IAS | INSTITUTE FOR ADVANCED STUDY

Faculty and Members 2025–2026

The Institute is pledged to assemble a group of scientists and scholars who with their pupils and assistants may devote themselves to the task of pushing beyond the present limits of human knowledge and to training those who may "carry on" in this sense.

—Mission statement of the Institute for Advanced Study by founding Director Abraham Flexner, Organization Meeting, October 10, 1930

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 first Board of Trustees

Cover: Pierre Deligne, Professor Emeritus in the School of Mathematics, enjoying the festivities at the 2024 Welcome Reception, hosted in the Simons Hall birch garden. Photo: Andrea Kane

Opposite page: IAS scholars taking in an exhibition titled "BioDiversity," displayed in the Rubenstein Commons Gallery. The exhibition was curated by Director's Visitor (2011) Subhankar Banerjee, a photographer and environmental humanities scholar. Photo: Maria O'Leary

Contents

Information contained herein is current as of October 15, 2025

Introduction

The Institute for Advanced Study is an international center for theoretical research and intellectual inquiry that provides an exceptional environment for the acceleration of ideas and knowledge. It creates time and space for solitary work as well as dialogue among some 250 researchers selected each year from more than 100 institutions around the world. Scholars, who come to the Institute at various stages in their careers, are mentored by a permanent Faculty, each of whom are preeminent leaders in their fields. From postdocs with new perspectives and tools, to established experts who create and advance fields of inquiry, the Institute's focused yet freely inquisitive atmosphere enables advancement in unforeseeable ways, leading to societal innovation and new understanding.

Located in Princeton, New Jersey, the Institute was founded in 1930 with the motto "Truth and Beauty." It is an independent educational institution that charges no tuition and relies on charitable contributions and grants for its operation. Brother-and-sister philanthropists Louis Bamberger and Caroline Bamberger Fuld established the Institute in the vision of founding Director Abraham Flexner.

At the Institute, everything is designed to encourage scholars to pursue their research: Members carry out their work in a setting where human scale has been carefully maintained to encourage the sharing of ideas, serendipitous interaction, and friendship. Members' freedom to express their scholarly convictions on a wide range of topics without institutional hindrance or interference is considered vital to the Institute's academic integrity, and the Institute refrains from issuing statements except on matters directly related to its founding values in order to support the free pursuit of research.

Research spans four Schools—Historical Studies, Mathematics, Natural Sciences, Social Science—as well as the Jonathan M. Nelson Center for Collaborative Research, focusing on long-term and fundamental outcomes, with no concern for immediate application but rather revolutionary and sustained impact. IAS is a scholar's paradise—a campus of unparalleled energy and curiosity, free of external pressures and academic restraints, where exceptional minds have boundless opportunity to explore what is not yet known. Among present and past Faculty and Members, there have been 37 Nobel laureates, 46 of the 64 Fields Medalists, and 24 of the 28 Abel Prize laureates, as well as winners of the Turing Award; the Pulitzer Prize in History; the Wolf, Holberg, and Kluge prizes; and many MacArthur and Guggenheim fellows, among other honors.

Long and complex chains of knowledge have developed in numerous and astounding ways through research originating at the Institute—from the development of programmable computers and the uncovering of deep symmetries of nature to advances in societal understanding and historical practice. Current research at IAS involves the following ventures: pursuing a theory of everything that governs the smallest and largest phenomena in our universe, a unified framework pursued by founding IAS Professor Albert Einstein, father of the theory of relativity; using computational tools, models, and simulations to determine the origins and long-term fate of the universe; establishing the theoretical foundations of machine learning; reconstructing history through textual and material evidence, utilizing digital resources, climate data, and genetic information; examining facets of society previously overlooked or hidden, such as racial formation and social citizenship and emerging scientific and technological phenomena; and developing a critical anthropology of politics and morality.

Albert Einstein, Kurt Gödel, Hetty Goldman, George F. Kennan, Erwin Panofsky, John von Neumann, and Hermann Weyl were among the first in a long line of distinguished Institute scientists and scholars to produce a deeper understanding of the physical world and of humanity. Flexner's vision has been maintained by his successors as Director: Frank Aydelotte, J. Robert Oppenheimer, Carl Kaysen, Harry Woolf, Marvin L. Goldberger, Phillip A. Griffiths, Peter Goddard, Robbert Dijkgraaf, and David Nirenberg, who became the Institute's tenth Director in February 2022.

David Nirenberg

Director and Leon Levy Professor

Director and Leon Levy Professor David Nirenberg is a historian and author, recognized for wide-ranging scholarship on the interaction of Christians, Jews, and Muslims. His research provides insight into questions of racism, Anti-Semitism, and Christian-Muslim relations. At the University of Chicago, Nirenberg served as founding director of the Neubauer Collegium for Culture and Society, Dean of the Social Sciences, Executive Vice Provost, and Interim Dean of the Divinity School. Nirenberg is a member of the American Philosophical Society, American Academy of Arts and Sciences, and Medieval Academy of America. His most recent book, co-authored with his father (Ricardo L. Nirenberg) is *Uncountable: A Philosophical History of Number and Humanity from Antiquity to the Present*, which seeks to understand the powers and limits of the sciences and the humanities. He is currently at work on a history of racial thought in Judaism, Christianity, and Islam.

School of Historical Studies

Administrative Officer: Janet Yoon

The School of Historical Studies was established in 1949 with the merging of the School of Economics and Politics and the School of Humanistic Studies. It bears no resemblance to a traditional academic history department as it brings together disciplines that are normally isolated in separate departments. The School supports all inquiry for which historical methods and approaches are appropriate throughout the humanistic disciplines, from socioeconomic developments, political theory, and modern international relations, to the history of art, science, philosophy, music, and literature. In geographical terms, the School concentrates primarily on the history of Western, Near Eastern, and Asian civilizations, with emphasis on Greek and Roman civilizations, the history of Europe (medieval, early modern, and modern), the Islamic world, and East Asia, but it also promotes research in areas beyond the scholarly interests of its Faculty. The School also supports scholars whose work focuses on other regions, including Central Asia, India, Africa, and the Americas.

The Members of the School represent a variety of nationalities and career stages, with a continually increasing number of young researchers and scholars from less privileged countries. 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, ranging from the edition of texts and the analysis of images to cooperations with the social and natural sciences. Uniquely positioned to sponsor work that crosses conventional departmental and professional boundaries, the School actively promotes interdisciplinary research and cross-fertilization of ideas. It thereby supports research that often is not possible in other academic environments and encourages the creation of new historical enterprises.

Suzanne Conklin Akbari

Professor · Medieval Studies

Suzanne Conklin Akbari has expanded the range and methods of exploring texts from the Middle Ages, pushing the boundaries of traditional readings and exploring shared histories. Her research has traced the evolving relationship between sight and knowledge as manifested in a range of poetic texts, explored the relationship between Islam and Christianity, challenged the notion of medieval European literature's insularity, and highlighted the influence of Arabic poetry, music, and philosophy. Her current research considers how historical fields intersect with Indigenous Studies, grounded on ongoing collaborations with Lunaape (Delaware) communities. She also co-hosts a literature podcast called *The Spouter-Inn*.

Angelos Chaniotis

Professor · Ancient History and Classics

Angelos Chaniotis is engaged in wide-ranging research in the social, cultural, religious, legal, and economic history of the Hellenistic world and the Roman East. The author of many books and articles and senior editor of the *Supplementum Epigraphicum Graecum*, he has worked on war, religion, communicative aspects of rituals, and strategies of persuasion in the ancient world. His current research focuses on emotions, memory, identity, the history of the night, and the history of Aphrodisias (Asia Minor). He is the co-director of the archaeological excavation of Lyktos on Crete.

Nicola Di Cosmo

Luce Foundation Professor in East Asian Studies · East Asian Studies

Nicola Di Cosmo's main field of research is the history of the relations between China and Inner Asia from prehistory to the modern period. Within that broad area, he has published on the early history of China's relations with steppe nomads (e.g., *Ancient China and Its Enemies: The Rise of Nomadic Powers in East Asian History*, 2002) and on Mongol and Manchu history (e.g., *Manchu-Mongol Relations on the Eve of the Qing Conquest*, 2003), and he has edited several books, including *The Cambridge History of Inner Asia* (2009). His most recent works explore the use of proxy data from climatology and other palaeosciences in the study of the history of China and Central Asia, with special reference to early Eurasian nomads, the Mongol empire, and the Qing dynasty.

Myles W. Jackson

Albers-Schönberg Professor in the History of Science · History of Science

Myles W. Jackson explores the intersections between science, technology, aesthetics, history, and society. The breadth of Jackson's research extends from the artisanal production of scientific knowledge in nineteenth-century Germany to molecular biology and physics, intellectual property and privacy issues, knowledge sharing, race and genomics, bioengineering, and the interactions between musicians, natural scientists, and radio engineers. His scholarship is noted for its cross-disciplinary methodology which interweaves economic, commercial, and scientific insights, pushing the boundaries of the field to establish fresh lines of inquiry.

Maria H. Loh

Professor · Art History

Maria H. Loh is best known for her work on Venetian art of the sixteenth and seventeenth centuries, particularly Titian and the numerous copies and variants that his works have inspired. Through her scholarship, she has developed radical new approaches to key issues in the field of art history, producing groundbreaking work on originality and repetition, and the emergence of the early modern artist. Loh has also written on rainbow imagery in Stuart England, melancholia and the Renaissance in nineteenth-century Italy, remakes in Chinese cinema, repetition in Alfred Hitchcock's *Vertigo*, and the work of contemporary artists such as Sherrie Levine. She is an advocate for the critical role of art history as a humanistic discipline and for the public humanities at large.

Sabine Schmidtke

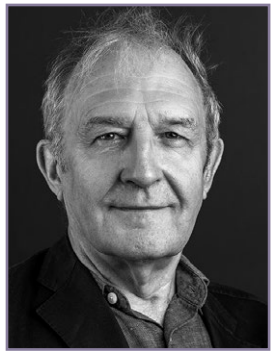
Professor · Islamic Intellectual History

Sabine Schmidtke is a scholar of Islamic intellectual history whose pioneering research has transformed perspectives on the interrelations and connections among different strands of intellectual inquiry—across time, place, religions, and philosophical schools. Schmidtke is currently working on the history of Islamic thought in the post-classical period (thirteenth to nineteenth century), with a focus on reconstructing the textual heritage and the intellectual import of the Islamic intellectual world, from Iran and Central Asia to Turkey and Yemen. She is also engaged in a comprehensive study of the Muslim reception of the Bible, a topic on which she has published extensively over the past years.

Francesca Trivellato

Andrew W. Mellon Professor · Early Modern Europe

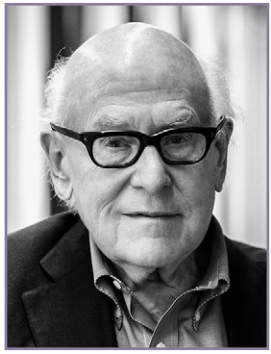
A leading historian of early modern Italy and continental Europe, Francesca Trivellato has made significant and groundbreaking contributions to our understanding of the organization and culture of the marketplace in the pre-industrial world. Trivellato's original and imaginative research has revitalized the study of early economic history, and her influential work on cross-cultural trade intersects the fields of European, Jewish, Mediterranean, and global history, religion, and capitalism.



Yve-Alain Bois

Professor Emeritus · Art History

A specialist in twentieth-century European and American art, 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. Bois is currently working on several long-term projects, foremost among them the five-volume catalogue raisonné of Ellsworth Kelly's paintings and sculptures.



Glen W. Bowersock

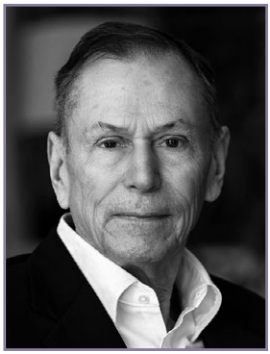
Professor Emeritus · Ancient History

Glen W. Bowersock is an authority on Greek, Roman, and Near Eastern history and culture as well as the classical tradition in modern literature. 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.

Caroline Walker Bynum

Professor Emerita · European Medieval History

Caroline Walker Bynum's work has been instrumental in introducing the concept of gender into the study of medieval Christianity. Her path-breaking books have 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 premodern European Studies. Several of her essays are widely cited in discussions of historical method. Her work in *Christian Materiality* (2011) and *Dissimilar Similitudes* (2020) is a radical reinterpretation of the nature of Christianity on the eve of the reformations of the sixteenth century and an exploration of theoretical problems concerning questions of historical comparison. She is currently continuing to work on Christian devotional objects in comparative perspective.



Patrick J. Geary

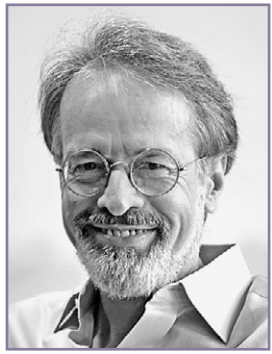
Professor Emeritus · Medieval History

Patrick J. Geary's work extends over a vast range of topics in medieval history, both chronologically and conceptually—from religiosity and social memory, to language, ethnicity, social structure, and political organization. Currently, Geary is leading a major project that studies the migration of European societies north and south of the Alps through the analysis of ancient DNA in Longobard-era cemeteries in Hungary and in Italy. He is Co-Principal Investigator of a European Research Council Synergy Grant project integrating genetic, archaeological, and historical perspectives on Eastern Central Europe in order to understand the impact of migrations and mobility on the population of the Carpathian Basin from 400–900 C.E.

Jonathan Israel

Professor Emeritus · 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 modern ideas of democracy, equality, toleration, freedom of the press, and individual freedom.



Heinrich von Staden

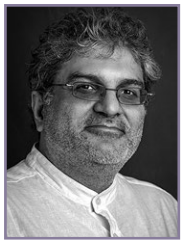
Professor Emeritus · Classics and History of Science

Heinrich von Staden has written on a variety of topics in ancient science, medicine, philosophy, and literary theory, from the fifth century B.C.E. to the fifth century C.E. 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 book *Herophilus: The Art of Medicine in Early Alexandria* (1989) is a major contribution to the history of Greek intellectual discourse. His current projects include a book on Erasistratus (one of the two early pioneers of human dissection), a study of the role of animals in ancient scientific theories and practices, and further work on the "semantics of matter" in ancient science.

Sofía Torallas Tovar

Classics, Papyrology, Ancient Mediterranean, Greco-Roman Egypt

Sofía Torallas Tovar's current research projects include the study of a papyrus containing Athanasius's Letter to Dracontius, the critical edition of the Coptic versions of the Gospel of Mark (with Anne Boud'hors), and "Transmission of Magical Knowledge" dedicated to the publication of Greco-Egyptian magical papyri (with Christopher Faraone).



Hassan Farhang Ansari

Islamic Law and Theology · Institute for Advanced Study · *ra*

Hassan Farhang Ansari focuses on the study of Islamic theology, philosophy, law, and legal theory.

Celia Applegate

Music Culture · Vanderbilt University

Friends of the Institute for Advanced Study Member

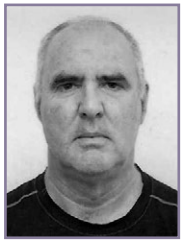
Celia Applegate is writing a book called "Wagner's Women": about the women who were patrons, lovers and wives, fans, and professional singers, as well as the strong female roles he invented for his operas.

Yury Arzhanov

History of Philosophy, Christian Oriental Studies · Universität Salzburg · *f*

Willis F. Doney Member

Yury Arzhanov studies the transmission of Greek philosophy in the Christian Orient during late antiquity and the early Middle Ages. While at IAS, he will be working on a digital lexicon of Syriac philosophical and scientific terminology.



Amir Ashur

Cairo Geniza, Indian Ocean Medieval Trade · University of Haifa · *s*

Funding provided by the Hetty Goldman Membership Fund

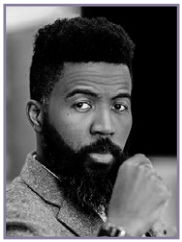
Amir Ashur's project aims to publish the last three volumes of S. D. Goitein's (1900–85) "India Book"—a remarkably groundbreaking and seminal study of Judeo-Arabic documents relating to Jewish medieval trade with India from the Cairo Geniza. The aim is to produce a Hebrew version containing the original editions of the Judeao-Arabic, Hebrew, or Arabic documents, with translations and annotations.

Jan Bemmann

Archaeology of Inner Asia · Universität Bonn · *s*

Starr Foundation East Asian Studies Member

Jan Bemmann, an archaeologist specializing in Central Europe and Mongolia, investigates the urban impact on the environment, economy, and society. During his time at IAS, he will be working on a book titled "Archaeology of Mongolia," which explores how cultural tipping points have shaped the history of the pastoral nomads of the Eastern Steppes.



Joshua B. Bennett

African American Literature · Massachusetts Institute of Technology · *f*
Funding provided by the Herodotus Fund

While at IAS, Joshua B. Bennett will be writing a book on "the art of opacity" in African American literature and life.

Anya Bernstein

Anthropology · Harvard University · *f*
Edwin C. and Elizabeth A. Whitehead Member; additional funding provided by the Fund for Historical Studies

Anya Bernstein is an anthropologist whose work explores the intersections of science, technology, religion, and politics, focusing on how life, death, nature, and time are being remade. Her book project, "Pleistocene Park: Extinction and Eternity in the Russian Arctic," investigates efforts to "resurrect" an extinct ecosystem in Siberia in an attempt to slow the melting of permafrost.

David Blackbourn

Modern German History · Vanderbilt University · *v*

While at IAS, David Blackbourn will complete a short book called "Wheels of Power" that asks a deceptively simple question: How did the Nazis use wheels to achieve their aims? The answers, which are many, cast light on the electoral success, ideology, form of rule, and genocidal policies of the Nazis.

Thomas E. Burman

Medieval Mediterranean History · University of Notre Dame
Funding provided by the Fund for Historical Studies

Thomas E. Burman studies the intellectual interactions of Jews, Christians, and Muslims and will be writing a book about the thirteenth-century Dominican polemicist and linguist, Ramon Martí.

Judith Ann-Marie Byfield

African History · Cornell University · *s*
Funding provided by The Andrew W. Mellon Foundation

Judith Ann-Marie Byfield's study, "Curry Goat and Gari," is one of the first studies of Anglophone Caribbean diasporas to focus on how West Indian women created a diasporic community in postcolonial Nigeria and the ways in which globalization shaped the geographic contours of an emergent Nigerian West Indian community.

Cara Caddoo

American History · Indiana University, Bloomington · *s*
Elizabeth and J. Richardson Dilworth Member

Cara Caddoo researches nineteenth- and twentieth-century American history, film and media history, and the histories of African Americans and Native Americans. During her time at IAS, she will work on a book exploring the formative role of modern cinema in Native American life during the Allotment Era.

Milton Cameron

Architectural History · *v/s*

Milton Cameron is an architectural historian whose research explores intersections between architecture, science, and art. At IAS, he will work on his Great Southern Land project, which traces European pursuit of Terra Australis Incognita from voyages through the European imagination to voyages across the high seas to Australia.

Pedro Cardim

Early Modern Iberian Empires · Universidade Nova de Lisboa · *s*
Martin L. and Sarah F. Leibowitz Member

Pedro Cardim is a specialist in the history of the early modern Iberian world. During his time at IAS, he will focus on exploring the debates surrounding Portuguese imperial rule, from the late fifteenth century through to the age of revolutions.

Zeynep Çelik Alexander

History of Modern Architecture · Columbia University
Hans Kohn Member

Zeynep Çelik Alexander is the author of *Kinaesthetic Knowing: Aesthetics, Epistemology, Modern Design*. At IAS, she is completing a book titled "Imperial Data: Architecture, Resource, and Information in Victorian London," an account of storehouses of information in the British Empire in the second half of the nineteenth century.

Rafael I. Chambouleyron

Latin American History · Universidade Federal do Pará · *s*
Gerda Henkel Stiftung Member

Rafael I. Chambouleyron is a historian of colonial Amazonia. At IAS, he will research forms of compulsory Indigenous labor and their connections to global trade dynamics involving the circulation of Amazonian products in Europe and the circulation of European manufactured goods in the Amazonian world.

Divya Cherian

Early Modern and Nineteenth-Century South Asian History · Princeton University

Divya Cherian is a historian of pre- and early colonial India and South Asia interested in histories of embodied difference. Her first book examined shifts in articulations of caste, untouchability, and Hinduness in eighteenth-century, pre-colonial South Asia. While at IAS, she will write a history of witch persecution and primitivity in the transition from early modernity to colonial modernity in eighteenth- and nineteenth-century South Asia.

Andrew Chignell

Early Modern European Philosophy, Moral Psychology, Philosophy of Religion · Princeton University · *va*

Andrew Chignell works on Immanuel Kant and other seventeenth- to nineteenth-century philosophers, as well as on the philosophy of religion, the ethics of belief, and certain issues in aesthetics and moral psychology (especially hope and despair). He also has interests in food and animal ethics.

Mita Choudhury

Early Modern France · Vassar College · *f*

Funding provided by the Fund for Historical Studies

Mita Choudhury is currently working on a book project that examines sexual violence in the early modern French church. Centering recent Black feminist scholarship, its analysis challenges traditional church histories by foregrounding sexual violence, trauma, subjectivity, and silence found in seventeenth- and eighteenth-century court records from French archives.

Frederic Clark

Early Modern European History, Intellectual History, Classical Reception · University of Southern California

Funding provided by the AMIAS Member Fund

Frederic Clark is a cultural and intellectual historian who specializes in the afterlife of classical antiquity in medieval and early modern Europe, the history of historical thought, and the history of books and reading. While at IAS, he will work on a book that traces both ideas of context and practices of contextualization across a millennium of Latin sources and beyond.

Emma Claussen

Early Modern French and European History and Literature · Trinity College, University of Cambridge · *f*

Funding provided by the Herodotus Fund

Emma Claussen works at the intersection of literary criticism and the history of ideas. She is focused on early modern France, with further interests in modern and contemporary culture and critical theory. While at IAS, she will work on a book titled "Surviving the Renaissance," a study of how French writers ca. 1550–1650 treat the theme of survival during this turbulent period, and how forms and ideas themselves survive.

Jeremiah Coogan

Early Christianity · Santa Clara University

The Andrew W. Mellon Foundation Fellowship for Assistant Professors

Jeremiah Coogan is a historian of religion, textuality, and enslavement in the Roman Mediterranean. His project at IAS locates early Christian debates about Gospel literature and textual difference in a broader Roman politics of reading.

Sarah Coogan

Global Modernist Literature · Institute for Advanced Study · *v*

Sarah Coogan is a scholar of global modernist poetics, with a focus on global modernisms and religion. At IAS, she will work on two main projects: one on the relationship of Christian networks to the formation of British modernism, and another on religious imagery and the representation of violence.

Bradley Camp Davis

Environmental History of Southeast Asia · Eastern Connecticut State University · *s*

Starr Foundation East Asian Studies Member

Bradley Camp Davis is writing a book on the multi-species environmental history of the last Vietnamese empire, examining the connections between plants, non-human animals (especially elephants and bovines), and humans in the decades before French colonial rule.

Mark Dike DeLancey

African Architecture · DePaul University

Funding provided by the Ruth Stanton Foundation Fund and the Fund for Historical Studies

Mark Dike DeLancey's research has primarily focused on palace architecture in Cameroon and, more recently, on contemporary painting and identity in Mauritania. While at IAS, he will work on a book that reinterprets the late fifteenth-century Tomb, or, as he argues, the Minaret, of Askia Muhammad in Gao, Mali, in light of that renowned ruler's pilgrimage to Mecca and political ambitions.

Leah DeVun

Medieval and Early Modern European History, Contemporary Art · Rutgers, The State University of New Jersey

George William Cottrell, Jr. Member; additional funding provided by the Fund for Historical Studies

Leah DeVun focuses on the history of gender and sexuality, science and medicine, and the history of the body. While at IAS, she will be writing a book about the history of encounters between humans and invisible intelligences, including through spirit possession, visionary dreams, and otherworldly experiences.

Rômulo Ehalt

Early Modern Iberian and Japanese History · Max-Planck-Institut für Rechtsgeschichte und Rechtstheorie · *f*

Funding provided by the Patrons' Endowment Fund

Rômulo Ehalt, a historian trained in Brazil and Japan, studies Catholic thought, labor, and legal and theological challenges faced by missionaries in early modern Iberian Asia. At IAS, he will develop a project on Portuguese colonialism, exploring how European law shaped Christian-non-Christian relations and transformed Roman slavery into a colonial institution, highlighting Asia in global colonial debates.

Tamar Eisenman

Performing Arts and Music Composition · Institute for Advanced Study · *v*

Tamar Eisenman is an acclaimed guitarist, singer-songwriter, and composer, with seven studio albums and an Emmy nomination for an original soundtrack in a documentary. Her new musical project investigates the historical and material evolution of guitar strings.

Mechthild Fend

French Eighteenth- and Nineteenth-Century Art and Visual Culture · Goethe University Frankfurt

Fritz Thyssen Stiftung Member

Mechthild Fend has a particular interest in images of the body and the historically changing relations between art and science. At IAS, she will be working on a book project that engages with the question of how the increasing use of images in the practices of pathology contributed to shaping modern notions of disease.

Goran Gaber

Early Modern European History · Centre National de Recherche Scientifique (IHRIM & ENS de Lyon) · *v/f*

Goran Gaber works on ideological conflicts embedded in everyday language. His current project traces the political history of the concept of critique in the early modern period. At IAS, he will develop a prosopography of the people (authors, editors, publishers, etc.) who shaped its many meanings during the sixteenth- and seventeenth-centuries.

M. Cecilia Gaposchkin

Medieval History · Dartmouth College

Willis F. Doney Member

M. Cecilia Gaposchkin works on the religious and cultural history of high- and late-medieval Europe, with particular expertise in Capetian France and in the Crusades. At IAS, she is working on a book about the history of relic cults in Paris, provisionally titled "Sacral Paris: Relic Cults and the Political Imagination in Medieval Paris."

John-Paul Ghobrial

Early Modern Global History · Balliol College, University of Oxford · *s*
Funding provided by the Patrons' Endowment Fund

While at IAS, John-Paul Ghobrial will be working on his next book, entitled "Leaving Babylon: A Story of Belief and Belonging in the Christian East" under contract with Princeton University Press. It tells the story of the first Arabic account of Latin America, and the life and times of the seventeenth-century traveler who wrote it.

Micah James Goodrich

Medieval Literature · Boston University · *s*
Funding provided by the Herodotus Fund

Micah James Goodrich is a scholar of late medieval English literature with related interests in transgender studies and the history of the body. While at IAS, Goodrich will work on a book about bodily and textual mutability in fourteenth-century English and Scottish texts.

Margaret Susanna Graves

Islamic Art History · Brown University · *s*
Agnes Gund and Daniel Shapiro Member

Margaret Susanna Graves works on the histories of art and artmaking in the Islamic world. At IAS, she will work on her book "Technologies of Impress: The Poetics of Absence and the Limits of Art History," about the instruments of impress: stamps, seals, punches, dies, moulds, and matrices. It explores craft histories and their reflections in Islamicate intellectual history, as well as the challenges these technologies present to art history.

Hanneke Grootenboer

Art History · University of Amsterdam · *f*
Funding provided by The Gladys Krieble Delmas Foundation

Hanneke Grootenboer is a specialist in seventeenth-century Dutch art, in particular still life and interior painting. Her scholarship focuses on small artifacts and miniaturization in relation to issues of intimacy, solitude, and selfhood. She is currently working on a book on art and contemplation.

Constanze M. Güthenke

Classics · Corpus Christi College, University of Oxford · *s*
Funding provided by the Patrons' Endowment Fund

Constanze M. Güthenke is a classicist and comparatist working especially on cultural and literary histories of the knowledge of antiquity in later contexts. At IAS, she will be working on a history of classical scholarship in the United States as a history of disorientation.

Eleni Hasaki

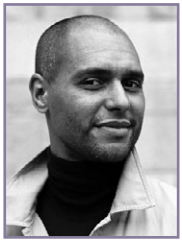
Classical Archaeology · The University of Arizona · *f*
Funding provided by the Hetty Goldman Membership Fund

Eleni Hasaki specializes in the craft communities of practice in ancient Greece, focusing on the technology and economy of the industrial quarters. At IAS, her book project will employ energetics and digital humanities to explore production capacity and market demand of ceramics in Greece and the wider Mediterrannean.

Catherine M. Jackson

History of Modern Science · *s*
Elizabeth and J. Richardson Dilworth Member

Chemist, historian, and educator Catherine M. Jackson uses history to understand chemistry's present and future, as well as its past. Built around practice-based breakthroughs including the glassware revolution and turn to synthesis, her book *Molecular World* (MIT Press, 2023) explains chemistry's quest to know and manipulate organic nature. A sequel, "Molecular Puzzles," will show how utility—rather than theoretical correctness—lay behind the success of Kekulé's benzene ring.



Edward Jones-Imhotep

History of Science and Technology · University of Toronto · *f*
Friends of the Institute for Advanced Study Member

Edward Jones-Imhotep is a historian of modern science and technology. At IAS, he will work on "The Black Androids: History and the Technological Underground," which explores Black technological selfhood in New York City between 1830 and 1930 through a history of the "black androids," automata in the form of Black humans.

Marion Holmes Katz

Premodern Islamic Law · New York University
Patricia Crone Member; additional funding provided by the Fund for Historical Studies

Marion Holmes Katz studies the premodern history of Islamic legal thought. Her current project focuses on the historical rise and contestation of the concept of religious merit (thawab), and particularly debates around transactions involving the generation of merit for donation to another person. It uses these developments as lenses for larger questions in premodern Islamic intellectual history, including the issue of premodern Islamic precursors of the secular/religious binary.

George Kazantzidis

Classics and Ancient History · University of Patras, Greece
Funding provided by the Stavros Niarchos Foundation

While at IAS, George Kazantzidis will work on "The Economy of Madness in the Greek and Roman World." The project explores how madness, beyond being a medical issue, was shaped through economic lenses—affecting families, law, and property. Drawing on literary, medical, philosophical, and legal sources, it highlights the interplay of madness and money as forces of social order in antiquity.

George A. Kiraz

Ottoman Religious Minorities, Syriac Studies · Beth Mardutho: The Syriac Institute · *sra*

George A. Kiraz is working on Ottoman Garshuni documents from the Mardin Patriarchal Archive dating to the late nineteenth century. These are documentary petitions addressed to the Syriac Orthodox Patriarchs who resided in Deir al-Za'frān (Monastery of the Saffron).

Henri Lauzière

Arab and Islamic Intellectual History · Northwestern University · *f*
Funding provided by the Patrons' Endowment Fund

At IAS, Henri Lauzière is writing a book on how to rethink the connection between reason and the development of Islamic intellectual history in the modern period. The book argues that it was the popularization of scientific rational outlooks which ironically facilitated the development of political Islam (Islamism) and Sunni ultra-orthodoxy (Salafism) in modern Arab societies.

Cheng Li

Modern Chinese Literature, Culture, and History · Carnegie Mellon University · *f*
Starr Foundation East Asian Studies Member

Cheng Li's main research engages with modern Chinese environmental literature (ecocriticism), film, and history. His interests also include science fiction, infrastructure studies, and military studies. While at IAS, he plans to study Chinese military culture.

Haiwei Liu

Pre-modern Chinese History · ShanghaiTech University
Zurich Insurance Company Member

Haiwei Liu's research focuses on the political and social history of imperial China. At IAS, he will work on his book, "The New Mandate of Heaven: Changing Narratives of Political Legitimacy in Song-Yuan-Ming China, 960–1644." It explores the fundamental transformation of Chinese political culture during these periods, with particular emphasis on the impact of the Mongol conquest on China.

Jinyu Liu

Socio-economic History of the Roman Empire · Emory University · *f*
Funding provided by the Fund for Historical Studies

At IAS, Jinyu Liu will be working on "Outsiders in Town," which explores social exclusion and the negotiation costs of relocation for mobile and immigrant tradesmen and craftsmen in the Roman West during the first three centuries C.E.

Coral Lumbley

Medieval Literary Cultures · Macalester College
The Andrew W. Mellon Foundation Fellowship for Assistant Professors

Coral Lumbley researches the intersections of literature, identity, and hierarchy in the medieval world. She is writing a monograph on environmental thought and colonialism in medieval England and Wales.

Ann McGrath

Cultural History · The Australian National University · *s*
Funding provided by the Patrons' Endowment Fund

Ann McGrath's project follows the travels of Sydney clay and Josiah Wedgwood's Hope Medallion. Crossing hemispheres and continents, this "primitive earth" transports us on journeys of early modern science and industry, paired with ideas of antiquity relating to the history of the earth, fossils, and Greek legends. Enlightenment scientists took a keen interest in both the clay and the Medallion.

Taylor M. Moore

History of Science, Modern Middle East · Yale University
Funding provided by the Herodotus Fund

Taylor M. Moore is a historian of science and technology in the Middle East, with interests in material methodologies. At IAS, she will work on a book tracing the history of rural bodies as environmental technologies in Egypt and their impact on the global historical imagination.

Marissa J. Moorman

Contemporary African History · University of Wisconsin–Madison
George F. Kennan Member

Marissa J. Moorman is writing "Imperialism on Trial," a book exploring the trial of thirteen British and American mercenaries in Angola in June 1976. The book locates the Angolan state's trial alongside the personal trajectories of the lawyers, the mercenaries, and the observers in- and outside the courtroom. It unpacks a congested, geopolitical crossroads where African decolonization, the Cold War, Black internationalism, and the use of mercenaries collide.

Melissa Moreton

History of the Book, Global Middle Ages · Institute for Advanced Study · *ra*

Melissa Moreton is a codicologist and scholar of the history of the book who is particularly interested in material culture and the development and exchange of manuscript technologies across Eurasia, Africa, and the Americas. She works on projects relating to global book history (1000–1700) and Indigenous language and cultural revitalization.

Michael Noone

Music and Musicians in Early Modern Spain · Boston College

Edward T. Cone Member in Music Studies; additional funding provided by the Fund for Historical Studies

Michael Noone is writing the first study of Susana Muñoz (d. 1625), a young autodidact who, with Artus Tavernier, founded a printing firm that achieved preeminence in the universities and cathedrals of Golden Age Spain. Twice widowed and thrice married, Muñoz came to dominate the niche genre of Latin sacred music in large choirbook format in early modern Spain.

Dan-El Padilla Peralta

Roman History, Black Studies, Critical Ancient World Studies · Princeton University · *va*

While at IAS, Dan-El Padilla Peralta will be working on a co-authored book on 338 B.C.E. (under contract with Harvard University Press); "A People's History of Rome" (under contract with Princeton University Press); and a co-authored book on "Schooling the Discipline/Racing the Classics."

Alex Reiss-Sorokin

History of Information Technology · Institute for Advanced Study and Princeton University

Alex Reiss-Sorokin is a socio-legal historian of information technology. At IAS, she will work on "Trust in Search: Credibility and Doubt in Legal Research Technologies," tracing how American legal professionals came to use and trust information technology for legal research, and how it transformed their work and expertise in the process.

Ohad Reiss-Sorokin

History of Science, Intellectual History, History of the Social Sciences and Humanities · University of Viriginia · *v*

Ohad Reiss-Sorokin is a historian of the mind sciences and the humanities in twentieth century Central Europe. Currently, he is writing a book on the culture of intellectual circles in interwar Vienna. He also writes on the history of the philosophy of science, Friedrich Hayek's neuropsychology, and the history of the desire for knowledge.

Adrian Robu

Ancient History and Classics · Université Paris 8 Vincennes–Saint-Denis · *s*

Funding provided by the Florence Gould Foundation Fund

Adrian Robu is interested in the history and epigraphy of Greek cities, as well as in ancient Mediterranean migrations. While at IAS, he will work on a new corpus of Megarian inscriptions.

Irene Bald Romano

Classical Archaeology · The University of Arizona · *s*
Funding provided by The Andrew W. Mellon Foundation

Irene Bald Romano is a specialist in Greek and Roman sculpture. Her research while at IAS is focused on a recently discovered group of Greek marble statuettes from a Parthian period (first century B.C.E.–first century C.E.) building at a site in eastern Iraqi Kurdistan.

Sophia Roosth

Anthropology of Science · New York University
Willis F. Doney Member

Sophia Roosth is an anthropologist who writes about the contemporary life and earth sciences. At IAS, she will complete "The Quick and the Dead," a historically and ethnographically informed travelogue into the worlds of contemporary geobiologists, scientists seeking ancient microbial life-forms fossilized in stone.

Rachel Schine

Medieval Islamic History · University of Maryland, College Park
The Andrew W. Mellon Foundation Fellowship for Assistant Professors

Rachel Schine studies the literatures and social histories of the premodern Islamic world, focusing on constructions of Blackness, Arabness, and Muslimness in popular cultural materials. At IAS, she will be working on a book about the role of linguistic, literary, and economic exchange with East Africa and the wider Indian Ocean world in creating and crossing racialized boundaries during the Mamluk period (1250–1517 C.E.).

Nataly Shahaf

History of China, Buddhism, Print Culture · Institute for Advanced Study and Princeton University

Nataly Shahaf, a historian of China, explores the nexus of religion, science, and culture. At IAS, she will be working on her book, "Multiple Exposures: Ghosts, Buddhism, and Visual Heritage in Early Twentieth-Century China," examining how visual media technologies have shaped and been shaped by religious ideas, beliefs, and practices.

Jane Sharp

Twentieth-Century Soviet and East European Art History · Rutgers, The State University of New Jersey
Hans Kohn Member

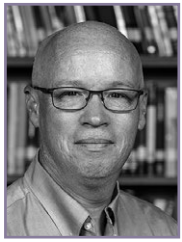
Jane Sharp's current IAS project is the completion of a book manuscript on Thaw-era Soviet abstraction (1950s–60s), focusing on artists based principally in Moscow and their complex engagement with state institutions and audiences.

Amy Elizabeth Singer

Ottoman History, Food in History, History of Philanthropy · Brandeis University

Patricia Crone Member

Amy Elizabeth Singer is completing a book on the history of Edirne (Byzantine Adrianople) as the second Ottoman capital city, prior to the move to Constantinople/Istanbul. She is also developing a new project entitled Ottoman Diasporas in New England.



Owen Stanwood

Early Modern North America · Boston College · *f*

Funding provided by the Hetty Goldman Membership Fund and the Fund for Historical Studies

Owen Stanwood specializes in early North American, Atlantic, and global history. At IAS, he will work on a study called "The Imagined Continent," an examination of European stories about lost Indigenous civilizations in North America from the sixteenth to the eighteenth centuries.

Justin Stearns

Premodern Islamic Intellectual History · New York University Abu Dhabi · *s*

Funding provided by the Hetty Goldman Membership Fund

Justin Stearns is writing an intellectual biography of the seventeenth century Moroccan Berber polymath al-Hasan al-Yusi, situating him in the social and intellectual networks of his age and arguing for a reevaluation of his significance.

Agnieszka Szymańska

Late Antique and Byzantine Art History · University of Richmond · *f*

Funding provided by the Herodotus Fund

Agnieszka Szymańska specializes in the visual culture of Christian monasticism in late antique Egypt. At IAS, she will work on a book project that reconstructs the immersive experience of monastic prayer spaces.

Melissa Teixeira

Latin American History · University of Pennsylvania

George F. Kennan Member; additional funding provided by the Herodotus Fund

Melissa Teixeira is an economic and legal historian of Brazil. While at IAS, she is working on her book "Inflation and the Making of Brazilian Democracy," exploring how persistent inflation in Brazil shaped popular struggles for democratic accountability, social mobility, and economic justice from the postwar era through the 1990s.

William Theiss

Early Modern German History · University of Connecticut
The Andrew W. Mellon Foundation Fellowship for Assistant Professors

William Theiss studies the intellectual, social, and cultural history of the Holy Roman Empire. At IAS, he is working on a book about stoicism, visual culture, and literary history in Cologne and the Low Countries in the sixteenth century.

Margaret B. Wan

Chinese Literature and Cultural History · University of Utah
Roger E. Covey Member in East Asian Studies; additional funding provided by the Fund for Historical Studies

Margaret B. Wan is writing a book on the development of concepts of individual agency as witnessed in the changing content of Chinese short stories and their transmission from the fifteenth to nineteenth centuries. This research explores how access to books shifted ideas and the influence of expanding access to print on the integration of Chinese culture.

Ismail Warscheid

Islamic Studies, History of North and West Africa · CNRS
William D. Loughlin Member

Ismail Warscheid studies the history of Muslim scholarship in the pre-colonial Sahara. While at IAS, he will work on a book examining how the spread of Islamic law and literacy shaped everyday life in nomadic communities and led to the emergence of a distinct regional tradition of legal reasoning known as the "jurisprudence of the steppe" (fiqh al-bādiya).

David Wilton

Historical Linguistics, Medieval English Literature · Institute for Advanced Study · *v*

David Wilton's current project examines lexicographic methodological practices, in particular the selection, presentation, and citation of usage citations in historical dictionaries, and how these practices are affected by the shift from print dictionaries to digital ones.

Yulian Wu

Early Modern Chinese History · Michigan State University
Starr Foundation East Asian Studies Member

Yulian Wu is a historian of imperial China. At IAS, she will work on her second book, which examines the development of the nephrite jade industry in the Qing dynasty (1644–1912). This project aims to understand the relationships among resource management, craftmanship, and governance in early modern China.

Fan Zhang

Chinese Visual and Material Culture · Tulane University · *f*
The Andrew W. Mellon Foundation Fellowship for Assistant Professors

Fan Zhang specializes in the visual and material culture of early medieval China (fourth to sixth centuries). Her research explores the cross-cultural exchange along and beyond the Silk Road. At IAS, she will focus on her book project, which draws on newly excavated artworks from immigrants' tombs to reveal the cosmopolitanism of Pingcheng, the capital of the Northern Wei dynasty.

School of Mathematics

Administrative Officer: Nicole Maldonado

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, who joined the Faculty in 1953, was one of the School's first Members. Today, the School is an international center for research in mathematics and theoretical 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 in the last nine decades 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.

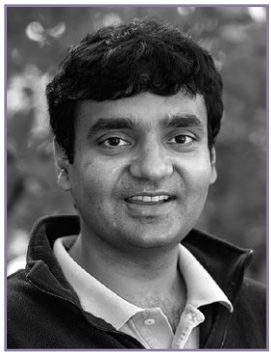
During the 2025-26 academic year, the School will have a special program on Arithmetic Geometry, Hodge Theory, and o-minimality. Jacob Tsimerman from the University of Toronto will be the Distinguished Visiting Professor.

This special year will focus on recent developments in Hodge theory and o-minimality and their applications to arithmetic geometry. There has been much progress over the last 15 years in using transcendental uniformization maps to study arithmetic questions (general Shafarevich theorems, results on unlikely intersections, general bounds on rational point counts). It has become increasingly clear that Hodge theory (both classical and p-adic) and the resulting period maps form a natural home for these kinds of investigations to arise. In the other direction, o-minimality has been applied with success to make progress on questions in Hodge theory (Griffiths conjecture, definable period maps), and has recently had its own explosion of results (sharply o-minimal sets, the resolution of Wilkie's conjecture).

The goal of this year will be to bring together researchers in these different fields, extending the collaboration between areas, sharing key insights, and investigating how far existing methods can be pushed.

Senior participants include Gal Binaymini, Ben Bakker, and Jonathan Pila.

Other programs associated with the School are the Park City Mathematics Institute (PCMI), an innovative program integrating mathematics research and mathematics education, and WAM, jointly sponsored by Lisa Simonyi, Robert S. Hillas Fund, Minerva Research Foundation, Institute for Advanced Study, and Princeton University. WAM brings together research mathematicians with undergraduate and graduate students for an intensive week-long workshop on campus.



Bhargav Bhatt

Fernholz Joint Professor

Bhargav Bhatt is interested in algebraic geometry, in a broad sense, and especially enjoys arithmetic questions. He has made fundamental contributions to *p*-adic Hodge theory and applied them to longstanding questions in commutative algebra and algebraic topology.

Camillo De Lellis

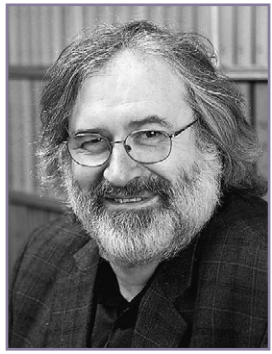
IBM von Neumann Professor

Camillo De Lellis, a geometric analyst, has broad expertise in the calculus of variations, geometric measure theory, and fluid dynamics. Using modern tools and innovative approaches, De Lellis has contributed to central problems in analysis and geometry, resulting in the creation of transparent proofs of regularity for minimal surfaces and opening new lines of inquiry for geometric analysts to explore.

Irit Dveer Dinur

Betsey Lombard Overdeck Theory of Computing Professor

Irit Dveer Dinur is interested in theoretical computer science, especially error-correcting codes and probabilistically checkable proofs, both of which capture a certain "robustness" in computation. Currently, she is interested in connecting these to so-called high-dimensional expansion—an analogue of expander graphs that draws on group theory, topology, and combinatorics.



Helmut Hofer

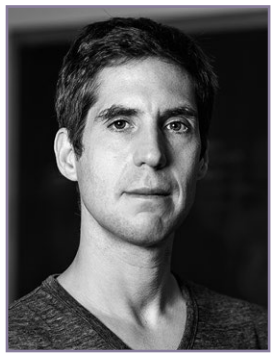
Hermann Weyl Professor

One of the founders of the area of symplectic topology, Helmut Hofer works on symplectic geometry, dynamical systems, and partial differential equations. His fundamental contributions to the field have led to a new area of mathematics known as Hofer geometry.

Elon Lindenstrauss

Professor

Elon Lindenstrauss is a leading authority in the field of ergodic theory, dynamical systems, and their applications to number theory. His major breakthroughs include the development of the theory of mean topological dimension, the proof of quantum unique ergodicity for arithmetic surfaces, and the characterization of the set of possible exceptions to the celebrated Littlewood conjecture in Diophantine approximation.



Jacob Lurie

Frank C. and Florence S. Ogg Professor

Jacob Lurie's research has influenced a diverse range of fields from topology to number theory, providing foundational work that has changed the way mathematicians describe and work with derived phenomena. His ideas have redefined the foundations of homotopy theory and topological aspects of algebraic geometry, providing a channel through which algebraic topology influences algebraic geometry. His proof of the Baez-Dolan cobordism hypothesis changed the field dramatically, providing a precise dictionary between manifold theory and operadic algebra as well as an applicable language for topological field theory.

Aaron Naber

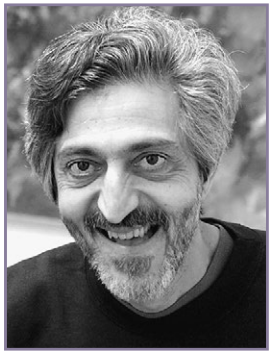
Professor

Aaron Naber, a world-renowned geometric analyst, has opened new horizons for studying singular sets arising in the calculus of variations. Powerful techniques that he has developed in the field of Riemannian geometry have also brought about new understandings of the structure of Gromov-Hausdorff limit spaces with lower Ricci bounds, Einstein manifolds, and their degenerations.

Akshay Venkatesh

Robert and Luisa Fernholz Professor

Akshay Venkatesh is a mathematician who has worked on many topics at the interface between number theory and other fields, including representation theory, dynamics, and algebraic topology. His recent work examines new algebraic structures related to the topology of locally symmetric spaces.



Avi Wigderson

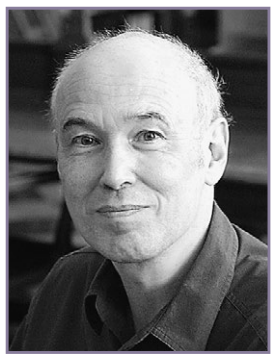
Herbert H. Maass Professor

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 as 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)?

Enrico Bombieri

Professor Emeritus

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 of how to solve equations and inequalities in integers and rational numbers. Some of the above topics, in particular those related to prime number theory, have potential practical applications to cryptography and security of data transmission and identification.



Pierre Deligne

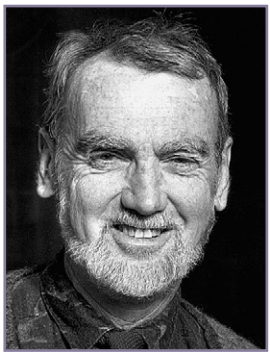
Professor Emeritus

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 twenty-first problem, Hodge theory, the relations between modular forms, Galois representations and L-series, the theory of moduli, Tannakian categories, and configurations of hyperplanes.

Phillip A. Griffiths

Professor Emeritus

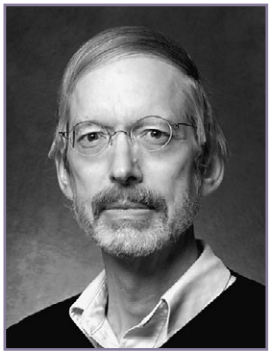
Phillip Griffiths initiated, with his collaborators, the theory of variation of Hodge structure, which has come to play a central role in many aspects of algebraic geometry and its uses in modern theoretical physics. In addition to algebraic geometry, he has made contributions to differential and integral geometry, geometric function theory, and the geometry of partial differential equations. A former Director of the Institute (1991–2003), Griffiths chaired the Science Initiative Group, which fosters science in the developing world through programs such as the Carnegie–IAS African Regional Initiative in Science and Education.



Robert P. Langlands

Professor Emeritus

Robert P. Langlands's profound insights in number theory and representation theory include the formulation of general principles relating automorphic forms and algebraic number theory; the introduction of a general class of L-functions; the construction of a general theory of Eisenstein series; the introduction of techniques for dealing with particular cases of the Artin conjecture (which 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. In recent years, he has been preoccupied by the geometric theory of automorphic forms.



Robert MacPherson

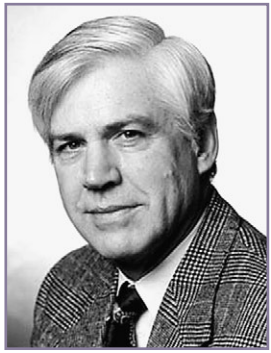
Professor Emeritus

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.

Peter Sarnak

Professor Emeritus

Peter Sarnak has made major contributions to number theory and to questions in analysis motivated by number theory. His interest in mathematics is wide-ranging, and his research focuses on the theory of zeta functions and automorphic forms with applications to number theory, combinatorics, and mathematical physics.



Thomas Spencer

Professor Emeritus

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 nonequilibrium theories of turbulence.

Jacob Tsimerman

Number Theory · University of Toronto

Ashvin B. Chhabra and Daniela Bonafede-Chhabra Member; additional funding provided by the Fund for Mathematics

Jacob Tsimerman is interesed in diophantine geometry and arithmetic geometry, specifically using methods of Hodge theory and o-minimality.

Karen Uhlenbeck

Geometric Partial Differential Equations, Gauge Theory · The University of Texas at Austin

Karen Uhlenbeck works primarily on geometric partial differential equations. She has worked in the areas of the calculus of variations, minimal surfaces, harmonic maps, gauge theory, and integrable systems. Her current interest is in analysis connected with the best Lipschitz model for Teichmüller space of Thurston.

VISITING PROFESSORS

Wei Ho

Number Theory, Algebraic Geometry · University of Michigan

Funding provided by the Fund for Mathematics

Wei Ho's research is in number theory, algebraic geometry, and related fields. Some of her favorite work involves finding arithmetic applications of classical algebro-geometric constructions.

Benjamin Thomas Bakker

Algebraic Geometry · University of Illinois at Chicago · *f*

Funding provided by the Charles Simonyi Endowment

Benjamin Thomas Bakker is interested in algebraic geometry, Hodge theory, moduli of abelian, symplectic, and calabi-yau varieties, and relations to arithmetic geometry and model theory.

Gregorio Baldi

Variations of Hodge Structures · Institut de Mathématiques de Jussieu–Paris Rive Gauche

Funding provided by the Ambrose Monell Foundation; additional funding provided by the Giorgio and Elena Petronio Fellowship Fund

Gregorio Baldi's research is centered in arithmetic geometry, focusing on areas such as Shimura varieties, variational Hodge theory, the Zilber-Pink conjecture, and homogeneous and Teichmüller dynamics.

John Ball

Calculus of Variations, Nonlinear Analysis · Heriot-Watt University

John Ball is interested in nonlinear analysis applied to the microstructure of alloys, liquid crystals, and computer vision.

Edward Belbruno

Celestial Mechanics · Yeshiva University · *v*

Edward Belbruno studies celestial mechanics, quantum mechanics, dynamical systems, and low energy chaotic transfers to the moon and beyond. He is also an artist of abstract expressionism.

Gal Binyamini

Geometry of Differential Equations, Diophantine Geometry · Weizmann Institute of Science

Funding provided by the Marvin V. and Beverly J. Mielke Member Fund and the Infosys Member Fund

Gal Binyamini works on the interface between o-minimality and Diophantine geometry. He also works on questions of effectivity in structures arising from solutions of differential equations.

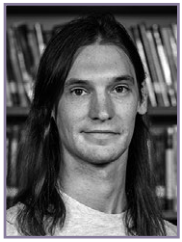
f First Term · *s* Second Term · *v* Visitor · *vri* Veblen Research Instructor · *bf* Bourgain Fellow
veb Veblen Fellow · *vnf* von Neumann Fellow

Charles Bordenave

Random Matrix Theory, Random Graphs, Random Walks · Université d'Aix-Marseille and CNRS

Funding provided by the James D. Wolfensohn Fund

Charles Bordenave is working on random matrix theory, random tensors, quantum ergodicity, mixing times of Markov chains, and dynamical systems.

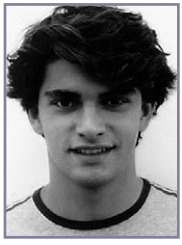


Tess Bouis

Arithmetic Geometry and Algebraic K-theory · Université Paris-Saclay

Funding provided by the Simons Foundation

Tess Bouis is interested in the interplay between arithmetic geometry and algebraic K-theory.



Camillo Brena

Geometric Measure Theory · Institute for Advanced Study

Funding provided by the National Science Foundation

Camillo Brena is interested in geometric measure theory, analysis on non-smooth spaces, and calculus of variations.

Elia Bruè

Geometric Analysis and Partial Differential Equations · Università Commerciale Luigi Bocconi · *vnf/s*

Funding provided by the National Science Foundation

Elia Bruè's research focuses on geometric analysis and partial differential equations, including Ricci curvature, metric geometry, incompressible fluid mechanics, and passive scalars in rough velocity fields.

Nataly Brukhim

Theoretical Machine Learning · Institute for Advanced Study · *v*

Nataly Brukhim studies theoretical machine learning and is interested in areas such as statistical and computational learning theory, boosting theory, and online learning. She also has a broad interest in related areas within theoretical computer science and combinatorics.

f First Term · *s* Second Term · *v* Visitor · *vri* Veblen Research Instructor · *bf* Bourgain Fellow
veb Veblen Fellow · *vnf* von Neumann Fellow

Anna Gwenaelle Cadoret

Arithmetic Geometry · Institut de Mathématiques de Jussieu–Paris Rive Gauche and Sorbonne Université · *f*

Funding provided by the Charles Simonyi Endowment

Anna Gwenaelle Cadoret works in arithmetic geometry with a focus on cohomological methods in the variational setting. During her stay at IAS, she plans to investigate further how to exploit comparison between complex and *p*-adic period maps to understanding the arithmetic of the Tate locus over number fields.

Huai-Dong Cao

Differential Geometry, Geometric Flows · Lehigh University · *s*

Huai-Dong Cao specializes in differential geometry and geometric analysis, especially in the Ricci flow.

Jonathan Chaika

Ergodic Theory · University of Utah · *vnf*

Funding provided by the National Science Foundation

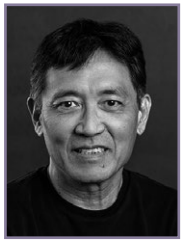
Jonathan Chaika works in ergodic theory, an area of dynamical systems that uses an object from abstract mathematics called a measure to understand the long-term behavior of closed systems. He is interested in systems connected to low dimensional geometric topology and systems arising from billiards in polygons and smooth flows on surfaces.

Michael Chapman

Group Theory, Quantum Information Theory · Institute for Advanced Study

Funding provided by the National Science Foundation

Michael Chapman's work lies in the confluence of several areas of pure mathematics—mainly group theory, combinatorics, and probability theory—with theoretical computer science. More specifically, he studies how hardness of approximation notions from complexity theory imply inapproximability results of certain algebraic structures.



Bennett Chow

Geometric Analysis · University of California, San Diego · *f*

Funding provided by the Jonathan M. Nelson Center for Collaborative Research

Bennett Chow is interested in differential geometry. While at IAS, Chow will work on the exposition of differential geometry.

Christopher Daw

Arithmetic Geometry · University of Reading · *f*

Christopher Daw is interested in arithmetic algebraic geometry, unlikely intersections, the André-Oort and Zilber-Pink conjectures, number theory, model theory, applications of o-minimality and differential algebraic geometry, ergodic theory, and algebraic groups.

Yash Deshmukh

Symplectic Topology · Institute for Advanced Study

Funding provided by the National Science Foundation

Yash Deshmukh's research focuses on symplectic topology and its interaction with homotopy theory. Deshmukh is particularly interested in construction and applications of higher homotopical structures on invariants of symplectic manifolds.

Yotam Dikstein

High-Dimensional Expanders, HOA, Graph Theory · Institute for Advanced Study

Funding provided by the National Science Foundation

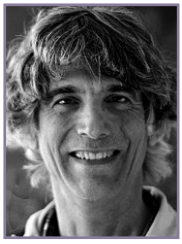
Yotam Dikstein is interested in high-dimensional expanders and similar structures. This includes constructing such objects, discovering new properties they possess, and utilizing them in various areas of TCS, such as PCPs, property testing, and codes. Dikstein is also interested in Boolean function analysis in non-standard domains.

Anna Erschler

Group Theory · École Normale Supérieure, Paris, and CNRS · *f*

Funding provided by the Fund for Mathematics

During her time at IAS, Anna Erschler plans to study asymptotic geometry of finitely generated linear groups.



David Gabai

Topology · Princeton University · *f*

David Gabai researches the topology and geometry of low dimensional manifolds. This includes the study of surfaces in and diffeomorphisms of smooth 4-manifolds and the study of geometric structures such as taut foliations, essential laminations and hyperbolic metrics. His work has led to significant advances in these fields introducing novel techniques and methods opening new directions as well as leading to the resolution of a number of key conjectures.

Ziyang Gao

Arithmetic Geometry · UCLA · *vnf/s*

Funding provided by the National Science Foundation

Ziyang Gao's research interests focus on arithmetic geometry and Diophantine geometry. He works on Shimura varieties (both pure and mixed), abelian varieties, cycles, height theory (including the Beilinson-Bloch height), adelic line bundles, and more.

Javier Gomez-Serrano

Partial Differential Equations and Machine Learning · Brown University · *f*

Javier Gomez-Serrano's work is on the boundary between analysis, partial differential equations, fluid mechanics, numerical computation, machine learning, and rigorous computer-assisted proofs.

Mark Goresky

Geometry, Automorphic Forms · Institute for Advanced Study · *v*

Mark Goresky is interested in singularities as they arise in topology, algebraic geometry, number theory, and analysis.

Asvin Gothandaraman

Arithmetic Geometry, Unlikely Intersections · University of Wisconsin–Madison

Asvin Gothandaraman is interested in arithmetic geometry, as well as cognitive science and AI.

Giada Grossi

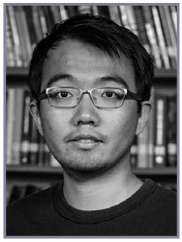
Number Theory, Iwasawa Theory · Université Sorbonne Paris Nord - CNRS

Giada Grossi's research focuses on number theory and arithmetic geometry, with particular interest in Iwasawa theory, Euler systems, special values of L-functions, automorphic forms, and the cohomology of Shimura varieties.

Pazit Haim-Kislev

Symplectic Geometry · Institute for Advanced Study
Erik Ellentuck Fellow

Pazit Haim-Kislev's research delves into the intricate intersections of symplectic and convex geometries, with a particular focus on symplectic capacities and their connections to geometric structures and dynamics within convex domains.



Yi Han

Probability, Random Matrices, Stochastic Analysis, Combinatorics and Mathematical Physics · Massachusetts Institute of Technology
Funding provided by the S. S. Chern Foundation for Mathematical Research Fund and the Fund for Mathematics

Yi Han is interested in various mathematical topics related to probability theory, including stochastic analysis, random matrix theory, and problems in combinatorics and mathematical physics. At IAS, he will further explore both the theoretical and applied perspectives of these problems.

Max Hopkins

High-Dimensional Expanders, Hardness of Approximation · Institute for Advanced Study
Funding provided by the National Science Foundation

Max Hopkins is broadly interested in the role of structure and randomness in computation, especially with respect to the nascent theory of high dimensional expansion. He is also interested in the interplay of combinatorial, geometric, and topological structure in learning and algorithmic stability.

Rahul Ilango

Computational Complexity Theory · Institute for Advanced Study
Funding provided by the National Science Foundation

Rahul Ilango studies computational complexity theory, where a central goal is to find faster algorithms or prove no faster algorithms exist. He is particularly interested in questions that bridge complexity theory with related areas such as cryptography and proof complexity. One such direction is better understanding algorithms for the "Minimum Circuit Size Problem," which is central to these areas.

Allyn Jackson

Mathematics Journalism · Institute for Advanced Study · *v*

Allyn Jackson is a journalist specializing in mathematics and theoretical computer science.

f First Term · *s* Second Term · *v* Visitor · *vri* Veblen Research Instructor · *bf* Bourgain Fellow
veb Veblen Fellow · *vnf* von Neumann Fellow

Wenshuai Jiang

Differential Geometry · Zhejiang University · *vnf/f*

Funding provided by the Jonathan M. Nelson Center for Collaborative Research and the Ky Fan and Yu-Fen Fan Endowed Fund

Wenshuai Jiang is interested in differential geometry and geometric analysis, including the geometry of Ricci curvature, harmonic maps and geometric flows, and related applications. While at IAS, Wenshuai Jiang will research Ricci curvature and related topics.

Chenzi Jin

Complex Algebraic Geometry · Institute for Advanced Study · *vri*

Chenzi Jin is interested in complex algebraic geometry, especially log canonical thresholds and stability thresholds, as well as the enumeration of lattice points and related problems in discrete and convex geometry.

Sean Keel

Algebraic Geometry · The University of Texas at Austin · *s*

Sean Keel is a geometer with particular interest in moduli spaces, birational geometry, and mirror symmetry.

Zander Kelley

Computational Complexity Theory · Institute for Advanced Study

Funding provided by the National Science Foundation

Zander Kelley is broadly interested in pseudorandomness and its application to computational complexity, as well as its application to extremal combinatorics and number theory.

Bruno Klingler

Algebraic Geometry · Humboldt Universität zu Berlin · *f*

Bruno Klingler works in algebraic geometry and Hodge theory. While at IAS, Klingler plans to work on periods.

f First Term · *s* Second Term · *v* Visitor · *vri* Veblen Research Instructor · *bf* Bourgain Fellow
veb Veblen Fellow · *vnf* von Neumann Fellow

Constantin Kogler

Random Walks on Lie Groups, Fractal Geometry, Ergodic Theory · Institute for Advanced Study

Constantin Kogler is interested in random walks on Lie groups and homogeneous spaces. Kogler's work also focuses on understanding properties of fractal measures that arise from limits of random walks. Kogler relies on techniques from probability, analysis, additive combinatorics, and number theory (particularly Diophantine approximation).

Dieter Kotschick

Differential Geometry and Topology · Ludwig-Maximilians-Universität München

While at IAS, Dieter Kotschick will work on complex and symplectic geometry, and their interactions with topology.

Chung-Hang Kwan

Number Theory · Institute for Advanced Study
Harish-Chandra Fund

Chung-Hang Kwan's research is in number theory. He is interested in the analytic theory of automorphic forms and their *L*-functions.

Matt W. Larson

Combinatorial Algebraic Geometry · Institute for Advanced Study · *bf*
Funding provided by the Charles Simonyi Endowment and the Oswald Veblen Fund

Matt W. Larson is interested in applications of algebraic geometry to combinatorics, especially to matroids and their generalizations. He is also interested in applying combinatorial tools to problems in algebraic geometry.

Ishan Levy

Homotopy Theory · Institute for Advanced Study

Ishan Levy is broadly interested in homotopy theory and related subjects. Topics he is interested in include: telescopic stable homotopy theory and its relations to algebraic K-theory, homotopy groups of spheres, and homology of Hurwitz spaces.

Linquan Ma

Commutative Algebra, Algebraic Geometry · Purdue University · *vnf*
Funding provided by the National Science Foundation

Linquan Ma's research is focused on singularities, local cohomology, multiplicities, and the homological conjectures in commutative algebra. While at IAS, Linquan Ma will work on singularities in mixed characteristic.

Peter Manohar

Theoretical Computer Science · Institute for Advanced Study
Funding provided by the National Science Foundation

Peter Manohar is broadly interested in theoretical computer science, specifically in the areas of algorithms and coding theory. His current research is focused on designing spectral algorithms for semirandom instances of optimization problems.

Govind Menon

Applied Mathematics · Brown University
Erik Ellentuck Fellow

Govind Menon is an applied mathematician with interests in the study of disordered systems, algorithms, and turbulence. His most recent work concerns the use of these ideas for the mathematical foundations of artificial intelligence. He is interested in developing a geometric foundation for deep learning based on the Nash embedding theorems, as well as developing mathematical policy and governance in light of the growth of AI.

Alexander Migdal

Theoretical High Energy Physics · New York University

Alexander Migdal is interested in connections between turbulence and the number theory in singular topological solutions of the Euler equations, and in Loop equations in gauge theory and fluid dynamics.

Petr Naryshkin

Actions of Countable Discrete Groups · Institute for Advanced Study
Funding provided by the Marvin V. and Beverly J. Mielke Fund

In general, Petr Naryshkin is interested in the actions of discrete countable groups on measure spaces, Borel spaces, topological spaces, and C*-algebras. Specific topics of interest to Naryshkin include classifiability of crossed products, Borel hyperfiniteness, mean dimension, and quantitative orbit equivalence.

f First Term · *s* Second Term · *v* Visitor · *vri* Veblen Research Instructor · *bf* Bourgain Fellow
veb Veblen Fellow · *vnf* von Neumann Fellow

Dmitry Novikov

Sharp O-Minimality · Weizmann Institute of Science
Kovner Member

Dmitry Novikov is working with various questions related to the finiteness of non-algebraic objects and functions described by algebraic differential equations.

Ania Agata Otwinowska

Hodge Theory · Humboldt-Universität zu Berlin · *f*
Bell System Fellowship Fund

Ania Agata Otwinowska works on variational Hodge theory and its applications to algebraic cycles.

Stan Palasek

Partial Differential Equations · Institute for Advanced Study
Funding provided by the National Science Foundation

Stan Palasek is interested in partial differential equations, particularly turbulence and blow-up phenomena in incompressible fluids.

Georgios Papas

Arithmetic Geometry · Weizmann Institute of Science
Minerva Research Foundation Member

Georgios Papas is interested in problems of unlikely intersections, particularly in the Zilber-Pink conjecture in the setting of Shimura varieties and variations of Hodge structures.

Sung Gi Park

Algebraic Geometry · Institute for Advanced Study and Princeton University · *veb*
Funding provided by the Oswald Veblen Fund

Sung Gi Park is interested in birational geometry and Hodge theory. Park's recent works focus on applications of the theory of mixed Hodge modules to problems in birational geometry, particularly concerning singularities and hyperbolicity.

f First Term · *s* Second Term · *v* Visitor · *vri* Veblen Research Instructor · *bf* Bourgain Fellow
veb Veblen Fellow · *vnf* von Neumann Fellow

Zsolt Patakfalvi

Algebraic geometry · EPFL – Swiss Federal Technology Institute of Lausanne

Zsolt Patakfalvi specializes in questions around the classification theory of algebraic varieties in all settings of characteristics. At IAS, he plans to study the applications of perfectoid geometry to the classification theory.

Dan Petersen

Topology of Moduli Spaces · Stockholm University · *vnf/s*

Funding provided by the National Science Foundation

While at IAS, Dan Petersen to study the predictions of Conrey-Farmer-Keating-Rubinstein-Snaith on moments of families of *L*-functions over function fields.

Jonathan Pila

Number Theory · University of Oxford

Funding provided by the Charles Simonyi Endowment

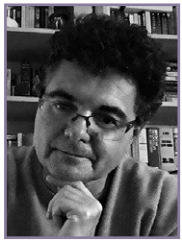
Jonathan Pila is interested in number theory and model theory, especially applications of o-minimality to problems in arithmetic.

Abror Pirnapasov

Symplectic Dynamic and Contact Topology · Institute for Advanced Study

Funding provided by the National Science Foundation

At IAS, Abror Pirnapasov is working on topological entropy and spectral theory of low-dimensional Hamiltonian systems using symplectic topological and variational methods.



Cristian D. Popescu

Number Theory, Special Values of L-functions · University of California, San Diego

Cristian D. Popescu works in algebraic number theory and arithmetic geometry, with a focus on special values of motivic and p-adic L-functions. While at IAS, Popescu will focus on higher equivariant main conjectures in equivariant Iwasawa theory for Artin motives, on developing an Iwasawa theory for t-motives, and on other related topics.

Doron Puder

Combinatorial and Geometric Group Theory, Random Matrices · Tel Aviv University

Kovner Member

Doron Puder studies group theory, especially combinatorial, geometric, and probabilistic aspects. Many of the questions in Puder's research involve measures on compact groups which are defined using random homomorphisms from free or related groups. This study involves representation theory and interesting algebraic, combinatoric, and topological objects.

Feliks Rączka

Algebraic and Nonarchimedean Geometry, Representation Theory · Institute for Advanced Study

Giorgio and Elena Petronio Fellow II Fund

Feliks Rączka is interested in algebraic and non-Archimedean geometry. His Ph.D. was devoted to D-modules on rigid analytic varieties.

Hanlin Ren

Complexity Theory · Institute for Advanced Study

Massive Dynamics Member

Hanlin Ren has a broad interest in complexity theory. Recently, Ren's research has focused on "meta-complexity," which studies the "difficulty" of complexity theory using insights from complexity theory itself.

Megan Roda

Dynamical Systems and Ergodic Theory · Institute for Advanced Study

Funding provided by the National Science Foundation

Megan Roda is interested in dynamical systems and ergodic theory.

Maya Sankar

Extremal Graph Theory · Institute for Advanced Study

Funding provided by the National Science Foundation

Maya Sankar studies extremal graph theory, with a particular focus on connections to topological combinatorics. She aims to continue developing graph-theoretic analogues of tools from algebraic topology and identifying further applications for parameters that have already been introduced.

f First Term · *s* Second Term · *v* Visitor · *vri* Veblen Research Instructor · *bf* Bourgain Fellow
veb Veblen Fellow · *vnf* von Neumann Fellow

Dragomir Saric

Ergodic Theory, Geometric Function Theory, Complex Analysis · Queens College, The City University of New York

Funding provided by the AMIAS Member Fund

Dragomir Saric is interested in the classification of infinite Riemann surfaces, hyperbolic geometry on infinite surfaces, quasiconformal maps, and Teichmüller theory.

Ananth Shankar

Number Theory · Northwestern University · *vnf*

Funding provided by the National Science Foundation

Ananth Shankar's research is in arithmetic geometry, specifically p-adic and mod p aspects of Shimura varieties and abelian varieties.

Omri Solan

Homogeneous Dynamics · Institute for Advanced Study and Princeton University · *bf*

Shiing-Shen Chern Member

Omri Solan studies homogeneous dynamics, with a focus on diagonal actions and effectivization problems. In his studies, he incorporates techniques from probability theory, ergodic theory, number theory, and algebraic topology.

Shashank Srivastava

Coding Theory · Institute for Advanced Study

Funding provided by the National Science Foundation

Shashank Srivastava is interested in the theory of error-correcting codes, pseudorandomness, algorithm design for constraint satisfaction problems, and the intersection of these areas.

Michal Szachniewicz

Model Theory · Harvard University

Funding provided by the National Science Foundation; Funding provided by an anonymous donor

Michal Szachniewicz works on connections between Arakelov geometry and continuous model theory.

f First Term · *s* Second Term · *v* Visitor · *vri* Veblen Research Instructor · *bf* Bourgain Fellow
veb Veblen Fellow · *vnf* von Neumann Fellow

Salim Tayou

Algebraic Geometry, Number Theory · Dartmouth College · *v/s*

Salim Tayou's research is in number theory and algebraic geometry. He likes to think about the Hodge locus in complex geometry and the Tate locus in arithmetic geometry, with applications to geometric problems on Shimura varieties, K3 surfaces, and abelian varieties. Recently, he has been interested in (mock-) modularity properties of special cycles in Shimura varieties, as well as the study of the non-abelian Hodge locus in non-abelian Hodge theory.

Michael Temkin

Algebraic Geometry · The Hebrew University of Jerusalem · *f*

Funding provided by the Fund for Mathematics

Michael Temkin studies algebraic geometry, non-Archimedean geometry, and the interplay between them. While at IAS, he plans to study various aspects of resolution of singularities and wild ramification phenomena.

Margaret E. M. Thomas

Model Theory, Diophantine Geometry · Purdue University

Funding provided by the Fund for Mathematics

Margaret E. M. Thomas's research interests lie in model theory, in particular o-minimality and applications to diophantine geometry, combinatorics, set-theoretic topology, and asymptotic analysis, with a recent focus on effective methods.

David Urbanik

Arithmetic Geometry · Institut des Hautes Études Scientifiques

Funding provided by the Ambrose Monell Foundation and the Fund for Mathematics

David Urbanik studies solutions to polynomial equations and their geometry.

Sahana Vasudevan

Geometry · Institute for Advanced Study and Princeton University

Friends of the Institute for Advanced Study Member

Sahana Vasudevan is interested in metric geometry and connections to related areas, like geometric topology and Teichmüller theory.

f First Term · *s* Second Term · *v* Visitor · *vri* Veblen Research Instructor · *bf* Bourgain Fellow
veb Veblen Fellow · *vnf* von Neumann Fellow

Joshua Wang

Geometry, Topology · Institute for Advanced Study and Princeton University · *vri*

Joshua Wang's research is in low-dimensional topology and its connections to other fields of mathematics, including gauge theory and representation theory.

Luya Wang

Symplectic Topology · Institute for Advanced Study and Princeton University · *v*

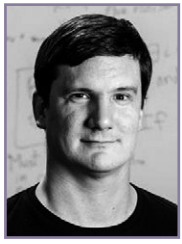
Luya Wang is currently interested in the interactions between smooth and symplectic topology. At IAS, she will continue to study symplectic structures via existing techniques, such as pseudoholomorphic curves and algebraic invariants in Floer theories, as well as building new tools in the Floer homotopy program.

Andreas Lorenzo Wieser

Homogeneous Dynamics · Institute for Advanced Study

Funding provided by the Fund for Mathematics

Andreas Lorenzo Wieser is interested in homogeneous dynamics, with a focus on applications in number theory. While at IAS, he will work on effective equidistribution problems for periodic orbits of semisimple groups and also investigate density and equidistribution problems for orbits of tori.



Ryan Williams

Algorithm Design, Computational Complexity · Massachusetts Institute of Technology · *vnf/f*

Funding provided by the National Science Foundation

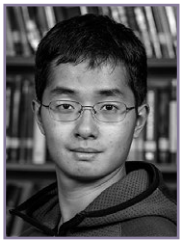
Ryan Williams studies what can and cannot be efficiently computed, independently of any particular computer. One question that haunts him is: When can interesting algorithms be used to prove that other kinds of algorithms do not exist?

Trevor Wooley

Analytic and Additive Number Theory, Applications of Arithmetic Harmonic Analysis · Purdue University

Trevor Wooley is especially interested in "Analytic methods for Diophantine problems," the Hardy-Littlewood method; applications and theory of exponential sums; Diophantine equations and inequalities in many variables; local (p-adic) solubility of Diophantine systems; distribution of fractional parts of polynomials; and density of rational points on varieties.

f First Term · *s* Second Term · *v* Visitor · *vri* Veblen Research Instructor · *bf* Bourgain Fellow
veb Veblen Fellow · *vnf* von Neumann Fellow



Kewen Wu

Theoretical Computer Science · Institute for Advanced Study
Funding provided by the National Science Foundation and the AMIAS Member Fund

Kewen Wu is interested in Boolean function analysis, quantum computing, probabilistic checkable proofs, and computer science theory in general.

Benny Zak

Tame Geometry, Hodge Theory · Institute for Advanced Study
Minerva Research Foundation Member

Benny Zak is interested in applications of sharp o-minimality to complex geometry, Hodge theory, and arithmetic.

Mingjia Zhang

Arithmetic Geometry · Institute for Advanced Study · *vnf*
Funding provided by the National Science Foundation

Mingjia Zhang is interested in the Langlands program and p-adic Hodge theory. Zhang has been studying the geometry and cohomology of Shimura varieties, the relation to their local analogues, as well as the p-adic Simpson correspondence.

Karen EDGE Fellowship

In a partnership with IAS, the Karen EDGE Fellowship works to support and enhance the research programs and collaborations of mid-career mathematicians, promoting greater inclusion in mathematics. The fellowship was created with the generous support of Abel Prize winner Karen Uhlenbeck, Distinguished Visiting Professor in the School of Mathematics, in conjunction with the EDGE Foundation.

KAREN EDGE FELLOWS

Malena Español

Henok Mawi

Reginald McGee

Mariana Smit Vega Garcia

f First Term · *s* Second Term · *v* Visitor · *vri* Veblen Research Instructor · *bf* Bourgain Fellow
veb Veblen Fellow · *vnf* von Neumann Fellow

School of Natural Sciences

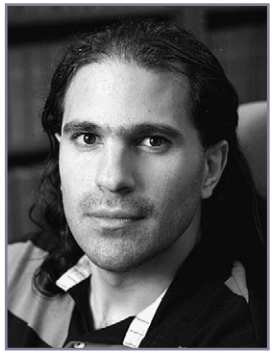
Administrative Officer: Michelle Sage

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

From its earliest days, the Institute has been a leading center for fundamental physics, contributing substantially to many of its central themes, which now interrelate with mathematics, astrophysics, and biology. Members in the astrophysics research group employ an array of tools from theoretical physics, large-scale computer simulations, and ground- and space-based observational studies to investigate the origin and composition of the universe, and to use the universe as a laboratory to study fundamental physics. At the Simons Center for Systems Biology, established in the School in 2004, the tools of modern physics and mathematics are being applied to biological investigation.

Areas of current interest in theoretical physics include elementary particle physics, particle phenomenology, string theory, quantum theory, and quantum gravity, and their relationship to geometry, theoretical and observational astrophysics, and cosmology. The astrophysics group combines theory with modern observational studies to understand a wide variety of astrophysical phenomena, from nearby planets to distant galaxies, from black holes to the dark matter and dark energy that dominate the evolution of the universe. The Simons Center conducts research at the interface of biology and the physical sciences, developing theoretical and experimental methods necessary for studying the collective behavior of biomolecules, cells, and organisms, exploring how individual components can give rise to complex, collective phenomena.

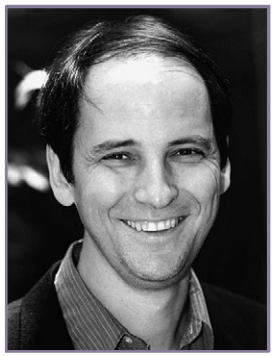
The School also hosts Prospects in Theoretical Physics (PiTP), a two-week residential summer program traditionally held at the Institute for promising graduate students and postdoctoral scholars, who attend lectures and sessions on the latest advances and open questions in the field of theoretical physics.



Nima Arkani-Hamed

Gopal Prasad Professor · Particle Physics

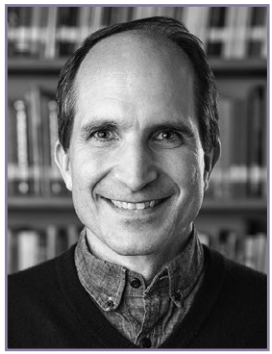
One of the leading particle physics phenomenologists of his generation, Nima Arkani-Hamed is concerned with the relation between theory and experiment. His research has shown how the extreme weakness of gravity, relative to other forces of nature, might be explained by the existence of extra dimensions of space, and how the structure of comparatively low-energy physics is constrained within the context of string theory. He has taken a lead in proposing new physical theories that can be tested at the Large Hadron Collider at CERN in Switzerland.



Stanislas Leibler

Professor · Biology

Stanislas Leibler has made contributions to theoretical and experimental biology, extending the interface between physics and biology to develop new solutions and approaches to problems. Interested in the quantitative description of microbial systems on both cellular and population levels, Leibler is developing the theoretical and experimental methods necessary for studying the collective behavior of biomolecules, cells, and organisms. By selecting a number of basic questions about how simple genetic and biochemical networks function in bacteria, he and his laboratory colleagues are beginning to understand how individual components can give rise to complex, collective phenomena.



Juan Maldacena

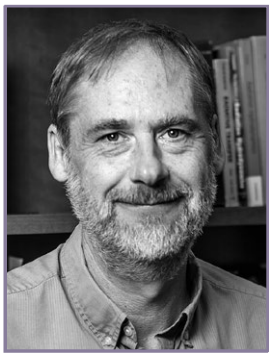
Carl P. Feinberg Professor · Theoretical Physics

Juan Maldacena's work focuses on quantum gravity, string theory, and quantum field theory. He has proposed a relationship between quantum gravity and quantum field theories that 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, and he is also exploring the connection between string theory and cosmology.

Nathan Seiberg

Charles Simonyi Professor · Mathematical Physics

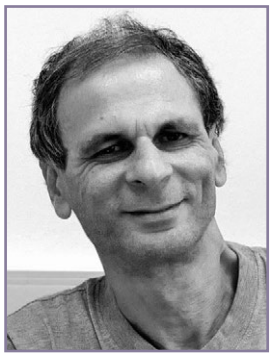
Nathan Seiberg's research focuses on various aspects of string theory, quantum field theory, and particle physics. He has made deep contributions to the understanding of the dynamics of quantum field theories, especially two-dimensional conformal field theories and supersymmetric quantum field theories. His exact solutions of supersymmetric systems have uncovered many new and unexpected phenomena, including the fundamental role of electric-magnetic duality in these theories. These exact solutions have led to many applications in physics and in mathematics. Recently, he combined insights from his earlier work to shed new light on quantum field theories in three space-time dimensions, which are also of interest to condensed matter physics.



James Stone

Professor · Computational Astrophysics

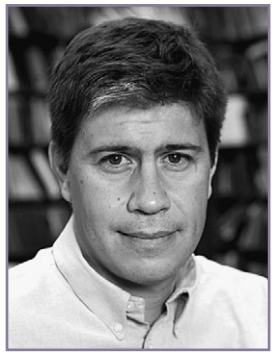
James Stone has developed novel numerical algorithms that have shaped the field of computational astrophysics and ushered in a new era of precision simulations with a wide range of applications. Stone's research is focused on fluid dynamics, particularly magnetohydrodynamics, for which he has developed some of the most powerful and widely used astrophysical codes. He has contributed groundbreaking methods to address a few of the field's most challenging problems, resulting in foundational insights into the nature of giant molecular clouds, the evolution of accretion disks, the process of planetary migration, and the phenomena of radiation transport.



Michail Tsodyks

C.V. Starr Professor · Theoretical Neuroscience

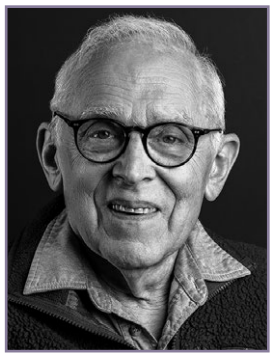
Michail "Misha" Tsodyks is a leading theoretical neuroscientist whose research has influenced important areas of neurobiology and the development of a quantitative understanding of brain functioning and human cognitive abilities. His work is focused on identifying neural algorithms that define functions of cortical systems and, in recent years, various aspects of cognitive behavior. From demonstrating the importance of sparsity in neural networks to providing deep insights into the mechanisms of short-term synaptic plasticity and working and associative memory, Tsodyks has devised conceptual models that make quantitative, testable predictions for experiments.



Matias Zaldarriaga

Richard Black Professor · Astrophysics and Cosmology

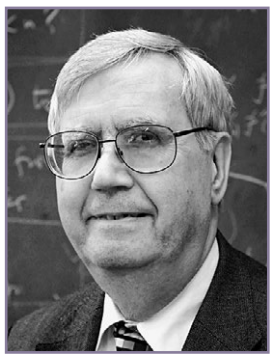
Matias Zaldarriaga has made many influential and creative contributions to our understanding of the early universe, particle astrophysics, and cosmology as a probe of fundamental physics. Much of his work centers on understanding the clues about the earliest moments of our universe encoded in the cosmic microwave background, in the faint glow of radiation generated by the Big Bang, and in the distribution of matter in the late universe.



Stephen L. Adler

Professor Emeritus · Particle Physics

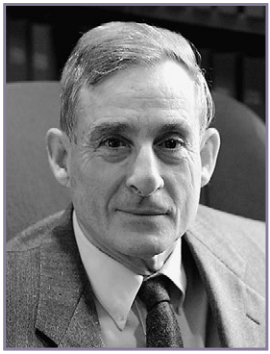
In a series of remarkable, difficult calculations, Stephen L. Adler demonstrated that abstract ideas about the symmetries of fundamental interactions could be made to yield concrete predictions. The successful verification of these predictions was a vital step toward the modern Standard Model of particle physics. In more recent work, he has been exploring generalized forms of quantum mechanics, both from a theoretical and a phenomenological standpoint. He has developed new algorithms for multidimensional integration, and is currently exploring a novel proposal for the "dark energy" that drives the accelerated expansion of the universe. He is also studying horizonless "dynamical gravastars" as alternatives to mathematical black holes at the center of galaxies.



Peter Goddard

Professor Emeritus · Mathematical Physics

Peter Goddard's research concerns quantum field theory and string theory. With his collaborators, he has made pioneering contributions to these areas, in particular: the quantization of the relativistic string; the "no ghost theorem" of string theory; electric-magnetic duality in gauge theories; the construction of conformal field theories; and the realization of gauge symmetry in string theory. Before serving as the eighth Director (2004–12) of the Institute for Advanced Study, he was Master of St. John's College and Professor of Theoretical Physics at the University of Cambridge, where he played a leading role in establishing the Isaac Newton Institute for Mathematical Sciences and the University of Cambridge Centre for Mathematical Sciences.



Peter Goldreich

Professor Emeritus · Astrophysics

Peter Goldreich has made profound and lasting contributions to planetary science 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, turbulence in magnetized fluids, and planet formation. His current research is focused on the production of impact spherules.

Arnold J. Levine

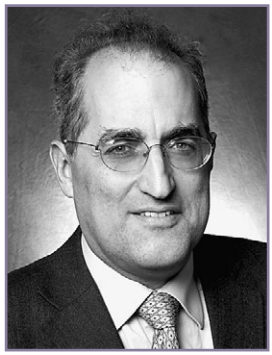
Professor Emeritus · Biology

Arnold J. Levine is a widely acclaimed leader in cancer research. In 1979, Levine and others discovered the p53 tumor suppressor protein, a molecule that inhibits tumor development. He established the Simons Center for Systems Biology at the Institute, concentrating on research at the interface of molecular biology and the physical sciences. Recognizing the potential of convergence research in the life sciences, Levine has inaugurated a program of research collaborations, in partnership with Stand Up to Cancer (and others), that bring together quantitative scientists from theoretical physics, computer science, and mathematics, with biologists and clinicians, to develop novel approaches to solve important problems in cancer research. He also leads the NSF–sponsored Cancer Convergence Education Network, and focuses on fostering convergence research to produce fundamental insights in the areas of immunology and infectious diseases.

Scott Tremaine

Professor Emeritus · 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 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.



Edward Witten

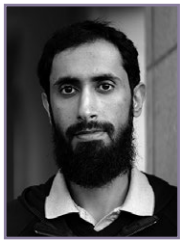
Professor Emeritus · Mathematical Physics

Edward Witten's work exhibits a unique combination of mathematical power and physics insight, and his contributions have significantly enriched both fields. He has greatly contributed to the modern interest in superstrings as a candidate theory for the 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.

Meng Cheng

Condensed Matter Physics · Yale University

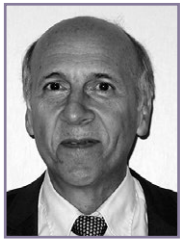
Meng Cheng's research focuses on characterizing and classifying universal emergent phenomena in interacting quantum systems by leveraging the principles of global symmetry and many-body topology.



Ahmed Almheiri

Theoretical Physics · New York University Abu Dhabi · *sm*
J. Robert Oppenheimer Endowed Fund

Ahmed Almheiri is a theoretical physicist working at the interface of quantum field theory, quantum information, and quantum gravity. His works revolves mostly around quantum black holes.



Ignatios Antoniadis

Theoretical High-Energy Physics · Laboratoire de Physique Théorique et Hautes Energies (LPTHE) · *sm*
Funding provided by the Jonathan M. Nelson Center for Collaborative Research

Ignatios Antoniadis is interested in the general area of string theory, from formal aspects to phenomenological applications in particle physics and cosmology. Specifically, Antoniadis is focused on string theory landscape and swampland.

Uddipan Banik

Theoretical Astrophysics · Institute for Advanced Study
Bezos Member; additional funding provided by the Fund for Memberships in Natural Sciences

Uddipan Banik has diverse interests ranging from galactic dynamics, dark matter, and structure formation to astrophysical plasma, dynamo, and particle acceleration. While at IAS, Banik will conduct research on the relaxation of collisionless plasma, cosmic ray transport, and MRI dynamo in accretion disks.

Sirio Belga Fedeli

Systems Biology · Institute for Advanced Study · *m*
Funding provided by the Simons Foundation

Sirio Belga Fedeli's research focuses on the mathematics of principles that govern cellular processes. Belga Fedeli's interests include collective behavior and dynamics of ecological systems.

Andreas Blommaert

Theoretical Physics · Institute for Advanced Study
Leinweber Physics Member; funding provided by the U.S. Department of Energy and the Sivian Fund

Andreas Blommaert studies quantum gravity and quantum black holes. In particular, Blommaert attempts to understand black holes (and their interiors) by developing a precise understanding of low-dimensional models of quantum gravity with simple holographic duals.

Nianyi Chen

Astrophysics · Institute for Advanced Study and Max-Planck-Institut für Astrophysik

Nianyi Chen is interested in using numerical simulations to model the evolution of galaxies across cosmic time, as well as the connection between massive black holes and their host galaxies. While at IAS, she will develop simulations for characterizing the observation signatures of such evolution through different probes and scales.

Alexander Chernoglazov

High-Energy Astrophysics · Institute for Advanced Study

Martin A. and Helen Chooljian Member; additional funding provided by the Fund for Memberships in Natural Sciences

Alexander Chernoglazov is a theoretical high-energy astrophysicist interested in the kinetic physics of plasmas and radiation mechanisms in the magnetospheres of compact objects (e.g., neutron stars and black holes). While at IAS, Chernoglazov will work on explaining the thermal X-ray emissions from the surfaces of pulsars and the dynamics of pulsar wind nebulae.

Mark Ho-Yeuk Cheung

Gravitational-Wave Astrophysics · Institute for Advanced Study

Croucher Fellow; additional funding provided by the Jonathan M. Nelson Center for Collaborative Research

Mark Ho-Yeuk Cheung is a gravitational-wave astrophysicist. His interests include binary compact-object mergers, black hole physics, gravitational-wave lensing, and tests of general relativity.

Yichul Choi

Theoretical Physics · Institute for Advanced Study

Funding provided by the National Science Foundation and the Fund for Memberships in Natural Sciences

Yichul Choi studies topological and global aspects of quantum field theory. In particular, his research focuses on symmetries, anomalies, and their generalizations. He is interested in applying new generalized symmetry principles to particle physics phenomenology and condensed matter physics.

Samuel Cohen

Ecology, Biophysics, Statistical Physics · Institute for Advanced Study

Starr Foundation Member in Biology

While at IAS, Samuel Cohen will research the dynamics and organization of complex terrestrial ecosystems, in particular involving agroecology.

Carolina Cuesta-Lazaro

Cosmology and Machine Learning · Institute for Advanced Study and The Flatiron Institute, Center for Computational Astrophysics

Funding provided by the Fund for Memberships in Natural Sciences

Carolina Cuesta-Lazaro works at the intersection of cosmology and machine learning. While at IAS, she will research how generative models can bridge the gap between cosmological simulations and observations, developing methods to identify missing physics in simulators and detect deviations from ΛCDM.

Biwei Dai

Cosmology · Institute for Advanced Study

Corning Glass Works Foundation Fellowship; additional funding provided by the Fund for Memberships in Natural Sciences

Biwei Dai is interested in developing and applying physics-motivated machine learning models to learn the fundamental properties of the universe from large-scale structure datasets. He currently works on the data analysis of weak gravitational lensing at the field level.

Alexander Dittmann

Astrophysics · Institute for Advanced Study

NASA Einstein Fellow

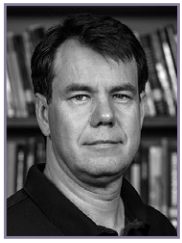
Alexander Dittmann works on numerous topics in theoretical and computational astrophysics. His research often focuses on the interactions between binary systems and their accretion disks, and using X-ray observations of neutron stars to glean insight into the nature of matter at supranuclear densities.

Chuanfei Dong

Plasma Astrophysics · Boston University · *sm/s*

IBM Einstein Fellow

Chuanfei Dong is interested in developing and applying cutting-edge numerical codes to study magnetic reconnection and turbulence, as well as star-terrestrial planet interactions within our solar system and beyond. Additionally, Dong is passionate about integrating machine learning with fundamental physics to address frontier challenges in plasma astrophysics.



Anatoly Dymarsky

Theoretical Physics · University of Kentucky · *sm*

IBM Einstein Fellow

Anatoly Dymarsky is interested in quantum field theory and its connection to the theory of error-correcting codes. He studies how codes emerge from global symmetries and the role they play in holography and quantum gravity.

Nick Early

Combinatorial and Geometric Aspects of QFT Amplitudes · Institute for Advanced Study · *f*

Funding provided by the European Research Council for the UNIVERSE+ Project

Nick Early is interested in the interplay between real, complex, and tropical algebraic geometry, combinatorics, and scattering amplitudes. While at IAS, he will continue to explore a proposal by CEGM for a possible generalization of QFT amplitudes, and pursue new connections with algebraic and geometric combinatorics.

Callum W. Fairbairn

Theoretical Astrophysics · Institute for Advanced Study

Friends of the Institute for Advanced Study Member

Callum W. Fairbairn's research concerns the nonlinear dynamics of distorted astrophysical discs, protoplanetary gas-dust dynamics, planet formation processes, planet-disc interactions, disc instabilities, and debris discs.

Jacob Fields

Numerical Relativity · Institute for Advanced Study

Funding provided by NASA

Jacob Fields is a computational astrophysicist with a background in modeling compact objects. He is particularly interested in several aspects of binary neutron star and black hole-neutron star mergers, including predicting observational signatures, exploring how different physical mechanisms (e.g., magnetohydrodynamic turbulence and instabilities) contribute to these signals, and developing improved numerical methods.

Hadleigh Frost

Theoretical Physics · Institute for Advanced Study

Funding provided by the U.S. Department of Energy and the Sivian Fund

Hadleigh Frost is interested in algebraic and combinatorial problems that arise when computing scattering amplitudes in quantum field theory and string theory, in order to better understand the physics of particle scattering at weak and strong coupling.

Matthias Gaberdiel

String Theory · Eidgenössische Technische Hochschule Zürich · *sm/s*

Funding provided by the Adler Family Fund

Matthias Gaberdiel is interested in deriving the AdS/CFT correspondence. While at IAS, he will attempt to generalize the proof of the AdS3/CFT2 duality for pure minimal NS-NS flux to the situation with R-R flux, as well as to higher dimensional AdS spaces.

Eric Gawiser

Astrophysics, Cosmology · Rutgers, The State University of New Jersey · *sm*

At IAS, Eric Gawiser will measure the star formation histories and physical properties of galaxies in the early universe discovered by NASA's James Webb Space Telescope. He will determine the relationship between galaxies and dark matter halos using a nonparametric method. These efforts will improve our understanding of galaxy formation and cosmic acceleration.

Antonis Georgiou

Human Memory · Institute for Advanced Study

Martin A. and Helen Chooljian Member in Biology; additional funding provided by the Charles L. Brown Member in Biology

Antonis Georgiou studies mathematical models of human memory, including forgetting dynamics.

Vera Gluscevic

Cosmology · University of Southern California · *sm*

IBM Einstein Fellow

Vera Gluscevic is interested in cosmological and astrophysical probes of new physics; dark matter and neutrinos; cosmic microwave background, large-scale structure, near-field cosmology, galaxy formation and evolution and cosmological simulations; and inference and machine learning applications in astrophysics.

Alfredo Guevara

High-Energy Physics · Institute for Advanced Study

Roger Dashen Member; additional funding provided by the U.S. Department of Energy

Alfredo Guevara studies scattering amplitudes and their application in understanding gravity within quantum field theory. More broadly, Guevara is interested in the study of black hole physics.

Chris Hamilton

Astrophysics · Institute for Advanced Study · *m*

John N. Bahcall Fellow

Chris Hamilton's research concerns the dynamics of galaxies, globular clusters, binary stars, and planetary systems; compact object mergers (LIGO/Virgo gravitational-wave progenitors); and the kinetic theory of stellar systems and plasmas.

Aidan Herderschee

Theoretical Physics · Institute for Advanced Study
Founders' Circle Member, in recognition of Edward and Kiyomi Baird; additional funding provided by the Simons Foundation

Aidan Herderschee's research focuses on scattering amplitudes in quantum field theory, gravity, and string theory. For example, Herderschee studies the classical limit of gravity amplitudes, specifically in relation to the analysis of gravitational waves emitted by inspiraling black holes.

Yue Hu

Theoretical Astrophysics · Institute for Advanced Study and California Institute of Technology
NASA Hubble Fellow

Yue Hu's research focuses on the ubiquitous turbulence and magnetic fields in astrophysics, as well as their role in cosmic ray transport, star formation, and galaxy evolution. At IAS, Hu will explore and study the largest magnetic field in galaxy clusters.

Eva Jablonka

Consciousness, Epigenetics · Tel Aviv University · *sm/s*
Funding provided by the Simons Foundation

Eva Jablonka engages in research on the evolution of imagination in non-human animals and the evolution of language in humans.

Mikhail Katkov

Neuroscience · Weizmann Institute of Science · *v/f*

Mikhail Katkov is broadly interested in exploring how humans understand the outside world, through the lens of theories as well as experimentation. He is especially interested in the perception of low- to mid-level visual features and in memory for verbal material, ranging from random lists to meaningful information.

Ryohei Kobayashi

Theoretical Physics · Institute for Advanced Study
Funding provided by the U.S. Department of Energy; additional funding provided by the Sivian Fund

Ryohei Kobayashi studies condensed matter physics and quantum field theories. He is interested in global symmetries, quantum entanglement, and the topological nature of quantum many-body systems. Recently, he has been studying symmetries of error-correcting codes to understand their fundamental properties.

Nickolas Kokron

Cosmology · Institute for Advanced Study

Funding provided by the Bershadsky Fund and the Fund for Natural Sciences

Nickolas Kokron is interested in the formation of large-scale dark matter structures in the universe and their connection to luminous tracers such as galaxies. He employs both numerical simulations and pen-and-paper theory in this study, with an emphasis on techniques that combine both paradigms.

David Kolchmeyer

Quantum Gravity, Quantum Field Theory, String Theory · Institute for Advanced Study

Funding provided by the National Science Foundation, the Paul Dirac Fund, and the Fund for Memberships in Natural Sciences

David Kolchmeyer studies quantum gravity using ideas from algebraic field theory. He is currently exploring holography in cosmological spacetimes.

Jonah Kudler-Flam

Theoretical Physics · Institute for Advanced Study

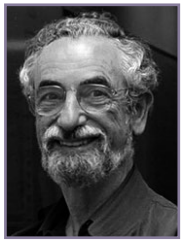
Funding provided by the National Science Foundation

Jonah Kudler-Flam is interested in quantum information theoretic aspects of quantum many-body physics, field theory, and gravity. His research focuses on chaos and thermalization in quantum systems and, in parallel, the quantum physics of black holes.

Wei Li

String Theory · Institute of Theoretical Physics, Chinese Academy of Sciences · *sm/s*

Wei Li is currently interested in various algebraic aspects of string theory and supersymmetric field theories, such as BPS algebras and chiral algebras. She is also interested in finite-N effects in quantum gravity and holography.



Elliott H. Lieb

Mathematical Physics · Princeton University · *v*

Elliott H. Lieb's research interests include mathematical physics and mathematical analysis, especially functional analysis. In physics, his main interests are in condensed matter physics, statistical mechanics, and questions concerning stability of matter and atomic physics.

Qianshu Lu

Theoretical Particle Physics · Institute for Advanced Study and New York University

Funding provided by the National Science Foundation

Qianshu Lu studies the interplay between cosmology and particle theory. She is particularly interested in cosmological signatures of particle physics models that are motivated by constraints from quantum gravity.

Claudio Andrea Manzari

Theoretical Particle Physics · Institute for Advanced Study

Funding provided by the U.S. Department of Energy and the Sivian Fund

Claudio Andrea Manzari's research interests lie in theoretical particle physics and phenomenology. His work focuses on advancing the theoretical understanding of fundamental unresolved questions in nature, such as the strong CP problem, the flavor puzzle, the electroweak hierarchy problem, and the nature of dark matter.

Gianluigi Mongillo

Theoretical Neuroscience · Sorbonne University · *f*

Funding provided by the Simons Foundation

Gianluigi Mongillo is interested in understanding how time gets encoded in memory and, in particular, working (short-term) memory, based on the hypothesis that, in working memory, time is encoded by short-term synaptic plasticity over multiple time scales.

Beatrix Muehlmann

Quantum Gravity · Institute for Advanced Study

Leinweber Physics Member; additional funding provided by the National Science Foundation

Beatrix Muehlmann is studying low-dimensional theories of quantum gravity. One central aspect of her work aims to construct explicit and rigorous models of de Sitter quantum gravity.

Andrew Mummery

Theoretical Astrophysics · Institute for Advanced Study · *m*

Funding provided by The Ambrose Monell Foundation and the W. M. Keck Foundation Fund

Andrew Mummery is interested in the dynamics of material falling onto black holes through so-called "accretion disks." By modeling these systems in detail, he uses astronomical observations and numerical simulations to learn more about the black holes in our universe and the behavior of fluids in extreme gravity.

Karl H. Palmquist

Systems Biology, Ecosystem Dynamics · Institute for Advanced Study
Martin A. and Helen Chooljian Member in Biology; additional funding provided by the Starr Foundation Member in Biology Fund

Karl H. Palmquist is interested in biological complexity and how systems organize in space and time. He has developed experimental and theoretical approaches to study biological development, and is extending his thinking to the emergence of complex phenomena in soil ecosystems to address fundamental questions of sustainable agriculture.

Xiaoliang Qi

Physics · Stanford University · *sm/f*
Funding provided by the Jonathan M. Nelson Center for Collaborative Research

Xiaoliang Qi is a theoretical physicist working in the fields of condensed matter physics, quantum information, and quantum gravity. He is also interested in artificial intelligence and its application in scientific research.

Roman Rafikov

Astrophysics · University of Cambridge · *sm/f*
IBM Einstein Fellow

Roman Rafikov works in the areas of planetary sciences, planet formation, N-body dynamics, fluid dynamics, accretion disks, and high-energy astrophysics.

Brandon Rayhaun

Theoretical Physics · Institute for Advanced Study
Leinweber Member; funding provided by the U.S. Department of Energy and the Sivian Fund

Brandon Rayhaun works on problems at the interface of high energy theory, condensed matter physics, and pure mathematics, using quantum field theory and string theory as guiding frameworks.

Javier Roulet

Gravitational-Wave Astronomy · Institute for Advanced Study and University of Chicago
Funding provided by the Jonathan M. Nelson Center for Collaborative Research

Javier Roulet is interested in compact object astrophysics. To this end, he develops algorithms for detecting gravitational waves from compact binary mergers, measuring their parameters and analyzing them collectively to characterize the astrophysical population.

Mor Rozner

Astrophysics · Institute for Advanced Study
Kovner Member

Mor Rozner is interested in planet formation, stellar and planetary dynamics, and gravitational wave sources.

Giulio Salvatori

Particle Physics · Institute for Advanced Study

Giulio Salvatori is mostly interested in the study of scattering amplitudes. In this context, he has been investigating the connection between positive geometries, such as the amplituhedron, and amplitudes. Salvatori has also been working on semi-analytical techniques for the computation of Feynman diagrams necessary for processes being studied at the Large Hadron Collider.

Gabriela Sato-Polito

Cosmology · Institute for Advanced Study
Funding provided by the National Science Foundation and the AMIAS Member Fund

Gabriela Sato-Polito is interested in connecting new observations of the most elusive corners of the universe with tests of fundamental physics. Her recent work explores techniques to map the matter distribution in the distant universe, and measurements of gravitational waves by precisely timing pulsars.

Sahand Seifnashri

Theoretical Physics · Institute for Advanced Study
Funding provided by the Ambrose Monell Foundation and the Simons Foundation

Sahand Seifnashri works on quantum field theory and its applications in high-energy and condensed matter physics. He is interested in generalized symmetries, their anomalies, and understanding the structures of extended operators and defects in quantum field theory.

Nadine Soliman

Theoretical Astrophysics · Institute for Advanced Study
NASA Hubble Fellow

Nadine Soliman is interested in the interplay between microphysical processes and large-scale astrophysical structures, with a focus on star and planet formation, galactic dynamics, and plasma physics. At IAS, she will refine star formation simulations to capture the multiscale processes governing the collapse of molecular clouds, the birth of stellar clusters, and the formation of protoplanetary disks.

Nikita A. Sopenko

Mathematical Physics · Institute for Advanced Study

Funding provided by the National Science Foundation

Nikita A. Sopenko works on mathematical aspects of condensed matter physics and quantum field theory. In particular, he is interested in the classification of topological phases of matter.

Anatoly Spitkovsky

Theoretical High-Energy Astrophysics · Princeton University · *sm*

Anatoly Spitkovsky is interested in using high-performance computing to explore fundamental problems in high-energy astrophysics, including relativistic outflows, pulsar magnetosphere, and collisionless shocks. He also studies phenomena occurring on accreting neutron stars, such as X-ray bursts.

Zimo Sun

Theoretical Physics · Institute for Advanced Study

Funding provided by the U.S. Department of Energy and the Sivian Fund

Zimo Sun works on quantum field theory and quantum gravity. In particular, he is interested in quantum cosmology, critical phenomena, and RG flows.

Leonard Susskind

Stanford University · *sm/s*

Funding provided by the Fund for Memberships in Natural Sciences

Leonard Susskind is the Felix Bloch Professor of Theoretical Physics at Stanford University, known for pioneering contributions to string theory, quantum field theory, statistical mechanics, and cosmology. Often regarded as one of the fathers of string theory, he has introduced groundbreaking concepts that continue to influence modern theoretical physics.

Giovanni Maria Tomaselli

Gravitational Physics · Institute for Advanced Study

Rubicon Fellow

Giovanni Maria Tomaselli is interested in theoretical and astrophysical aspects of black holes, gravitational waves, and dark matter. His research has explored signatures of new ultralight particles in black hole binary inspirals.

Erez Urbach

Theoretical Physics · Institute for Advanced Study
William D. Loughlin Member; additional funding provided by the Fund for Natural Sciences

Erez Urbach is interested in quantum gravity, string theory, and holography. At IAS, Urbach will attempt to further understand quantum aspects of black holes and cosmology.

Francisco Vazão

Theoretical Physics · Institute for Advanced Study and University of Pennsylvania
Funding provided by the Jonathan M. Nelson Center for Collaborative Research

Francisco Vazão is interested in the study of cosmological observables. He has been exploring the connection between the cosmological observables and positive geometries, such as polytopes, as well as their analytic structure.

David Velasco-Romero

Computational Astrophysics · Institute for Advanced Study
Funding provided by the National Science Foundation

David Velasco-Romero's research focuses on developing and adapting high-order numerical methods for astrophysical simulations, particularly in the areas of magneto-hydrodynamics and planet-disk interactions. He is also interested in high-performance computing techniques, including GPU acceleration and parallelization, to tackle complex astrophysical problems.

Michael Winer

Statistical Physics · Institute for Advanced Study
Marvin L. Goldberger Member

Michael Winer studies disordered systems, their phase transitions, thermodynamics, and dynamics. Much of his work focuses on the physics of glasses, and how it relates to important concepts ranging from holography to deep learning.

George Nathaniel Wong

Astrophysics · Institute for Advanced Study and Princeton University
Infosys Member

George Nathaniel Wong uses numerical methods and analytic modeling to study high-energy astrophysical phenomena, especially accretion onto supermassive black holes. He is interested in predicting observational signatures of the connection between black holes and relativistic jets as might be observed by next-generation experiments.

Nadia Zakamska

Astrophysics · Johns Hopkins University · *sm*

Nadia Zakamska's research interests range from extrasolar planets to extragalactic astronomy. Most recently, she has been focused on long-standing puzzles in the evolution and dynamics of binary stars, and on the discovery of binaries composed of compact stellar remnants.

Weishun Zhong

Statistical Physics, Neuroscience, AI · Institute for Advanced Study

Eric and Wendy Schmidt Member in Biology; additional funding provided by the Simons Foundation

Weishun Zhong wants to understand natural and artificial intelligence through the lens of statistical physics. In particular, he is interested in how intelligent behaviors can arise in disordered systems and neural networks, and how complex many-body interactions affect the emergent computation capabilities in such systems.

Zhaohuan Zhu

Astrophysics · University of Nevada, Las Vegas · *sm/s*

Zhaohuan Zhu's research interests include the properties of young stars and young planets, planet formation and detection in protoplanetary disks, and exoplanet evolution, among other interests. Zhu's research uses analytical methods and numerical simulations to understand the dynamical processes during star and planet formation, as well as observational predictions based on simulations.

School of Social Science

Administrative Officer: Miriam Harris

Founded in 1973, the School of Social Science is dedicated to rigorous, critical approaches to social research that span theoretical and empirical inquiry. Each year, approximately 20 scholars pursue research within a designated annual theme or individual topics, engaging in sustained intellectual exchange.

The theme for the 2025–26 academic year is "Digital (In)Equality," convened by Alondra Nelson, Harold F. Linder Professor in the School of Social Science. Scholarly explorations of digital inequality and efforts to achieve equality through digital means emerge from distinct disciplinary traditions and methods. This special year brings these approaches into closer dialogue, examining the paradoxical relationship between these dynamics across different historical and social contexts. Scholars will investigate how equality and inequality are co-constituted in digital spaces and analyze the various forms such inequities take. The seminar will examine how digital technologies shape, enable, or constrain gender and racial equality; trace connections between algorithmic bias and unequal access or outcomes; and grapple with the exacerbated harms, concentrated wealth, and consolidated power characterizing society after the digital turn. Participants will consider how digital technologies expand and limit rights claims and civic participation, while exploring the potential of digital tools and infrastructures to foster more inclusive and equitable social arrangements.

Understanding this contemporary moment requires examining the intellectual lineage of digital inequality scholarship. Early digital scholarship attended to lack of access to technology, centering the "digital divide"—defined variously as lack of access to personal computers and later broadband—and consequent disparities in educational achievement, employment opportunities, creative endeavor, knowledge production, and civic participation among communities, countries, and nations. This work also heralded the possibility of new liberatory networked communities and modes of being based on a small set of networked digital tools.

Yet the landscape has transformed dramatically. Today's digital ecosystem is more expansive, encompassing the internet, social media, platforms, and artificial intelligence, with vectors of technologically mediated inequality spanning all facets of global society. The seminar confronts a fundamental question: whether we can reclaim the equality-enhancing promise of earlier digital scholarship, including possibilities for expanding personal freedoms, supporting

social mobility, and amplifying political voice, or whether the affordances of contemporary digital technologies inherently compromise their utility for advocacy, activism, novel governance, and democratic action. The theme year will assess both the liberatory potential and structural constraints of digital tools for community-building and political practice in an age of unprecedented technological concentration.

The School of Social Science cultivates intellectual experimentation that refuses narrow disciplinary boundaries or methodological orthodoxies. By convening scholars with varied perspectives, methods, and subjects from across the social sciences and related fields, the School provides a distinctive space for dialogue and debate. Whether pursuing the annual theme or independent research agendas, Members benefit from this community of scholars committed to examining pressing historical and contemporary problems through sustained, collaborative inquiry. This approach, which prizes both depth and breadth, individual scholarship and collective exchange, enables the School to advance innovative research at the frontiers of social research.

Wendy Brown

UPS Foundation Professor

Wendy Brown is a political theorist who investigates the subterranean powers shaping contemporary Euro-Atlantic polities, with particular attention to their deformations of democracy—its institutions, citizenries, and cultures. She has brought these concerns to her early studies of masculinism in political life, political identity, and discourses of tolerance, and, more recently, to her work on sovereignty and border fortification, neoliberal reason, and nihilism. She is currently writing a book on the intersection between ecological crises and crises of constitutional democracy, tentatively entitled "Reparative Democracy"

Didier Fassin

James D. Wolfensohn Professor

An anthropologist and sociologist who has conducted field work in Senegal, Ecuador, South Africa, and France, Didier Fassin was initially trained as a physician in internal medicine and public health. He developed the domain of critical moral anthropology. His recent research was on the theory of punishment, the politics of life, and the public presence of social science. He currently works on displacement and on violence. Recipient of the Huxley Medal of the Royal Anthropological Society and of the Nomis Distinguished Scientist Award, he is involved in a global program on crises, in particular in the context of the erasure of Gaza. He is also Professor at the Collège de France, where he holds the chair on Moral Questions and Political Issues in Contemporary Society.

Alondra Nelson

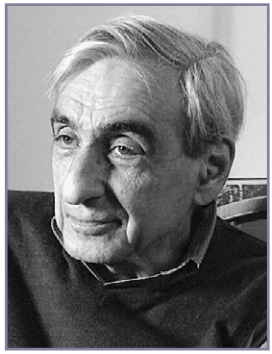
Harold F. Linder Professor

An acclaimed sociologist, Alondra Nelson examines questions in science, technology, and social inequality. Nelson's work offers a critical and innovative approach to the social sciences in fruitful dialogue with other fields. She has developed a distinctive approach that interrogates the social life of emerging technologies—from genomics to artificial intelligence—and their entanglements with justice, democracy, and public accountability. Her major research contributions are situated at the intersection of racial formation and social citizenship, on the one hand, and emerging scientific and technological phenomena, on the other. Nelson's scholarship spans topics including the social implications of DNA and genomics, medical discrimination and health activism, and AI governance and platform society.

Joan Wallach Scott

Professor Emerita

Joan Wallach 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. Broadly, the object of her work is the question of difference in history: its uses, enunciations, implementations, justifications, and transformations in the construction of social and political life. Scott's books have focused on the vexed relationship of the particularity of gender to the universalizing force of democratic politics. Her most recent work explores the question of the ethical responsibility of history-writing.



Michael Walzer

Professor Emeritus

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. He has played a critical role in the revival of a practical, issue-focused ethics and in the development of a pluralist approach to political and moral life. Walzer's books include *Just and Unjust Wars* (1977), *Spheres of Justice* (1983), *On Toleration* (1997), *Arguing About War* (2004), and *The Paradox of Liberation* (2015); he served as co-editor of the political journal *Dissent* for more than three decades, retiring in 2014. Currently, he is working on issues to do with international justice and the connection of religion and politics, and also on a collaborative project focused on the history of Jewish political thought.

Carina Albrecht

Science and Technology Studies · Institute for Advanced Study · *ra*

Carina Albrecht's research focuses on critical studies of the technical models that shape the web and artificial intelligence. Her work in the Science, Technology, and Social Values Lab will focus on Sociotechnical Imaginaries and Narratives of AI (SINAI). Data fluencies combine the humanities with critical work in the data s ciences to go beyond data literacies and express, imagine, and create innovative and sustainable engagements with our data-filled world.

Ingrid Becker

Twentieth and Twenty-First-Century Literature, Sociology · Bard College · *v/s*

Ingrid Becker's research bridges poetry and poetics, human rights, and sociology in the twentieth and twenty-first centuries. While at IAS, she will work on a new research project about the rise of the question-naire —a sociological technology and ubiquitous mass cultural form —in relation to the shifting status of the question in post-1945 Anglo-American poetry.

Fernando Brancoli

Political Science, International Relations · Universidade Federal do Rio de Janeiro

Fernando Brancoli is an Associate Professor of International Relations at UFRJ, Brazil. With a background as an award-winning journalist and humanitarian specialist in conflict zones, Brancoli will examine global peripheralization through the Amazon, focusing on neo-extractivism, state crisis, and governance.

Tatiana Carayannis

International Relations, Global Governance, Emerging Technology, Violent Conflict, Research Ethics · Institute for Advanced Study · *ra*

A leading scholar of international organizations, global governance, and violent conflict in Central Africa, Tatiana Carayannis's work in the Science, Technology, and Social Values Lab currently focuses on the geopolitics of AI and critical minerals supply chains. Previously, she served as program director at the Social Science Research Council and has had visiting appointments at LSE and NYU.

Martín Cortés

Political Theory · Consejo Nacional de Investigaciones Científicas y Técnicas

Martín Cortés's research focuses on political theory, intellectual his-tory, and the history of the left. His work examines the key theoretical contributions of Latin American Marxism, including critiques of linear time, the relationship between social class and political subjectivity, and the significance of the national question. At IAS, he will explore the concept of "non-Western Marxisms," analyzing the connections between Latin American Marxism and other Marxist traditions.

Molly J. Crockett

Cognitive Science · Princeton University

Molly J. Crockett is a cognitive scientist studying how technologies shape social cognition and knowledge production. At IAS, they will explore how artificial intelligence research is shifting collective understandings of human cognition.

Taylor Marion Cruz

Sociology of Science, Technology, and Medicine · Northeastern University

Taylor Marion Cruz studies the societal dimensions of emerging technologies in U.S. biomedicine. While at IAS, she will conduct research on how investments in data analytics are transforming care in the digital safety net.

Christine Custis

Ethical and Responsible AI Innovation · ra

Christine Custis is a Research Associate and Program Manager for the Science, Technology, and Social Values Lab. A computer scientist and organizational strategist whose work has spanned industry, civil society, and academia, Custis has more than two decades of experience in the development and governance of emerging science and technology. She previously served as Director of Programs and Research at the Partnership on AI.

Cathy N. Davidson

History of Technology and AI · v/f

While at IAS, Cathy N. Davidson will focus on generative AI and the opportunities and dangers that it portends. She plans to be in deep dialogue with historians, social scientists, economists, and computer scientists, as she works on a new book that examines three past episodes in the history of emerging technologies to address the commercial release and political implications of AI in the present.

Anne-Claire Defossez

Sociology · Institute for Advanced Study · *v*

Anne-Claire Defossez is a sociologist who has been conducting research on migration during five years at the border between Italy and France. Based on this ethnography, her work this year will be focused on solidarity practices toward exiles and their evolution in a context of growing repressive policies.

Jenny Earle

Criminology, Law, Gender Studies · v

Jenny Earle's current research is focused on initiatives in the U.K., U.S., and Australia to improve criminal justice outcomes for women. Although women are a small minority of the prison population, their incarceration rate in the U.S. has grown. Most are mothers and the separation from their children contribute to high rates of self-harm in prison. Earle's research will investigate legal and policy developments intended to reduce the incarceration of pregnant women and mothers.

Gastón Gordillo

Anthropology · The University of British Columbia
Wolfensohn Family Member

While at IAS, Gastón Gordillo is working to complete a book manuscript on how perceptions of whiteness in Argentina are defined by the sense of being under siege by racialized multitudes. In particular, the book analyzes how historically and in the present, the middle-classes and the elites fear crowds of working-class people—as if they signal the return of the "Indian hordes" that, until the late 1800s, controlled half of Argentina.

Ana Grondona

History of Latin American Social Science, Archival Studies · v/s

Ana Grondona's research focuses on the South–North circulation of development and modernization debates during the second half of the twentieth century. At IAS, she will examine Gino Germani's intellectual trajectory in the United States (1966–79), analyzing his scholarly work, transnational academic networks, and the archival challenges posed by global intellectuals' personal records.

Sarah J. Jackson

Communication Studies · University of Pennsylvania

Sarah J. Jackson studies how media, journalism, and technology are used by and represent marginalized publics, with a focus on the contributions of Black, feminist, and activist communities to U.S. politics and culture. While at IAS, she will consider how digital theory and African American history are interlinked in questions of virality, migration, and the refutation of pseudoscience.

Peniel Emmaus Joseph

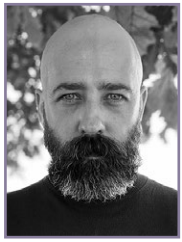
Twentieth-Century American History · The University of Texas at Austin
Friends of the Institute for Advanced Study Member

Peniel Emmaus Joseph's book project, "Witness: James Baldwin's 1963," examines the way in which the writer's discourse of race, democracy, and citizenship altered global discourse on dignity and freedom in the epochal year of the March on Washington, Birmingham, the 16th Street Baptist Church bombings, and the assassinations of civil rights leader Medgar Evers and President John F. Kennedy.

David Kazanjian

Colonial Latin American Studies · University of Pennsylvania · *v/s*

In David Kazanjian's book "The Trusted Ones: A Conversation and a Conflict in Colonial Yucatán," he re-assembles the history of an enslaved Black man named Juan Patricio who fought with a Spanish priest named Don Ignacio de Esquivel over the fate of a Maya woman named Fabiana Pech in 1690 on the Yucatán peninsula, revealing a potent Black and Indigenous critique of both dispossession and possession.



Scott MacLochlainn

AI Language and Sentiment in the U.S., Death in the Phillippines · *v*

Scott MacLochlainn's work examines new language, media, and legal formations in the Philippines, as well as in the United States and Ireland. He is currently exploring how death has been documented and recorded in the Philippines. He is also studying the relationship between AI, voice, and gesture. In particular, he is interested in how the aggregation and analysis of text and speech data are emerging as a critical site through which different actors are conceiving of how publics think, feel, and believe.

Lilian Mathieu

Political Sociology · CNRS

Lilian Mathieu will study how Argentine artists and intellectuals adapted to, and sometimes challenged, a context of censorship, coercion, and state terror during the last military dictatorship (1976–83).

Sabine Mohamed

Anthropology · Johns Hopkins University

Sabine Mohamed's work is focused on infrastructure, political economy, race, citizenship, and empire. While at IAS, she will be working on her first book, "Losing Ground: Emergent Black Empire and Counter-Futures in Urban Ethiopia," which ethnographically explores how categories of blackness and race, as well as experiences of urban and national dispossession, are attached to an infrastructure of emergent empire in East Africa.

Taberez Ahmed Neyazi

Technology, Politics, and Governance in Asia · National University of Singapore

Alfred Landecker Member

Taberez Ahmed Neyazi is interested in internet governance policies and the role of AI in content moderation, political campaigns, and decentralized governance. His research examines the evolving relationship between technology, governance, and power, contributing to broader debates on how digital infrastructures and media influence political behaviour and shape political and social dynamics.

Ayesha Omer

Media Studies, Anthropology, Environmental Humanities · York University

Funding provided by the AMIAS Member Fund

Ayesha Omer studies the relationships between media technologies, political sovereignty, and the climate crisis. At IAS, she will complete a book on dust as the material residue, affective medium, and technological mediation of global networks through an ethnography of Chinese infrastructures in Pakistan's indigenous borderlands.

Shobita Parthasarathy

Science and Technology Studies · University of Michigan

Shobita Parthasarathy studies the social and political dimensions of technological innovation and innovation policy in cross-national perspective. She is completing her third book on the evolution, institutionalization, and impacts of "inclusive innovation," a type of "tech for good" that leverages innovation and the marketplace to solve global poverty and inequality. The book focuses on technologies for sanitation and menstrual health and hygiene in India.

Justine Pila

Law, Regulation, and Technology · *v*

Justine Pila works in the fields of intellectual property law and law, regulation, and technology, and will use her time at the Institute to progress a monograph she is writing on law and technology for publication by Oxford University Press.

Lucas G. Pinheiro

Political Theory · Bard College

Lucas G. Pinheiro works on early modern and contemporary political theory, with a focus on ideas and practices of labor, race, aesthetics, and technology in the development of capitalism and empire across the Atlantic world since the seventeenth century. He is finishing a book on the colonial origins and digital afterlives of the factory system and the ways in which the factory's global history enriches our understanding of political thought and capitalist society as mutually-constitutive social formations.

Jennifer S. Ponce de León

Latin American and American Studies · University of Pennsylvania

Jennifer S. Ponce de León is an interdisciplinary scholar who researches culture and politics in the Americas in the twentieth and twenty-first centuries, and Marxist and anticolonial thought.

Philipp Rehm

Political Science · Johns Hopkins University · *v*

Philipp Rehm's research is in comparative politics, with a focus on social policy and political behavior in wealthy democracies.

Annelise Riles

Law, Anthropology · Northwestern University Pritzker School of Law
Alfred Landecker Member

Digital platforms have many qualities of transnational self-regulatory communities, akin to offshore banking systems or transnational social movements that draw upon, but also transcend, the power of nation-states. At IAS, Annelise Riles is writing a book that rethinks transnational law in light of the rise of digital platforms as new sources of global authority and considers how digital platform sociality can be reimagined for more just global futures.

Corey Robin

Political Science · Brooklyn College and the Graduate Center, The City University of New York

Corey Robin specializes in political theory and the history of political thought. He will be working on a political theory of capitalism while at IAS.

Diego Rossello

Political Philosophy · Universidad Adolfo Ibañez · *f*
Ralph E. and Doris M. Hansmann Member

Diego Rossello explores the contribution that animal magnetism can make to contemporary ecocriticism. This theory, widely discussed and adopted by French revolutionaries, German idealist philosophers, and Gothic writers, has been recuperated by contemporary scholars in new materialism and animal studies. Emphasizing the interconnection of all forms of life, animal magnetism shares affinities with radical democratic forms of government.

Ravideep Sethi

Economics · *v/s*

Ravideep Sethi is an applied microeconomic theorist and experimental economist. He uses the tools of information economics and non-cooperative bargaining to study topics in political economy and organizational economics.

Alma Steingart

United States History, History of Science · Columbia University
Robbert Dijkgraaf Member

Alma Steingart's research interests lie in the intersection of the history of science and U.S. political history. She is interested in the interplay between politics and mathematical rationalities. While at IAS, Steingart will be working on her book manuscript entitled "Accountable Democracy: Mathematical Reasoning and Representative Democracy in America, 1920 to Now."

Julieta Suárez-Cao

Comparative Politics · Pontifical Catholic University of Chile · *v/f*

At IAS, Julieta Suárez-Cao will advance research on governance, gender, and political crisis in Latin America. Her research employs mixed-methods and comparative approaches, combining historical analysis, electoral data, public opinion surveys, and in-depth interviews.

Inés Valdez

Latin American Marxism, Imperialism, Racial Capitalism · Johns Hopkins University
Richard B. Fisher Member

Inés Valdez works on the political theory of empire, Latin American Marxism, and racial capitalism. At the Institute, she is working on Marxist dependency theory. A recovery of this tradition demonstrates that it has important implications for pressing issues in anti-colonial political theory. These include postcolonial democracy and the perils of rehabilitating the New International Economic Order.

Miguel Vatter

Political Theory · Deakin University · *f*

Miguel Vatter is a political theorist who works in the areas of history of republican political thought, biopolitics, and political theology. While at the Institute, he will be working on the "planetary turn" in political theory, and in particular on the political and legal ramifications of adopting the perspective of planetary habitability on the ecological crisis.

Judy Wajcman

Sociology · London School of Economics and Political Science
Roger W. Ferguson, Jr. and Annette L. Nazareth Membership

Judy Wajcman's scholarly interests encompass the sociology of work and employment, science and technology studies, gender theory, temporality, and organizational analysis. She recently completed a project at the Alan Turing Institute on Women in Data Science and AI. At IAS, she will interrogate whether and how the gender gap in high-tech and high-finance shapes technological innovation.

Jonathan M. Nelson Center for Collaborative Research

The Jonathan M. Nelson Center for Collaborative Research is dedicated to furthering the Institute's mission of advanced study by providing the funding, space, and technical and administrative expertise necessary for complex collaborations that may extend beyond the resources of a single scholar, discipline, or organization. Supporting research at scale within and across fields and institutions, the Nelson Center seeks to advance foundational knowledge by overcoming constraints that might otherwise restrict the capacity for discovery of the Institute's scholars.

DISTINGUISHED VISITING PROFESSORS

Svitlana Mayboroda

Analysis, Partial Differential Equations · ETH Zurich · *dvp*

Svitlana Mayboroda is interested in the interplay between geometric properties of sets and properties of the solutions to partial differential equations, as well as localization phenomena and, more generally, spectral features of elliptic operators.

MEMBERS AND VISITORS

Nicolas Lenner

Biophysics, Ecology, Evolution · Institute for Advanced Study · *ra*

Funding provided by the Simons Foundation

Nicolas Lenner's scientific background is in physics of dynamical biological systems, ranging from molecular dynamics to developmental processes of whole organisms. Lenner now applies this dynamical systems perspective to problems in ecology and evolution.

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dvp Distinguished Visiting Professor · *ra* Research Associate

Director's Office

Scholars within the Director's Office are from a variety of fields, including areas not represented in the Schools. They are invited to the Institute for varying periods of time, depending on the nature of their work.

David Gyllenhaal

History, Religion · ra

David Gyllenhaal's research explores the rationalization process and impact of trauma on Greek- and Syriac-speaking Christians and Arabic-speaking Muslims during late antiquity.

Edmond Shlomo Zuckier

Rabbinic Literature, Philosophy of Religion · ra

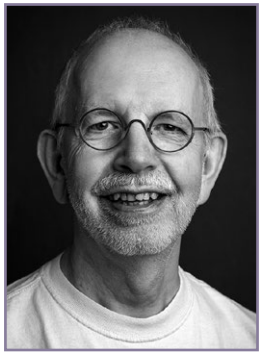
Edmond Shlomo Zuckier is a scholar of rabbinic literature and philosophy of religion. His prior work has focused on concepts of sacrifice, atonement, and Halakhah (Jewish law). At IAS, Zuckier's research will focus on conceptions of divine will that emerged in antiquity and the medieval period across Judaism, Christianity, and Islam.

ra Research Associate

Legacy Programs

PROGRAM IN INTERDISCIPLINARY STUDIES (2002–2023)

The Program in Interdisciplinary Studies (PIDS) explored different ways of viewing the world, spanning a range of disciplines from physics to astrophysics, geology, paleontology, and biology, to artificial intelligence, cognitive psychology, and philosophy. As a program intended to engage new interdisciplinary questions and facilitate greater communication and collaboration between the four Schools, PIDS was dedicated to developing infrastructure for open-ended intellectual exchange to help expand the interface between formal research and the larger ecosystem of human knowledge. It brought to life After Hours Conversations—short, informal, cross-disciplinary talks occurring twice a week to discuss open problems in a variety of fields—a tradition continued by other Schools. The program was headed by Professor Emeritus Piet Hut, and during its tenure had a total of 67 Visitors.



Piet Hut

Professor Emeritus

Piet Hut's main research theme is "the Nature of Reality," as seen through the lenses of Math, Matter, and Mind. Some subthemes are: for Math, "Algorithms and Foundations"; for Matter, "Physics and Biology"; and for Mind, "Phenomenology and Contemplation." In 2024 he started FEST, short for Fully Empirical Science and Technology, a new research program aiming to bridge the gap between matter and mind. Inspired by the success of science in understanding matter, using matter, this program extends the same empirical methodology to study the mind, using the mind. This requires developing new tools, partly inspired by philosophical and contemplative traditions of the past.

ELECTRONIC COMPUTER PROJECT (1945–1957)

The Electronic Computer Project started in late 1945 when John von Neumann, IAS Faculty from 1933–55, joined forces with a group of engineers to design and build one of the first stored-program electronic digital computers at the Institute. The ECP's goal was to create the physical realization of Alan Turing's Universal Machine, theoretically conceived in 1936. The project's many notable achievements include producing the first short-term numerical predictions of the weather, calculating the results of the thermonuclear reaction of the first H-bomb in 1950, and developing von Neumann architecture, which is still used in many modern-day computer systems. Its progress reports, which described the specifications and design principles for the machine, were made freely and widely available in the public domain rather than being patented, heralding the ideals of open access long before such a notion existed. The IAS machine was used continually and productively until 1960. Over 140 individuals were engaged in the project over its duration at the Institute.

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Marcia Tucker
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Caitlin Rizzo
Archivist

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Administrative Officer, School of Mathematics

Miriam Harris
Administrative Officer, School of Social Science

Janet Yoon
Administrative Officer, School of Historical Studies

Michelle Sage
Administrative Officer, School of Natural Sciences

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D Director · *DO* Director's Office · *SHS* School of Historical Studies · *SM* School of Mathematics
SM-KEF Karen Edge Fellow · *SNS* School of Natural Sciences · *SSS* School of Social Science · *L* Legacy Programs
NCCR Jonathan M. Nelson Center for Collaborative Research

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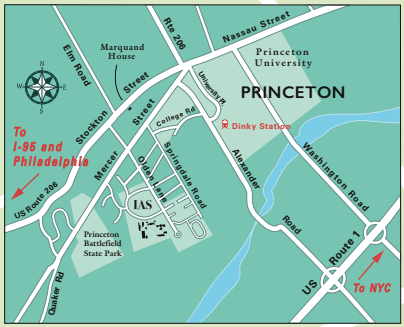

Haslet Avenue
Battle Rd Circle
Einstein Drive
Ober Road
Olden Lane
Newlin Road
Maxwell Lane
to Visitor Housing
Member
Housing
Earle Lane
Einstein Drive
Flexner Lane
to Member Activities Center
Goldman Lane
Parking
Soccer Field
footpath
Parking Lot A
Parking Lot B
to Tennis Courts
Pond
to Princeton Battlefield State Park
Founders' Rock
The Institute Woods
Map is not to scale

1 Fuld Hall
- a Reception
- b Mathematics–Natural Sciences Library (second floor)
- c Common Room
- d Director's Office

2 Building A
3 Building B
4 Rubenstein Commons
5 Bloomberg Hall
- e Lecture Hall
- f The Simons Center for Systems Biology

6 Wolfensohn Hall
7 Simonyi Hall
- g Lecture Hall

8 Historical Studies–Social Science Library
- h The Shelby White and Leon Levy Archives Center
- i White-Levy Room
- j Archives Storage

9 West Building
- k Lecture Hall (first floor)
- l Seminar Room (second floor)

10 Birch Garden

11 Marilyn and James Simons Hall
- m Dining Hall (first floor)
- n Dilworth Room (first floor)

12 Building D
13 ECP Building (225 S. Olden Lane)
- o Crossroads Nursery School
- p Fitness Center
- q Business Office

14 310 S. Olden Lane
15 320 S. Olden Lane
16 Olden Farm (97 Olden Lane)
17 Modular Office Space

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