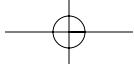# INSTITUTE
for ADVANCED STUDY
2006–2007

FACULTY AND MEMBERS

PRINCETON · NEW JERSEY

Since its founding, the Institute has maintained a policy of non-discrimination.

It is fundamental in our purpose, and our express desire, that in the appointments to the staff and faculty, as well as in the admission of workers and students, no account shall be taken, directly or indirectly, of race, religion, or sex. We feel strongly that the spirit characteristic of America at its noblest, above all the pursuit of higher learning, cannot admit of any conditions as to personnel other than those designed to promote the objects for which this institution is established, and particularly with no regard whatever to accidents of race, creed, or sex.

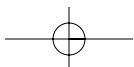—Louis Bamberger and Caroline Bamberger Fuld, in a letter, dated June 4, 1930, to the Institute's Trustees.

CONTENTS

INSTITUTE FOR ADVANCED STUDY
MISSION AND HISTORY

The Institute for Advanced Study is one of the world's leading centers for theoretical research and intellectual inquiry. The Institute exists to encourage and support fundamental scholarship—the original, often speculative, thinking that produces advances in knowledge. It provides for the mentoring of scholars by Faculty, and it offers all who work there the freedom to undertake research that will make significant contributions in any of the broad range of fields in the sciences and humanities studied at the Institute.

Founded in 1930 by philanthropists Louis Bamberger and his sister Caroline Bamberger Fuld, the Institute was established through the vision of founding Director Abraham Flexner. Past Faculty have included Albert Einstein, who arrived in 1933 and remained at the Institute until his death in 1955, and other distinguished scientists and scholars such as Kurt Gödel, Erwin Panofsky, Homer A. Thompson, John von Neumann, George F. Kennan, and Hermann Weyl.

Abraham Flexner was succeeded as Director in 1939 by Frank Aydelotte, in 1947 by J. Robert Oppenheimer, in 1966 by Carl Kaysen, in 1976 by Harry Woolf, in 1987 by Marvin L. Goldberger, and in 1991 by Phillip A. Griffiths. In January 2004, Peter Goddard became the Institute's eighth Director.

Dedicated to the disinterested pursuit of knowledge, the Institute has had permanent impact, in both intellectual and practical terms, through the work of its Faculty and Members. One of the Institute's unique strengths is its twenty-six permanent Faculty whose broad interests and extensive ties to the larger academic world are reflected in their own work and also in the guidance and direction they provide. The Faculty selects and works closely with visiting Members and defines the major themes and questions which become the focus of each School's seminars and other activities. Small in number and organized in four Schools (Historical Studies, Mathematics, Natural Sciences, and Social Science), the Faculty and Members can interact with one another without any departmental and disciplinary barriers.

Each year the Institute awards fellowships to some 190 visiting Members from about one hundred universities and research institutions throughout the world. The Institute's more than 5,000 former Members hold positions of intellectual and scientific leadership in the United States and abroad. Some twenty-one Nobel laureates, and thirty-four out of forty-eight Fields Medalists have been Institute Faculty or Members. Many winners of the Wolf or MacArthur prizes have also been affiliated with the Institute.

Located in Princeton, New Jersey, the Institute is a private, independent academic institution with no formal links to other educational institutions. However, there is a great deal of intellectual, cultural, and social interaction with Princeton University and other nearby institutions. The Institute's Historical Studies-Social Science Library has a collection of over 100,000 volumes and subscribes to approximately 1,000 journals. The Library of the Schools of Mathematics and Natural Sciences, located in Fuld Hall, contains over 30,000 volumes and an important collection of journals. Institute scholars have full access to the libraries of Princeton University and the Princeton Theological Seminary.

The Institute is situated on 800 acres of land, the majority of which has been permanently conserved, forming a key link in a network of green spaces in central New Jersey and providing a tranquil environment for Institute scholars and members of the community. The Institute does not receive income from tuition or fees. Resources for operations come from endowment income, grants from private foundations and government agencies, and gifts from corporations and individuals.
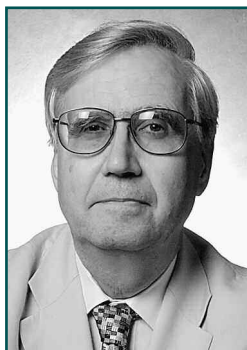
PETER GODDARD
Director

Peter Goddard, a mathematical physicist, is distinguished for his pioneering contributions in the areas of string theory, quantum field theory, and conformal field theory. Formerly Master of St. John's College in the University of Cambridge, England, he played a key role in the establishment of the university's Isaac Newton Institute for Mathematical Sciences, serving as its first Deputy Director, and the University of Cambridge Centre for Mathematical Sciences, one of the world's largest centers for research and teaching in the mathematical sciences.

SCHOOL OF HISTORICAL STUDIES

Administrative Officer: Marian Gallagher Zelazny

The School of Historical Studies was established in 1949 with the merg-
ing of the School of Economics and Politics and the School of
Humanistic Studies. It bears no resemblance to a traditional academic
History Department, but rather supports all learning for which histori-
cal methods are appropriate. The School embraces research throughout
the humanistic disciplines, from socio-economic developments, politi-
cal theory, and modern international relations, to the history of art, sci-
ence, music, and literature. In geographical terms, the School concen-
trates primarily on the history of Western, Near Eastern, and Far
Eastern civilizations, with emphasis upon Greek and Roman civiliza-
tion, the history of Europe (medieval, early modern, and modern), the
Islamic world, and East Asia. Support has also been extended to the his-
tory of other regions, including central Asia, India, and Africa.

The Faculty and Members of the School do not adhere to any one point
of view but practice a range of methods of inquiry and scholarly styles,
both traditional and innovative. Uniquely positioned to sponsor work
that crosses conventional departmental and professional boundaries,
the School actively promotes interdisciplinary research and cross-fertil-
ization of ideas. It thereby encourages the creation of new historical
enterprises.

Faculty
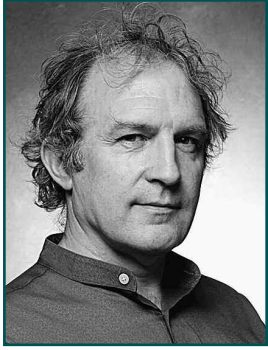
YVE-ALAIN BOIS
Professor • Art History

A specialist in twentieth-century European and American art, Yve-Alain Bois is recognized as an expert on a wide range of artists, from Henri Matisse and Pablo Picasso to Piet Mondrian, Barnett Newman, and Ellsworth Kelly. The curator of a number of influential exhibitions in the past decade, he is currently working on several long-term projects, including a study of Barnett Newman's paintings, the catalogue raisonné of Ellsworth Kelly's paintings and sculptures, and the modern history of axonometric projection.

CAROLINE WALKER BYNUM
Professor • Western Medieval History

Caroline Bynum's work has been instrumental in introducing the concept of gender into the study of medieval Christianity. Her pathbreaking books created the paradigm for the study of women's piety that dominates the field today and helped propel the history of the body into a major area of pre-modern European Studies. She is currently working on pilgrimage and piety in Germany and on theories of identity in medieval theology.

PATRICIA CRONE
Andrew W. Mellon Professor • Islamic History

Patricia Crone's scholarly and intellectual activities concentrate on the history of Late Antiquity and the early Middle Ages, circa 630 to 900, when a recognized Islamic culture appeared and subsequently rose to dominate the area from Spain to the frontiers of China and India. The author of numerous books and published papers, Crone's work challenges long-held explanations and provides new approaches for the social, economic, legal, and religious patterns that transformed Late Antiquity.

Faculty

NICOLA DI COSMO
Luce Foundation Professor in East Asian Studies • East Asian Studies

Nicola Di Cosmo's research focuses on the history of the relations between China and Inner Asia from prehistory to the modern period. His work specializes in the cultural, political, and military history of China's northern frontiers, with an emphasis on Mongol and Manchu sources as well as archaeological materials. His current projects include the study of the historiography of Inner Asian peoples and cultural contact in ancient China, the political and economic history of the early Manchu state, and questions of historical method in the study of Chinese dynasties of foreign origin.
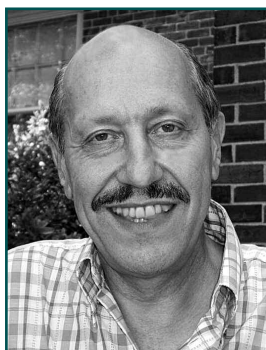
JONATHAN ISRAEL
Professor • Modern European History

Jonathan Israel's work is concerned with European and European colonial history from the Renaissance to the eighteenth century. His recent work focuses on the impact of radical thought (especially Spinoza, Bayle, Diderot, and the eighteenth-century French materialists) on the Enlightenment and on the emergence of the modern ideas of democracy, equality, toleration, freedom of the press, and individual freedom.

AVISHAI MARGALIT
*George F. Kennan Professor* • Philosophy and Modern International Relations

Avishai Margalit is one of the foremost thinkers and commentators on the contemporary human condition, the moral issues of our time, and current problems facing Western societies. In addition to his influence as a philosopher, he is highly regarded for his profound and cogent observations of the Israeli-Palestinian conflict and the broader struggle between Islam and the West. The author of a number of influential books, Margalit has transformed philosophical perspectives on a range of political and societal issues.

Faculty

HEINRICH VON STADEN
Professor • Classics and History of Science

Heinrich von Staden has written on a variety of topics in ancient science, medicine, philosophy, and literary theory, from the fifth century BC to the fifth century AD. Drawing on a wide range of scientific, philosophical, and religious sources, he has contributed to the transformation of the history of ancient science and medicine, particularly of the Hellenistic period. His current projects include a book on Erasistratus (one of the two Hellenistic pioneers of human dissection), a study of the exegesis of scientific texts in antiquity, and further work on the "semantics of matter" in ancient science.
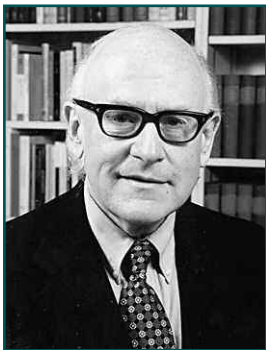
GLEN W. BOWERSOCK
*Professor Emeritus* • Ancient History

Glen W. Bowersock is an authority on Greek, Roman, and Near Eastern history and culture as well as the classical tradition in modern literature. The author of numerous important volumes and articles, he uses his exceptional knowledge of classical texts in many languages, together with inscriptions, coins, mosaics, and archaeological remains, to illuminate the mingling of different cultures and to draw unexpected and revelatory conclusions. His research interests include the Greek East in the Roman Empire and Late Antiquity as well as pre-Islamic Arabia.
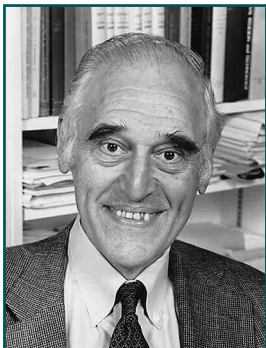
GILES CONSTABLE
Professor Emeritus • Medieval History

The medievalist Giles Constable is the author or editor of more than twenty books in the area of medieval religious and intellectual history, concerning, among other subjects, the origins of monastic tithes, Peter the Venerable, people and power of Byzantium, medieval religious and social thought, the reformation of the twelfth century, and Renaissance Florence as seen through the case of Antonio Rinaldeschi. He has written over a hundred articles, most of which have been reprinted in five volumes. He is currently working on a book on crusading in the twelfth century.

Faculty
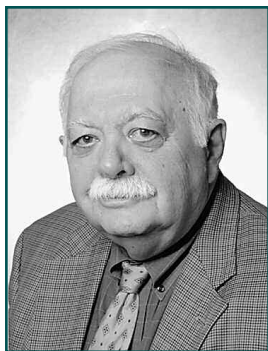
OLEG GRABAR
*Professor Emeritus* • Islamic Art and Culture

Oleg Grabar's research has had a profound and far-reaching influence on the study of Islamic art and architecture. In his many authoritative books, he has introduced readers to the formation of Islamic art, the idea of ornament in the context of Islamic art, the physical and ideological influence of early Islam on Jerusalem, and a breadth of other subjects elucidating the history and range of Islamic art, architecture, manuscripts, and decorative arts. His extensive archaeological expeditions and research trips cover the vast expanse of the Islamic world in Africa, the Middle East, and Muslim Asia.
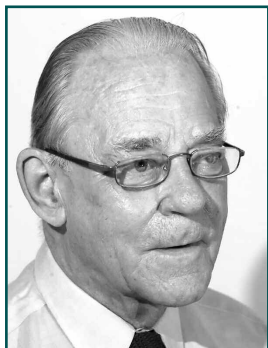
CHRISTIAN HABICHT
Professor Emeritus • Ancient History

Chrisian Habicht is among the leading historians of the Hellenistic period and an authority on Greek Epigraphy and on the history of Athens in the centuries between the fall of the Athenian and the establishment of the Roman Empire. He is also the author of books on the cults of the Hellenistic kings, on the Maccabees and on Pausanias, among others.
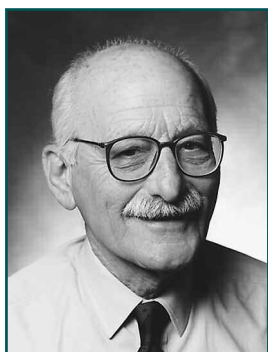
IRVING LAVIN
Professor Emeritus • Art History

Irving Lavin is one of America's most distinguished art historians. He has written extensively on the history of art from late antiquity to modern times, including numerous studies on Italian painting, sculpture, and architecture. He is a Foreign member of the Accademia Nazionale dei Lincei, and in 2005 was awarded the Galileo Galilei Prize at the University of Pisa for the outstanding foreign historian of Italian art.

Faculty
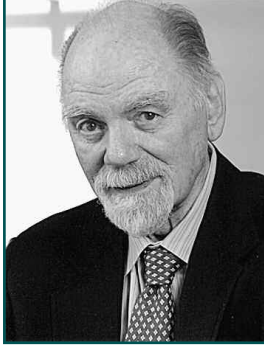
PETER PARET
Professor Emeritus • Modern European History

The two principal areas of Peter Paret's research are the history of ideas on war and the interaction of literature and art with ideology and society. He has written on modernism in Wilhelmine and Weimar Germany, on the conflict between the sculptor Ernst Barlach and National-socialism, and on works of art as historical documents. Among his books on war are a study of Prussia in the Napoleonic era, and a biography of Carl von Clausewitz, the third revised edition of which is about to appear. He is the 2008 Lees Knowles Lecturer in the History of War at Cambridge University.
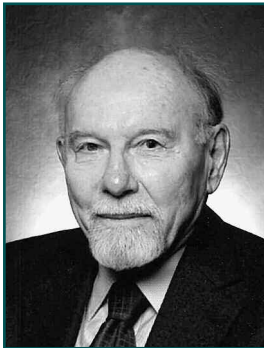
MORTON WHITE
Professor Emeritus • Philosophy and Intellectual History

Morton White is one of America's leading thinkers. In his philosophy of holistic pragmatism, he tries to bridge the positivistic gulf between analytic and synthetic truth as well as that between moral and scientific belief. He maintains that philosophy of science is not philosophy enough, thereby encouraging the examination of other aspects of civilized life, especially art, history, law, politics, religion, and their relations with science.

Members, Visitors, and Research Staff

DIANE AHL
History of Art • Lafayette College • *f*
*Funding provided by The Hetty Goldman Membership Fund*

Diane Cole Ahl is writing a book on painting in Italy during the fifteenth century. Tracing the distinctive visual culture of each region, she will consider how painting shaped sacred, social, and economic relationships throughout Italy.

WALTER AMELING
Ancient History • Friedrich-Schiller-Universität, Jena
Funding provided by the Fritz Thyssen Stifung

Walter Ameling is working on a comprehensive view of martyrdom in late antiquity. He is focusing on martyrdom from the pre-Constantinian to post-Constantinian times and examining the attitudes of the martyrs and their society, and the way they are remembered and worshiped, as common traits creating and forming late antiquity.

PETER ARNADE
Early Modern Low Countries • California State University, San Marcos
Funding provided by the National Endowment for the Humanities

Peter Arnade is preparing a book that reconsiders the Dutch Revolt through the lens of political culture. His work studies the tensions between princely and civic representations of authority in the Burgundian and Habsburg Netherlands, and traces the developments of symbols and rituals of religious and political dissent between 1566 and 1584.
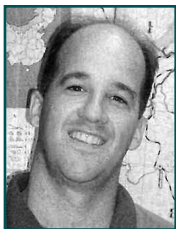
CHRISTOPHER ATWOOD
Central Eurasian/East Asian History • Indiana University
Funding provided by The Starr Foundation Fund

Christopher Atwood is looking at tribes, nomadism, and state formation in Central Eurasia. He will examine the paradox that results in finding nomadic empires and states in Central Eurasia, while challenging the traditional explanation that emphasizes the role of nomadic-sedentary interaction in propelling Central Eurasian state-formation.

JOHANNES (HAN) BALTUSSEN
Ancient Philosophy • University of Adelaide • *f*
Funding provided by the Fund for Historical Studies

Han Baltussen is analyzing the exegetical strategies of the philosopher and commentator Simplicius of Cilicia (c. 480-540 AD), arguing that these will illuminate his value for the study of the commentary tradition, for the reception of Presocratic philosophy, and for a better understanding of the purpose of these commentaries.

f First Term • *s* Second Term • *b* Both Member and Visitor
v Visitor • *a* Research Assistant

Members, Visitors, and Research Staff
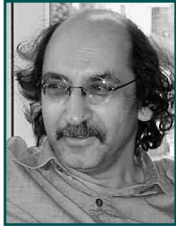
JAIRUS BANAJI
Late Antiquity, Sasanian History • Jawaharlal Nehru University
Funding provided by The Andrew W. Mellon Foundation

Jairus Banaji is sifting through the Middle Iranian, Arabic, Greek, Latin and (in translation) Armenian and Syriac sources on the Sasanians to construct a much clearer picture of the nature and strength of the Iranian aristocracy of the third to seventh centuries.

HERMAN BENNETT
Latin American History • Rutgers, The State University of New Jersey
Frederick Burkhardt Fellowship funded by the American Council of Learned Societies

Herman Bennett is focusing on Afro-Christian narratives in Colonial Mexico (1640-1750) to explain how freedom before liberty acquired its modern character. He will look beyond defining liberty in terms of Enlightenment thought to bring into relief an earlier but also widely manifest genealogy of freedom.
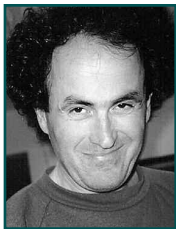
MARIO BIAGIOLI
History of Science • Harvard University • *f*
Funding provided by The Andrew W. Mellow Foundation

Mario Biagioli is working on a book about intellectual property in science, focusing on the changing relation between publication credit (or authorship) and patents. Specifically, he will work on an historical analysis of the emergence of the publication system of science in the seventeenth and eighteenth centuries in relation to the development of patent law.

KU-MING (KEVIN) CHANG
Early Modern European History, History of Science and Medicine •
Academia Sinica • *f*
Funding provided by the Fund for Historical Studies

Ku-ming (Kevin) Chang is examining the transformation of the modern dissertation from the medieval oral disputation into a written thesis in early modern Europe. His study will analyze theoretical discourses, practical manuals, university regulations, polemics, and unpublished proposals, petitions, and correspondence.

LUCILLE CHIA
Chinese History • University of California, Riverside
Frederick Burkhardt Fellowship funded by the American Council of Learned Societies

Lucille Chia's research interests include late imperial Chinese social and cultural history, the Chinese diaspora in Southeast Asia, and Chinese book and print culture.

f First Term • *s* Second Term • *b* Both Member and Visitor
v Visitor • *a* Research Assistant

I N S T I T U T E   F O R   A D V A N C E D   S T U D Y

Members, Visitors, and Research Staff

ANDREW CHIGNELL
History of Modern Philosophy • Cornell University
Funding provided by The Andrew W. Mellow Foundation

Andrew Chignell is working on a book that extends his account of Immanuel Kant's theory of assent, justification, and belief to some central themes in his aesthetics, including the subtle ways in which Kant thinks our interests in metaphysics, ethics, and religion impinge on the realm of taste.

PARKS COBLE
History of Modern China • University of Nebraska • *f*
Funding provided by The Andrew W. Mellow Foundation

Parks Coble will contrast how the Sino-Japanese War (1937-1945) was publicly remembered in its immediate aftermath, with the "new memory" of the war which appeared in the last fifteen years. He aims to add to the understanding of the traumatic historical event and to inform us about the uses of history and historical memory.

FLORIN CURTA
Medieval History • University of Florida • *s*
Funding provided by the Patron's Endowment Fund

Florin Curta intends to explore the relation between medieval cave monasticism and state frontiers, taking the position that hermit cave communities were strategically positioned in borderlands and most likely attracted the favors of frontier military district commanders, who expected their path to salvation to be smoothed by the prayers of the monks.

MOHAMED EL MANSOUR
North African History • Mohammed V University, Morocco • *f*
Funding provided by The Herodotus Fund

Mohamed El Mansour's project focuses on paramilitary groups in pre-modern Islamic cities through the case of Morocco's oldest Islamic city, Fès. His objective is to demonstrate that traditional cities in Morocco did have their private militias, which played an important role in social and political life.

MARGALIT FINKELBERG
Classics • Tel Aviv University • *s*
Funding provided by the Fund for Historical Studies

Margalit Finkelberg will look at the special position Homeric poems occupy within Greek epic tradition by comparing the Homeric poems with other traditional poetry, in particular the poems of the Epic Cycle, which to a much greater degree than the Homeric poems lend themselves to being analyzed in terms of oral theory.

f First Term • *s* Second Term • *b* Both Member and Visitor
v Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

LISA FLORMAN
History of Art • The Ohio State University • *f*
Agnes Gund and Daniel Shapiro Membership

Lisa Florman will analyze Cézanne's three large, late *Bather* composi-
tions and the numerous early twentieth-century works that were sig-
nificantly influenced by them. Her account of artistic influence will
neither adhere to the standard linear models of tradition nor assume
that artists are autonomous subjects in full control of their relation to
the past.

EMMA GANNAGÉ
Greco-Arabic Philosophy • Université Saint-Joseph, Beirut
Funding provided by The Herodotus Fund

Emma Gannagé's work focuses on the transmission of Greek scientific
and philosophical works into Arabic and their influence in the
Islamic world.

STEPHEN GERSH
Medieval Philosophy • University of Notre Dame • *f*
Funding provided by The Herodotus Fund

Stephen Gersh's research interests include the history of Platonism
and Neoplatonism from antiquity through the Middle Ages (Western
and Byzantine) and the Renaissance to the present day, with special
emphasis upon the hermeneutical problems involved.

BETTINA GOCKEL
History of Art • University of Tuebingen
Funding provided by the Fritz Thyssen Stifung

Bettina Gockel is researching pictorial practices in the arts and sci-
ences between 1600 and 1900 in various geographical and cultural
spaces. Within an art-historical framework, she will take a historico-
epistemological approach to offer new insights in the genre of still life
beyond symbolic or iconological, semiotic or hermeneutic meanings
of objects in pictures.

CORDULA GREWE
History of Art • Columbia University
Hans Kohn Membership

Cordula Grewe is examining the revival of religion in the first half of
the nineteenth century and the role of aesthetic experience, focusing
on the German Nazarenes. She will pursue a revisionist agenda that
aims to integrate the "modern anti-modernism" of the Nazarene
movement into the history of aesthetic, as well as socio-cultural
modernity.

f First Term • *s* Second Term • *b* Both Member and Visitor
v Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

CHRISTOPHER HAILEY
Music, Cultural History • Independent Scholar
Edward T. Cone Membership in Music Studies

Christopher Hailey aims to reconsider Viennese musical modernism beyond Arnold Schoenberg. He will provide a broader view of early twentieth-century Viennese music history, examining the pluralities of modernism and the complex and often contradictory ways in which various Viennese contemporaries interacted with their cultural environment.
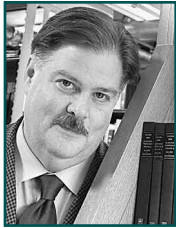
JAMES HANKINS
Renaissance History • Harvard University • *f*
Felix Gilbert Membership

James Hankins is writing an historical interpretation of the cultural ideals of early humanism from Petrarch to Ficino. He aims to illuminate the intellectual passions that originally inspired the *studia humanitatis,* the group of disciplines that coalesced as an educational program in the early Renaissance and which mutatis mutandis become the modern humanities.

HUSEYIN HANSU
Islamic Studies • Yuzuncu Yil University, Turkey • *s*
Funding provided by the Fund for Historical Studies

Huseyin Hansu plans to prepare for publication a critical edition with a study in English of a manuscript by Abu'l-Qasim al-Balkhi (d. 319/931), a prominent Baghdat Mu'tazilah theologian, who discusses the reliability of many early Hadith authorities by presenting Mu'tazilah criticism against them.
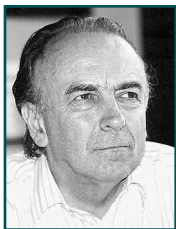
GEOFFREY HOSKING
Russian History, History of Trust and Social Solidarity • University College London
Elizabeth and J. Richardson Dilworth Fellowship in Historical Studies

Geoffrey Hosking aims to develop a typology of the trust structures of the major types of European society since the ancient world, examining turning points when the radius of trust has broadened quite rapidly and offering ways for historians to study trust and weave it into their accounts of political, social, and economic developments.

MASOUD JAFARIJAZE
Islamic History • Institute for Advanced Study • *a*

Masoud Jafarijaze is a research assistant to Professor Patricia Crone. His research interests include Persian literature, especially the Samanid and Ghaznavid ages and comparative studies in contemporary Persian literature.

f First Term • *s* Second Term • *b* Both Member and Visitor
v Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

RAYMOND JONAS
European History • University of Washington • *f*
Funding provided by the Patron's Endowment Fund

Raymond Jonas is writing about the battle of Adwa (1896) where Ethiopian forces successfully resisted Italian colonization. He is focusing on the reception and imagistic retelling of the battle in Europe and America, while addressing the mutilation of the vanquished and the place of the defeated body in discussions of race, regeneration, and salvation.

RICHARD KAGAN
History of Early Modern Europe, especially Spain • Johns Hopkins University • *f*
Elizabeth and J. Richardson Dilworth Fellowship in Historical Studies

Richard Kagan specializes in early modern Europe, especially Spain, and its empire. His current work focuses on historiography, imperial rhetorics, and related topics.
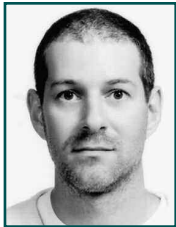
MICHAEL KEEVAK
Early Modern European History • National Taiwan University • *v, s*

Michael Keevak will work on *How East Asians Came To Be Yellow: A Study in the History of Racial Thinking*, a book that will focus on Western perceptions of East Asians between the thirteenth and the early twentieth centuries.

AXEL KÖRNER
Modern European History • University College London • *s*
Funding provided by the Friends of the Institute for Advanced Study

Axel Körner will continue his research on Bologna and the former Papal legations between Unification and World War I, focusing on the cultural policy of a city in which traditional elites and the rising middle classes compete for political power and use culture and the arts to communicate their respective views.

THOMAS KROLL
Comparative Intellectual History • Justus-Liebig-Universität Giessen
Elizabeth and J. Richardson Dilworth Fellowship in Historical Studies

Thomas Kroll's research interests include comparative intellectual history (nineteenth and twentieth centuries), especially the history of intellectuals in western Europe and the United States, and the history of communism.

f First Term • *s* Second Term • *b* Both Member and Visitor
v Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

MICHAEL LACKNER
Chinese Studies • University of Erlangen-Nuremberg
Funding provided by the Gerda Henkel Stifung

Michael Lackner is looking at the way structures of language and exegetical interpretations of the Chinese language were represented through iconic procedures during the period from the twelfth to fourteenth centuries, when some literati developed a method for using diagrams to interpret canonical and classical texts.

DAVID LANGSLOW
Classics • University of Manchester • *f*
William D. Loughlin Membership

David Langslow is working on the first critical edition of the ancient Latin version of the medical works of Alexander of Tralles. He will also work on the notes to accompany a new version in English (already complete) of the *Lectures on Syntax* by the great Swiss classicist, Indologist and Indo-Europeanist, Jacob Wackernagel (1853-1938).

CARL LEVY
Modern European History and Politics • Goldsmiths College, University of London
Funding provided by the Friends of the Institute for Advanced Study

Carl Levy is working on the first full-length English biography of Errico Malatesta (1853-1932), the most prominent Italian anarchist during the eras of the Second and Third Internationals, who embodied the "subversive" political culture of the Italian left and produced a unique form of anarchism.

FELICE LIFSHITZ
Medieval History • Florida International University • *f* • *v, s*
Funding provided by the Fund for Historical Studies

Felice Lifshitz is working on a monograph illustrating the role of female scribes in the transmission of early Christian and Patristic texts, and thus in the shaping of Christian traditions, through an analysis of several manuscripts dating from the eighth and early ninth centuries that originated in the Main River valley.

RITA LIZZI
Roman and Late Antique History • University of Perugia • *f*
Funding provided by The Hetty Goldman Membership Fund

Rita Lizzi is working on a book in which she will translate the first book of Quintus Aurelius Symmachus' letters and provide historical commentary. Her book will include a large introduction, the text of the 107 letters, their Italian translation, and their historical commentary.

f First Term • *s* Second Term • *b* Both Member and Visitor
v Visitor • *a* Research Assistant

S C H O O L   O F   H I S T O R I C A L   S T U D I E S

Members, Visitors, and Research Staff

KATHRYN LOWRY
Chinese Literature and Intellectual History • Independent Scholar • *f*
Funding provided by The Herodotus Fund

Kathryn Lowry is writing a book on Deng Zhimo, a disenfranchised intellectual, and his livelihood in editing letter-writing guides and fiction in seventeenth-century China. She views his writing manuals as "fictions of the self," spelling out the meanings attached to gifts and describing countless private pleasures.

LORENZ LÜTHI
Modern International Relations • McGill University • *s*
Funding provided by the Fund for Historical Studies

Lorenz Luthi will work on a book that focuses on the emergence of the post-Cold War world in East Asia, Europe, and the Middle East from the 1960s to the 1980s. He will focus on the reintegration of China into the world and on its impact on the Vietnam War, nuclear disarmament talks, and German-German relations.

IRINA LYUTER
History and Philosophy of Mathematics • Russian Academy of Sciences, Institute for the History of Science and Technology • *s*
Association of Members of the Institute for Advanced Study (AMIAS) Membership

Irina Lyuter will produce a commented critical edition and English translation of the commentary by al-Shirazi on the anonymous treatise "On the Motion of Rolling and the Relation between the Plane and the Curve." She will also study a treatise, similar in its context, by Alfonso de Valladolid, a Spanish contemporary of al-Shirazi.

ANDREW MEADOWS
Ancient Numismatics • The British Museum • *s*
Funding provided by the Fund for Historical Studies

Andrew Meadows plans to provide detailed accounts of the monetary production of two Hellenistic city-states of Caria in SW Asia Minor, mapping their coinage onto their different political histories with a view to answering fundamental questions about the nature of ancient coinage and its place within local economies in the late Hellenistic period.

TATSUO NAKAMI
International Relations in Modern East and Inner Asia • Tokyo University of Foreign Studies
Funding provided by the Fund for Historical Studies

Tatsuo Nakami will continue to research and write a book that focuses on the foreign policies of imperial Japan and Russia toward Mongolia and the Mongols' responses to these two countries in the early twentieth century. He will also edit an important Manchu manuscript on the lives of the Manchu Bannermen.

f First Term • *s* Second Term • *b* Both Member and Visitor
v Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

MARTHA NEWMAN
Medieval History • The University of Texas at Austin
George William Cottrell, Jr. Membership

Martha Newman is investigating expressions of religious uncertainty in the monastic exempla collected by the late twelfth-century Cistercian, Engelhard of Langheim, arguing that twelfth-century epistemological questions about knowledge of unseen realities could be articulated in the everyday concerns of monastic life.

UTA NITSCHKE-STUMPF
History of Architecture/History of Berlin • Institute for Advanced Study • *a*

Uta Nitschke-Stumpf is a research assistant to Professor Irving Lavin. Her research interests include German-American relations, the history of Berlin, and architectural history.

EVELYN RAWSKI
East Asian History • University of Pittsburgh • *s*
Funding provided by the Fund for Historical Studies

Evelyn Rawski will compare the divergent and sometimes contradictory perspectives in Chinese, Japanese, and Korean-language sources concerning key encounters among these Northeast Asian neighbors, primarily during 1500-1800. She will focus on how the nationalist bias of twentieth-century history writing distorts understanding of the historical interactions among these countries in ways that influence contemporary events.

MELVIN RICHTER
Modern European Intellectual History • City University of New York • *s*
Funding provided by The Hetty Goldman Membership Fund

Melvin Richter will write about the histories of Tocqueville's key concepts, particularly those phrased as paired oppositions: society/politics, democracy/aristocracy, reform/violent revolution, liberty and its contraries: despotism, tyranny, Caesarism, Bonapartism. He will apply to Tocqueville the methods developed by historians of concepts, such as Reinhart Koselleck, to chart continuity and change in political language.

FRANCESCA ROCHBERG
Assyriology/History of Science • University of California, Riverside • *s*
Funding provided by the Institute for Advanced Study General Endowment

Francesca Rochberg will work on a comprehensive study of the celestial science of ancient Mesopotamia, providing a cultural context for early and late Babylonian astronomy and assessing the degree to which Babylonian religion influenced its form and objectives. She will also consider the affinities between ancient and later science.

f First Term • *s* Second Term • *b* Both Member and Visitor
v Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

PAUL ROREM
History of Theology • Princeton Theological Seminary • *v*

Paul Rorem's work concerns Hugh of St. Victor (early twelfth-century Paris), both an analysis of his commentary on the Pseudo-Dionysian treatise (his overall research program) and an introduction to his life and thought as a whole.

MARY SAROTTE
Modern International Relations • University of Southern California
Funding provided by the National Endowment for the Humanities

Mary Elise Sarotte will continue her work on a history of the Cold War, while focusing on transatlantic relations, both in the past and at the present. She is particularly interested in the relationship between diplomacy, strategy, and military power.

MARK SCHIEFSKY
Classics/History of Science • Harvard University • *f*
Martin L. and Sarah F. Liebowitz Membership

Mark Schiefsky's work concerns the history of science and philosophy in the ancient Greco-Roman world, with particular emphasis on medicine and mechanics.

RENATE SCHLESIER
History of Religion and Culture, Ancient Greek Religion, History of Classical Scholarship and Cultural Anthropology • Freie Universität Berlin • *s*
Funding provided by the Fund for Historical Studies

Renate Schlesier plans to complete a subsequent volume to her 1994 book *Kulte, Mythen und Gelehrte. Anthropologie der Antike seit 1800.* The second volume will focus on the impact of anthropology on the modern historiography of ancient religion and culture.

BENJAMIN SCHMIDT
Early Modern European History • University of Washington
Frederick Burkhardt Fellowship funded by the American Council of Learned Societies

Benjamin Schmidt is investigating early modern European "exoticism." His project explores the extraordinary production of geographic materials circa 1700—books, maps, prints, paintings—and their manner of consumption. More broadly, his research questions the place of power in the production of knowledge, as it interrogates this earlier moment of imaginative "globalism."

f First Term • *s* Second Term • *b* Both Member and Visitor
v Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

SETH SCHWARTZ
Rabbinic Judaism and Early Christianity • Jewish Theological Seminary
Funding provided by The Gladys Krieble Delmas Foundation

Seth Schwartz is exploring the tensions between the utopian norms of ancient Israelites and Jews and the exigencies of life in the eastern Mediterranean through his examination of three texts: the Wisdom of Jesus ben Sira (c.180 BCE), the works of Josephus (80-100 CE), and the Palestinian Talmud (c.380 CE).

KARL SHOEMAKER
Medieval History • University of Wisconsin, Madison
Funding provided by the National Endowment for the Humanities

Karl Shoemaker is analyzing a long neglected set of medieval legal texts, which imagine the devil initiating a lawsuit aimed at gaining legal title to human souls. The texts provide key insights into understanding a medieval articulation of the link between emotion and law, and the place of grace within justice.

MATTHEW STANLEY
History of Physics and Astronomy • Iowa State University
Funding provided by The Andrew W. Mellow Foundation

Matthew Stanley will examine the construction of scientific naturalism and use the tools of cultural, intellectual, and social history to show how the limits of science were flexible and negotiated, opening a space for dialogue between modern science and the wider culture.

NANCY STEINHARDT
East Asian Art and Architecture • University of Pennsylvania • *s*
Funding provided by the Fund for Historical Studies

Nancy Steinhardt will investigate the purposes of architecture in China during Mongolian rule (1267-1368). Looking at cities and imperial or urban building projects, religious and other ceremonial architecture, distinctive signs of Mongolian heritage, and aesthetics of Yuan architecture, she will explore how the Mongols' architectural choices were intentional and served political goals.

KATHERINE TACHAU
Medieval Intellectual History • University of Iowa • *v, s*

Katherine Tachau plans to complete a book focusing on early thirteenth-century illuminated manuscripts known as Bibles Moralisées, which were made for members of the French royal family. Tachau will explain the ideology conveyed by the images and texts in the manuscripts and recognize the roles these volumes evidently played in shaping royal policies.

f First Term • *s* Second Term • *b* Both Member and Visitor
v Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

PHILIP VAN DER EIJK
Classics and History of Medicine • University of Newcastle upon Tyne • *f*
Funding provided by the Fund for Historical Studies

Philip van der Eijk's work concerns the intellectual history of the classical world, particularly the relationship between philosophy and medicine in classical antiquity. While at the Institute, he will concentrate on interactions between Aristotelian thought and developments in Hellenistic and early imperial medicine.

ALEXEI VOLKOV
History of Mathematics • National Tsing Hua University, Taiwan • *s*
*Funding provided by the Fund for Historical Studies*

Alexei Volkov's research will be devoted to a preliminary analysis of extant Vietnamese mathematical texts. The goal of the study is to prepare a monograph devoted to the Vietnamese mathematical treatises, discussing their contents, the possible relations between them, and their history.

SHIRA WOLOSKY
American Studies • Hebrew University of Jerusalem • *s*
Funding provided by the Fund for Historical Studies

Shira Wolosky will look at how religion, at least within the histories and contexts of American Protestantism, has served as a central context for American women's activism. She will focus on nineteenth-century women's poetry as primary source material to further understand the historical, religious, and political aspects of women's lives.
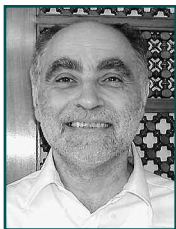
ARON ZYSOW
Islamic Studies • Harvard Law School • *s*
Funding provided by The Hetty Goldman Membership Fund

Aron Zysow will look at causation and related concepts in Mu`tazili theology that have been largely ignored. He will prepare an edition and translation of texts, accompanied by a full commentary, in the hitherto overlooked genre in the Mu`tazili tradition on "effectiveness" (ta'thir).

f First Term • *s* Second Term • *b* Both Member and Visitor
v Visitor • *a* Research Assistant

SCHOOL OF MATHEMATICS

Administrative Officer: Mary Jane Hayes

The School of Mathematics, established in 1933, was the first School at the Institute for Advanced Study. Oswald Veblen, Albert Einstein, John von Neumann, and Hermann Weyl were the first Faculty appointments. Kurt Gödel was among the School's first Members.

Today, the School is an international center for research on mathematics and computer science. Members discover new mathematical results and broaden their interests through seminars and interactions with the Faculty, and with each other. Several central themes in mathematics of the last seventy-five years owe their major impetus to discoveries that took place at the Institute. As an example, the creation of one of the first stored program computers, which von Neumann built on the Institute's campus, influenced the development of today's computers and formed the mathematical basis for computer software.

During the 2006-2007 academic year, the School of Mathematics will offer a special program on algebraic geometry with many aspects of algebraic geometry and its applications represented, including, but not limited to, cohomology theories, motives, moduli spaces, Shimura varieties, complex or p-adic analytic methods, and singularities. A seminar and two workshops on homological mirror symmetry will be held during the second term.

Other programs associated with the School are the Institute for Advanced Study/Park City Mathematics Institute (PCMI), an innovative program integrating mathematics research and mathematics education, and the Program for Women and Mathematics, jointly sponsored with Princeton University, which brings together research mathematicians with women undergraduate and graduate students for an intensive 10-day workshop held on campus.

Faculty

ENRICO BOMBIERI
IBM von Neumann Professor

Enrico Bombieri, a Fields Medalist for his work on the large sieve and its application to the distribution of prime numbers, is one of the world's leading authorities on number theory and analysis. His work ranges from analytic number theory to algebra and algebraic geometry, and the partial differential equations of minimal surfaces. In the past decade, his main contributions have been in the active area of Diophantine approximation and Diophantine geometry, exploring questions on how to solve equations and inequalities in integers and rational numbers.
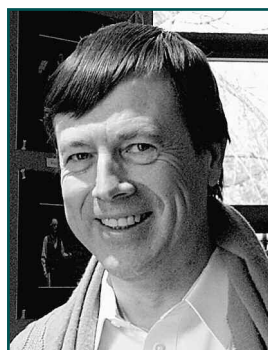
JEAN BOURGAIN
Professor

Jean Bourgain's work touches on many central topics of mathematical analysis: the geometry of Banach spaces, harmonic analysis, ergodic theory, spectral problems, and nonlinear partial differential equations from mathematical physics and combinatorial number theory. His contributions solved longstanding problems in convexity theory and harmonic analysis such as Mahler's conjecture and the lambda-p set problem. His work also had important consequences in theoretical computer science and on exponential sums in analytic number theory. In Hamiltonian dynamics, he developed the theory of invariant Gibbs measures and quasi-periodicity for the Schrödinger equation.
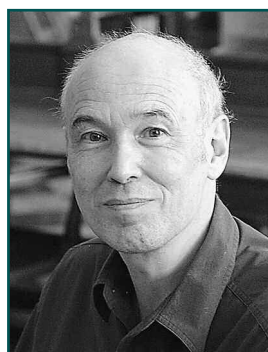
PIERRE DELIGNE
Professor

Pierre Deligne is known for his work in algebraic geometry and number theory. He pursues a fundamental understanding of the basic objects of arithmetical algebraic geometry—motive, L-functions, Shimura varieties—and applies the methods of algebraic geometry to trigonometrical sums, linear differential equations and their monodromy, representations of finite groups, and quantization deformation. His research includes work on Hilbert's 21st problem, Hodge theory, the relations between modular forms, Galois representations and L series, the theory of moduli, tannakian categories, and configurations of hyperplanes.

Faculty

PHILLIP A. GRIFFITHS
Professor

Phillip Griffiths initiated with his collaborators the theory of variation of Hodge structure, which has come to play a central role in many aspects of algebraic geometry and the uses of that subject in modern theoretical physics. In addition to algebraic geometry, Griffiths has made contributions to differential and integral geometry, geometric function theory and the geometry of partial differential equations. A former Director of the Institute (1991-2003), Professor Griffiths leads the Millennium Science Initiative (MSI) whose primary goal is to create and nurture world-class science and scientific talent in the developing world.

ROBERT P. LANGLANDS
*Hermann Weyl Professor*

Robert Langlands' 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. Mathematicians have been working on his conjectures, the Langlands Program, for the last three decades. He, himself, has spent some of his time in recent years studying lattice models of statistical physics and the attendant conformal invariance.
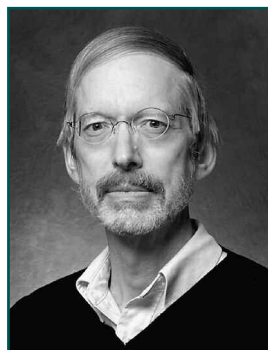
ROBERT MacPHERSON
Professor

Robert MacPherson's work has introduced radically new approaches to the topology of singular spaces and promoted investigations across a great spectrum of mathematics. He works in several fields of geometry-topology, algebraic geometry, differential geometry, and singularity theory. He is especially interested in aspects of geometry that interact with other areas of mathematics such as the geometry of spaces of lattices, which interacts with modular forms, and the geometry of toric varieties, which interacts with combinatorics.

Faculty
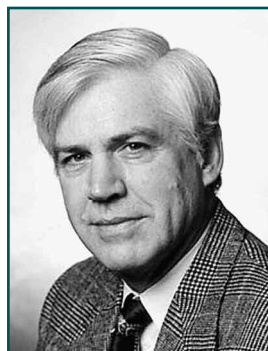
THOMAS SPENCER
Professor

Thomas Spencer has made major contributions to the theory of phase transitions and the study of singularities at the transition temperature. In special cases, he and his collaborators have proved universality at the transition temperature. Spencer has also worked on partial differential equations with stochastic coefficients, especially localization theory. He is presently developing a mathematical theory of supersymmetric path integrals to study the quantum dynamics of a particle in random media. His other interests include random matrices, chaotic behavior of dynamical systems, and non-equilibrium theories of turbulence.

VLADIMIR VOEVODSKY
Professor

Vladimir Voevodsky is known for work in the homotopy theory of schemes, algebraic K-theory, and interrelations between algebraic geometry and algebraic topology. He made one of the most outstanding advances in algebraic geometry in the past few decades by developing new cohomology theories for algebraic varieties. One consequence of his work is the solution of the Milnor Conjecture. Currently he is interested in categorical probability theory, mathematical population genetics, and automated proof verification. He is working on a new approach to formalization of mathematics based on homotopy lambda calculus. His other interests include wildlife photography and trance music.
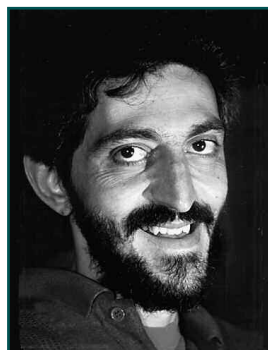
AVI WIGDERSON
Herbert H. Maass Professor

Avi Wigderson is a widely recognized authority in the diverse and evolving field of theoretical computer science. His main research area is computational complexity theory. This field studies the power and limits of efficient computation, and is motivated by such fundamental scientific problems like: Does P=NP? (Can mathematical creativity be efficiently automated?) Can every efficient process be efficiently reversed? (Is electronic commerce secure?) Can randomness enhance efficient computation? Can quantum mechanics enhance efficient computation? How do we learn, and can machines be taught to learn like us (or better)?

Faculty
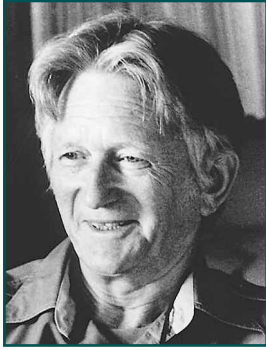
ATLE SELBERG
Professor Emeritus

Mathematician Atle Selberg is regarded as one of the world's greatest analytic number theorists. He has 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, and The Selberg Zeta Function, as well as his elementary proof of the prime number theorem, with generalization to prime numbers in arithmetic progressions.

Members and Visitors

NIR AILON
Algorithms, optimization • Princeton University

Nir Ailon's work concerns design and analysis of algorithms for approximating NP-Hard combinatorial optimization problems and for handling high-dimensional, massive datasets.

JOSEPH AYOUB
Algebraic geometry • Université Paris 7, France

Joseph Ayoub is working on the conservation conjecture which says that the "nearby motive" functor detects zero objects. One of his main tools is theory of analytic rigid varieties.

NILS BAAS
Algebraic topology • Norwegian University of Science and Technology • *j, s*

Nils Baas will continue his study of the use of higher categories in topology and geometry, especially relations to K-theory, Elliptic cohomology, Generalized bundles and Cobordism categories. He also plans to explore the use of his hyperstructure concept in systems biology.

DMITRI BELIAEV
Function theory • Institute for Advanced Study • *vri*

Dmitri Beliaev will continue to study local properties of harmonic measure and related problems of the Geometric Function theory. He will study harmonic measure on random clusters, and he will use harmonic measure to study random fractals and random fractals to construct sets with extremal behavior of harmonic measure.

AMNON BESSER
Arithmetic geometry • Ben-Gurion University, Israel
The Bell Companies Fellowship
Funding provided by The James D. Wolfensohn Fund

Amnon Besser is working on the explicit computation of the p-adic height pairing on the jacobian of a hyperelliptic curve; new constructions of Coleman integrals; studying the relation between the syntomic regulator and the one defined by Karoubi; and the construction of L-invariants associated with Drinfeld domains of dimension greater than 1 using Coleman integration.

f First Term • *s* Second Term • *v* Visitor • *vp* Visiting Professor
j Joint Member School of Natural Sciences • *vri* Veblen Research Instructorship

Members and Visitors

ANDREW BLUMBERG
Algebraic topology • University of Chicago

Andrew Blumberg will continue his study of the algebraic K-theory of structured ring spectra. In particular, he hopes to make progress in verifying the conjectural results underpinning the program of Rognes and Waldhausen for understanding the K-theory of the sphere spectrum.

ALLAN BORODIN
Complexity theory • University of Toronto, Canada • *s*

Allan Borodin plans to continue the development of a precise understanding of the power and limitations of various basic algorithmic paradigms, such as greedy algorithms, dynamic programming, primal dual, and local search algorithms.

PAUL BRESSLER
Characteristic classes • The University of Arizona
Funding provided by The Ellentuck Fund

Paul Bressler plans to investigate a non-commutative construction of secondary characteristic classes. His primary tools are K-theory and Hochschild and cyclic homology.

DAVID BRYDGES
Analysis • University of British Columbia, Canada • *f*

David Brydges plans to continue a study of self-avoiding walk in four dimensions, to understand better combinatorial identities relating statistical mechanics to walks weighted according to loop erasure, and to work on the renormalization group with Tom Spencer.

ALINA IOANA BUCUR
Zeta and L-functions • Brown University

Alina Ioana Bucur will study number theory and automorphic forms. Bucur is interested in looking at multiple Dirichlet series and their connections to affine Weyl groups.

f First Term • *s* Second Term • *v* Visitor • *vp* Visiting Professor
j Joint Member School of Natural Sciences • *vri* Veblen Research Instructorship

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Members and Visitors

NERO BUDUR
Algebraic Geometry • Johns Hopkins University

Nero Budur plans to study local and global problems on singularities for higher dimensional algebraic varieties. Some of his main tools will be multiplier ideals, D-modules, and local systems.
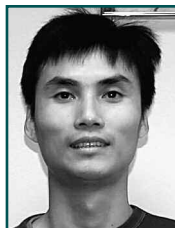
KAIHUA CAI
Schrödinger equations • California Institute of Technology • *f*

Kaihua Cai's work concerns the stability of the ground states of the critical focusing wave equations on three dimension: the dispersive properties of the underlying linear system and the analysis of the perturbations.

JULIA CHUZHOY
Approximation • Massachusetts Institute of Technology
Funding provided by the State of New Jersey

Julia Chuzhoy's research focuses on approximation of NP-hard optimization problems. She plans to work on lower bounds on the approximability of some graph partitioning problems. She will look at whether these problems can be shown to be hard to approximate independently of the Unique Games Conjecture.

LISA CLAY
*Automorphic form*s • Northwestern University

Lisa Clay will be studying the p-adic properties of Hecke algebras acting on the cohomology of some arithmetic groups, with possible applications to the geometry of eigenvarieties. Some of her more computational work will involve the design and use of software for working with automorphic symbols in mixed characteristic.

SINNOU DAVID
Number theory • Université Pierre et Marie Curie, France
Funding provided by The Ellentuck Fund

Sinnou David's research focuses on the distribution of points of small height on subvarieties of group varieties and the relation with uniformity questions (moduli independent) for the distribution of rational points belonging to them. In particular, he will focus on certain classes of abelian varieties.

f First Term • *s* Second Term • *v* Visitor • *vp* Visiting Professor
j Joint Member School of Natural Sciences • *vri* Veblen Research Instructorship

Members and Visitors

MARK ANDREA DE CATALDO
Algebraic geometry • SUNY at Stony Brook

Mark Andrea de Cataldo plans to study the interplay between topology and Hodge theory in the study of algebraic varieties and the morphisms between them, and of algebraic cycles.

MICHAEL DETTWEILER
Algebraic geometry, number theory • University of Heidelberg, Germany • *s*

Michael Dettweiler will work on motives with exceptional Galois groups and on the Galois representations which are defined by them.

HONGJIE DONG
Differential equations, probability • University of Chicago

Hongjie Dong's main research interest involves both partial differential equations and probability theory, more specifically, fully nonlinear elliptic and parabolic equations, probability approach of PDEs, and rates of convergence of finite-difference approximations for elliptic and parabolic Bellman's equations. Other interests include the stochastic partial differential equations, the Navier-Stokes equations, and reaction-diffusion equations.

BRENT DORAN
Geometric invariant theory • University of Oxford, United Kingdom

Brent Doran will study cohomology of quotients and applications to moduli problems, using techniques from geometric invariant theory and A^1-homotopy theory, with a special focus on non-reductive quotients.

BRUNO FABRE
Algebraic geometry • Stockholm University, Sweden

Bruno Fabre, whose research concerns algebraic and analytic geometry, will look at interesting possible developments of Professor Phillip Griffith's article "Variations on a Theorem of Abel," and also of his monograph with M. Green on Abel's differential equations. In addition, he will work on non-abelian geometry, principally in a spirit related to quantum mechanics.

Members and Visitors

BROOKE FEIGON
Automorphic forms • University of California, Los Angeles

Brooke Feigon's research involves number theory and automorphic forms. Feigon is interested in looking at applications of the relative trace formula to base change and functoriality.

DAVID GABAI
Low dimensional topology • Princeton University • *s*

David Gabai's research concerns the geometry and topology of low dimensional manifolds. Among other things, he is working with Robert Meyerhoff and Peter Milley to develop a topological/geometric theory called "Mom-Technology" to identify the low volume closed and complete hyperbolic 3-manifolds.

ALEXANDRA GOLUBEVA
Representation theory • Boston University • *v*

Alexandra Golubeva plans to apply the geometric constructions of the theory of Springer representations to the problem of finding a canonical form for pairs of nilpotent elements of a semisimple Lie algebra under diagonal adjoint action.

MARK GORESKY
Geometry, automorphic forms • Institute for Advanced Study

Mark Goresky's main interest this year concerns the generation of pseudo-random sequences for use in cryptography and spread-spectrum communications. He plans to complete the first draft of his book, *Algebraic Shift Register Sequences,* written jointly with Andrew Klapper.

GUENTER HARDER
Arithmetic geometry • Max-Planck Institut für Mathematik, Germany • *f*
Funding provided by The Oswald Veblen Fund

Guenter Harder will work on certain questions concerning the cohomology of arithmetic groups, especially in the case that the locally symmetric space provides a Shimura variety; mixed motives (mixed Galois modules, mixed Hodge structures) visible in these cohomology groups; and the integrality properties of Eisenstein cohomology classes.

f First Term • *s* Second Term • *v* Visitor • *vp* Visiting Professor
j Joint Member School of Natural Sciences • *vri* Veblen Research Instructorship

Members and Visitors

ROMAN HOLOWINSKY
Automorphic forms • Rutgers, The State University of New Jersey

Roman Holowinsky will work on the Quantum Unique Ergodicity conjecture for non-compact arithmetical quotient spaces and the shifted convolution sums that arise naturally during analysis. He plans to further develop a method introduced in his recent doctoral thesis for application to analogous equidistribution problems as well as general sums with multiple shifts.

LUC ILLUSIE
Algebraic geometry • Université de Paris-Sud, France • *s*
Funding provided by The Oswald Veblen Fund

Luc Illusie plans to study several problems arising from the theory of étale oriented products and vanishing cycles over general bases, and their interplay with ramification theory and Gabber's recent uniformization and finiteness theorems over excellent schemes.

JAYA IYER
Moduli spaces • Institute of Mathematical Sciences, India

Jaya Iyer's current research involves studying the Chern invariants of Flat bundles on a quasi-projective variety and their extensions on good compactifications. The Chern invariants takes values in different cohomology theories and she will consider the de Rham cohomology, the Deligne cohomology, and the rational Chow groups to make explicit computations.

WILLIAM JACO
Topology, geometry • University of Michigan • *f*

William Jaco plans to continue the development of efficient triangulations of 3-manifolds and their use to study and gain a better understanding of the geometry and topology of 3-manifolds, to resolve decision problems, and to improve algorithms and computational complexity.

LJUDMILA KAMENOVA
Differential geometry • Massachusetts Institute of Technology

Ljudmila Kamenova's research involves hyper-Kaehler manifolds, specifically their deformations and degenerations, as well as their fiber structures.

S C H O O L   O F   M A T H E M A T I C S

Members and Visitors

LUDMIL KATZARKOV
Algebraic geometry • University of California, Irvine • *s*

TALI KAUFMAN
Algorithms • Tel Aviv University, Israel • *s*

NEERAJ KAYAL
Computational complexity • Indian Institute of Technology, India
D. E. Shaw & Co., L.P. Membership

Neeraj Kayal is interested in Complexity Theory, especially in show-ing that problems which admit efficient randomized algorithms also admit deterministic algorithms with comparable resource usage. These problems include testing if a given arithmetic circuit computes the zero polynomial (identity testing), testing if a bipartite graph has a perfect matching, and factoring polynomials over finite fields.

JONATHAN KELNER
Theoretical computer science • Massachusetts Institute of Technology
Funding provided by the State of New Jersey

Jonathan Kelner's research focuses on the use of geometric and ana-lytic techniques from pure mathematics to attack long-open, funda-mental questions in the theory of algorithms and combinatorial opti-mization. He intends to focus on polyhedral geometry and algorithms for linear programming and graph isomorphism.

MAHTA KHOSRAVI
Analysis • Institute for Advanced Study
Funding provided by The Oswald Veblen Fund

Mahtka Khosravi plans to work on investigating if the normalized remainder term of Weyl's law on nil-manifolds is B^2 Besicovitch and, if so, how does its distribution function behave; obtaining some sharp lower bound estimates for the error term of Weyl's law on Heisenberg manifolds; and remainder term estimates on sol-manifolds.

DANIEL KRASHEN
Homogeneous Varieties • Yale University • *v, f*

Daniel Krashen's research involves algebraic geometry and noncom-mutative algebra, particularly division algebras. At the Institute, he will study cycles on homogeneous varieties, Brauer groups, and certain moduli and configuration spaces.

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f First Term • *s* Second Term • *v* Visitor • *vp* Visiting Professor
j Joint Member School of Natural Sciences • *vri* Veblen Research Instructorship

Members and Visitors

DONG LI
Mathematical physics, fluid dynamics • Princeton University

Dong Li will work on the mathematical analysis of molecular dynamics and related problems in mathematical physics.

STEPHEN LICHTENBAUM
Arithmetic algebraic geometry • Brown University • *s*
Funding provided by The Oswald Veblen Fund

Stephen Lichtenbaum works in the general area of arithmetic algebraic geometry. He intends to spend his time at the Institute investigating possible formulas giving special values of motivic L-functions over number fields in terms of Euler characteristics of cohomology groups.

WENZHI LUO
Automorphic forms • The Ohio State University • *f*

Wenzhi Luo's fields of research are number theory and automorphic forms. Luo plans to study further the equidistribution problems on homogeneous varieties by means of Bergman kernel and theta correspondence.

SERGEY LYSENKO
Automorphic forms • Université Paris 6, France

Sergey Lysenko plans to work on the following (related) aspects of the geometric Langlands program: geometric analogue of the theta-lifting for dual reductive pairs, geometric constructions of automorphic sheaves on GSp_4, and geometric approach to some multiplicity one models.
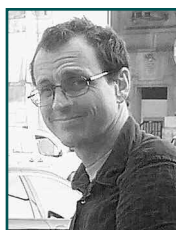
LUCA MIGLIORINI
Hodge Theory • University of Bologna, Italy • *s*

Luca Migliorini is working on several problems in complex algebraic geometry, especially Hodge theory. More specifically, he intends to study the interplay between perverse sheaves, singularities, and Hodge theory, and to study problems on normal functions for families of varieties over a base of dimension bigger than one.

f First Term • *s* Second Term • *v* Visitor • *vp* Visiting Professor
j Joint Member School of Natural Sciences • *vri* Veblen Research Instructorship

Members and Visitors

SOPHIE MOREL
Shimura varieties • Université Paris 11, France

Sophie Morel is studying the automorphic representations appearing in the intersection cohomology of the Baily-Borel compactification of Shimura varieties. One of her main tools will be Arthur's stable trace formula.

MICHAEL MOVSHEV
*Mathematical physics* • Institute for Advanced Study • *j*

Michael Movshev continues to work on algebraic theory of deformations of maximally sumetric gauge theories. He also has started a new project which concerns topology and geometry of noncommutative K-3 surface.

VICENTE MUÑOZ
Geometry, gauge theory • Consejo Superior de Investigaciones Científicas, Spain • *s*

Vicente Muñoz's work concerns Hodge structures in the geometry of a complex manifold: the computation of Hodge numbers of moduli spaces of vector bundles with additional structure over complex curves; Torelli type theorems in which the Hodge structure of a moduli space determines the curve; and constructions of solenoids representing homology classes of complex manifolds.
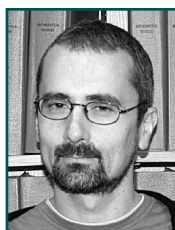
MIRCEA MUSTATA
Algebraic geometry • University of Michigan • *f*

Mircea Mustata plans to work on several aspects related to invariants of singularities. Part of the work involves the use of spaces of jet spaces to attack some problems in birational geometry. Another aspect concerns invariants of singularities in positive characteristic.

IRINA NENCIU
Integrable systems, random matrices • Institute for Advanced Study • *f*

Irina Nenciu is focusing mainly on the discrete nonlinear Schrödinger equation, and in particular its Lie algebraic and multi-Hamiltonian structures, as well as the behavior of its solutions in the continuum limit and their relation to the (continuous) nonlinear Schrödinger equation and Witham equations.

Members and Visitors

BAO CHAU NGO
Algebraic geometry, group theory • Université Paris 11, France • *f*
Association of Members of the Institute for Advanced Study (AMIAS)
Membership

Bao Chau Ngo's research concerns the fundamental lemma in positive characteristic by a geometric approach.

TUAN NGO DAC
Moduli spaces • Université de Paris 13, France • *f*

Tuan Ngo Dac is working on the problem of compactifying the stacks of shtukas. He will also collaborate with Professor Bao Chau Ngo on the relation between the Hitchin fibration and the weighted fundamental lemma.

GIA-VUONG NGUYEN-CHU
Representation theory of p-adic groups • University of Toronto, Canada
Funding provided by The Weyl Fund

Gia-Vuong Nguyen-Chu's work involves some local aspects of the Langlands program. He is interested in homogeneity problems and problems related to representation theory and orbital integrals of p-adic groups.

DMITRY ORLOV
Mirror symmetry • Steklov Mathematical Institute, Russia • *s*
Funding provided by The Oswald Veblen Fund

Dmitri Orlov plans to study different aspects of Homological Mirror Symmetry: relations between derived categories of coherent sheaves on varieties and categories of Lagrangian vanishing cycles for mirror symmetric Landau-Ginzburg models; descriptions of categories of D-branes for Landau-Ginzburg models, constructions of mirror symmetric models for some Fano varieties and varieties of general type.

TONY PANTEV
Algebraic geometry • University of Pennsylvania • *v, s*

Tony Pantev will work on two interelated projects: the construction of Hodge theoretic invariants arising from the coherent sheaf theory of commutative or noncommutative spaces, and the study of the behavior of these invariants under Fourier-Mukai transforms and homological mirror symmetry.

f First Term • *s* Second Term • *v* Visitor • *vp* Visiting Professor
j Joint Member School of Natural Sciences • *vri* Veblen Research Instructorship

Members and Visitors

DINH HUONG PHAM
Algebraic geometry • Université Paris-Sud, France • *f*

Dinh Huong Pham is studying the geometric interpretation of the geometric side of the trace formula. She wishes to construct an analogue of Hitchin fibration in the case of Lie groups instead of Lie algebras.

ELENA POLETAEVA
Infinite-dimensional Lie algebras • University of California at Riverside • *s*

Elena Poletaeva plans to study infinite-dimensional Lie algebras and superalgebras from algebraic and geometric points of view: the representation theory and structure of superconformal algebras, the representation theory of exceptional Lie superalgebras related to superconformal algebras, and semi-infinite cohomology of Lie algebras.

DIPENDRA PRASAD
P-adic groups • Tata Institute of Fundamental Research, India
Funding provided by the Friends of the Institute for Advanced Study and The von Neumann Fund

Dipendra Prasad plans on proving that any self-dual supercuspidal representation of GL(n) over a p-adic field can be globalised to a self-dual representation using methods of the trace formula, and as an application determine whether an orthogonal representation of a local Galois group corresponds to an orthogonal or symplectic representation of D^*.

CONJEEVERAM RAJAN
Automorphic forms • Max-Planck Institute für Mathematik, Germany • *s*

ALEXANDER RAZBOROV
Combinatorics, computer science • Institute for Advanced Study • *vp*

Alexander Razborov continues his work in extremal combinatorics. The main tool will be the theory of flag algebras, unifying, in a clean and convenient form, many standard techniques existing in the area. He also plans to revisit several areas in Theoretical Computer Science, including Proof Complexity (most likely) and Quantum Computing (possibly).

f First Term • *s* Second Term • *v* Visitor • *vp* Visiting Professor
j Joint Member School of Natural Sciences • *vri* Veblen Research Instructorship

Members and Visitors

VALENTINA RIVA
Probability, field theory • University of Oxford, United Kingdom
Funding provided by The Giorgio and Elena Petronio Fellowship Fund

Valentina Riva's research is in mathematical physics. Riva is studying problems of statistical mechanics with two main tools: Conformal Field Theory and Stochastic Loewner Evolution.

KAY RÜELLING
Algebraic geometry • École Normale Supérieure, France

Kay Rüelling is studying p-adic cohomology theories. In particular, he wants to compare the behavior of rigid cohomology of a variety which lifts to characteristic zero with the de Rham cohomology of its general fiber.

ALIREZA SALEHI GOLSEFIDY
Semisimple lie groups • Yale University • *vri*

Alireza Salehi Golsefidy is working on various topics centering at Semisimple Lie Groups, such as homogeneous dynamical system, its application in number theory, action of discrete subgroups on the Bruhat-Tits building, and studying the lattices of minimum covolume in various semisimple Lie groups.

PETER SARNAK
Analytic number theory, automorphic forms • Princeton University/ Institute for Advanced Study • *s*
Funding provided by The Oswald Veblen Fund and The Ambrose Monell Foundation

JEFFREY SCHENKER
Mathematical physics • Institute for Advanced Study

Jeffrey Schenker is studying banded random matrices and their relation to localization/delocalization phenomena in linear wave equations with disorder.

f First Term • *s* Second Term • *v* Visitor • *vp* Visiting Professor
j Joint Member School of Natural Sciences • *vri* Veblen Research Instructorship

Members and Visitors

SCOTT SHEFFIELD
Probability, field theory • Microsoft Research

AARON SIEGEL
Game theory • Mathematical Sciences Research Institute

Aaron Siegel is working on several problems in combinatorial game theory: the structure of misère quotients; the temperature theory of loopy games; and the lattice structure of partizan games. He will explore the use of computational techniques to gain insight into these problems.

JAKE SOLOMON
Gromov-Witten invariants • Massachusetts Institute of Technology

Jake Solomon will continue his research on the definition and properties of open Gromov-Witten theory and its connections to physics, wherein it provides computable definitions to test the predictions of open mirror symmetry, and mathematics, wherein it is important to understanding and extending recent research in real enumerative geometry.

JAKOB STIX
Algebraic geometry • University of Bonn, Germany

Jakob Stix is studying the arithmetic-geometric contents of algebraic fundamental groups (anabelian geometry) with respect to the following two main directions: higher dimensional phenomena and, secondly, the geometry of the section conjecture, which relates the subject to diophantine questions.

VLADIMIR TRIFONOV
Theoretical computer science • University of Texas at Austin

Vladimir Trifonov's general field of interest is computational complexity theory, particularly the power of restricted models of computation, e.g. constant-depth circuits and space-bounded computation. He will work on upper bounds on the incomplete exponential sums corresponding to lower bounds on the size of MAJ o MOD(m) o AND circuits computing the MOD(q) function.

f First Term • *s* Second Term • *v* Visitor • *vp* Visiting Professor
j Joint Member School of Natural Sciences • *vri* Veblen Research Instructorship

Members and Visitors

NIKOLAI TYURIN
Geometric quantization • Joint Institute for Nuclear Research, Russia • *s*

Nikolai Tyurin is looking at whether mirror symmetry is a kind of duality between algebraic (or Kahler) geometry and symplectic geometry (as he believes) and if it is possible to repeat some classical constructions from both sides of the correspondence.

EMANUELE VIOLA
Computational complexity theory • Harvard University

Emanuele Viola's area of study is computational complexity theory. Specifically, he is studying the interplay between randomness and efficient computation. One of his main tools will be the construction of pseudorandom objects, which are objects that look random despite being constructed with little or no randomness.

MONICA VISAN
Nonlinear PDE • University of California, Los Angeles

Monica Visan works in harmonic analysis and dispersive PDE. She plans to continue her investigations of nonlinear Schroedinger equations. The problem she is most eager to solve is global well-posedness and scattering for the mass-critical NLS.

CHARLES WEIBEL
K-theory, motivic cohomology • Rutgers, The State University of New Jersey
Funding provided by The Oswald Veblen Fund

Charles Weibel is working on several interconnected problems between algebraic K-theory and motivic cohomology, concerning the K-theory of polynomial extensions, the norm residue conjecture connecting K-theory to motivic and etale cohomology, and torsion symbols for the integers in a number field.

DAVID WHITEHOUSE
Automorphic forms • California Institute of Technology

David Whitehouse plans to work on problems related to the trace formula and its application to the study of automorphic forms. In particular, he is interested in using and developing the relative trace formula to obtain explicit identities for periods of automorphic forms.

f First Term • *s* Second Term • *v* Visitor • *vp* Visiting Professor
j Joint Member School of Natural Sciences • *vri* Veblen Research Instructorship

SCHOOL OF NATURAL SCIENCES

Administrative Officer: Michelle Sage

Executive Director and Administrator,
The Simons Center for Systems Biology: Suzanne P. Christen

The School of Natural Sciences, established in 1966, provides a unique atmosphere for research in broad areas of theoretical physics, astronomy, and systems biology.

Areas of current interest in theoretical physics include elementary particle physics, string theory, quantum theory and quantum gravity and their relationship to geometry, and theoretical and observational astrophysics. The astrophysics group employs both classical and quantum physics techniques, combined with modern observational studies, to investigate the origin and composition of the Universe. The Simons Center for Systems Biology takes an interdisciplinary approach to biology, conducting research at the interface of molecular biology and the physical sciences and drawing researchers from an array of disciplines, including mathematics, physics, astrophysics, molecular biology, and chemistry.

The research in mathematical physics and string theory benefits from a strong synergistic activity involving the School of Mathematics and the School of Natural Sciences. The programs in physics and astronomy are closely integrated with the corresponding activities at Princeton University via joint seminars and lunches, as well as frequent informal contacts. The Simons Center encourages collaborations with other academic and clinical groups as well as with research scientists from pharmaceutical, biotechnology, and computer companies. The Center hosts a variety of joint "lab meetings," seminars, symposia, and public lectures that take place during the year.

The School also sponsors Prospects in Theoretical Physics, a two-week residential summer program held at the Institute for promising graduate students who attend lectures and working sessions on the latest advances and open questions in the field of theoretical physics.

Faculty
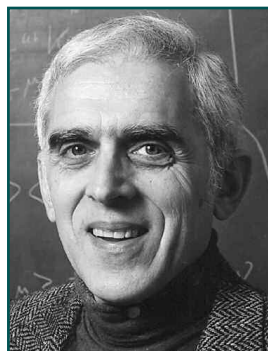
STEPHEN L. ADLER
Professor • Particle Physics

In a series of remarkable, difficult calculations, Stephen Adler demonstrated that abstract ideas about the symmetries of fundamental interactions could be made to yield concrete predictions. The successful verification of these predictions was a vital step toward the modern Standard Model of particle physics. In some of his more recent work, he has been exploring generalized forms of quantum mechanics, both from a theoretical and a phenomenological standpoint.
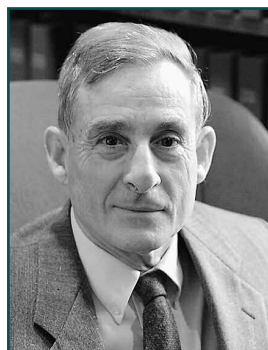
PETER GOLDREICH
Professor • Astrophysics

Peter Goldreich has made profound and lasting contributions to planetary sciences and astrophysics, providing fundamental theoretical insights for understanding the rotation of planets, the dynamics of planetary rings, pulsars, astrophysical masers, the spiral arms of galaxies, oscillations of the sun and white dwarfs, and turbulence in magnetized fluids. His current research is focused on planet formation.

ARNOLD J. LEVINE
Professor • Systems Biology

Arnold Levine is a widely acclaimed leader in cancer research. In 1979, Professor Levine and others discovered the p53 tumor suppressor protein, a molecule that inhibits tumor development. He established and heads The Simons Center for Systems Biology at the Institute, which concentrates on research at the interface of molecular biology and the physical sciences; on genetics and genomics, polymorphisms and molecular aspects of evolution, signal transduction pathways and networks, stress responses, and pharmacogenomics in cancer biology.

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Faculty
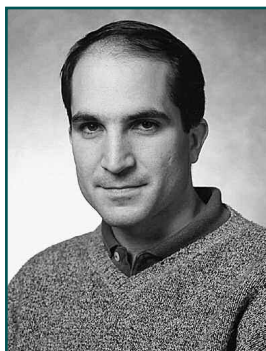
JUAN MALDACENA
Professor • Theoretical Physics

Juan Maldacena's work focuses on quantum gravity, string theory, and quantum field theory. He has recently proposed a relationship between quantum gravity and quantum field theories, which elucidates various aspects of both theories. He is studying this relationship further in order to understand the deep connection between black holes and quantum field theories. He is also exploring the connection between string theory and cosmology.
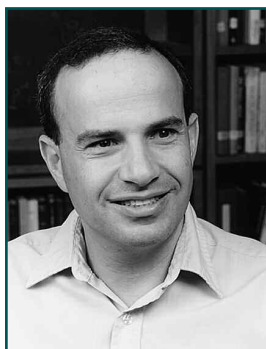
NATHAN SEIBERG
Professor • Mathematical Physics

Nathan Seiberg's work focuses on various aspects of string theory, field theory, and particle physics. In recent years he has found with various collaborators exact solutions of supersymmetric quantum field theories and string theories. These solutions have applications to mathematics, and to the dynamics of quantum field theories and string theory, leading to many new and unexpected insights. One of them is the fundamental role played by the "duality" between electricity and magnetism in these theories.
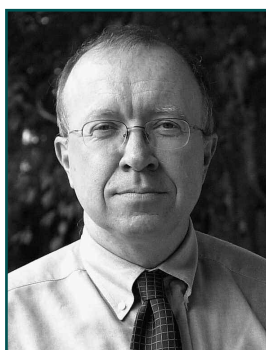
SCOTT TREMAINE (From January 1, 2007)
Richard Black Professor • Astrophysics

Scott Tremaine has made seminal contributions to understanding the formation and evolution of planetary systems, comets, black holes, star clusters, galaxies, and galaxy systems. He predicted the Kuiper belt of comets beyond Neptune, and, with Professor Peter Goldreich, the existence of shepherd satellites and density waves in Saturn's ring system, as well as the phenomenon of planetary migration. He interpreted double-nuclei galaxies, such as the nearby Andromeda galaxy, as eccentric stellar disks and elucidated the role of dynamical friction in galaxy evolution.

Faculty
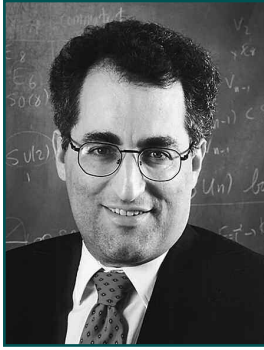
EDWARD WITTEN
Charles Simonyi Professor • Mathematical Physics

Edward Witten's work exhibits a unique combination of mathematical power and physics insight, and his contributions have greatly enriched both fields. He is largely responsible for the modern interest in superstrings as a candidate theory for unification of all known physical interactions. Most recently, he has explored quantum duality symmetries of field theories and string theories, opening significant new perspectives on particle physics, string theory, and topology.
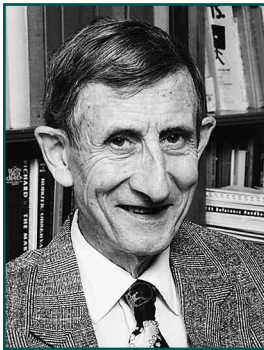
FREEMAN J. DYSON
Professor Emeritus • Mathematical Physics and Astrophysics

Freeman Dyson's work on quantum electrodynamics marked an epoch in physics. The techniques he used in this domain form the foundation for most modern theoretical work in elementary particle physics and the quantum many-body problem. He has made highly original and important contributions to an astonishing range of topics, from number theory to adaptive optics. His current research tries to answer the question, whether any conceivable thought-experiment could detect a single graviton.

SCHOOL OF NATURAL SCIENCES

Members, Visitors, and Research Staff

OFER AHARONY
Particle Physics • Weizmann Institute

Ofer Aharony is working on the relations between quantum field theories and string theories that follow from generalizations of Maldacena's AdS/CFT correspondence. He hopes this will lead to finding a useful string theoretic description of the strong nuclear interactions as well as a better understanding of string theories, specifically how to formulate them non-perturbatively and how they behave in time-dependent backgrounds.

LUIS FERNANDO ALDAY
Particle Physics • Utrecht University

Luis Alday is mainly interested in topics related to the AdS/CFT duality. He is mainly focused on the problem of quantization of strings on AdS_5 x S^5 and its relation to integrable systems. He also plans to explore the microscopic description of black holes and other black objects by means of this duality.

GABRIELA ALEXE
Biology • IBM Research • *v*

Gabriela Alexe's research focuses on developing protocols for molecular profiling of cancer, which are of potential clinical use, as well as on longevity and disease association studies.

GURINDER ATWAL
Biology • Institute for Advanced Study

Gurinder Atwal will continue to develop and use tools from statistical mechanics and information theory to address problems in population genetics and association studies. He will study haplotype structure and selection of genes in the p53 pathway, and also seek to uncover epistatic interactions between single nucleotide polymorphisms related to cell apoptosis.

NILS BAAS
Biology • University of Trondheim, Norway • *s, jm*

Nils Baas will continue his study of the use of higher categories in topology and geometry, especially relations to K-theory, Elliptic cohomology, Generalized bundles, and Cobordism categories. He also plans to explore the use of his hyperstructure concept in systems biology.

f First Term • *s* Second Term • *m* Long-term Member • *v* Visitor
jm Joint Member School of Mathematics • *a* Research Assistant

Members, Visitors, and Research Staff

ANIRBAN BASU
Mathematical and Particle Physics • Institute for Advanced Study
William D. Loughlin Membership

Anirban Basu is analyzing patterns of chiral symmetry breaking in asymptotically free quantum field theories. Understanding this is necessary to study QCD at low energies. He is currently investigating toy models in two space-time dimensions where calculations are under greater control.

GYAN BHANOT
Biology • Rutgers, The State University of New Jersey and The Cancer Institute of New Jersey • *v*

Gyan Bhanot's research concerns computational biology related to cancer. He uses microarray, mass spec and SNP polymorphism data to identify, quantify, and explain cancer initiation, progression, and metastasis. He also works in evolutionary genetics including human migration, phylogeny, disease association studies, and patterns of mutations correlated with longevity and complex disease phenotypes.

NIELS EMIL JANNIK BJERRUM-BOHR
Mathematical and Particle Physics • University of Wales

N. Emil J. Bjerrum-Bohr is investigating the recent conjecture of supersymmetric Yang-Mills as a topological string theory in twistor space and continuing his computations of amplitudes relevant to understanding the physics and phenomenology in and beyond the Standard Model as well as in quantum gravity.

GARETH BOND
Biology • Institute for Advanced Study

Gareth Bond is utilizing the genetics of cancer patients to identify and study variations in the human genome that affect the p53 tumor suppressor pathway, in the hopes of improving cancer prevention and treatment strategies.

DORON CHELOUCHE
Astrophysics • Institute for Advanced Study

Doron Chelouche is exploring the physics of various astronomical phenomena by studying their spectra. Specifically, he will investigate how accreting systems shed their mass via gaseous outflows and probe the properties of gas in the halos of galaxies and quasars. He will continue to study the fundamental physics of photoionized gas.

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jm Joint Member School of Mathematics • *a* Research Assistant

Members, Visitors, and Research Staff

SHANE DAVIS
Astrophysics • University of California, Santa Barbara

Shane Davis is working on a broad variety of problems within the field of high energy astrophysics. This includes a continuing emphasis on the study of accreting black hole systems to better understand the nature of their X-ray emission mechanisms.

RADOVAN DERMISEK
Particle Physics • Institute for Advanced Study

Radovan Dermisek is working on theoretical and phenomenological aspects of models beyond the Standard Model of particle physics, focused mainly on ideas related to understanding electroweak symmetry breaking and solving the hierarchy problem, such as supersymmetry, models with extended Higgs sector, and grand unified theories. He is also interested in understanding quark and lepton masses, and neutrino masses and mixing.

MICHAEL DINE
Mathematical and Particle Physics • University of California, Santa Cruz • s

Michael Dine works in theoretical elementary particle physics. His interests range from experiments at accelerators, to cosmology to string theory. During his stay at the Institute, he will be working principally on issues related to the upcoming start of the Large Hadron Collider at CERN.

TOHRU EGUCHI
Particle Physics • University of Tokyo • f

Tohru Eguchi is working on elucidating geometrical aspects of some non-compact space-times relevant in string theory, making use of superconformal field theories in 2-dimensions.

CHARLES GAMMIE
Astrophysics • University of Illinois

Charles Gammie investigates problems in theoretical astrophysics. He is particularly interested in creating realistic radiative models of accreting black holes like the one believed to sit at the center of the galaxy. He will also begin writing a book on astrophysical fluid mechanics.

f First Term • *s* Second Term • *m* Long-term Member • *v* Visitor
jm Joint Member School of Mathematics • *a* Research Assistant

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MURAT GUNAYDIN
Particle Physics • Penn State University

Currently, Murat Gunaydin's main research interests include the construction of unitary representations of U-duality groups that arise in M/Superstring theory and related supergravity theories; the understanding of the extremal black hole and other solitonic spectra of these theories in terms of the relevant unitary representations of U-duality groups; and AdS/CFT dualities in M/Superstring theory.

SIMEON HELLERMAN
Mathematical and Particle Physics • Institute for Advanced Study • *m*

Simeon Hellerman is exploring models of particle physics and gravity that are capable of describing all currently observed natural phenomena and predicting new ones. He continues to work on models of string theory with broken supersymmetry.

CHRISTOPHER HIRATA
Astrophysics • Institute for Advanced Study • *m*
John N. Bahcall Fellowship

Christopher Hirata continues his work on galaxy clustering, and gravitational lensing of galaxies and of the cosmic microwave background. He will also work on precision calculation of the recombination of hydrogen and helium in the early Universe.

MARIO JURIC
Astrophysics • Princeton University

Mario Juric's current area of research is the dynamics of few-body systems. During his stay at the Institute, he will numerically investigate the long-term evolution of planetary systems, with the goal of understanding and explaining the observed properties of extrasolar planets.

URI KESHET
Astrophysics • Institute for Advanced Study

Uri Keshet is exploring topics in high-energy astrophysics, such as the physical processes involved in astronomical collisionless shock waves and the role of cosmic-rays.

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jm Joint Member School of Mathematics • *a* Research Assistant

SCHOOL   OF   NATURAL   SCIENCES

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MICHAEL KRASNITZ
Biology • Institute for Advanced Study

Michael Krasnitz is working on the bioinformatics of DNA and RNA sequences, with applications including patterns of reassortment in the Influenza virus, optimal RNA expression for an HIV vaccine, and chromatin structure as a function of DNA sequence.

MICHAEL KUHLEN
Astrophysics • University of California, Santa Cruz

Michael Kuhlen continues to investigate the formation of structure in the Universe, using both analytical methods as well as large-scale numerical simulations. In particular, he is interested in the very first generation of luminous objects: how they affected their surrounding, how they influenced subsequent structure formation, and how we might be able to observationally constrain these questions.
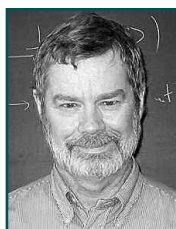
PAUL LANGACKER
Particle Physics • University of Pennsylvania
Funding provided by the Friends of the Institute for Advanced Study

Paul Langacker is exploring the physics implications of concrete string constructions. This will include possibilities for extended gauge, Higgs, fermion, and quasi-hidden sectors for collider physics, and non-standard mechanisms for generating neutrino mass.
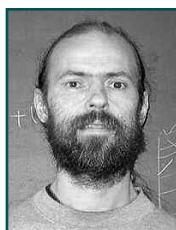
ROBERT LUPTON
Astrophysics • Princeton University

Robert Lupton continues to juggle problems concerning data from the [optical] Sloan Digital Sky Survey, virtual data from the [microwave] Atacama Cosmology Telescope, and even more virtual data from the [optical] Large Survey Synoptic Telescope. He also intends to publish the algorithms that he developed to process SDSS images.
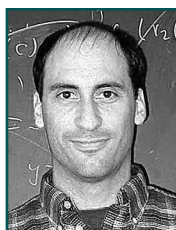
ANDREW MacFADYEN
Astrophysics • Institute for Advanced Study
Frank and Peggy Taplin Membership

Andrew MacFadyen is studying the behavior of astrophysical fluid in strong asymmetric explosions related to stellar death. In addition to exploring the behavior of ultra-relativistic fluids in inhomogeneous media using RAM, a highly accurate computer code for simulating relativistic fluids, he is studying the accretion of gas into black holes in the centers of galaxies and in the cores of collapsed rotating stars.

f First Term • *s* Second Term • *m* Long-term Member • *v* Visitor
jm Joint Member School of Mathematics • *a* Research Assistant

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ALEXANDER MALONEY
Mathematical and Particle Physics • Stanford University

Alex Maloney's research focuses on various aspects of string theory and quantum gravity, with a particular emphasis on applications to problems in cosmology and black hole physics.

RACHEL MANDELBAUM
Astrophysics • Princeton University

Rachel Mandelbaum continues to work in the field of weak gravitational lensing. Her work includes an analysis of data to answer a variety of astrophysical questions, and development of techniques for using lensing as a probe of cosmological parameters.

DARIO MARTELLI
Mathematical and Particle Physics • CERN

SATOSHI MISHIMA
Particle Physics • Institute for Advanced Study

Satoshi Mishima is studying phenomenological aspects of theoretical particle physics. In particular, he will explore the flavor structure of various new physics models, such as supersymmetric standard models.

MICHAEL MOVSHEV
Mathematical Physics • Institute for Advanced Study • *jm*

Michael Movshev continues to work on algebraic theory of deformations of maximally supersymmetric gauge theories. He has also started a new project which concerns topology and geometry of noncommutative K-3 surface.

f First Term • *s* Second Term • *m* Long-term Member • *v* Visitor
jm Joint Member School of Mathematics • *a* Research Assistant

S C H O O L   O F   N A T U R A L   S C I E N C E S

Members, Visitors, and Research Staff

ANDREW NEITZKE
Particle Physics • Institute for Advanced Study
Martin A. and Helen Chooljian Membership

Andrew Neitzke is working on mathematical aspects of string theory; at the moment, he is trying to construct a nonperturbative extension of the topological string, and to understand its relation to automorphic forms and black holes.

MARGARET PAN
Astrophysics • California Institute of Technology

Margaret Pan is exploring solar system dynamics, extrasolar planets, the Kuiper belt, and relativistic self-similar solutions.

GIL PAZ
Particle Physics • Cornell University

Gil Paz continues to work on inclusive B decays and their implications for extracting Standard Model parameters and constraining new physics models. He also plans to start working on projects related to the Large Hadron Collider (LHC), which will start running in 2007.

RAÚL RABADÁN
Biology • Institute for Advanced Study

Raúl Rabadán is exploring the biology of viruses, especially influenza A and HIV. He is utilizing databases of influenza and HIV viruses to look at, among other things, how influenza A infects different hosts, and patterns of reassortments between different segments.
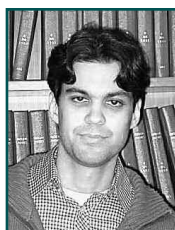
ENRICO RAMIREZ-RUIZ
Astrophysics • Institute for Advanced Study • *m*
John N. Bahcall Fellowship

Enrico Ramirez-Ruiz continues to study the violent Universe with an emphasis on stellar explosions, black hole formation, galactic nuclei, gamma-ray bursts, and accretion phenomena near compact objects.

f First Term • *s* Second Term • *m* Long-term Member • *v* Visitor
jm Joint Member School of Mathematics • *a* Research Assistant

Members, Visitors, and Research Staff

TIMOTHY REBBECK
Biology • University of Pennsylvania Medical School • *s*

Timothy Rebbeck is developing and applying novel methods for high dimensional analysis of genotype and phenotype data to better understand the complex interactions of genes and exposures in the etiology of commonly occurring human diseases. This work will focus on biologically-based pathways related to cancer risk and outcomes.
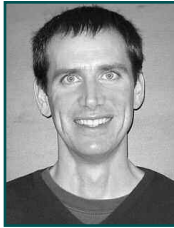
TODD RILEY
Biology • Rutgers, The State University of New Jersey • *a*

Todd Riley is working on methods for modeling the binding characteristics of proteins to nucleic acids. His work focuses on the p53 tumor suppressor pathway in the hopes of increasing our knowledge of cancer prevention and treatment.

MARTIN SCHNABL
Mathematical and Particle Physics • CERN

Martin Schnabl's research focuses on central questions of string theory and particle physics. While carrying on active research within string field theory, he will pursue other promising directions as well.

ALDO SERENELLI
Astrophysics • Institute for Advanced Study • *m*
Ralph E. and Doris M. Hansmann Membership

Aldo Serenelli's work concerns modeling late evolutionary stages of low and intermediate mass stars with emphasis on nucleosynthesis processes occurring during these phases. He is also working on detailed models of the solar structure and has started a project aimed at determining the solar interior composition using solar models and helioseismology data.

KRIS SIGURDSON
Astrophysics • Institute for Advanced Study

Kris Sigurdson continues his research into the particle properties of dark matter and its signatures in both the laboratory and the Universe. He will also continue to examine potential new cosmological probes such as 21-cm fluctuations from the cosmic dark ages and other aspects of theoretical and early universe cosmology.

f First Term • *s* Second Term • *m* Long-term Member • *v* Visitor
jm Joint Member School of Mathematics • *a* Research Assistant

Members, Visitors, and Research Staff

IAN SWANSON
Mathematical and Particle Physics • Institute for Advanced Study
Marvin L. Goldberger Membership

Ian Swanson is studying the relationship between string theory and gauge field theory, particularly instances where the physical models of interest appear to be completely integrable. Swanson will also study aspects of string theory as they are related to various cosmological settings, including supercriticality and quintessence, time-dependent backgrounds and tachyon condensation.
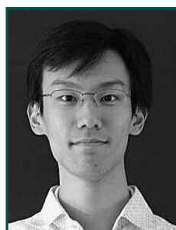
YUJI TACHIKAWA
Mathematical and Particle Physics • University of Tokyo

Yuji Tachikawa continues his research on the superstring theory. In particular, he is interested in finding the effective supersymmetric actions of its various compactifications to lower dimensions. This involves various intricate geometrical structures, which are also the objectives of his study.

GLENN VAN DE VEN
Astrophysics • Princeton University

Glenn van de Ven is investigating the dynamical structure and evolution of galaxies and globular clusters through detailed modeling of their observed photometry and two-dimensional kinematics. These three-dimensional reconstructions provide a look inside these stellar systems and allow the search for the "fossil record" of their formation history.

JIRI VANICEK
Biology • Institute for Advanced Study

Jiri Vanicek's work involves applying methods of statistical physics to biological problems, including the development of numerically efficient theoretical methods to describe quantum effects experimentally observed in enzymatic reactions. While at the Institute, he will use statistical algorithms to predict genes regulated by herpesviral microRNAs and to study mechanisms of latency and reactivation in these viruses.

ALEXEI VAZQUEZ
Biology • Institute for Advanced Study

Alexei Vazquez will continue to work on different aspects of protein-protein interaction networks, including the sensitivity of high throughput experiments and the prediction of protein-protein interactions from sequence analysis. He will also study the dynamics of mRNA and protein expression in gene circuits.

f First Term • *s* Second Term • *m* Long-term Member • *v* Visitor
jm Joint Member School of Mathematics • *a* Research Assistant

Members, Visitors, and Research Staff

JOHANNES WALCHER
Mathematical and Particle Physics • Institute for Advanced Study • *m*
Roger Dashen Membership

Johannes Walcher is working on a range of topics in string theory. He is mostly interested in mathematical and phenomenological aspects of string compactifications with D-branes, orientifolds, and fluxes, as well as possible implications for cosmology.
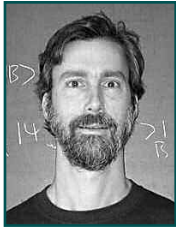
DAVID WEINBERG
Astrophysics • Ohio State University • *f*

David Weinberg will work on modeling the clustering of galaxies in the Sloan Digital Sky Survey, the largest ever 3-dimensional map of the distribution of galaxies, to extract information about the matter and energy contents of the universe and the physical processes that gave rise to cosmic structure.

ERICK WEINBERG
Particle Physics • Columbia University • *s*

Erick Weinberg is focusing on problems in quantum field theory, including the theory of vacuum transitions in de Sitter space-time and electric-magnetic duality in supersymmetric theories.

CHEN-HSIANG YEANG
Biology • Institute for Advanced Study • *s*

Chen-Hsiang Yeang will investigate the coevolution of various components in molecular systems by applying a general coevolutionary model to the sequences of a large number of species. He will also integrate different cellular activities and organisms information to reconstruct the gene regulatory network, and apply the network reconstruction methods to understand the regulatory circuitry of cancer and pathogens.

NADIA ZAKAMSKA
Astrophysics • Institute for Advanced Study

Nadia Zakamska is continuing to study quasars using data from the Sloan Digital Sky Survey, from Hubble and Spitzer Space Telescopes, and from Chandra X-ray observatory. This ongoing work is part of the effort to achieve a complete census of supermassive black holes in the Universe. In addition, she is working on topics in planetary formation and evolution of planetary systems.

f First Term • *s* Second Term • *m* Long-term Member • *v* Visitor
jm Joint Member School of Mathematics • *a* Research Assistant

Members, Visitors, and Research Staff

ZHENG ZHENG
Astrophysics • Institute for Advanced Study

Zheng Zheng is studying the large-scale structure of the universe probed by the distribution of galaxies. He will use galaxy clustering data to constrain cosmological parameters and learn about galaxy formation and evolution.

f First Term • *s* Second Term • *m* Long-term Member • *v* Visitor
jm Joint Member School of Mathematics • *a* Research Assistant

SCHOOL OF SOCIAL SCIENCE

Administrative Officer: Donne Petito

Founded in 1973, the School of Social Science at the Institute for Advanced Study takes as its mission the analysis of societies and social change, and is devoted to a multi-disciplinary, comparative, and international approach to social research.

Professors of the School have participated actively in the most important contemporary debates about the meaning of the "interpretive turn" in anthropology, history, and political theory; about the centrality of culture, language, ritual, and moral understandings in the study of society; about the character and direction of social change; and about the explanatory power of rational choice in the analysis of political decision-making and economic exchange. Although each is rooted in his or her own discipline, all do work that transcends disciplinary boundaries.

The School operates under the guiding principles of informality and collegiality and with a shared understanding that the social sciences are not to be narrowly defined. Each year, the School brings together scholars from various fields, including political science, economics, law, psychology, sociology, anthropology, history, philosophy, and literary criticism, to examine historical and contemporary problems.

In an attempt to create a sense of community among the Members, the School designates an annual theme, which is neither exclusive nor excluding. The theme of the 2006-2007 academic year is The "Third World" Now. It is hoped that this year's group of scholars will contribute to the articulation of new and revised categories of analysis that will illuminate the patterns that have emerged over the last sixty years, during which the shape of the world has changed dramatically.

Faculty

ERIC S. MASKIN
Albert O. Hirschman Professor

Eric Maskin is an internationally recognized authority on economic theory whose work has been drawn on extensively by researchers in industrial organization, finance, development, and other fields in economics and political science. He works in many areas of economic theory, including game theory, the economics of incentives, and social choice theory. This year he will continue his work on the theory of coalition formation; comparing different voting systems; the advantages and drawbacks of accountability in government; and the pros and cons of intellectual property rights.

JOAN WALLACH SCOTT
Harold F. Linder Professor

Joan Scott's groundbreaking work has challenged the foundations of conventional historical practice, including the nature of historical evidence and historical experience and the role of narrative in the writing of history. Her recent books have focused on the vexed relationship of the particularity of gender to the universalizing force of democratic politics. She has just finished a book that examines the controversy in France that led to a law banning the wearing of Islamic headscarves in public schools.
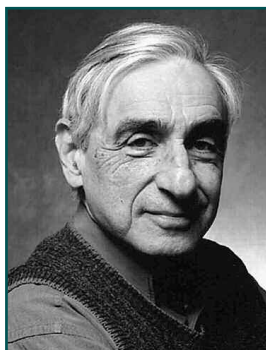
MICHAEL WALZER
UPS Foundation Professor

One of America's foremost political thinkers, Michael Walzer has written about a wide variety of topics in political theory and moral philosophy, including political obligation, just and unjust war, nationalism and ethnicity, economic justice, and the welfare state. In addition to writing frequently about war and terrorism, he is currently addressing questions of pluralism, ethnicity, cultural rights, and multiculturalism. He continues to work on volumes three and four of a major collaborative project focused on the history of Jewish political thought.

Faculty
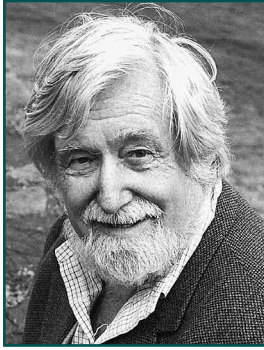
CLIFFORD GEERTZ
Professor Emeritus

An eminent figure in the field of cultural anthropology, Clifford Geertz is known for his ethnographical research in Southeast Asia and North Africa. His contributions have been influential not only among anthropologists, but also among geographers, ecologists, political scientists, humanists, and historians. He has also worked on religion (especially Islam), on bazaar trade, economic development, traditional political structures, and on village and family life. His current research concerns the question of ethnic diversity and its implications in the modern world.
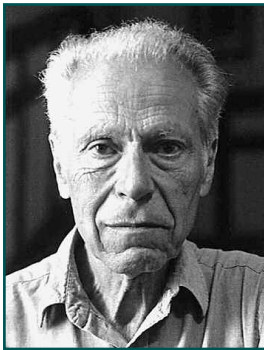
ALBERT O. HIRSCHMAN
Professor Emeritus

Albert O. Hirschman is a developing economist renowned for his lucid and innovative contributions to economics, the history of ideas, and the social sciences. He has contributed to the discussion around the economic reasons for the emergence of authoritarian regimes in Latin America in the sixties and seventies, and for the return to democratic forms of governance in the eighties. Lately he has engaged in what he calls "self-subversion"— systematically revisiting his principal theorems and models and modifying, qualifying, and complicating them in various respects.

SCHOOL OF SOCIAL SCIENCE

Members, Visitors, and Research Staff

ATTILA AMBRUS
Economics • Harvard University
Richard B. Fisher Membership

Attila Ambrus is working on developing a realistic dynamic model of household bargaining that will ultimately provide an integrated model of marriage markets and household decisions. In addition to this, he is investigating how and to what extent altruism plays a role in household decisions.
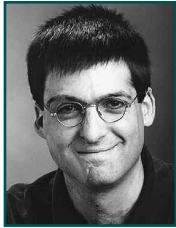
DAN ARIELY
Psychology • Massachusetts Institute of Technology • *v*

Dan Ariely is looking at the savings rates of the United States, which are the lowest in the Western world. He aims to provide a broad analysis of the mistakes people make when dealing with money and, based on that, offer a set of remedies for these problems.

SUMEDHA GUPTA ARIELY
Psychology • Massachusetts Institute of Technology • *v*

Sumedha Gupta Ariely is looking into why and under what conditions people give to charity. She will examine the choice of giving money versus time, the social norms surrounding charitable giving, how individuals view these norms, and how these norms influence people when they are considering charitable gifts.

HAGIT BENBAJI
Philosophy • Ben-Gurion University • *v*

Hagit Benbaji plans to develop a view of color that she calls "phenomenal dispositionalism." In contrast to traditional dispositionalism, which seeks to reduce colors to physical properties and mental responses, she argues that color is nevertheless a phenomenal property, neither mental nor physical.

YITZHAK BENBAJI
Political Science • Bar-Ilan University

Yitzhak Benbaji plans to write a book that explores central questions debated by theorists and practitioners in relation to the justice of military campaigns. In his book, Benbaji plans to defend the traditional war convention described in Professor Michael Walzer's *Just and Unjust Wars,* but also point to the ways that it can be improved.

f First Term • *s* Second Term • *v* Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

AMY BOROVOY
Anthropology • Princeton University

Amy Borovoy is developing a book manuscript that examines the interconnections between prominent postwar Japanese discourses of national identity and the development of the American anthropology of Japan. She is examining the traffic between Japanese and American intellectuals, exploring how it shaped the postwar anthropology of the self.
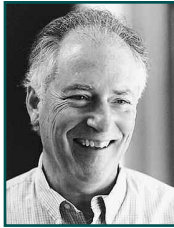
EDMUND BURKE, III
Sociology • University of California, Santa Cruz • *v, f*

Edmund Burke, III, will give a lecture on the creation of the Moroccan colonial archive (1880-1925) as a major intellectual and political achievement. By imagining a "traditional Morocco," the archive provided the chief justification for the French protectorate (1912-1956) as well as the template for the colonial state.

PATRICK CHABAL
Political Science • King's College London

Patrick Chabal is re-examining the "scientific" nature of the so-called social sciences with particular reference to the epistemological foundations of contemporary political science. The aim is to establish whether the current notion of social "science" is suited to the analytical challenges of explaining the social and political realities prevailing in, respectively, the West and the Third World today.

IN-KOO CHO
Economics • University of Illinois, Champaign-Urbana
Deutsche Bank Membership

In-Koo Cho is synthesizing recent ideas from various areas to build a new framework for design and analysis of efficient simulation tools and of new algorithms for learning that can be applied to a broad class of dynamic economic problems, especially in computational and macroeconomics as well as in the area of bounded rationality.

FORREST D. COLBURN
Political Science • Graduate Center, City University of New York

Forrest D. Colburn is working on a book about how the heterogeneous collection of poor countries in Latin America, Africa, the Middle East, and Asia today define themselves with respect to each other and the more prosperous countries of the world. He aims to explore the political, economic, and cultural consequences of shifting self-definitions.

f First Term • *s* Second Term • *v* Visitor • *a* Research Assistant

S C H O O L   O F   S O C I A L   S C I E N C E

Members, Visitors, and Research Staff
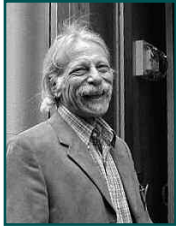
EUGENE COOPER
Anthropology • University of Southern California

Eugene Cooper is working on an ethnographic monograph focused on the multi-functional totality of Chinese market/temple fairs, and the insights their study provides into the currents and countercurrents of contemporary popular thought, religion, and culture, as well as the dynamism of rural commodity production and trade.

ELISABETH H. ELLIS
Political Science • Texas A&M University
National Endowment for the Humanities Fellow

Elisabeth Ellis is working on a book project developing the argument that political right ought to be understood as dynamic and provisional, rather than static and conclusive. Toward this end, she is applying provisional theory to a series of topics in contemporary politics, including public discourse, citizenship, environmental politics, international politics, and property rights.

HENRY S. FARBER
Economics • Princeton University
Leon Levy Foundation Member

Henry S. Farber is working on several projects, including an analysis of the role of reference-dependent preferences in labor supply with application to New York City taxi drivers, and a book (with Bruce Western of Princeton University and Margaret Levi of the University of Washington) on the future of labor unions in the United States.

STEVEN FEIERMAN
History • University of Pennsylvania
National Endowment for the Humanities Fellow

Steven Feierman is writing a book that explores major themes in the history of medicine in eastern, central, and southern Africa, over the past century and a half. He will argue that the region has a uniquely rich set of social technologies—ones in which the treatment of bodily illness and social disease have long been integrated in useful ways.

ERICA FIELD
Economics • Harvard University

Erica Field is examining the relationship between reproductive and child outcomes and specific features of marriage institutions in the developing world. Her research will examine both the underlying causes as well as the welfare consequences of several marriage practices common to developing countries, including consanguineous marriage, child marriage, and dowry practices.

f First Term • *s* Second Term • *v* Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

ARIEL FURSTENBERG
Political Science • Tel-Aviv University and Shalom Hartman Institute • *a*

Ariel Furstenberg is working on a project, chaired by Professor Michael Walzer, which focuses on the history of Jewish political thought from the ancient period to modern times. Specifically, he is researching Jewish intellectual reactions to historical events as well as other conceptions of political phenomena such as war and peace.

KRISTEN GHODSEE
Anthropology • Bowdoin College

Kristen Ghodsee is working on an ethnographic study of a Slavic Muslim community in the Rhodopi mountain region of southern Bulgaria. She is examining how local social, political, and economic relations have been affected by the demise of communism, the advent of global capitalism, and the insertion of international aid from the Middle East.

SUSANNA HECHT
Geography • University of California, Los Angeles

Susanna Hecht is looking at what the South American lowlands tell us about the Third World now. She will explore how globalization and global environmental change unfold in a context of highly indige-nized and active civil societies that are pressuring for a reconfiguration of the state and the state of distribution, and how these affect the tra-jectories of Neoliberal economic development.

KRISTIN HOGANSON
History • University of Illinois, Champaign-Urbana • *v*

Kristin Hoganson will tackle the myth of heartland provincialism by exploring links between local and world history. More specifically, she proposes to set the history of Champaign County, Illinois, in global context, in order to reveal the contrived nature of all local history.

A. B. HUBER
Literature • University of California, Berkeley • *a*

A. B. Huber is looking at the ascension of American policies target-ing civilian morale (at home, and in the air and atomic war abroad) during the middle years of the twentieth century and the attendant shift in the perception and language of security, fear, and fatality.

f First Term • *s* Second Term • *v* Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

VIJAY KRISHNA
Economics • Pennsylvania State University
Deutsche Bank Membership

Vijay Krishna's research concerns (i) auction theory, particularly how post-auction resale possibilities affect bidding behavior; (ii) mechanism design, specifically the development of conceptual tools to study mechanism design problems in which the decision-maker's ability to commit is imperfect or absent; and (iii) voting theory, particularly how different voting rules aggregate private information held by voters.

MICHAEL LeBUFFE
Philosophy • Texas A&M University • *v*

Michael LeBuffe is working on a complete interpretation of Spinoza's theory that emphasizes the systematic relations between his epistemology, moral psychology, conceptions of good and evil, and normative ethics. He will interpret *The Ethics* as unified argument and as reflecting Spinoza's response to Descartes and to tensions he perceived in Cartesian doctrine.

CHING KWAN LEE
Sociology • University of Michigan
National Endowment for the Humanities Fellow

Ching Kwan Lee is working on a comparative ethnographic study of worker protests and survival strategies in the northeastern rustbelt (Liaoning Province) and the southern sunbelt (Guangdong Province). She is exploring the uneven effects of globalization, the developmental strategies of central and local governments in China, and the relationship of different labor regimes to the diverse patterns of labor activism.

ROSALIND C. MORRIS
Anthropology • Columbia University

Rosalind Morris is working on a book-length project based on her ethnographic and archival research in a South African gold-mining community. Her book will explain the relation between changing conceptions of value and new modes of historical consciousness in South Africa.

SUSAN NEIMAN
Philosophy • Einstein Forum

Susan Neiman aims to provide a defense of the moral language of the Enlightenment as foundation for a liberal worldview robust enough to meet contemporary challenges. She maintains that freeing the Enlightenment from the clichés both left and right have attached to it reveals the common bonds between religious and secular cultures.

f First Term • *s* Second Term • *v* Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

JENNIFER PITTS
Political Science • Princeton University

Jennifer Pitts is exploring how the limits of the international community have been drawn and redrawn in European political and legal thought and practice; how European thinkers have grappled with the problem of cross-cultural moral and legal judgments in a diverse world; and to what extent European thinkers have regarded moral duties beyond Europe as legal obligations.

THOMAS G. RAWSKI
Economics • University of Pittsburgh • *v, s*

Thomas Rawski is surveying China's expanding international economic links, analyzing the contribution of overseas participants to upgrading manufacturing capabilities in old and new industries, and documenting the centrality of unfettered market access to China's future development prospects. The results will illuminate the dynamics of Chinese industrial growth.

DAVID SCOTT
Anthropology • Columbia University

David Scott is working on *In Bandung's Wake: Re-Imagining Sovereignty,* a book project focused on questions concerning sovereignty and the Third World, principally, if indeed the age of sovereignty is now over, what prospect is there for the Third World, which emerged geopolitically precisely within the terms of a normative discourse of sovereignty?

FARZANA SHAIKH
Political Science • University of Cambridge • *v*

Farzana Shaikh is working on her forthcoming book, provisionally titled *Making Sense of Pakistan*, which analyses the degradation of public life in Pakistan and argues that the country's social and political decline is rooted in continuing uncertainty about the meaning of Pakistan and the significance of "being Pakistani."

BAN WANG
Literature • Rutgers, The State University of New Jersey • *v*, s

Ban Wang is examining the new interstate alliances, expanding networks of economic and political cooperation, and widening connections of investment and trade that are affecting Third World countries. Specifically, he is looking at how China has learned from the modern experience of European-American cultures and drawn on its own geo-historical heritage.

f First Term • *s* Second Term • *v* Visitor • *a* Research Assistant

Members, Visitors, and Research Staff

LISA WEDEEN
Political Science • University of Chicago
Funding provided by the Friends of the Institute for Advanced Study

Lisa Wedeen is using the example of the recently unified state of Yemen to analyze the making of national attachments. She will explore the mechanisms by which national identifications are established; investigate, counter-intuitively, how weak state institutions also provide for the cultivation of democratic practices; and chronicle the impact of growing piety on political life.

f First Term • *s* Second Term • *v* Visitor • *a* Research Assistant

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PROGRAM IN INTERDISCIPLINARY STUDIES

The Program in Interdisciplinary Studies explores different ways of viewing the world, spanning a range of disciplines from physics and especially computational astrophysics, geology, and paleontology to artificial intelligence, cognitive psychology, and philosophy. The program is headed by Faculty member Piet Hut.

Faculty
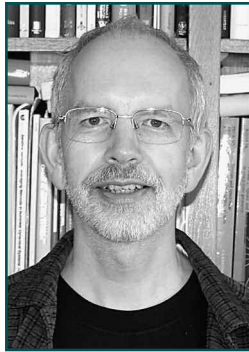
PIET HUT
Professor • Program in Interdisciplinary Studies

The focus of Professor Hut's research is computational astrophysics, in particular multi-scale multi-physics simulations of dense stellar systems. He is currently exploring novel ways to develop frameworks for such simulations, in order to integrate codes from different fields in astrophysics. In addition, he is actively involved in interdisciplinary explorations in the areas of cognitive science and philosophy of science centered around questions involving the nature of knowledge.

Visitors

ANDREW McGOWAN
Theoretical Physics • College of William and Mary

Andrew McGowan's research is centered on string theory. It also includes projects in the areas of epistemology and the nature of knowledge. He will be a part-time assistant for Professor Piet Hut during his stay.

HYUN OK PARK
Sociology • Institute for Advanced Study

Hyun Ok Park is writing a book on the transnational migration around the Korean Peninsula and northeast China since the 1990s. The national, human, and labor rights of Korean and non-Korean migrant laborers are examined as the venue of the Korean nation and a democratic capitalist order in post-cold war East Asia.

Visitors
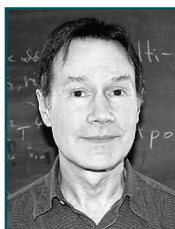
STEVEN TAINER
Asian Philosophy · Institute for World Religions

Steven Tainer is on the faculty of the Institute for World Religions, an Asian Studies institute in Berkeley. His specialties include Asian philosophy and contemplative traditions, and their possible implications for science, ethics, and values. Other background areas of concentration are philosophy of science and mathematical logic.

ED TURNER
Astrophysics · Princeton University

Ed Turner's primary research activities concern exoplanets, astrobiology, cosmology, gravitational lenses, quasars and statistical problems in astrophysics. At the Institute, he will work on theses topics, particularly the latter one, as well as exploring issues related to the history, philosophy and nature of both science and other approaches to acquiring knowledge.

DEJAN VINKOVIĆ
Astrophysics · Institute for Advanced Study

Dejan Vinković is studying properties of dust and gas clouds around newborn stars, which are conditions where new planets are born. In addition, he will also work on a project that establishes mathematical links between socioeconomic models of segregation and physical models of clustering.

ARTIST-IN-RESIDENCE PROGRAM

The Artist-in-Residence Program 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.

In 2003, the Institute's Artist-in-Residence Program launched *Recent Passts 20/21*, a four-year initiative of chamber music concerts and lectures. Hosted by Artist-in-Residence composer Jon Magnussen, the series is designed to explore the wide variety of aesthetic perspectives in Western art music of the 20th and 21st centuries.

JON MAGNUSSEN
Composer

In addition to curating *Recent Passts 20/21*, Jon Magnussen is continuing work on *The Folding Cliffs,* an opera based on the epic poetry of W.S. Merwin. He is also composing a commissioned chamber work which will be premiered this season by Ebb and Flow Arts (Hawaii) and by the New York New Music Ensemble (Princeton).

DIRECTOR'S VISITORS

Director's Visitors contribute much to the vitality of the Institute. Scholars from a variety of fields, including areas not represented in the Schools, are invited to the Institute for varying periods of time, depending upon the nature of their work.

LAKHDAR BRAHIMI
Special Advisor to the Secretary-General of the United Nations

For the last sixteen years or so, Lakhdar Brahimi has dealt almost full-time with conflict and post-conflict situations and problems, mostly on behalf of or within the United Nations. At the Institute, he will reflect not so much on what has been achieved, but on where the UN and/or others went wrong (for example in Haiti, Afghanistan, Iraq). Whether this reflection will translate into a publication, lectures, or a report, he is not sure yet.

JOHN CARDY
Theoretical Physics • University of Oxford

John Cardy is studying the connection between random planar curves and conformal field theory, as well as various aspects of localization in random systems.
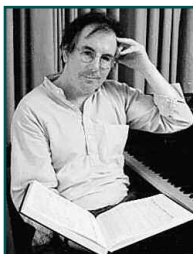
ROGER PARKER
Music • University of Cambridge

Roger Parker is working on a history of opera, in collaboration with Professor Carolyn Abbate, formerly of Princeton University, now at Harvard.
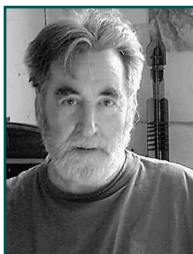
TOM PHILLIPS
Painter, writer, composer

Tom Phillips would like to be conducting proton collider experiments but in fact will be continuing work on his now 40-year-old project A HUMUMENT and pursuing his current collaboration [with Tarik O'Regan] on the opera *Heart of Darkness* and having lunch and looking at trees in the fall.

MARIO DRAGHI
Governor, Bank of Italy
Rome, Italy

ROGER W. FERGUSON, JR.
Chairman, Swiss Re America Holding Corporation
Washington, D.C.

PETER L. GALISON
Mallinckrodt Professor of the History of Science and of Physics
Harvard University
Cambridge, Massachusetts

PETER GODDARD
Director, Institute for Advanced Study
Princeton, New Jersey

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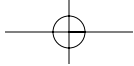
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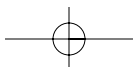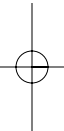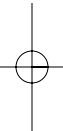
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