

For the 65th consecutive year Sigma Xi presents its College of Distinguished Lecturers. This is an opportunity for chapters to host visits from outstanding individuals who are at the leading edge of science. These visitors can thereby communicate their insights and excitement to a broad range of scholars and to the community at large.

Each of the individuals listed has agreed to be available to visit and speak to Sigma Xi sponsored groups insofar as their schedule permits. The 2002-2003 Distinguished Lecturers are available from July 1, 2002-June 30, 2003. Each visitor has consented to limit honoraria to a minimal \$200 per visit, together with full payment of travel costs and subsistence.

The Society continues its modest program of subsidies for chapters in need of financial assistance to host a visit. Subsidy applications are available at [www.sigmaxi.org/lectureships/lectureships.htm](http://www.sigmaxi.org/lectureships/lectureships.htm) and are due at Sigma Xi's administrative offices March 1, 2002. If you have any questions or need additional information, please send an e-mail to [lectureships@sigmaxi.org](mailto:lectureships@sigmaxi.org) or call 800-243-6534 x 204.

The committee is pleased to announce the support of the American Meteorological Society and the Society for Risk Analysis. These organizations have nominated a member of their society as a lecturer, and have provided funding for additional subsidies.

**William A. Lester, Jr., Chairman**  
Committee on Lectureships

**Delivery Levels of Lectures.** *Each member of this College has designated his or her topic(s) for three different types of audience. Where more than one level is shown, the lecture can be adjusted to the needs of the audience.*

**P (Public)** *Aimed at presenting scientific issues of general concern to a public audience.*

**G (General)** *Intended for a normal Sigma Xi audience of both scientists and other scholars representing a broad range of disciplines.*

**S (Specialized)** *Aimed at scientists and students in fields that are closely related to that of the lecturer.*



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**Magnetic Recording: Winner of the Data Storage Technology Race (G,S) • The Disk Drive: Unsung Hero of the Technology Revolution (P)**

Tom Albrecht received a B.A. in physics from Carleton College in 1985 and a Ph.D. in applied physics from Stanford University in 1989. His thesis research was on atomic force microscopy (AFM). Since 1989, he has been at the IBM Almaden Research Center, working on data storage technologies, primarily for disk and tape drives. Areas of focus include tape and disk track-following servo, head-disk interface, load/unload and IBM's one-inch Microdrive. Albrecht spearheaded the development of ramp load/unload technology for mobile disk drives. This technology provides increased data density, reduced power consumption, better shock robustness and improved reliability over conventional contact start-stop technology commonly used in disk drives. His other work has included the design and applications work for a one-inch disk drive intended for new markets such as digital cameras, MP3 music players and handheld computers.



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**Bringing Magnetic Levitation Trains to the USA: Technology and Policy Challenges (G) • Balancing Transportation, Energy and the Environment (G, P) • Electromagnetic Fields and Health Hazards-A Physicist's Perspective (G,P) • Transportation in 2050: Technologies and Outlook (G)**

Educated as a physicist at the Massachusetts Institute of Technology and the University of California at San Diego, Aviva Brecher has extensive teaching, research and technical experience in academia, business and government. Her work has spanned a broad range of interdisciplinary topics from physics instruction to lunar and planetary exploration and technical consulting. She now serves as a national expert in safety, health and environment. Her Volpe Center work experience includes: risk analysis and risk management; the future global air traffic control environment; safety, health and environmental effects of electromagnetic fields (EMF) for transportation systems and facilities; assessing and managing non-ionizing and ionizing radiation exposure risk in transportation, such as an update of the FAA's Radiation Safety Program (RSP) Occupational Safety and Health policy; outreach events on transportation health effects and risk tradeoffs; and safety analysis and regulatory development for maglev and high-speed rail.

Details available at <http://www.sigmaxi.org/programs/lectureships/0203.shtml>



**James S. Brooks**, Department of Physics, FSU/NHMFL, 1800 East Paul Dirac Dr., Florida State University, Tallahassee FL 32310

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 Diamagnetism: The Less Well-Known Magnetic Force and the Levitating Frog (P, G) • The Summer Student Research Experience—They Appear in Early Summer and Remind You About Your Generous Offer to Mentor (G, S) • Extreme Physics in High Magnetic Fields: Superconductors, Explosives and Atoms (P, G, S)

James Brooks teaches astronomy at Florida State University and has worked in many areas of experimental low temperature and high magnetic field physics. His early work involved the properties of superfluid helium, first in bulk liquid, and in restricted geometries and thin films. While at Boston University he developed very low temperature experimental capabilities in high magnetic fields. This opened new opportunities for the investigation for novel condensed matter systems—quantum fluids, organic conductors and superconductors, doped semiconductors, the quantum and fractional quantum Hall effects, and heavy Fermion systems. Brooks joined the faculty at Florida State University when the National High Magnetic Field Laboratory was established, and has since continued his high magnetic field research, which is presently funded by the NSF.



*Society for Risk Analysis-Sigma Xi Lecturer*

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Protecting the Children: Risk Assessment, Risk Management, and Children's Environmental Health (G) • Communicating About Environmental Health Risks: Using Science to Shape Policy (S or G?) • Reducing Risks to Our Health and Environment: The Roles of Science and Precaution (G)

Gail Charnley is an internationally recognized expert in environmental health risk assessment and risk management science and policy. She has over 20 years of experience in environmental toxicology, human health risk assessment and risk management. As a consultant, she develops scientific, regulatory and risk communication strategies to help clients respond to legal, regulatory and public perception challenges in the United States and Europe. She provides support for clients on issues regarding the strategic risk management of complex scientific issues related to, for example, the implementation of numerous regulatory programs and standards. These include the Clean Air Act, Food Quality and Protection Act and the Environmental Protection Agency's proposed cancer risk assessment guidelines and Integrated Risk Information System. A past president of the international Society for Risk Analysis, Charnley also holds an adjunct faculty position at the Harvard Center for Risk Analysis.



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Traffic Safety—What Do We Know, How Do We Know It, and What Can We Do? (P,G,S) • Gender Differences in Traffic Safety (P,G,S) • Traffic Safety—Past, Present and Future—in Different Countries (P,G,S)

Leonard Evans is president of Science Serving Society and, prior to that, worked for General Motors. He received his D. Phil. in physics from Oxford University. His research interests are reflected in his book, *Traffic Safety and the Driver* (reprinted 1996), and some 138 journal publications. He gave the keynote address in Dublin at the 1998 international conference *The Older Driver, Health and Mobility*. A member of the National Academy of Engineering, Dr. Evans is president of the International Traffic Medicine Association and a past president of the Association for the Advancement of Automotive Medicine and has received awards from both organizations for outstanding contributions and achievements in the field.



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Tailoring Drugs to Fit Your Genes (P) • Pharmacogenetics of Membrane Transporters (G) • Pharmacogenetics (G)

Kathleen Giacomini is chair of the department of biopharmaceutical sciences and professor of biopharmaceutical sciences, pharmaceutical chemistry and cellular and molecular pharmacology at the University of California at San Francisco. She received her Ph.D. in pharmaceuticals from the State University of New York at Buffalo. Targeting of a molecule, such as a drug, to a biological receptor necessitates a knowledge of the cellular and molecular events involved in the transport of the molecule across the epithelia relative to its absorption, distribution and elimination. Research in Dr. Giacomini's laboratory focuses on understanding the molecular events involved in this process. Particular emphasis is placed on understanding the mechanisms involved in the transport of organic cations and nucleosides and ascertaining the biological relevance of these transport processes to drug disposition. Dr. Giacomini has served on the editorial boards of *Facts and Comparisons*, *Drug Interactions*, *Clinical Pharmacology and Therapeutics* and the *Journal of Pharmacology and Experimental Therapeutics*. She was the 1999 International Pharmaceutical Federation Scientist of the Year.



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**Geometry and the Imagination (P)** • **Non-Euclidean Geometry and Computers (G)** • **Algorithms, Discrete Groups and Low-dimensional Topology (S)**

Jane Gilman is a professor on the faculty of arts and sciences at Rutgers University, Newark and a past chair of the department of mathematics and computer science. She received her Ph.D. from Columbia University. Her fields of interests include Riemann surfaces, Kleinian groups, Teichmüller theory, hyperbolic geometry and theory of algorithms and symbolic computation on Kleinian groups. Dr. Gilman has been a visiting professor at Princeton University, the Institute for Advanced Study and the Mathematical Science Research Institute in Berkeley, California. She has published and lectured widely and has held a number of positions in the American Mathematical Society.



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**The Complex Nature of Molecular Motion in Liquids and Gasses: Finding Order in Disorder (G,S)** • **Computer Simulations of Polymer Materials (G,S)** • **Computational Materials Science: The Next Frontier (G,S)**

Sharon Glotzer is associate professor of chemical engineering, materials science and engineering, and macromolecular science and engineering at the University of Michigan. She is cofounder and former director of the Center for Theoretical and Computational Materials Science at the National Institute of Standards Technology, where she worked after receiving her Ph.D. in theoretical condensed matter physics from Boston University. Dr. Glotzer works in the area of soft materials and nanoscale systems, for which she develops and applies computational investigative tools.



**Wendell T. Hill III**, Institute for Physical Science and Technology, Rm.2117, Inst Phys Sci Tch Bldg., University of Maryland, College Park, MD 20742-2431 301-405-4813, Fax: 301-314-9404, E-mail: [wth@ipst.umd.edu](mailto:wth@ipst.umd.edu)

**Molecules in Intense Laser Fields: Learning Physics from Chemistry (G,S)** • **Atoms, Molecules and Light: Physics Serving Society (P)**

Wendell T. Hill, III is a professor in the Institute for Physical Science and Technology and director of the laboratory for atomic, molecular and optical sciences and engineering at the University of Maryland. He received his Ph.D. from Stanford University. Dr. Hill studies the interaction of electromagnetic radiation with atoms and molecules. Using focused femtosecond bursts of laser light, Dr. Hill creates environments where the average electric field of the laser is comparable in strength to that of the natural electric field in the hydrogen atom. These intense laser fields provide ways to modify the internal quantum states of a molecule and to alter its decay dynamics (ionization and dissociation). Dr. Hill guides ultra-cold beams of neutral atoms with carefully crafted hollow laser beams. He is investigating ways to use hollow laser beams to create atom interferometers and gyroscopes.



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**Comets, Messengers from the Past: Decoding the Message (P)** • **Viewing Atmospheric and Astrochemical Photochemical Reactions with Velocity Ion Imaging (G)** • **Photochemical Reaction Dynamics with Velocity Ion Imaging and VUV Lasers (S)**

William Jackson is a professor of chemistry at the University of California at Davis. He also has taught at Howard University and worked at the Goddard Space Flight Center. His research interests include laser chemistry, laser photochemistry, free radical gas phase reactions and cometary astrochemistry. He and his colleagues are studying photodissociation dynamics by using one laser to produce the free radical under study, a second laser to photodissociate the free radical and a third laser to probe the internal energy distribution of the free radical. A member of Sigma Xi, Jackson has received a Guggenheim Fellowship and a Humboldt Research Award, among other awards.



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**Novel Methods in Cancer Diagnostics (P,G)** • **Laser-based Micromanipulation of Biological Materials (G)** • **The Physics of the Actin Cytoskeleton (S)**

Josef Käs is an assistant professor of physics at the Center for Nonlinear Dynamics and the Institute for Cellular and Molecular Biology at the University of Texas at Austin. His research involves the next big challenge for physics: studies of soft condensed matter physics on the scale of nanometers to tens of microns, i.e., on the scale of proteins and cells, in complex biological matter—often far from equilibrium and frequently behaving in a highly nonlinear manner. “There has been tremendous progress in molecular biology,” Käs says. “Nevertheless, many of the questions addressed by molecular biology can only be understood by developing a novel combination of nanosciences and soft condensed matter physics.” He says one of the most appealing aspects of this synergetic research in physics, chemistry and biology is that it simultaneously advances fundamental science and provides novel applications in biomedicine and materials sciences.

Details available at <http://www.sigmaxi.org/programs/lectureships/0203.shtml>



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Surface Science and The Atomic-Scale Origins of Friction: What Once was Old is New Again (G) • Vapor-Phase Lubrication of MEMS Devices (S) • Nanoscale Machines: These Squeaky Wheels Will Get No Grease (P)  
Jacqueline Krim is a professor of physics at North Carolina State University. She received her Ph.D. in experimental condensed matter physics from the University of Washington, Seattle. Her research interests include solid-film growth processes and topologies at submicron length scales, nanotribology (the study of friction, wear and lubrication at nanometer length and time scales) and liquid-film wetting phenomena. She is a Fellow of both the American Physical Society and the American Vacuum Society. Dr. Krim serves on the editorial boards for *Tribology Transactions* and *Tribology Letters* and on the advisory editorial board for *Surface Science*. She has published and lectured widely. Her articles include "Friction at the Atomic Scale," which was the cover story for the October 1996 issue of *Scientific American*.



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Making Friends with Chemical Reactors (S) • Anomalies in Science (G) • A Chemical Engineer Visits Dinosaurland (G)  
Octave Levenspiel is emeritus professor of chemical engineering at Oregon State University, with primary interests in the design of chemical reactors. He received his Ph.D. at Oregon State. His pioneer book, *Chemical Reaction Engineering*, was the first in the field and has gone through numerous foreign editions, having been translated into 10 languages. His other books are *The Chemical Reactor Omnibook*, *Fluidization Engineering* (with a co-author), *Engineering Flow and Heat Exchange* and *Understanding Engineering Thermo*. A member of the National Academy of Engineering, Dr. Levenspiel has received major awards from scientific societies, but what pleases him most is being called the "Dr. Seuss" of chemical engineering.



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Can Values Be Good for Science? (G) • Individualism and Folk Psychology in the Scientific Study of Aggression (P) • Science and Values: A Feminist Perspective (G)  
Helen Longino received her Ph.D. in philosophy from the Johns Hopkins University. She is a professor of philosophy and women's studies and a member of the Minnesota Center for Philosophy of Science at the University of Minnesota. Her work in the philosophy of science has focused on two areas: the character of scientific knowledge practices and a variety of philosophical issues raised by the scientific study of behavior. She is known particularly for bringing feminist concerns about gender into conversation with mainstream work in both of these domains of inquiry. Her research has been recognized by grants from the NSF, as well as from private foundations, and has been widely published in a variety of journals. Her books include *Science as Social Knowledge* and *The Fate of Knowledge*, both from Princeton University Press.



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Interdisciplinary Methodology for Activity Area Research in Domestic Contexts (S) • Teotihuacan, Central Mexico: Multiethnic Cities and Urban Development (P) • Corporate Groups and Rulership at Teotihuacan (G)  
Linda Manzanilla is a researcher with the Institute of Anthropological Research of the National Autonomous University of Mexico and professor of archaeology at the National School of Anthropology and History. She received her Ph.D. at the University of Paris. One of her areas of focus is the domestic life of the inhabitants of the first urban developments of archaic states. She has excavated in Mexico, Bolivia, Egypt and Eastern Anatolia. One new technical development related to her projects is the application of chemical techniques in the reconstruction of ancient activities, together with pollen, phytoliths, botanical macrofossils, faunal remains, osteology, ancient DNA and archaeological materials.



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Violence Against Women In Ancient America (G) • Brain Surgery, Pregnancy Tests And False Teeth: Ancient Inventions In Health Care (P) • The Women Who Came Before Us: Diet, Health And Healing In The Ancient World (P) • Skeletal Plasticity: Reading Bones For Clues To Past Behavior (S)  
Debra Martin is professor of biological anthropology, director of the U.S. Southwest and Mexico Program and dean of the School of Natural Science at Hampshire College. She received her Ph.D. from the University of Massachusetts at Amherst. Her research interests include health in the ancient world, with a focus on indigenous women and arid environments. Her work centers on identification of groups at risk, patterns of mortality of women and children, violence directed against subgroups, political-economic perspectives in the analysis of disease, Native and Southwest Studies and ethnic tourism and its effects on indigenous people. Dr. Martin has published and lectured widely.

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**Bridging the Gap Between Teaching and Learning (G,S) • Preparing Teachers to Teach Physics and Physical Science by Inquiry (G,S)**

Lillian C. McDermott is Professor of Physics and director of the Physics Education Group at the University of Washington. She received her Ph.D. in physics from Columbia University. She is a Fellow of the American Physical Society and the AAAS and is the recipient of both the Millikan Lecture Award (1990) and Oersted Medal (2001) of the American Association of Physics Teachers. For more than two decades, Prof. McDermott has worked to establish research on the learning and teaching of physics as a field for scholarly inquiry by physicists and has written extensively on the subject. Under her leadership, the Physics Education Group conducts a coordinated program of research, curriculum development and instruction.



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**Human Demographic Evolution: A View from Archaeology (G) • Overcoming Biases in Paleodemography (S)**  
Richard Meindl is professor and chair of the department of anthropology at Kent State University, where he teaches courses in demography, statistics and biological anthropology. He earned his Ph.D. in anthropology from the University of Massachusetts at Amherst. He has conducted research in population genetics, human and primate evolution and human ergonomics. His work for the Connecticut Valley Project focused on the historical demography of western New England, especially the mortality transition of the 19th century. Recently, Meindl has studied the paleodemography of an archaeological area known as the Shell Mound Region of western Kentucky. These were pre-agricultural peoples whose skeletal remains and artifacts have been recovered from sites more than 4,000 years old. They provide opportunity to examine the precursors of complex societies, sedentary living and human demographic evolution.



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**Falling Cats and Classical Quarks (P, G, S) • Figure Eights with Three Bodies (P, G, S) • Heisenberg and the Isoperimetric Inequality (P, G, S)**

Richard Montgomery is a professor of mathematics at the University of California at Santa Cruz. He received his B.A. at Sonoma State University and his Ph.D. at the University of California at Berkeley. His work can be characterized as applied differential geometry. Much of it involves applications of gauge theory (fiber bundles with connections) to problems in mechanics and control theory. One such problem is that of a falling cat dropped from upside down. This geometric point of view on the cat's problem gives us a deep understanding and allows us to solve it explicitly for certain model cats. Most recently, Montgomery has returned to the N-body problem, which has a long history. He has been approaching it using modern methods taken from equivariant differential geometry and calculus of variations. Recently Montgomery and Alain Chenciner rediscovered and proved the existence of a figure eight orbit type orbit for three bodies.



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**Reengineering the Electric Grid (P,G) • Visualization of Electric Power Systems (G,S) • Price Spikes in Electricity Markets: Is Deregulation Really Going to Result in Lower Electricity Prices? (G,S)**

Thomas Overbye is assistant professor of electrical and computer engineering at the University of Illinois at Urbana-Champaign. He received his Ph.D. from the University of Wisconsin at Madison. His article "Reengineering the Electric Grid" appeared in the May-June 2000 issue of *American Scientist*. From 1983 to 1991, he was employed with Madison Gas and Electric Company, where he helped develop their real-time power system analysis software. In 1993, he was the recipient of the IEEE Power Engineering Society Walter Fee Outstanding Young Engineer Award and this year received the IEEE's Third Millennium Medal, as well



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**Race, Gender and American Chemistry (G) • Who Will Do Science? (P/G) • Community-based Research Approach to Juvenile Violence (P)**

Willie Pearson, Jr., is Chair and Professor, School of History, Technology, and Society at Georgia Institute of Technology. He received his Ph.D. in sociology from Southern Illinois University in Carbondale. His research focuses on human resources in science and science policy. He has authored and edited many publications, including *Who Will Do Science?* (co-edited with Alan Fechter). Currently, Dr. Pearson chairs the committee Committee on Science, Engineering and Public Policy for the AAAS; co-chairs the NIH Minority training Program Committee for the national Academy of Sciences, and is vice chair of the Committee on Equal Opportunity in Science, National Science Foundation.

Details available at <http://www.sigmaxi.org/programs/lectureships/0203.shtml>



**American Meteorological Society-Sigma Xi Lecturer**

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**Climate Change: What Is At Stake And What Can Be Done About It? (P) • Can Climate Models Be Trusted? (G) • Cloud-Radiation Processes In The Climate System (S)**

Since 1979, Richard Somerville has been professor of meteorology at Scripps Institution of Oceanography at the University of California, San Diego. His current research emphasis is the role of clouds in the climate system. Somerville earned a B. S. from Penn State in 1961 and a Ph. D. from New York University in 1966, both in meteorology. He is the author of the critically acclaimed book, *The Forgiving Air: Understanding Environmental Change*, which was awarded the Louis J. Battan Author's Award from the American Meteorological Society (AMS). He has been elected a fellow of both the AAAS and the AMS. Somerville was also awarded the Walter Orr Roberts Lectureship in Interdisciplinary Sciences for 1999 by the AMS "in recognition of significant contributions to the understanding of atmospheric processes."



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**The Mysterious Behavior of Liquid Water (P, G) • Can Physicists Contribute to Economics? (G)**

Eugene Stanley is University Professor and professor of physics and physiology at Boston University. He received his Ph.D. at Harvard University. Stanley has published over 800 papers, has written or edited 15 books and recently received the Highly-Cited Award from Science Citation Index (5,898 citations). He received the 2001 NSF Distinguished Teaching Scholar Director's Award for integrating forefront research with undergraduate teaching in an effort towards empowering majors and non-majors to learn fundamental concepts through interactive visualization experiences. Stanley is also keenly interested in reforming scientific instruction at the secondary level, hoping to transform instruction so that students can use the computer as a personalized tool of enquiry. He has received a Guggenheim Fellowship.



**Mriganka Sur**, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, 45 Carleton St, E25-235, Cambridge, MA 02139

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**How the Brain Wires Itself (P) • Brain Plasticity (P,G) • Rewiring Cortex: Patterned Activity and the Development of Cortical Networks (G,S)**

Mriganka Sur is the Sherman Fairchild Professor of Neuroscience and chair of the department of brain and cognitive sciences at the Massachusetts Institute of Technology. He received his Ph.D. in neuroscience at Vanderbilt University. His main research interest is the organization, development and plasticity of the cerebral cortex, which he studies with a combination of novel approaches. Dr. Sur is the author of numerous research articles on the wiring of the brain, including the mechanisms by which brain networks are created and altered during development and adulthood. His laboratory is supported by grants from the National Institutes of Health and other research foundations.



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**What Does Genetics Tell Us About the Origins of Aboriginal North Americans? (P) • A Case Study On the Etiology of Type 2 Diabetes In a Group of Indigenous Subarctic North Americans (G) • Genetic Evidence Regarding the Peopling of the Americas. (S)**

Emoke Szathmáry earned a B.A. and a Ph.D. in anthropology from the University of Toronto. In 1996 she was named president of The University of Manitoba. Szathmáry's research has focused on the genetics of the aboriginal peoples of North America. Her work has addressed the causes of type-two diabetes in aboriginal North Americans, the genetic relationships within and between peoples of North America and Asia, and micro-evolution of the peoples of the sub-arctic and arctic. Her field research was conducted among Ottawa, Ojibwa and Dogrib peoples in Ontario and the Northwest Territories. She is the author of more than 80 scientific articles and reviews, and has co-edited three books. Szathmáry is the past editor of the *Yearbook of Physical Anthropology* (1987-91), and of the *American Journal of Physical Anthropology* (1995-2001).



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**Fair Division: From Cake-Cutting to Dispute Resolution (G) • The Mathematics of Voting (G) • Three Impossibility Results in the Context of Modeling Fairness (G)**

Alan Taylor is the Marie Louise Bailey Professor of Mathematics at Union College and the 1998 winner of its college-wide Stillman Prize for Teaching. He received his Ph.D. from Dartmouth College and, although trained as a logician, has spent much of the last decade dealing with mathematical questions arising from the field of political science. In addition to publishing a number of research articles, he is the author or co-author of four recent books: *Mathematics and Politics*, *Fair Division: From Cake-Cutting to Dispute Resolution* (with S. Brams), *The Win-Win Solution: Guaranteeing Fair Shares to Everybody* (with S. Brams) and, with W. Zwicker, *Simple Games*.



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**Human Origins: Newest Evidence of Our Earliest Ancestors (P, G) • How Human Intelligence Evolved (G,S) • The Origin of Human Locomotion (P,G,S)**

With a dual faculty appointment, Carol Ward serves as the primary link between anthropology and anatomy at the University of Missouri-Columbia. Her interests include the evolution of humans and our closest relatives, apes and monkeys, and her research focuses on fossils from East and South Africa, primarily Kenya. She takes a mechanical approach to the interpretation of the postcranial skeleton and uses these principles to reconstruct the behavior of extinct animals. Her current research involves description and interpretation of early hominid fossils from Ethiopia. Another interest is the great radiation of apes that lived in the early Miocene (almost 18 million years ago) out of which came human ancestors. Ward is also interested in the functional anatomy of the spines and the hands of modern and fossil humans and of our earlier relatives. She teaches anthropology courses during winter semester only, and anatomy during summer.



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Pamela Willoughby is an associate professor of anthropology at the University of Alberta. She received her Ph.D. at the University of California at Los Angeles. She has directed several archaeological surveys in Southwestern Tanzania and has participated in digs in Canada, France, Egypt and Ghana. Her current research involves the Middle and Later Stone Age and the origin of anatomically modern humans in Africa, Stone Age prehistory of the Lake Rukwa Rift Valley in Tanzania and experimental analysis of stone tool production and function. Dr. Willoughby has published and lectured widely on these subjects. Her many professional affiliations include the Society for American Archaeology, the American Anthropological Association and the Society of Africanist Archaeologists.



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Milford Wolpoff is a professor of anthropology at the University of Michigan whose interests include evolutionary process and theory and functional morphology. He has firsthand experience with virtually the entire human and pre-human fossil record, from evidence of hominid origins to the appearance of modern humans and their evolution. His research overseas has been supported by grants from the NSF, the Committee for Scholarly Exchange with the People's Republic of China and the National Academy of Sciences, among others. Wolpoff is one of the developers of the Multiregional Evolution hypothesis about the pattern of human evolution, and is deeply involved in the ongoing debate over the place of Neanderthals. His recent books include the definitive textbook *Paleoanthropology* and the award-winning *Race and Human Evolution* with Dr. Rachel Caspari.