Society for 41 years.