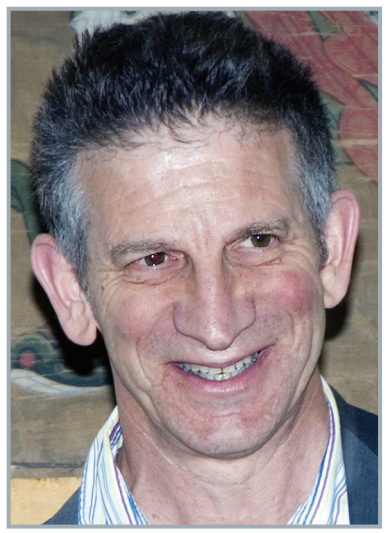
THE INSTITUTE LETTER

INSTITUTE FOR ADVANCED STUDY

PRINCETON, NEW JERSEY · FALL 2007

MATHEMATICIAN PETER SARNAK APPOINTED TO THE FACULTY OF THE INSTITUTE



C. J. MOZOCHI

Peter Sarnak

Leading number theorist Peter Sarnak has joined the Faculty of the School of Mathematics at the Institute for Advanced Study. Sarnak, a Member at the Institute from 1999 to 2002 and from 2005 to 2007, is the Eugene Higgins Professor of Mathematics at Princeton University. He will continue to hold his appointment at Princeton in conjunction with his professorship at the Institute.

Peter Goddard, Director of the Institute, described Sarnak as a scholar who "combines distinction as one of the world's leading number theorists with outstanding talents as a mentor of younger mathematicians. He inspires enormous enthusiasm for his subject and fosters interactions across disciplinary boundaries."

Born in Johannesburg, South Africa, Sarnak has had a wide and profound influence in many areas of mathematics and has made major contributions to number theory and to questions in mathematics related to number theory. His research focuses on the theory of zeta functions and automorphic forms with applications to number theory, combinatorics, and mathematical physics.

Particularly significant among Sarnak's more recent contributions are his work (with Nicholas Katz) about symmetry and universality in the local spacings of zeros of L-functions over function and number fields; his work (with collaborators) on Hilbert's 11th problem concerning the determination of which integers in a number field are represented by a positive definite integral quadratic form; and his work in quantum chaos explaining the regular and singular behavior of the eigenfunctions and eigenstates of the Laplacian on an arithmetic surface.

Regarding his appointment, Sarnak commented, "I am delighted to join the Institute for Advanced Study and to participate in its primary mission of scholarship, research, and mentoring. To step into the unique intellectual environment that has defined the Institute since its beginnings is a challenge and an opportunity that I am grateful to embrace."

On the occasion of the Institute's seventy-fifth anniversary celebration in 2005, the School of Mathematics invited Sarnak to speak on number theory, symmetry, and zeta functions. His talk was characteristically wide ranging and generous, addressing some of the mathematical accomplishments of Srinivasa Ramanujan, Carl Ludwig Siegel, André Weil, Atle Selberg, Enrico Bombieri, Harish-Chandra, Armand Borel, Pierre Deligne, Goro Shimura, and Robert Langlands, all of whom (with the exception of Ramanujan) have been closely associated with the Institute.

After earning an undergraduate degree from the University of Witwatersrand in Johannesburg in 1974, Sarnak obtained his Ph.D. from Stanford University in 1980. He joined the Courant Institute of Mathematical Sciences of New York University in 1980 as an assistant professor, becoming an associate professor in 1983. In 1987, he returned to Stanford University as Professor of Mathematics. Sarnak joined the Princeton University faculty in 1991 and was the Henry Burchard Fine Professor of Mathematics from

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PARTICLE PHYSICIST NIMA ARKANI-HAMED TO JOIN THE SCHOOL OF NATURAL SCIENCES

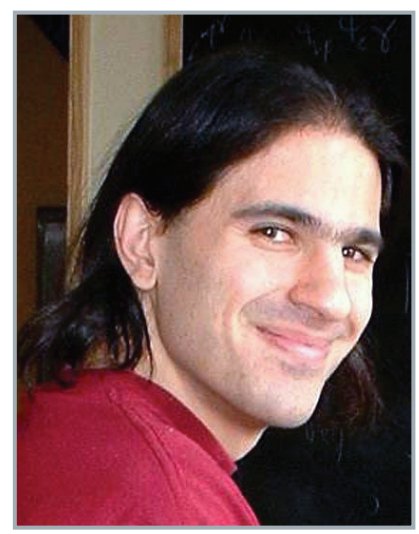
Particle physicist Nima Arkani-Hamed, currently Professor of Physics at Harvard University, will join the Faculty of the School of Natural Sciences at the Institute for Advanced Study, effective January 1, 2008.

One of the leading particle physics phenomenologists of his generation, Arkani-Hamed is concerned with the relation between theory and experiment. His research has shown how the extreme weakness of gravity, relative to other forces of nature, might be explained by the existence of extra dimensions of space, and how the structure of comparatively low-energy physics is constrained within the context of string theory. A frequent Visitor in the Institute's School of Natural Sciences in recent years, Arkani-Hamed has taken a lead in proposing new physical theories that can be tested at the Large Hadron Collider (LHC) at CERN in Switzerland, which is scheduled to start up in May 2008.

"We are delighted that Dr. Arkani-Hamed has agreed to join our Faculty. He combines a brilliant imagination with a deep grasp of the technical aspects of modern theories, continually challenging conventional assumptions," said Director Peter Goddard. "He will play a leading role in the coming years as theory confronts experiment at the LHC."

Much of Arkani-Hamed's work has been concerned with addressing the hierarchy problem—why gravity is far weaker than the current theories might predict. Together with Savas Dimopoulos and Gia Dvali, he has suggested that the extreme weakness of gravity can be attributed to the existence of large extra dimensions of space, perhaps as large as one hundred microns in size, with the scale of quantum gravity lowered to the electroweak scale. This has opened up the possibility that quantum gravitational effects can be probed at accelerators and even in tabletop experiments.

Arkani-Hamed, together with Andy Cohen and Howard Georgi, has constructed models where (nongravitational) extra dimensions are generated dynamically from purely four-dimensional models, which have also led to new approaches to the hierarchy problem. Additionally, he has investigated the possibility that gravity is modified at large distances and times in an effort to address various cosmological problems. Together with Dimopoulos, he has explored the possibility that the fine-tunings for the cosmological constant and hierarchy problems find a common explanation within a huge landscape of possible low-energy worlds that may exist in string theory, leading to a novel proposal for "split" supersymmetry at the LHC. He has also explored how the structure of relatively low-energy physics is constrained within the context of string theory.



COURTESY OF HARVARD UNIVERSITY

Nima Arkani-Hamed

"The IAS has always provided an ideal atmosphere for conducting fundamental research, and so I am thrilled to be joining the School of Natural Sciences as we enter a very exciting time for physics," said Arkani-Hamed of his appointment.

(Continued on page 9)

NEWS OF THE INSTITUTE COMMUNITY

In June 2007, Columbia University Press published a festschrift for CAROLINE WALKER BYNUM, Professor in the School of Historical Studies, titled "History in the Comic Mode." Professor Bynum also received the American Academy of Religion's 2007 Award for Excellence in the Study of Religion for her book *Wonderful Blood: Theology and Practice in Late Medieval Northern Germany and Beyond* (University of Pennsylvania Press, 2007).

PIERRE DELIGNE, Professor in the School of Mathematics, was elected a foreign associate of the National Academy of Sciences for his distinguished and continuing achievements in original research.

PETER GOLDREICH, Professor in the School of Natural Sciences, was awarded the 2007 Shaw Prize in Astronomy in recognition of his lifetime achievements in theoretical astrophysics and planetary sciences. ROBERT P. LANGLANDS, Professor Emeritus in the School of Mathematics, was awarded the 2007 Shaw Prize in Mathematics with Richard Taylor, the Herchel Smith Professor of Mathematics at Harvard University, for their work initiating and developing a grand unifying vision of mathematics that connects prime numbers with symmetry.

JONATHAN ISRAEL, Professor in the School of Historical Studies, delivered the fourth KB Lecture, "Failed Enlightenment? Spinoza's Legacy and the Netherlands (1670–1800)," on June 21 at the Netherlands Institute for Advanced Study in the Humanities and Social Sciences in The Hague.

School of Natural Sciences Professor JUAN MALDACENA has been elected a Fellow of the American Academy of Arts and Sciences.

The A.M.N. Foundation for the Advancement of Science, Art and Culture in Israel, under the auspices of and in cooperation with the Prime Minister of Israel, recently awarded AVISHAI MARGALIT, George F. Kennan Professor in the School of Historical Studies, the 2007 EMET Prize in the humanities (philosophy).

The European Association of Environmental and Resource Economists has presented the 2007 Erik Kempe Award to Partha Dasgupta and ERIC S. MASKIN, Albert O. Hirschman Professor in the School of Social Science, for their article, "Uncertainty and Hyperbolic Discounting," published in *American Economic Review,* 95:4 (2005), pp. 1290–99.

JOAN WALLACH SCOTT, Harold F. Linder Professor in the School of Social Science, and former School of Mathematics Member KAREN UHLENBECK (1979–80, 1995–96, 1997–98), cofounder of the IAS/Park City Mathematics Institute (PCMI) and the Women and Mathematics program, were awarded honorary degrees from Harvard University in June.

AVI WIGDERSON, Herbert H. Maass Professor in the School of Mathematics, presented three lectures at Princeton University in the Louis Clark Vanuxem Lecture Series in February. Titled "A Worldview through the Computational Lens I, II and III," videos of the lectures are available for viewing at http://lectures.princeton.edu/index.php?s=wigderson.

GLEN W. BOWERSOCK, Professor Emeritus in the School of Historical Studies, has been named a Chevalier de l'ordre des Arts et des Lettres. Among Professor Bowersock's recent books is *Saggi sulla tradizione classica dal Settecento al Novecento* (Einaudi, 2007).

Advanced Quantum Mechanics, the first publication of the lectures on quantum electrodynamics given by School of Natural Sciences Professor Emeritus FREEMAN J. DYSON at Cornell University in 1951, has been published by World Scientific Press. Dyson's *A Many-Colored Glass: Reflections on the Place of Life in the Universe* has been published by University of Virginia Press.

PETER PARET, Professor Emeritus in the School of Historical Studies, will receive an honorary Ph.D. from Humboldt University in Berlin in December.

SIR JOHN ELLIOTT, former Professor in the School of Historical Studies (1973–90), has been awarded the Francis Parkman Prize by the Society of American Historians for his *Empires of the Atlantic World*, adjudged the best book on American history published in 2006.

Trustee ROGER W. FERGUSON, Jr., chairman of Swiss Re America Holding Corporation, has received the first GAIM/CERF Global Financial Policy Award from ICBI's Global Alternative Investment Management Forum (GAIM) and the Cambridge Endowment for Research in Finance (CERF) of Cambridge University.

Former Trustee HYMAN BASS, Professor of Mathematics and Mathematics Education at the University of Michigan at Ann Arbor, has been awarded a National Medal of Science, the nation's highest scientific honor.

LAKHDAR BRAHIMI, former Special Advisor to the Secretary-General of the United Nations and a Director's Visitor at the Institute, has been named a member of "The Elders," a group created at the initiative of Nelson Mandela and his wife Gracia Machel, which is dedicated to solving long-standing conflicts and global problems. The group is chaired by Archbishop Desmond Tutu and includes former U.S. President Jimmy Carter, former U.N. Secretary General Kofi Annan, and former President of Ireland Mary Robinson.

Former Director's Visitor and former School of Mathematics Member (1979–80) ROBERT L. BRYANT, program director of PCMI and director of the Mathematical Sciences Research Institute, has been elected a member of the National Academy of Sciences.

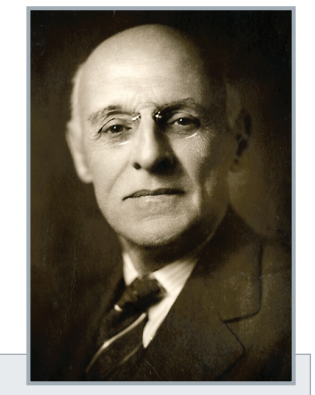
MARTIN SCHNABL, Member in the School of Natural Sciences (2006–09), has won the EURYI Award, administered by the European Science Foundation and the European Heads of Research Councils, for "five years of hard work culminating in the solution of an equation in string field theory that had gone unsolved for twenty years."

ALEXANDER VERLINSKY, Member in the School of Historical Studies, has been elected director of the Bibliotheca Classica Petropolitana.

Former School of Mathematics Member DAVID M. BRESSOUD (1979–80) has been elected to a two-year term as president of the Mathematical Association of America (MAA), beginning in 2009.

OF HISTORICAL NOTE

The following excerpt, from Founding Director Abraham Flexner's announcement of the appointment of Albert Einstein as Head of the Institute's School of Mathematics, was published in the *New York Times* on October 16, 1932.



More Light

Over a hundred years have passed away since Faraday, at the Royal Institution in London, began to play with electricity. He had absolutely no idea that his investigations would have any practical consequences or any theoretical consequences beyond the satisfaction of his curiosity, and yet everything that we do today with electricity is more or less closely dependent upon the unfettered investigations which Faraday was fortunately in a position to make.

It is as true today as it was when Goethe closed his eyes in death that what the world needs is "more light"—more light to illuminate what is obscure, more light to enable us to reorganize our intellectual and social and political lives. No one is wise enough to tell the source from which illumination will come, but the experience of the race will not in the future be different from what it has been in the past, and an institute which enables men of superior wisdom and capacity to indulge their curiosity and to promote understanding will in due course produce consequences of which neither they nor we now dream.

MICHAEL F. BROWN, former Member in the School of Social Science (2001–02), has been named director of the Oakley Center for Humanities and Social Sciences at Williams College.

YOHANAN FRIEDMANN, former Member in the School of Historical Studies (2002), has been elected Chairman of the Humanities Division of the Israel Academy of Sciences and Humanities.

THOMAS GAEHTGENS, former Member in the School of Historical Studies (1979–80), has been named director of the Getty Research Institute.

Former School of Natural Sciences Member MARC KAMIONKOWSKI (1991–94) has been awarded the 2006 Ernest Orlando Lawrence Award in physics from the U.S. Department of Energy.

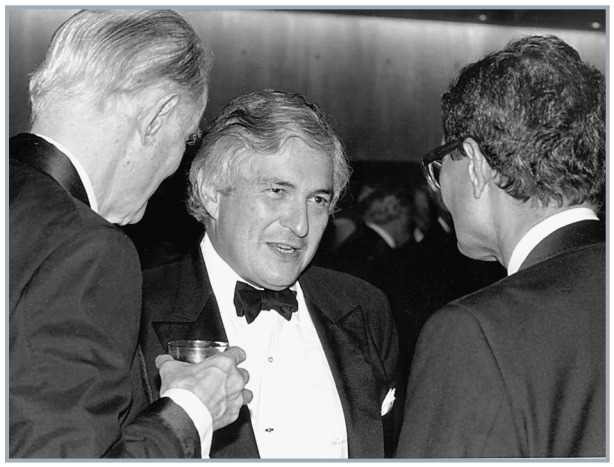
The 2007 Reuchlin Prize in the Humanities has been awarded to CHRISTIAN MEIER, former Member in the School of Historical Studies (1979). The prize is awarded by the city of Pforzheim, Germany, on the recommendation of the Academy of Heidelberg.

Questions and comments regarding *The Institute Letter* should be directed to Kelly Devine Thomas, Publications Officer, via email at kdthomas@ias.edu or by telephone at (609) 734-8091.

JAMES WOLFENSOHN: "A TRUE JEWEL IN THE INTELLECTUAL FIRMAMENT"

James Wolfensohn first joined the Institute for Advanced Study's Board of Trustees in 1979 under Chairman Howard C. Petersen, a former presidential adviser and chairman and chief executive officer of Fidelity Bank. At the time, Wolfensohn was a general partner of Salomon Brothers. Previously, he had served as executive deputy chairman and managing director of Schroeder's Ltd. in London.

"I remember I felt tremendously privileged," Wolfensohn recalled of his Trustee appointment during a recent interview with *The Institute Letter*. "I felt like I had been elected to something way beyond either my capacity or my intellect. I was anxious to do the preparation so that people would not find me out too quickly."



COURTESY OF THE INSTITUTE FOR ADVANCED STUDY ARCHIVES

James Wolfensohn with former Chairman J. Richardson Dilworth (left) and former Trustee Amartya Sen

Wolfensohn was born in Sydney, Australia, in December 1933, the same year Abraham Flexner opened the Institute for Advanced Study in Princeton. An officer in the Royal Australian Air Force and a member of the 1956 Australian Olympic Fencing Team, Wolfensohn obtained his B.A. and LL.B. from the University of Sydney. He was admitted to the Bar of the Supreme Court of Australia and joined the Sydney law firm of Allen Allen & Hemsley. It was only in 1957, when he was accepted into the Harvard Graduate School of Business, where he earned his M.B.A., that he left Australia for the first time.

"I think I was very lucky to be born in Australia," said Wolfensohn. "I think I had a much better chance to innovate and to test myself. It was a human enough pace that when you did fail you had a chance to get back up and try again. The support of my parents and my sister when I did fall down was essential to my development."

Upon joining the Board, Wolfensohn set out to improve the Institute's finances. He also reached out to Faculty members to better understand their research as well as their expectations and aspirations. "I loved, as I still do, talking to the scientists. I have adopted the practice of trying to look very intelligent, nodding at all the right times, and remembering a few key phrases that can indicate that I followed the explanations in some way," said Wolfensohn. "Now that I am retiring as Chairman, I can say that I didn't understand a word of the scientific explanations, but I was in such awe of the intellect and of the achievements that I hope I have always managed to give the appearance of in-depth understanding and great support of the intellectual efforts."

Over the years, Wolfensohn's astute vision has guided the Institute's growth and evolution as an institution. In 1984, he agreed to chair the Planning and Review Committee, the driving force of a decadal review set up to appraise the structure, operation, and intellectual direction of the Institute, and to consider its future. "A lot of my thinking was formed during the decadal review," said Wolfensohn. "It allowed me to dig much deeper into the history of the Institute and into the aspirations and hopes of the members of the Faculty."

In 1986, Wolfensohn was elected Chairman of the Board, succeeding J. Richardson Dilworth, former senior financial officer to the Rockefeller family and chairman of Rockefeller Center. At the time, Wolfensohn was president of James D. Wolfensohn, Inc., an advisory and investment firm he had established in 1981. He was also serving as chairman of the board of Carnegie Hall, which underwent a renowned transformation under his eleven-year leadership, ending in 1991.

Having participated in a wide range of cultural and volunteer activities throughout his life, including serving as chairman of the board of trustees of the John F. Kennedy Center for the Performing Arts from 1990 to 1995, Wolfensohn encouraged performance at the Institute. "I found a very ready and willing Faculty to embrace new initiatives, which years later was to lead to artists in residence and regular performances at the Institute," said Wolfensohn.

Reflecting Wolfensohn's long-standing commitment to the Institute and his dedication to the arts, the Institute named its lecture and performance hall, Wolfensohn Hall, in his honor in 1993. Wolfensohn, who studied the cello with Jacqueline du Pré in his forties, performed at Carnegie Hall with Isaac Stern and Vladimir Ashkenazy for his fiftieth birthday.

In 1995, when Wolfensohn became the ninth president of the World Bank, a position he held for ten years, he relinquished all of his charitable positions and other obligations save one: his role as Chairman of the Institute's Board. "In the academic field, the Institute is not like any other place," said Wolfensohn. "It is not a university. It is not just some research institution. It is a place with a history and integrity that I think adds tremendously not just to the body of knowledge but to the structure of thought and research in this century."

"I have always felt it a tremendous privilege as a non-academic to have a chance to support the scholarship that exists at the Schools. It has never occurred to me, as I have gone in and out of other organizations, to question why I should be at the Institute."

Together with his wife Elaine, Wolfensohn has been an energetic supporter of the Institute's IAS/Park City Mathematics Institute (PCMI), and has also facilitated new construction on campus such as Simonyi Hall (1993) and Bloomberg Hall (2002), which respectively house the Institute's Schools of Mathematics and Natural Sciences.

"I think that having now really had a chance to look at the world because of the good luck of my recent professional work, I am even more convinced that centers of excellence are essential for the future of mankind. I think that they are constantly under challenge for financial and political reasons and that the Institute is a very, very important part of our history and our future," said Wolfensohn. "I am not trying to idealize its Professors or its Board or its physical attributes, but a place that can support twenty or more of the finest minds that the world has produced and allow them in turn to influence both their colleagues and, in particular, the next generation, with no pressure for degrees, no pressure for formal recognition, but solely to advance scholarship, is a true jewel in the intellectual firmament."

CLIFF MOORE

Elaine and James Wolfensohn

As for the change in leadership now underway, Wolfensohn observed with characteristic charm, "I think Marty Leibowitz and Charles Simonyi are a big improvement in the leadership. After all, I was a not very accomplished Olympian and Charles is an astronaut supported by a brilliant mathematician. I see a great future for the Institute." ■

Letter from the Director

As the fall issue of *The Institute Letter* goes to press, the Institute academic year has decidedly begun. The prevalence of welcoming receptions at this time prompted one new arrival to express surprise that the Institute was such a "party school." Term officially began on September 24, but one hardly notices: the Institute starts filling up from Labor Day, when the full service of lunches begins and the various Schools and subject groups reassert *de facto* ownership of their traditional tables in the Dining Hall; and we know that the year is really underway when Saturday lunches, with their eclectic, relaxed, and family atmosphere begin, at the start of October.

One project that is nearing completion as the year begins is the extension to Bloomberg Hall to allow our biologists to take their place physically within the School of Natural Sciences. Richard Long spent three days here constructing on site a sculpture in the small courtyard created by the new extension on the southeast side of the building. The extension will be opened formally at the time of the meeting of the Board of Trustees at the end of October. As reported above, this meeting will also see Jim Wolfensohn hand over the Chairmanship after a historic tenure that has seen the Institute consolidate and expand its very special place in the academic world.

Seventy-five years ago, when the appointment of Albert Einstein, as one of the first professors at the then embryonic Institute, was announced in October 1932, *The Washington Post* commented: "Professor Albert Einstein's decision to carry on his future work in America is of less importance than the inauguration of the educational venture with which he will be associated. The name of this great scientist lends dignity to the Institute for Advanced Study, to be launched next year by Dr. Abraham Flexner, but if this new super-university succeeds, its effect upon American life may be far more important than the theory of relativity and all of its corollaries."

This last statement is a proposition that it would be impolitic to debate but one might note that the effects of the Institute are not at all confined to the United States: the worlds of science and scholarship are intrinsically international; substantially more than half of the new Members, who have been arriving these last weeks, come as usual from outside the United States, from more than thirty different countries; and "institutes for advanced study," modeled on or inspired by this Institute, are being founded, at an ever faster rate it seems, around the globe. Our international character, present from the Institute's inception, remains a palpable characteristic of IAS, contributing essentially to the vitality on campus as a community of scholars settles in and a new year begins.

Peter Goddard
Director

MICHAEL WALZER ON "TERRORISM AND JUST WAR"

After twenty-seven years on the Faculty of the Institute's School of Social Science, political philosopher Michael Walzer retired in July, becoming Professor Emeritus. One of the most influential political theorists of our time, Walzer has played a critical role in the revival of a practical, issue-focused ethics and in the development of a pluralist approach to political and moral life.

Thirty years ago, Walzer published *Just and Unjust Wars*, a seminal text on how we think about war and the moral issues surrounding military theory, war crimes, and the spoils of war. His other books include *Arguing About War* (2004) and *On Toleration* (1997). In November, Yale University Press will publish *Thinking Politically: Essays in Political Theory*, a collection of some of his most important essays addressing crucial political ideas and questions of the day.

Walzer's analysis of "just war" theory has taken on new urgency given the events that have arisen since 9/11. Last May, Walzer spoke at the Institute on "Terrorism and Just War," in which he attempted to answer the following: What is wrong with terrorism? How is terrorism chosen—picked out of all the possible political strategies? How ought we to fight against terrorism? Or better, what are the moral limits that antiterrorists ought to recognize?

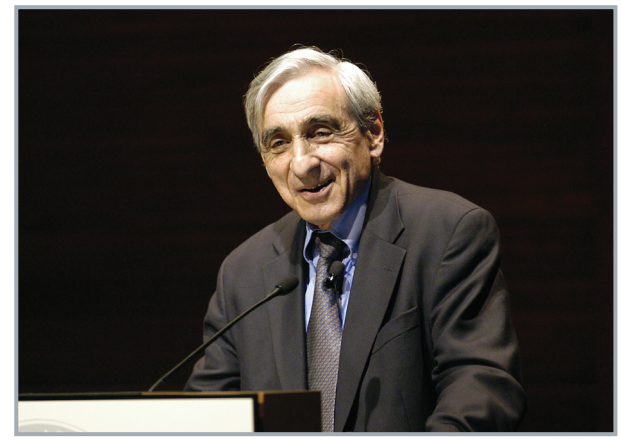
Whether terrorism is wrong is a question that is often answered badly or at least inadequately, according to Walzer, who defines terrorism as the random killing of innocent people in the hope of creating pervasive fear. "Randomness and innocence are the crucial elements in the definition," said Walzer. "The critique of this kind of killing hangs especially on the idea of innocence, which is borrowed from 'just war' theory."

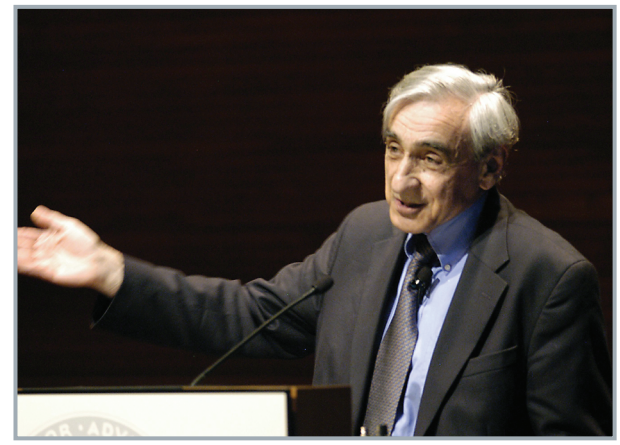
By "innocence" Walzer means those noncombatants who are not materially engaged in the war effort. "These people are 'innocent' whatever their government and country are doing and whether or not they are in favor of what is being done," Walzer explained. "The opposite of 'innocent' is not 'guilty,' but 'engaged.' Disengaged civilians are innocent without regard to their personal morality or politics."

Terrorism attacks this notion of innocence and treats civilians as legitimate targets. The long-term purpose of the fear that terrorists inspire is the collective destruction, removal, or radical subordination of individuals as an associated group. "It is who you are, not what you are doing, that makes you vulnerable; identity is liability," said Walzer. "And that is a connection that we are morally bound to resist."

Implicit in the theory of just war is a theory of just peace, Walzer said, meaning noncombatant immunity protects not only individual noncombatants but also the group to which they belong. "Just as the destruction of the group cannot be a legitimate purpose of war," observed Walzer, "so it cannot be a legitimate practice in war."

Terrorism is a strategy that is chosen from a wide range of possible strategies, according to Walzer. "For many years, I have been insisting that when we think about terrorism we have to imagine a group of people sitting around a table, arguing about what ought to be done," said Walzer. "When terrorists tell us that they had no choice, there was nothing else to do, terror was their last resort, we have to remind ourselves that there were people around the table arguing against each of those propositions."





CLIFF MOORE

Michael Walzer delivering "Terrorism and Just War" at the Institute

Once terrorists choose terrorism, the answer as to how we should fight them, said Walzer, "is simple in principle, though often difficult in practice: not terroristically. That means, without targeting innocent men and women." The second answer, according to Walzer, is within the constraints of constitutional democracy. "Right-wing politicians often insist that it isn't possible to live with either of these limits: they sit around the table and argue for prison camps like Guantanamo or the use of 'harsh' interrogation methods," said Walzer. "We must be the people at the table who say 'no.'"

In particular, said Walzer, we must "insist at the outset that the people the terrorists claim to represent are not themselves complicit in the terror." Just as the "terrorists collectivize the guilt of the other side, insisting that every single person is implicated in the wrongful policies of the government," Walzer explained, "the antiterrorists must collectivize in the opposite way, insisting on the innocence of the people generally." Likewise, where terrorists dismiss the notion of collateral or secondary damage, setting out instead to inflict as much primary damage as possible, antiterrorists have to "distinguish themselves by insisting on the category of collateral damage, and doing as little of it as they can. The rules of *jus in bello* apply: soldiers must aim only at military targets and they must minimize the harm they do to civilians."

Once governments learn to kill, according to Walzer, they are likely to kill too much and too often, so moral and political limits must be imposed. "The hard question in war is what degree of risk we are willing to accept for our own soldiers in order to reduce the risks we impose on enemy civilians," said Walzer. "When the police are chasing criminals in a zone of peace, we rightly give them no latitude for collateral damage. In the strongest sense, they must intend not to injure civilians—even if that makes their operation more difficult and even if the criminals get away. That seems to me roughly the right rule for people planning targeted killings."

If terrorists use other people as shields, then antiterrorists have to try to find their way around the shields, Walzer said, just as we would want the police to do. "When killing takes precedence over targeting, the antiterrorists look too much like the terrorists, and the moral distinction that justifies their 'war' is called into question," said Walzer. "Similarly, whatever goes wrong in the 'war' against terrorism doesn't affect the wrongness of terror. In fact, it confirms the wrongness: what we learn is that we have to condemn the murder of innocent people wherever it occurs, on both sides of the line." ■

Professor Emeritus Michael Walzer received his Ph.D. from Harvard University in 1961. He served as Assistant Professor of Politics at Princeton University from 1962 until 1966, when he was named Professor of Government at Harvard University. He left Harvard to join the Faculty at the Institute for Advanced Study in 1980 and was named UPS Foundation Professor in 1986. Co-editor of the political journal Dissent *since 1975, Walzer writes frequently about war and terrorism and is currently addressing questions of pluralism, ethnicity, cultural rights, and multiculturalism. He continues to work on volumes three and four of a landmark collaborative project focused on the history of Jewish political thought, which is being published by Yale University Press.*

The following is an excerpt from Michael Walzer's updated preface in the fourth edition of Just and Unjust Wars, *published last year by Basic Books.*

By 2003 the position of the United States and its allies, a smaller number now, had changed dramatically. To be sure, the second Bush administration gave a variety of reasons for its decision to go to war: another day, another reason. But all the reasons suggested the need, this time, to march on Baghdad and replace the Baathist regime. The most important reason was the danger that Iraq possessed, or in the near future would be capable of producing, weapons of mass destruction. But the fact that France (say) possessed weapons of mass destruction was never imagined as an occasion for war. It was the character of its regime that made Iraq dangerous: The U.S. government claimed that Saddam's regime was inherently aggressive and inherently murderous. Just as it had committed aggression in the past, so it had massacred its own people in the past, and American leaders insisted that, in this case, the past was prologue. What had happened before would happen again unless the regime was replaced.

So Iraq was not similar to the German or Japanese or the (hypothetical) Rwandan case: The war was not a response to aggression or humanitarian intervention. Its cause was not (as in 1991) an actual Iraqi attack on a neighboring state or even an imminent threat of attack; nor was the cause an actual, ongoing massacre. The cause was regime change, directly—which means that the U.S. government was arguing for a significant expansion of the doctrine of *jus ad bellum*. The existence of an aggressive and murderous regime, it claimed, was a legitimate occasion for war, even if the regime was not actually engaged in aggression or mass murder. In more familiar terms, this was an argument for preventive war, but the reason for the preventive attack wasn't the standard perception of a dangerous shift in the balance of power that would soon leave "us" helpless against "them." It was a radically new perception of an evil regime.

No one who has experienced, or reflected on, the politics of the twentieth century can doubt that there are evil regimes. Nor can there be any doubt that we need to design a political/military response to such regimes that recognizes their true character. Even so, I do not believe that regime change, by itself, can be a just cause of war. When we act in the world, and especially when we act militarily, we must respond to "the evil that men do," which is best read as "the evil that they are doing," and not the evil that they are capable of doing or have done in the past. Aggression and massacre are legitimate causes of war, and we must learn, what we have not yet learned, to respond to each of these in a timely and forceful way. But the existence of regimes capable of aggression and massacre requires a different response. ■

ROBERT LANGLANDS: FAR-REACHING MATHEMATICS

After thirty-five years at the Institute for Advanced Study, Robert Langlands, whose visionary work, known as the Langlands program, has had a deep influence across a broad sweep of mathematics and parts of theoretical physics, retired in July as Hermann Weyl Professor in the School of Mathematics, becoming Professor Emeritus.

Professor Langlands's profound insights in number theory and representation theory include the formulation of general principles relating automorphic forms and algebraic number theory; the introduction of a general class of L-functions; the construction of a general theory of Eisenstein series; the introduction of techniques for dealing with particular cases of the Artin conjecture (that proved to be of use in the proof of Fermat's theorem); the introduction of endoscopy; and the development of techniques for relating the zeta functions of Shimura varieties to automorphic L-functions.

Langlands was awarded the 2007 Shaw Prize in Mathematical Sciences. His other honors include the Frederic Esser Nemmers Prize in Mathematics (2006); the Grande Médaille d'Or (Gold Medal) of the French Academy of Sciences (2000); the Wolf Prize in Mathematics (jointly with Andrew Wiles, 1996); the inaugural National Academy of Sciences Award in Mathematics (1988); the Common Wealth Award (1984); and the American Mathematical Society's Cole Prize (1982).

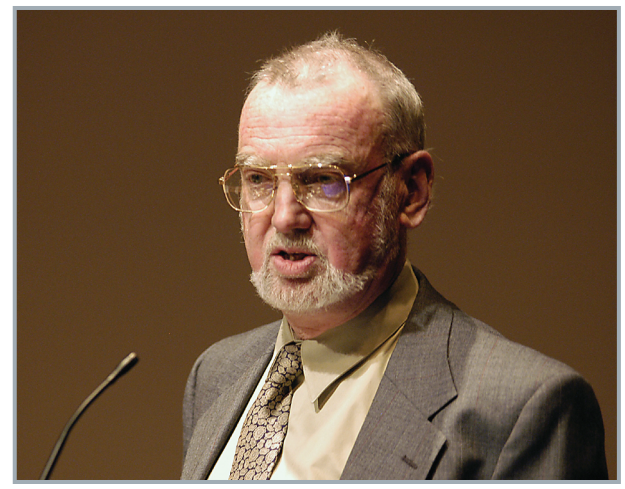
Born on October 6, 1936, in British Columbia, Professor Langlands grew up in a small town where his father owned a building supply store. "When I was a child I liked to add and subtract," Professor Langlands recently told *The Institute Letter*. "In our store, my mother worked. And I remember competing with her. We would tally lumber; she would do it on the adding machine and I would do it in my head."

He enrolled at the University of British Columbia at age sixteen, returning home during the summers to work with his father, hauling lumber and cement. At the University, he was drawn to mathematics over physics, particularly algebraic computations. "In the course of my life I have spent much time with algebraic computations. I never minded," says Langlands. "They are often irritating things, because it is clear what the answer must be, but the answer turns out otherwise. It may take days to find the small error."

Professor Langlands received his Ph.D. from Yale University and taught at Princeton and Yale before joining the Faculty of the Institute in 1972. At Princeton University, he was encouraged to teach a course in class field theory by his colleague Salomon Bochner, who drew him to the attention of the Institute's late Atle Selberg (see article, page 6). "I had an hour's conversation with Selberg and he explained the details of some of his ideas," says Langlands. "That was my first professional contact with a really first-class mathematician. It was an experience I will never forget."

But it was the Institute's Harish-Chandra with whom Langlands felt a particular affinity. "His papers were among the first—Selberg's papers and then Harish-Chandra's—that I studied very carefully, that I actually worked with, that I actually used in what I was doing," says Langlands. "Harish-Chandra was the one who proposed me for the Institute. The first time I did not meet with his colleagues' approval, but the second time I did."

Of his first meeting in the early 1960s with the Institute's André Weil, to whom he would address a letter five years later suggesting conjectures that would become collectively known as the Langlands program, Langlands recalls, "He came into my office in the old Fine Hall, threw his foot up over the arm of the chair, and he started to talk to me. Somehow he had heard of me as a promising young person and he had come to me, which is striking. I was never someone who ever learned to be silent, and I remember telling him my ideas, and they were foolish ideas, I must say. I was already inclined to formulate conjectures and some of them were not bad, but some of them were foolishly wrong, a result of inexperience."

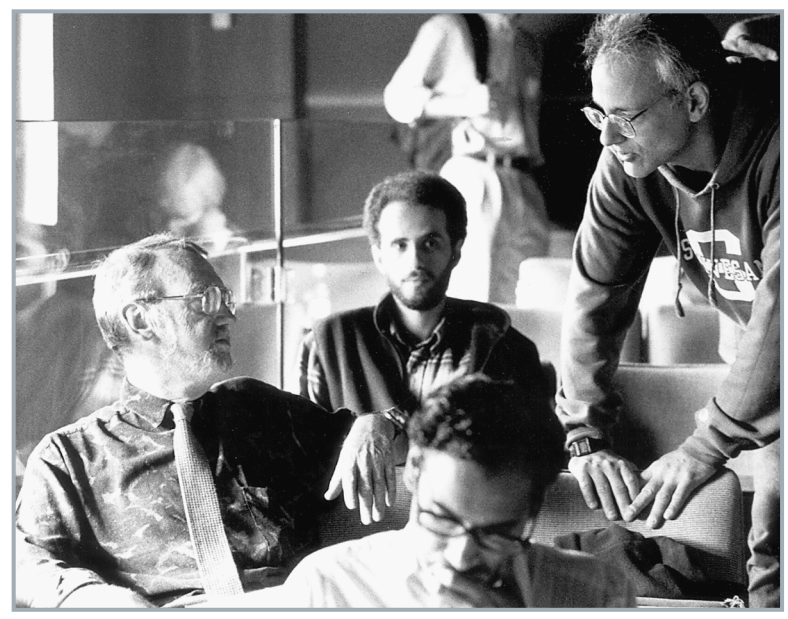


CLIFF MOORE

Robert Langlands's visionary program has had a deep influence in mathematics and parts of theoretical physics.

In 1967, Langlands ran into Weil at a lecture given by Shiing-Chen Chern. Langlands had been making calculations when he came across some L-functions that he liked. He told Weil what he was thinking and Weil suggested he write it down for him. Langlands went home and wrote a seventeen-page handwritten letter, showing it to Harish-Chandra before sending it on to Weil. A typed copy of the letter, made at Weil's request for easier reading, circulated widely among mathematicians in the late 1960s and '70s, and for more than three decades now, mathematicians have been working on its conjectures.

In his letter, Langlands proposed a grand unifying theory that relates seemingly unrelated concepts in number theory, algebraic geometry, and the theory of automorphic forms. "There were some fine points that were right that rather surprise me to this day," says Langlands. "There was evidence that these L-functions were good but that they would have these consequences for algebraic number theory was by no means certain." As William Casselman observed, Langlands's astounding insight "has provided a whole generation of mathematicians working in automorphic forms and representation theory with a seemingly unlimited expanse of deep, interesting, and above all approachable problems to work away on."



COURTESY OF THE INSTITUTE FOR ADVANCED STUDY ARCHIVES

Langlands conversing with former Member Philip Kutzko

Some aspects of the Langlands program have been proven, such as Laurent Lafforgue's proof of the "Langlands conjecture for function fields," which Lafforgue presented in a series of lectures at the Institute in 1999 and for which he won a Fields Medal. Other aspects have led to proofs of seemingly unrelated theorems, such as Andrew Wiles's 1994 proof of Fermat's Last Theorem. "Nobody understood really before Wiles the implications for Fermat's theorem. That was something that will have an enormous influence," says Langlands. "Proposals of interest only to mathematicians, and then only to a small circle of mathematicians, now had potential appeal to anyone with even a slight interest in scientific ideas."

The geometric Langlands program, created by Vladimir Drinfeld and collaborators, is particularly rich for implications in theoretical physics, especially string theory. Last year, Edward Witten, Charles Simonyi Professor in the School of Natural Sciences, who says his understanding of the Langlands program is limited (see box, above) wrote a 225-page paper on the relation of part of the geometric Langlands program to physics. Asked if he understands Witten's work in relation to his program, Langlands replies, "I would say at the moment no. I think I would like to. At first, I wanted to understand it out of curiosity but now I think there are other reasons for wanting to do so."

Despite tremendous progress, the core problem (functoriality) of the Langlands program remains unsolved, according to Langlands. Moreover, Langlands observes, "[Alexander] Grothendieck left behind some unrealized ideas. There are connections between these ideas and my proposals. What I like to think, although I may be fooling myself, is that the two will someday merge."

In recent years, Langlands has spent some of his time studying a field unrelated to the Langlands program—lattice models of statistical physics and the attendant conformal invariance. His interest in languages continues unabated, particularly his study of Russian, which he laments, remains "one of the unrequited intellectual loves of my life." Now and again, he likes to write something about the history of mathematics. "I am rather fascinated by mathematics as a chapter in the history of ideas," says Langlands.

(Continued on page 7)

Edward Witten on Geometric Langlands

The Langlands program is incredibly vast and far-reaching. The deepest aspect of it, as far as we know, involves the number theory setting where Langlands started close to forty years ago. However, the Langlands program has all kinds of manifestations. The part that I have tried to understand personally is the "geometric" form of the Langlands program, where some of the ideas are converted from number theory into statements in geometry.

For a long time, mathematicians working on the geometric Langlands program have made great use of ideas from mathematical physics—notably an area called conformal field theory that is important both in condensed matter physics and in string theory. But the physics ideas were always rearranged in ways that—to a physicist—looked strange. This bothered me a lot for years, really for decades. I felt that if physics-based ideas are relevant to the geometric Langlands program, then it should be possible to reformulate the geometric Langlands program in terms that would be more recognizable to a physicist. Eventually, after a lot of false starts, I did have some success with this.

Despite all the hard work, I personally only understand a tiny bit of the Langlands program. I think, however, that this probably puts me in the majority among researchers who work on it. It is such a vast subject that few can really have an overview. And where it will ultimately lead, it is way too soon to say.

—Edward Witten, Charles Simonyi Professor in the School of Natural Sciences

ATLE SELBERG
June 14, 1917–August 6, 2007

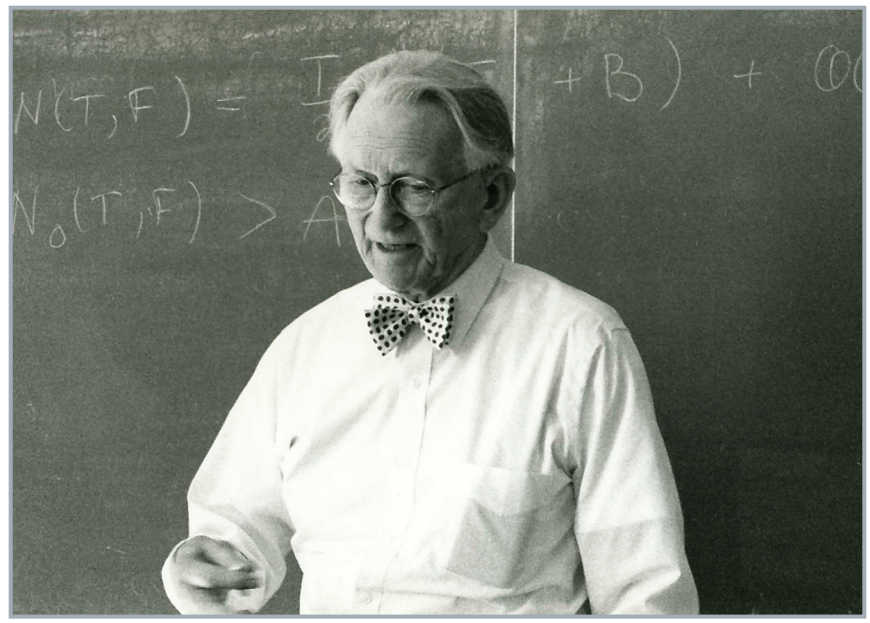
Renowned Norwegian mathematician Atle Selberg, Professor Emeritus in the School of Mathematics at the Institute for Advanced Study, died on August 6, 2007, at the age of ninety.

Throughout a career spanning more than six decades, Professor Selberg made significant contributions to modular forms, Riemann and other zeta functions, analytic number theory, sieve methods, discrete groups, and trace formula. The impact of his work is evident from the many mathematical terms that bear his name: The Selberg Trace Formula, The Selberg Sieve, The Selberg Integral, The Selberg Class, The Rankin-Selberg L-Function, The Selberg Eigenvalue Conjecture, and The Selberg Zeta Function.

"Atle's passing marks a great loss, both to the Institute and to the larger scientific community," commented Director Peter Goddard. "His far-reaching contributions have left a profound imprint on the world of mathematics, and we have lost not only a mathematical giant, but a dear friend."

Widely regarded as one of the world's greatest analytic number theorists, Selberg first came to the Institute for Advanced Study from Norway in 1947 at the invitation of Carl Ludwig Siegel, who noted that, at thirty-one years of age, Selberg "already had earned his place in the history of science in the twentieth century."

After spending a year at the Institute, Selberg took a post as an associate professor at Syracuse University, returning to the Institute in 1949 as a permanent Member. In 1951, he was appointed Professor in the Institute's School of Mathematics, and he was named Professor Emeritus in 1987.



C. J. MOZZOCHI

Atle Selberg

COURTESY OF BETTY COMPTON SELBERG

Selberg, the youngest of nine children, seated on his mother's lap

Selberg knew seven of the Institute's eight Directors, missing only Founding Director Abraham Flexner, and ranked among the great figures in the Institute's history. He cut wood with Oswald Veblen and a group of mathematicians and physicists, Wolfgang Pauli and Raoul Bott among them, in the Institute Woods on Wednesday afternoons. As the Executive Officer for the School of Mathematics in the early 1960s, he also agreed to cast votes for Kurt Gödel during Faculty meetings. Gödel refused to take part in the meetings because Selberg had asked then-Director J. Robert Oppenheimer not to attend them. (Gödel believed in authority.) In this and many other ways, Selberg played a major role in the development of the School of Mathematics, including the recruitment of André Weil.

"The twentieth century was blessed with a number of very talented mathematicians, and of those, there are a few who I would say had a golden touch," said Peter Sarnak, Professor in the School of Mathematics. "In any topic about which they thought in depth, they saw further and uncovered much more—seemingly effortlessly—than the generations before them. Their work set the stage for many future developments. Atle was one such mathematician; he was a mathematician's mathematician."

During the 1940s, Selberg's work centered around the theory of the Riemann Zeta Function and related problems concerning the distribution of prime numbers. The celebrated Riemann Hypothesis states that all the "nontrivial" zeros of the Riemann Zeta Function lie on the line in the complex plane consisting of numbers of the form $1/2 + it$, where t real is a real number. This central problem remains unsolved to this day.

Developing fundamental, new techniques, Selberg showed that a positive proportion of these infinitely many zeros lie on this line. These ideas led him to his powerful and novel sieving methods and in 1948 to his celebrated Selberg Trace Formula and to the elementary proof of the Prime Number Theorem. The latter took the mathematical community by surprise as such a proof had been sought since the formulation of the problem by Legendre and Gauss some 150 years earlier. For these works, Selberg was awarded the prestigious Fields Medal in 1950.

It was at the Institute, during the early 1950s, that Selberg turned his attention to the spectral theory of automorphic forms. His 1956 paper in the *Journal of the Indian Mathematical Society* introduced, among other things, what is known today as The Selberg Trace Formula. "This is one of the most influential mathematical papers of the twentieth century," noted Sarnak. "It lays the foundations and many of the tools on which the modern theory of automorphic forms, with its many spectacular applications, rests."

Selberg's work in automorphic forms led him in 1960 to the discovery of an unexpected phenomenon of the rigidity of lattices in higher rank Lie groups. This phenomenon was developed much further by a number of mathematicians, and it is a central theme in modern geometry and group theory. Selberg continued to lecture, elaborate, and develop new aspects of the many topics that he pioneered until well into his eighties.

In 1987, nearly one hundred mathematicians from all over the world convened in Oslo, Norway, for a symposium in honor of Selberg's seventieth birthday. In the preface to the collection of the twenty-nine papers presented at the symposium and published by Academic Press in 1989, fellow mathematician Karl Egil Aubert extolled Selberg's "many-sided achievements [that] place him squarely as one of the truly great mathematicians of the twentieth century."

In his more than five decades at the Institute, Selberg maintained an understated view of his highly significant accomplishments in the field. In 1990, he noted, "I think the things I have done ... although sometimes there were technical details, and sometimes even a lot of calculation, in some of my early work ... the basic ideas were rather simple always, and could be explained in rather simple terms ... in some ways, I probably have a rather simplistic mind, so that these are the only kind of ideas I can work with. I do not think that other people have had grave difficulties understanding my work."

Enrico Bombieri, IBM von Neumann Professor in the School of Mathematics at the Institute, described the hallmark of Selberg's style as "simplicity and elegance of method, [and] powerful results. He had an uncanny ability to see immediately what was at the core of an issue. This ability was by no means restricted to scientific matters."

In honor of Selberg's ninetieth birthday in June 2007, the Institute invited his close colleagues and friends to celebrate his lifetime of achievement. Among those who spoke at the event was former School of Mathematics Member Nils Baas, who conveyed the congratulations of the Norwegian government and proposed a toast to "Atle Selberg—a great Norwegian." Selberg himself spoke animatedly and at length at the event, and noted of the Institute's early days, "the whole complement of people in the Institute was very small. By and large, everybody knew everybody. Even I knew everybody."

Selberg, who was born on June 14, 1917 in Langesund, Norway, was the youngest of nine children born to Anna Kristina Selberg, a teacher, and Ole Michael Selberg, an educator and mathematician. His siblings became teachers and academics, including brothers Henrik and Sigmund, mathematicians who were both members of the Norwegian Academy of Sciences and Letters; Henrik was a Member at the Institute in 1963–64. Selberg's childhood and youth were spent in Norway, in Voss, Bergen, and Gjøvik. At the age of

DINAH KAZAKOFF

Selberg with Nils Baas (left) at his ninetieth birthday celebration

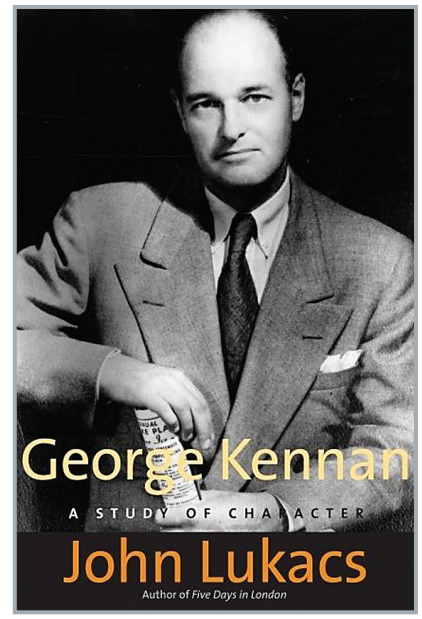
thirteen, he began to study mathematics using his father's extensive library, where he discovered Leibnitz's series for $\pi/4 = 1 - 1/3 + 1/5 - 1/7 \ldots$, later describing it as "such a very strange and beautiful relationship that I determined I would read that book in order to find out how this formula came about."

In 1934, Selberg came upon a copy of the collected works of Indian mathematician Srinivasa Ramanujan,

(Continued on page 7)

GEORGE KENNAN: A STUDY OF CHARACTER

A Review by Jack F. Matlock, Jr.



John Lukacs's *George Kennan: A Study of Character* (Yale University Press, 2007) is, to my knowledge, the first book-length study of Kennan to appear since his death in 2005, at the age of 101. While it is not a complete biography—Yale professor John Lewis Gaddis, who has been granted access to all of Kennan's papers, is now at work on one—Lukacs has produced a concise, well-argued study of Kennan's thought. It conveys a balanced view of Kennan's contributions to policymaking, historical research, and public philosophy with the insight of a long-time friend, correspondent, and interlocutor. Though Lukacs was a friend, his book is not a puffpiece; it is remarkably objective in pointing out inconsistencies in Kennan's thinking and the impracticality of some of his policy preferences. At the same time, Lukacs's analysis never degenerates into the sort of polemic to which some of Kennan's critics have resorted.

George Kennan was not satisfied with the book-length studies of his work and thought that appeared during his lifetime. There were at least three: by David Mayers (1988), Walter Hixson (1989), and Wilson Miscamble (1992). Kennan complained at times that these authors misunderstood and misrepresented his thought on key questions. He was, perhaps, overly sensitive to criticism, but he had a point: all of these studies concentrate on Kennan's position on the political issues of the day rather than on his reasons for taking them. All were written more than a decade before Kennan's death and could not take account of Kennan's remarkable productivity during the 1990s as a historian and public philosopher. All were written too early to recognize that Kennan's early insights about the Soviet Union proved to be more accurate than those of his critics. (He had predicted in the early 1930s that the Soviet Union would eventually be subject to internal fissures that could bring it down.)

Furthermore, previous studies provided little understanding of Kennan's personality. He was more modest—even gracious—in debate and private correspondence than a reader would have suspected from the vivid and categorical imagery he often employed in his published writings on current political issues. John Lukacs, combining the perspective of a post–Cold War observer with direct knowledge of Kennan's personality, has managed to capture the essence of Kennan's character and thought more successfully than any of the earlier commentators. He has done this in an admirably compact and readable volume.

Lukacs's study also makes clear, as earlier studies did not, the importance of the Institute for Advanced Study in Kennan's life and work. Something of a loner by nature—though by no means antisocial—Kennan found his natural intellectual home at the Institute. Despite his importance, at key junctures, as a policy adviser, he was never comfortable in a bureaucratic environment. He actively resented the pressures of domestic politics on policy formation and had little patience for the administrative duties and empty formalities that accompany senior positions in the government. Given the nature of American politics and the structure of its government, his life would have been one of repeated frustration if he had stayed longer in the Foreign Service. We can all thank the Institute—as he always did—for providing a suitable environment and necessary support for his independence of mind and his remarkable productivity.

Kennan applauded the diplomacy of the late 1980s and early 1990s that resulted in the end of the Cold War, but by the mid-1990s he was again a critic of major aspects of American foreign policy. He called the enlargement of NATO a fundamental strategic error, deplored the bombing of Serbia over Kosovo, and warned that an invasion of Iraq would end in disaster. Recent events are testimony to his prescience on these points.

We can benefit, even today, from pondering some of Kennan's judgments made more than a half century ago. Considering the record of American foreign policy from 1900 to 1950, he complained in 1951 that much "was utopian in its expectations, legalistic in its concept of methodology, moralistic in the demands it seemed to place on others, and self-righteous in the degree of high-mindedness and rectitude it imputed to ourselves." Is this still true, and if so, have these characteristics strengthened or weakened American diplomacy? I leave it to the reader to decide.

As for Russia, at about the same time, when that country still seemed locked in an inescapable totalitarian dictatorship, he observed, "If it should turn out to be the will of fate that freedom should come to Russia by erosion from despotism rather than by the violent upthrust of liberty, let us be able to say that our policy was such as to favor it, and that we did not hamper it by preconception, or impatience, or despair." One can well imagine how Kennan would react today to the efforts of some of our politicians to "penalize Russia" (as if we had the power to do so) for its "backsliding on democracy" (the latter as we, not they, define it).

John Lukacs's absorbing study reminds us of these and many other examples of Kennan's wisdom, wisdom that has been ignored of late at great cost to our country's standing in the world. We can only hope that Kennan's principles will receive more respectful attention by American policymakers in the future, lest posterity be required to pay an even heavier price for failure than that imposed upon our present generation. ■

Jack F. Matlock, Jr., former U.S. Ambassador to the Soviet Union, served as the first George F. Kennan Professor in the Institute's School of Historical Studies from 1996 to 2001.

SELBERG *(Continued from page 6)*

which an older brother had brought home with him from school. At age seventeen, Selberg wrote his first article, "On Some Arithmetical Identities." The next year, he began his education at the University of Oslo, where he submitted the paper for review to one of his professors. A year later, the article was published.

By the time Selberg obtained his Ph.D. in 1943, also at the University of Oslo, he had published eleven more articles, the later ones focusing on Riemann's Zeta Function. His paper on The Selberg Integral dates from this period and it is his only paper in Norwegian; it took more than thirty years to be recognized for its importance.

Selberg defended his dissertation i n November 1943, shortly before the German occupying forces closed down the university for the duration of the war. Selberg had been appointed a research fellow at the University of Oslo in 1942, the year before he received his doctorate. He remained in this post until 1947, when he married Hedvig Liebermann of Tirgu Mures, Transylva nia, and moved to the United States. During the Second World War he worked in isolation due to the occupation of Norway by the Nazis, but after the war, his accomplishments in the theory of the Riemann Zeta Function became known.

In addition to the 1950 Fields Medal, Selberg's contributions to the field of mathematics have been widely recognized, including an honorary doctorate from the University of Trondheim (1972) and the Wolf Prize in Mathematics (1986), which is bestowed annually for outstanding achievements in agriculture, chemistry, mathematics, medicine, physics, and the arts. He was inducted into the Royal Norwegian Academy of Sciences and Letters, the Royal Danish Academy of Sciences and Letters, the Royal Swedish Academy of Sciences, the American Academy of Arts and Sciences, the Indian National Science Academy, and was named an honorary member of the London Mathematical Society. In 1987, Selberg was named a Knight Commander with Star of the Royal Order of Saint Olav.

Selberg's first wife, Hedvig, worked at the Institute in the 1950s in the group headed by John von Neumann, and later at the Princeton Plasma Physics Laboratory until the 1980s; she died in 1995. He is survived by his second wife Betty Compton Selberg of Princeton; his two children from his first marriage, daughter Ingrid Maria Selberg and son-in-law Mustapha Matura of London, and son Lars Atle Selberg and daughter-in-law Julia Selberg of Middlefield, Connecticut; his two stepdaughters Heidi Faith of Mountain View, California, and Cindy Faith of Roland Park, Maryland; and his grandchildren Cayal Mathura, Maya Kristina Mathura, Atle Michael Selberg, and Katharine Rowley Selberg.

The Institute will host a memorial for Professor Selberg on January 11–12. ■

LANGLANDS *(Continued from page 5)*

In the 1999–2000 academic year, Langlands presented a series of Institute talks, "The Practice of Mathematics," aimed at explaining several central mathematical problems to a general audience. The series, for which Langlands adopted the title of a poem by William Butler Yeats, "Beautiful, Lofty Things," for inspiration, grew from eight to sixteen lectures over the course of the year. "It grew partially because it was fun to do," says Langlands, who notes that the lectures were inspired in part by the late Clifford Geertz, Professor in the School of Social Science. "He would occasionally ask me about mathematics," explains Langlands. "When I started, I had him implicitly in mind as a member of the audience, as *the* audience."

Over the years Langlands has been a strong supporter, financially and otherwise, of the intellectual and cultural life of the Institute, engaging in discourse with his colleagues in the other Schools and attending its lectures and concerts with his wife Charlotte, to whom he has been married for fifty-one years. They have four grown children and several grandchildren. "At the Institute, there can be a richer intellectual life than is often possible at a university," says Langlands.

Arriving at the Institute at age thirty-six and being granted the freedom to pursue his curiosity and unfettered time to think, Langlands says, has been a true blessing. "I wish often that I had done better, but nonetheless, it is a real reason to be grateful." ■

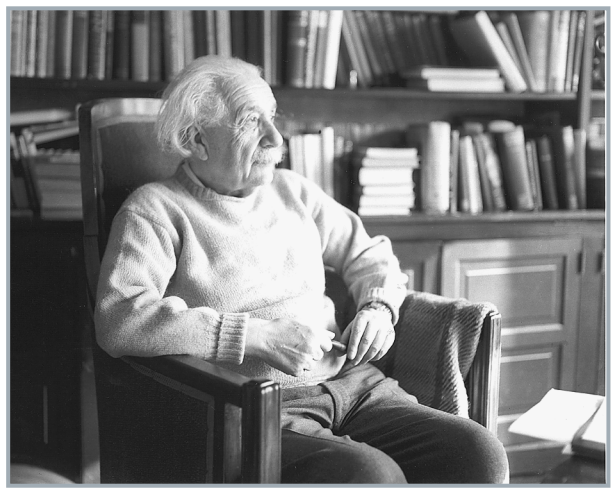
BI'OGRAPHYING, *VBL. N.*: ON EINSTEIN

By Diana Kormos Buchwald

In the last four years, according to cursory research into library databases, it appears that about 250 books have been published pertaining in some way to the life and work of Albert Einstein (1879–1955). These include Walter Isaacson's Einstein: His Life and Universe (Simon & Schuster, 2007) *and* Einstein on Politics: His Private Thoughts and Public Stands on Nationalism, Zionism, War, Peace, and the Bomb (Princeton University Press, 2007)*, edited by David Rowe and Robert Schulmann. Here, Diana Kormos Buchwald, director and general editor of the Einstein Papers Project and a former Member in the School of Social Science (1992–93), writes about the historical and present treatment of Einstein as a biographical subject.*

According to the *Oxford English Dictionary*, the first use of the noun "biography" in the English language appeared in Dryden's 1683 *Life of Plutarch*. There, Dryden treated biography, the history of the lives of individual men, as a branch of literature. Its second use, indicating a written record of a person's life, entered English around the turn of the eighteenth century. As for the métier of the "biographer," a noun that replaced the earlier variant "biographist," it first appeared in 1715, rather unflatteringly, in Joseph Addison's shortlived *Freeholder Whig* political magazine: "Grubstreet Biographers ... watch for the Death of a great Man." Addison, a founder of the toasters' Kit Cat Club in London, much loved for his innocuous satire, during times well-known for excesses and flamboyance, was keen to observe that "admiration is a very shortlived passion that immediately decays upon growing familiar with its object."

Over the past nine decades, biographies of Einstein



ALAN RICHARDS

Have we a proper Einstein biography fifty years after his death?

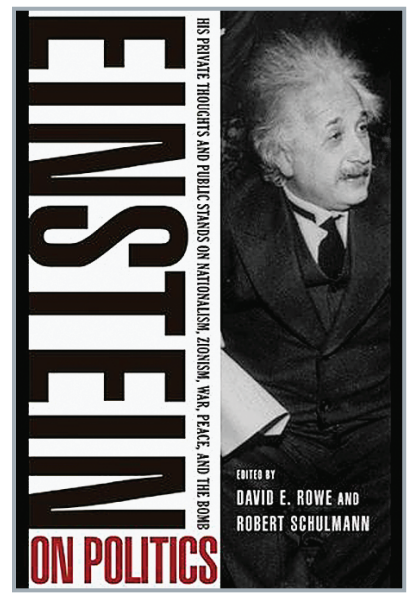
have mirrored the preoccupations and appetites of writers and readers. He was first embraced by an enthusiastic international press in 1919, after the results of two British eclipse expeditions confirmed the crucial prediction of gravitational lightbending contained in his general theory of relativity, completed almost four years earlier. The Berlin papers compared the forty-year-old Einstein with Copernicus, Galileo, and Newton. The daily accounts of Einstein's tribulations during trips to the United States and Japan in 1921–22 produced the iconic persona of the disheveled, irreverent, yet wise theoretical physicist. More recently, the earlier "saintly sage" has gradually been deposed, and a more "human," if on occasion more pedestrian, Einstein is taking his place.

Walter Isaacson, a journalist, editor, and former executive at CNN and *Time* magazine, has resisted the impulse to show us that Einstein, too, had feet of clay. Instead, his wide-ranging biography, based on the most recent scholarly research and newly available archival materials, argues that Einstein's life provides a fitting model for an age of globalization that requires renewed efforts at fostering creativity and strengthening freedom of inquiry and human compassion. The private and the public Einstein, his stances on various social and political issues, as well as well-crafted accounts of Einstein's major scientific accomplishments are all present alongside juicy anecdotes and contemporary news reports.

In 1921, a first book of "conversations" with Einstein was published in Berlin by the journalist A. Moszkowski; it was soon followed by various popular expositions of relativity that contained biographical sketches of Einstein, by numerous interviews, and by a dozen or so more substantial biographies published during his lifetime. Of these, the first was an Italian booklet, eight were first published in English, one was aimed at young children, and several were issued already in the 1920s in China and Japan. As in Addison's and Carlyle's time, journalists played the leading role in the production of Einsteiniana. Some colleagues, such as Max Born, directly complained to Einstein that these writings were unseemly eulogies to a living scientist.

While Einstein was still alive, the longer biographies were written by authors who had a personal connection to the famous scientist: Rudolf Kayser, essayist, critic, and journalist, whose 1930 book is often referred to as the earliest complete treatment, was Einstein's son-in-law; so was the Soviet journalist Dimitri Marianoff, who published an "intimate" portrait in 1944. Antonina Vallentin, a correspondent for the *Manchester Guardian*, had been a friend of the Einsteins in Berlin; Philipp Frank, physicist and philosopher, had been Einstein's successor as professor of theoretical physics at the German University in Prague in 1912; the physical chemist David Reichinstein had audited Einstein's courses as early as 1911 and remained a frequent correspondent; and Leopold Infeld was one of Einstein's close collaborators during his Princeton years. Often embarrassed by these books, Einstein mentions in several letters that he allowed these friends and family members to write about him because doing so would assist them during the political and economic crises and displacements of the interwar years. He mostly came to regret their publications, and on at least two occasions unsuccessfully tried to stop the presses.

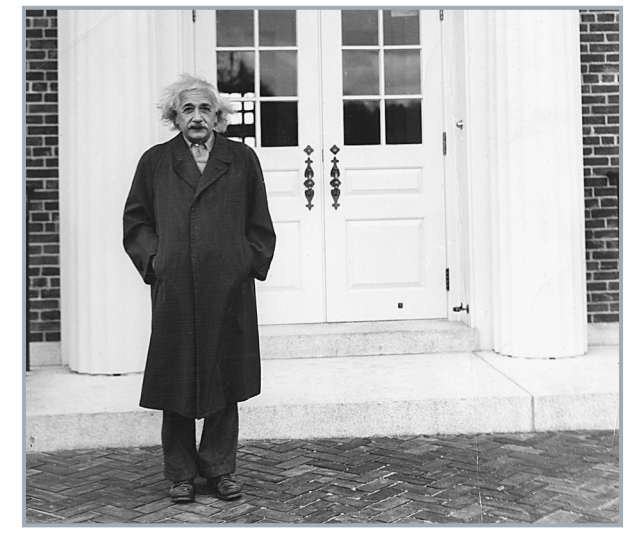
After Einstein's death in 1955, when his mere physical presence could no longer inhibit or intimidate, opinions and biographies proliferated, especially during anniversary years. At the 1965 UNESCO workshop in Paris, J. Robert Oppenheimer, then Director of the Institute for Advanced Study, elaborated in public the view he had long held, and of which Einstein had been well aware for years: namely, that Einstein was seen to have wasted the last decades of his life on efforts toward a unified field theory that his younger contemporaries considered utterly misguided. The 1930s through the 1970s had been the era of discovery and innovation in atomic and high energy physics, and Einstein had ceased being a guiding light for the generation of experimental and theoretical physicists trained by Oppenheimer and many others at Berkeley, Chicago, Columbia, Los Alamos, and elsewhere.



A recently published annotated volume of Einstein's writings on politics

In 1982, Abraham Pais, who had arrived at the Institute in 1947, published what remains to this day the most respected and detailed scientific biography.

A distinguished physicist, Pais had a



HARRY C. DORER/COURTESY OF NEWARK PUBLIC LIBRARY

Einstein in front of the Institute's Fuld Hall

solid grasp of Einstein's work. Yet he too considered that Einstein, whom he had met, essentially had ceased being a major contributor to modern physics by the time he was forty—"Einstein could have gone fishing," Pais reputedly said to colleagues. The book appeared at the apex of support for theoretical physics in the United States. While idiosyncratically structured, it was splendidly researched. Purely biographical (short) chapters were interspersed with extensive scientific ones. With suitably italicized headings, Pais recommended that readers with a modest interest in (or grasp of) physics could skip the technical parts. Nevertheless, this volume was primarily aimed at physicists and those interested in the technical details of Einstein's scientific development.

Pais benefited from the assistance of Helen Dukas, Einstein's secretary, who provided him access to Einstein's papers, located until shortly before her death in 1982 at the Institute and in Einstein's home on Mercer Street in Princeton. Dukas, the one person alive in the late 1970s who might have composed a firsthand, in-depth portrait of Einstein's "human side," modestly contented herself with publishing a selection of quotations from Einstein's writings and correspondence in 1981, coedited with Banesh Hoffmann, a physicist and one-time Einstein collaborator. With her generous assistance, Pais immersed himself into certain aspects of Einstein's life and work, leaving others less well explored. Of the book's 500 pages, Pais devoted 400 to the pre-1925 period of Einstein's life, explaining the extraordinary achievements of relativity and the early quantum theoretic papers. In background, training, and professional identity a product of the influential Copenhagen school led by Niels Bohr, Pais was a critic of Einstein's "stubbornness" and lack of appreciation for the new directions in physics. His book perpetuated the view that Einstein "lost his identity" as a leading physicist already in the 1920s, when quantum mechanics became the reigning professional paradigm.

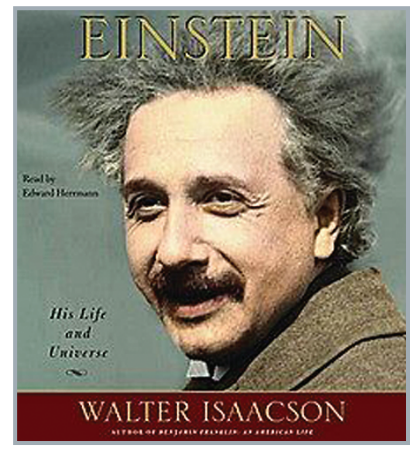
Nevertheless, this view was not universally shared even in the 1960s, and has certainly been modified in the recent past. John Wheeler, for example, continued to be inspired by Einstein's work, even by Einstein's efforts toward a unified field theory, and eventually built a highly successful school of modern relativistic physics. These days, string theorists often see themselves as continuators of the "later" Einstein tradition, and though their fundamental assumptions are completely different, the underlying convictions and methodologies of their recent work show significant similarities.

Yet another decade later, science journalist Albrecht Fölsing's biography of Einstein was the earliest to greatly benefit from the availability of the Einstein Archive established at the Hebrew University in Jerusalem, the institution to which Einstein had bequeathed his literary estate. Unlike Ronald Clark, a science writer and author of the first complete post-1955 biography published in

1971, Fölsing could also draw on the first volumes of *The Collected Papers of Albert Einstein*, published by Princeton University Press, and from the assistance and insights of the series' editors. Fölsing, who has also written on Galileo, Wilhelm Roentgen, and Heinrich Hertz, covered Einstein with fresh insight and smooth prose—in an at times unidiomatic translation. While the book probably remains the one most profusely documented with primary sources, it was mildly criticized for instances of disappointing treatment of Einstein's science.

In 1987, the first volume of *The Collected Papers of Albert Einstein*, edited by John Stachel and his collaborators, contained previously entirely unknown documents. The love letters between the young Einstein and his first wife Mileva Marić discovered by Robert Schulmann, an editor of the series, revealed not only their youthful premarital liaison, but also the birth in 1902 of a daughter whose whereabouts have been entirely lost. (It is thought that the daughter, Lieserl, died of scarlet fever when still a small child.) In light of passages referring to their studies, reading, and work, the letters opened up a controversy as to whether Marić contributed or not to Einstein's early papers. This debate was added to other, earlier disputes: for example, the significance of Henri Poincaré as a progenitor of special relativity (for an altogether different approach to this issue that contextualizes both Einstein's and Poincaré's work in the early 1900s, see Peter Galison's 2003 book *Einstein's Clocks, Poincaré's Maps: Empires of Time*); the issue of credit to be apportioned to David Hilbert and Einstein for the final formulation of the general theory of relativity; and the interpretation of the 1919 eclipse expedition results by Sir Arthur S. Eddington. All these constitute even today active areas of engagement and, among the younger scholars, Jeroen van Dongen, Daniel J. Kennefick, Alberto Martinez, and Tilman Sauer, are making significant contributions to their clarification.

But even before the late 1980s, attempts at gaining a deeper historical understanding of Einstein's work in the context of modern science were illuminated through the efforts of specialized scholars, notable among them in the United States, Gerald Holton, Martin Klein, Thomas S. Kuhn, John Stachel, and many others, followed by the editors and contributors to *The Collected Papers* project. Of greatest interest to many specialists was the detailed exploration of Einstein's path to the general theory of gravitation, a topic that has been intensively studied on the basis of Einstein's scientific notebooks, published in volumes 4 and 6 of the edition, and now expanded in two recent volumes edited by Michel Janssen, John Norton, Jürgen Renn, Tilman Sauer, and John Stachel. Also vital have been the annotated volumes of Einstein's writings by knowledgeable scholars—such as the recent *Einstein on Politics: His Private Thoughts and Public Stands on Nationalism, Zionism, War, Peace, and the Bomb*, edited by David Rowe and Robert Schulmann—which provide readers with access to authoritative translations, explanations of the historical context, and sources.



Journalist Walter Isaacson's tome

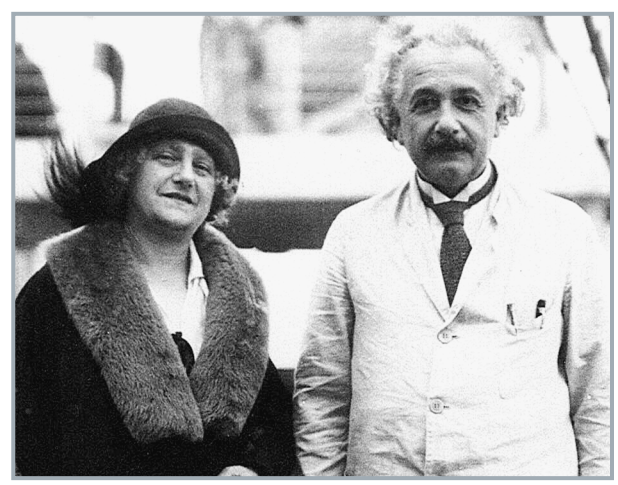
By the mid-1990s, the increasing availability of edited and translated Einstein correspondence and speedier access to archival material fostered further biographies. The overall tenor in popular treatments shifted from Einstein's intellectual and humanistic achievements to microscopies of his private life. Especially after correspondence between Einstein and his cousin, Elsa Einstein, appeared in the fifth volume of the series in 1993, revealing that Einstein had begun a relationship with her as early as 1912, while still married to Marić, biographies moved from the gently voyeuristic into the editorializing of his moral failures vis à vis his children and the women in his life.

In principle, the demise of false gods is a healthy exercise. "Debunking the Einstein myth" became an oft-encountered phrase. In 1993, first in England and then the U.S., *The Private Lives of Albert Einstein* by Roger Highfield and Paul Carter was likened to a "hand grenade lobbed into the sacred temple" of Einstein biography. It was followed in 2000 by Dennis Overbye's *Einstein in Love: A Scientific Romance*, in which Einstein's love objects are seen as essential ingredients to his creative bursts, eventually discarded or neglected by the increasingly successful and famous scientist.

Einstein has been accused of creating a self-serving mythology, as have the people who managed his literary estate into the mid-1980s, Helen Dukas and Otto Nathan. John Stachel gave a personal account of the complications leading to the eventual publication of the first volume of *The Collected Papers*, and criticized the "keepers of the flame" (see the essays in his book, *Einstein from 'B' to 'Z'*, 2002). This view appeared most recently in the biography of science journalist Juergen Neffe. According to its jacket copy, *Einstein*, a best-seller in Germany published in the U.S. this year, aims to provide "a groundbreaking psychological portrait of a man whose character has too often been obscured by the shadow of genius." Inclined toward sensationalist and at times unwarranted speculation, the author does not always provide accurate sources, nor does he always clearly distinguish between fact and opinion.

Carlyle was dissatisfied with the absence of a "proper biography," seventy years after Voltaire's death. Today, some fifty years after Einstein's death, a definitive and all-encompassing biography that would please all appetites —personal, scientific, historical, political—and that would address the young and old Einstein's life and work still remains a daunting task. None of the Einstein experts—historians and philosophers of science, editors of Einstein's papers, or specialists in modern German history—has published a "cradle to grave" biography, mindful of the complexity of the task and its possible pitfalls. We still have to study carefully another half of Einstein's life, a large number of unidentified manuscripts, a huge body of correspondence, both from his Berlin and Princeton years, and immerse ourselves in the work and writings of Einstein's scientific colleagues and contemporaries. We can thus look forward to many new biographies. ■

The Einstein Papers Project, of which Diana K. Buchwald is director and general editor, is devoted to the publication of The Collected Papers of Albert Einstein, *a multivolume series published by Princeton University Press. Kormos Buchwald is also Professor of History in the Division of the Humanities and Social Sciences at the California Institute of Technology.*



Einstein had a youthful premarital liaison with his first wife, Mileva Marić (left), and later married his cousin Elsa (right).

SARNAK *(Continued from page 1)*

1995 to 1996, when he became Chair of the Department of Mathematics. From 2001 to 2005, he was a professor at the Courant Institute at New York University, during which time he was named to his current position at Princeton.

Sarnak's work has been recognized by a number of awards and distinctions, including the Frank Nelson Cole Prize of the American Mathematical Society (2005), the Levi L. Conant Prize (2003), the Ostrowski Prize (2001), SIAM's Polya Prize (1998), and in 1985, a National Science Foundation (NSF) Presidential Young Investigator Award. He is a member of the National Academy of Sciences and is a Fellow of The Royal Society of London.

"Peter Sarnak is a mathematician with an extraordinary range of interests," observed Enrico Bombieri, IBM von Neumann Professor in the School of Mathematics. "His presence will be a fundamental factor in achieving full coverage of all aspects of mathematics in our School." ■

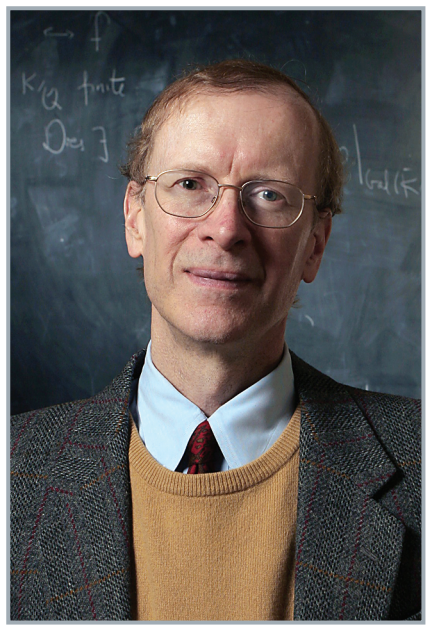
ARKANI-HAMED *(Continued from page 1)*

After earning his undergraduate degree in mathematics and physics at the University of Toronto in 1993, Arkani-Hamed obtained a Ph.D. in physics from the University of California, Berkeley, in 1997, and did postdoctoral work at the Stanford Linear Accelerator Center. He joined the faculty of the University of California, Berkeley, as Assistant Professor of Physics in 1999, and was named Associate Professor in 2001. After spending a year as Visiting Professor of Physics at Harvard University, he joined their faculty in 2002 as Professor of Physics. He is the recipient of a Phi Beta Kappa teaching award from Harvard (2005), the Gribov Medal of the European Physical Society (2003), and a number of fellowships, including a Packard Fellowship and a Sloan Fellowship, both awarded in 2000.

In July, Arkani-Hamed participated as a lecturer in the Institute's 2007 Prospects in Theoretical Physics program. The theme of the program, "The Standard Model and Beyond," focused on particle physics phenomenology with special emphasis on model building with the goal of preparing young physicists for the physics that will emerge from the LHC.

"We are very excited about Dr. Arkani-Hamed's appointment," commented School of Natural Sciences Professor Nathan Seiberg. "His deep understanding of physics and his remarkable creativity will further strengthen the School of Natural Sciences." ■

MATHEMATICIAN ANDREW WILES APPOINTED TO THE BOARD OF THE INSTITUTE FOR ADVANCED STUDY



DENISE APPLEWHITE/COURTESY OF PRINCETON UNIVERSITY

Andrew Wiles

Andrew J. Wiles, Eugene Higgins Professor of Mathematics and Chair of the Department of Mathematics at Princeton University, has joined the Board of Trustees of the Institute for Advanced Study. A world-renowned mathematician, Wiles is perhaps best known for his proof of Fermat's Last Theorem, for which he was honored by the International Mathematical Union in 1998.

At the May 2007 Board meeting, the Institute also accepted the resignation of two Trustees whose terms had ended—James Arthur, who had served as Academic Trustee for the School of Mathematics since 1997, and Ronaldo Schmitz, who joined the Board in 1992. Arthur, one of the world's foremost researchers in automorphic forms and Lie group representations and a frequent Member in the School through the years, was an extraordinarily effective advocate on behalf of the School of Mathematics as well as mathematics in the academic world and in society as a whole.

During his fifteen years of service on the Board, Ronaldo Schmitz, former member of the board of managing directors of Deutsche Bank AG, was instrumental in promoting the international character of the Institute and establishing the Institute's Albert O. Hirschman Chair in Economics. Schmitz was elected Trustee Emeritus effective May 5, 2007.

The British-born Wiles earned his undergraduate degree at Merton College, Oxford, in 1974, and obtained his Ph.D. at Clare College, Cambridge, in 1980. He was a Member in the School of Mathematics at the Institute in 1981–82, 1991–92, and 1995–2004, and will serve as the Academic Trustee for the School, where he is currently a Visitor. His present work concerns the solvability of equations in more than one variable and a long-term project to understand the problem of functoriality in Langlands's theory of automorphic representations.

Prior to his 1982 appointment to the faculty at Princeton University, Wiles was a Junior Research Fellow at Clare College and a Benjamin Pierce Assistant Professor at Harvard University. After being awarded a Guggenheim Fellowship, he spent a year at the Institut des Hautes Études Scientifique and the École Normale Supérieure, Paris, in 1985–86. He also spent two years at Oxford University as a Royal Society Research Professor beginning in 1988.

Wiles, whose research concerns number theory, has received numerous awards during his career, including: the Wolf Prize (1995–96); the National Academy of Science Award in Mathematics (1996); the Royal Medal of the Royal Society of London (1996); the Frank Nelson Cole Prize in Number Theory from the American Mathematical Society (1997); and the Shaw Prize in Mathematical Sciences (2005). He was named a Fellow of the Royal Society in 1989, and was elected a foreign member of the National Academy of Sciences in 1996 and the French Academy of Sciences in 1998, and in 2001 was named a London Mathematical Society Honorary Member. ■

ASHVIN CHHABRA APPOINTED CHIEF INVESTMENT OFFICER

DANIELA BONASEDE-CHHABRA

Ashvin Chhabra

Ashvin Chhabra, a financial investment executive with a Ph.D. from Yale in applied physics, has joined the Institute for Advanced Study as Chief Investment Officer. Chhabra is working closely with the Finance Committee of the Institute's Board of Trustees and John Masten, Associate Director for Finance and Administration, to manage the Institute's endowment.

Chhabra, who most recently served as managing director and head of wealth management strategies and analytics in the global private client group at Merrill Lynch, comes to the Institute with a broad range of investment research and financial modeling experience. He has held positions at Chase Manhattan and J.P. Morgan and was selected by a search committee drawn from the Institute's Finance Committee chaired by Dr. James Simons, president of Renaissance Technologies Corporation.

"We are delighted to have someone with Dr. Chhabra's analytic skills, broad investment experience, and understanding of the Institute's mission join us in this crucial role," said Director Peter Goddard. "The expertise he brings to this new position plays an important part in ensuring the growth of the Institute's endowment, on which the ability of the Institute to continue its work depends." ■

Leaving a Legacy

"The Institute has been wonderful to me and I am extremely grateful. The tranquil, scholarly atmosphere at the Institute—and its excellent library facilities—have enabled me to give a special depth and breadth to my biography of the great theoretical physicist Paul Dirac. I believe that it is important to do what I can to help sustain the future of this extraordinary organization."

—Graham Farmelo, former Director's Visitor
and Member of the Einstein Legacy Society

It has been widely suggested that gifts to charity—including bequests in one's will—are primarily driven by tax considerations. Our experience, however, suggests otherwise. In truth, it is the desire to create a legacy, not financial advantage, which motivates the large majority of charitable donors.

Since the Bamberger family's founding gift, the Institute has benefited from the vision and commitment of many individuals, like Dr. Farmelo, who have included the Institute in their estate plans. If you would like more information about creating your own legacy at the Institute, please contact Margaret A. Jackson, Planned Giving Officer, at (609) 951-4612 or pjackson@ias.edu. ■

FRIENDS

THE GENEROSITY OF FRIENDS

Contributions by Friends of the Institute for Advanced Study are exceedingly important to the Institute, providing its largest source of unrestricted income and allowing Director Peter Goddard the flexibility to allocate funds where they are most needed.

In fiscal year 2007, for example, Friends' funds were used to support a Member in each of the Institute's four Schools and to match substantial grants from the National Endowment for the Humanities to the Schools of Historical Studies and Social Science. Funds were also used to support a distinguished Director's Visitor, diplomat Lakhdar Brahimi; the Historical Studies/Social Science Library; the School of Natural Sciences; and the Institute's outreach program, the IAS/Park City Mathematics Institute.

Support for an extraordinary range of people and programs was possible thanks to the great generosity of Friends, whose combined contributions reached more than a half-million dollars in fiscal year 2007, an all-time high.

The dedication of many individuals figured in achieving this milestone. Five Friends took a significant step up and became members of the Founders' Circle, a new level of giving that requires a minimum contribution of $25,000.

Trustee Martin Chooljian, who became a charter member of the Founders' Circle, said, "It has always been a privilege to support the work of the Institute, and Helen and I were very pleased to have the opportunity to help initiate the Founders' Circle and so contribute in our own way to the extraordinary scholarship that takes place at IAS."

A number of new gifts also helped to raise the Friends' total. Under the leadership of Friends President Tina Greenberg and Membership Chair John Pallat, a record thirty-seven new Friends joined the Institute last year.

In recognition of their support, Friends receive many opportunities to participate in the intellectual and cultural life of the Institute. A full program of lectures, talks, concerts, films, and more take place throughout the academic year. For further information about the Friends, please see our website, www.ias.edu/about/friends, or call (609) 734-8204. ■

PAUL MORAVEC INTRODUCES *TRADITION REDEFINED*

Concert Series Renamed to Honor Edward T. Cone

As the third Artist-in-Residence at the Institute for Advanced Study, Pulitzer Prize-winning composer Paul Moravec has introduced *Tradition Redefined*, designed to explore some of the many modes in which contemporary musicians are reappraising, developing, and revitalizing musical conventions, especially in Western art music.

Tradition Redefined also marks the inaugural season of the Edward T. Cone Concert Series, named in honor of Edward T. Cone (1917–2004), a composer, pianist, writer, and professor emeritus of the Department of Music at Princeton University (see box, left). Cone established the Edward T. Cone Foundation during his lifetime to support the arts and humanities, with a special emphasis on music. This year, the foundation established an endowment to support the concert series of the Artist-in-Residence program at the Institute. In 2001, the foundation endowed an Edward T. Cone Membership in Music Studies in the School of Historical Studies, which has brought noted scholars to the Institute.

DINAH KAZAKOFF

New Artist-in-Residence Paul Moravec in Wolfensohn Hall

The Artist-in-Residence program at the Institute was established in 1994 to create a musical presence within the Institute community and to have in residence a person whose work could be experienced and appreciated by scholars from all disciplines.

The 2007–08 concert season began on Friday, October 5, and Saturday, October 6, with "Beyond Crossover," a performance by virtuoso clarinetist David Krakauer, who was joined by Marija Stroke, Will Holshouser, and Nicki Parrott. The program highlighted Krakauer's redefinition and personal combination of elements from his influences, including Western classical, jazz, and most notably, Klezmer music.

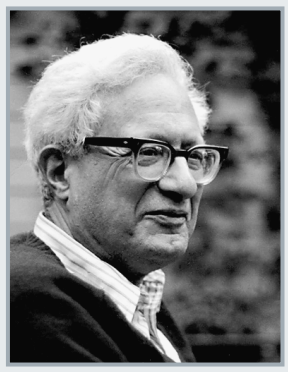
Professor Mark Slobin of Wesleyan University, a leading authority on Klezmer and other world music, presented a pre-concert lecture, "Jewish Music and the Electric Eclectic." Following the concert on Saturday, October 6, Krakauer spoke informally with Paul Moravec and with members of the audience about his remarkable artistic journey.

Few contemporary artists have mastered as comprehensive a range of musical styles and genres as violinist Maria Bachmann. On Friday, November 30, and Saturday, December 1, Bachmann and the British pianist Simon Mulligan will present "The Red Violin," a program featuring works by Corigliano, Ravel, Gershwin, and Moravec, from Bachmann's eponymous, recently released CD album, as well as the astounding—and rarely heard—Violin Sonata no. 3 by George Enesco.

Moravec will present a preconcert lecture, "A Composer's World Today," at 4 p.m. on Friday, November 30, in the West Building Lecture Hall. He will discuss, in part, his works that will be performed at the concerts, and he will reflect on how he approaches the matter of "tradition redefined."

The Enso String Quartet will perform on Friday, February 8, and Saturday, February 9, of next year. The season will conclude on Friday, March 7, and Saturday, March 8, with Quartet New Generation, a recorder collective dedicated to contemporary music and collaborations with emerging composers from around the world.

For more details and the latest information on the upcoming concerts, please visit www.ias.edu/air. ■



Noted composer, teacher, pianist, and author Edward T. Cone (1917–2004) earned his undergraduate and MFA degrees at Princeton University and was affiliated with its music department for more than fifty years. A Founding Friend of the Friends of the Institute, he had a close and long-standing relationship with the Institute. During his lifetime, he was a tireless supporter of the arts and humanities at the Institute and elsewhere. "It is a great pleasure and honor for the Institute to be able to name the Artist-in-Residence concert series for Edward T. Cone," commented Director Peter Goddard. "Ed was a great and generous Friend of the Institute, a remarkable composer, and an important musical scholar. He taught generations of Princeton students, most of whom never became professional musicians or scholars of music themselves, but who gained a deeper and a permanent appreciation of music. Now his name will be permanently attached to a series of concerts that continue in the tradition of presenting great music in the academic context of the Institute. We are grateful to the Edward T. Cone Foundation for its generous support." ■

CONCERTS AT THE INSTITUTE FOR ADVANCED STUDY

Edward T. Cone Concert Series

Concerts take place at 8 p.m. For information about the Edward T. Cone Concert Series and tickets, please visit www.ias.edu/air or call (609) 734-8228.

October 5 and 6, 2007
"Beyond Crossover": David Krakauer, *clarinet;* Marija Stroke, *piano;* Will Holshouser, *accordian;* Nicki Parrott, *bass*

November 30 and December 1, 2007
"The Red Violin": Maria Bachmann, *violin*; Simon Mulligan, *pianist*

February 8 and 9, 2008
Enso String Quartet

March 7 and 8, 2008
Quartet New Generation

DINAH KAZAKOFF

A chamber performance by Princeton Symphony Orchestra musicians at the Institute

Princeton Symphony Orchestra

Four times a year, the Princeton Symphony Orchestra presents its chamber series at Wolfensohn Hall. The concerts take place at 4:30 p.m. on Sundays, and tickets may be requested by calling Dinah Kazakoff at (609) 951-4458 or by email at kazakoff@ias.edu.

October 21, 2007
Ariadne Trio: Basia Danilow, *violin;* Peter Sanders, *cello*; Albert Stanziano, *piano*

November 18, 2007
Alistair MacRae, *cello*; Heather Conner, *piano*

January 13, 2008
Miranda Cuckson and Annaliesa Place, *violins*; Stephanie Griffin, *viola*; Joanne Lin, *cello*

April 13, 2008
Greg Giannascoli, *marimba*; Rebecca Edie, *piano*

THE INSTITUTE LETTER

COURTESY OF THE INSTITUTE FOR ADVANCED STUDY ARCHIVES

For the last twenty-one years, James D. Wolfensohn has served as Chairman of the Board of Trustees of the Institute for Advanced Study. The longest serving Chairman in the Institute's history thus far, he is pictured above at a Trustee dinner at Olden Farm in 1988, two years into his Chairmanship. At the time of the photograph, physicist Marvin L. Goldberger was Director of the Institute; since joining the Board in 1979, Wolfensohn has worked with four of the Institute's eight Directors, Harry Woolf, Goldberger, Phillip Griffiths, and the current Director, Peter Goddard.

As of October 27, Wolfensohn will step down as Chairman of the Institute, becoming Chairman Emeritus. He will be succeeded for one year by Board Vice Chairman Martin L. Leibowitz, who will serve as Chairman before Charles Simonyi, current President of the Corporation, officially begins his appointment as Chairman in October 2008.

Over the past quarter century, Wolfensohn, former president of the World Bank and current chairman of Wolfensohn & Company, L.L.C., has helped the Institute sustain and enhance its standing as one of the world's leading centers for intellectual inquiry. In addition to stewarding the growth of the Institute's endowment, which has more than quadrupled since his appointment as Chairman, Wolfensohn has taken a particularly active interest in extending the Institute's global impact and profile. He played an instrumental role in creating the Albert O. Hirschman Professorship in the School of Social Science in 2000, currently held by economist Eric S. Maskin, which acknowledges Professor Hirschman's unparalleled leadership in the field of economics. With Griffiths, Wolfensohn also spearheaded the creation of the Millennium Science Initiative, a program that aims to create and nurture world-class science and scientific talent in the developing world.

"Over many years, Jim Wolfensohn has been an essential force in the development of the Institute, deeply committed to its mission of the disinterested pursuit of knowledge," commented Director Peter Goddard. "Despite his many other formidable responsibilities, Jim's loyalty and commitment to the Institute have never wavered. He is much loved by the whole Institute community and we owe him an inestimable debt."

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