

# IAS

INSTITUTE FOR  
ADVANCED STUDY



Faculty and Members  
2015–2016

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

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# Introduction

FROM THE DEVELOPMENT of programmable computers and the uncovering of the deep symmetries of nature to advances in societal understanding and historical practice, long and complex chains of knowledge have developed in numerous and astounding ways through research originating at the Institute for Advanced Study for eighty-five years.

Work at the Institute takes place across historical studies, mathematics, natural sciences, and social science. Currently, a permanent Faculty of some thirty eminent academics each year award fellowships to some two hundred visiting Members, from about one hundred universities and research institutions throughout the world. The Institute's reach has been multiplied many times over through the more than seven thousand Members who have influenced entire fields of study as well as the work and minds of colleagues and students. Thirty-three Nobel Laureates and forty-one out of fifty-six Fields Medalists, as well as many winners of the Wolf and MacArthur prizes, have been affiliated with the Institute.

Each year a new intellectual mix is created by the Members, ranging from young postdoctoral fellows to distinguished senior professors, who typically stay a year but may stay up to five years and return for subsequent visits throughout their careers. A period spent as a Member is often a lifechanging experience. Young scholars meet the contemporaries who, with them, will be leading figures in their field in the future. Senior Members have the time and freedom to initiate new lines of research. Freed from teaching and administration, Members are afforded opportunities for discussing their work with scholars and scientists from other fields. Here they are given the time to take advantage of serendipitous encounters at lunch, teatime, or at After Hours Conversations, an interdisciplinary program to encourage wide-ranging conversations in an informal and relaxed environment.

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. Yet the Institute's remarkable history does not seem to weigh heavily on current scholars and scientists. Instead, the atmosphere focuses on the present, where every twist and hairpin bend changes our view. What do we know? What do we yet need to understand? How should we try to comprehend it?



Located in Princeton, New Jersey, the Institute is a private, independent academic institution. Unlike universities, it has neither tuition nor intellectual property income, and its independence and excellence have been almost fully reliant on philanthropy. Founded in 1930 by brother-and-sister philanthropists Louis Bamberger and Caroline Bamberger Fuld, the Institute was established through the vision of founding Director Abraham Flexner. It was Flexner's belief that if the Institute

eschews the chase for the useful, the minds of its scholars will be liberated, they will be free to take advantage of surprises, and someday an unexpected discovery, apparently leading nowhere, will be found to be an indispensable link in a long and complex chain that may open new worlds in theory and practice.

Flexner's vision has been maintained by his successors Frank Aydelotte (1939), J. Robert Oppenheimer (1947), Carl Kaysen (1966), Harry Woolf (1976), Marvin L. Goldberger (1987), Phillip A. Griffiths (1991), and Peter Goddard (2004). In July 2012, Robbert Dijkgraaf became the Institute's ninth Director.

At the Institute, everything is designed to encourage scholars to take their research to the next level. This includes creating and sustaining an environment where Members live in an academic village of apartments, originally designed by Marcel Breuer in 1957, at the edge of the Institute's eight hundred acres of campus, woodland, and farmland. Members eat in the same dining hall, share common rooms and libraries, and carry out their work in an institutional setting where human scale has been carefully maintained to encourage the sharing of ideas, mutual understanding, and friendship.



### **Robbert Dijkgraaf**

*Director and Leon Levy Professor*

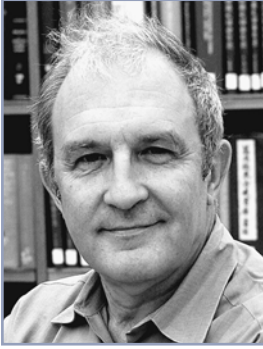
Robbert Dijkgraaf is a leading mathematical physicist who has made significant contributions to string theory and the advancement of science education. He has identified deep connections between particle physics and mathematics, as well as between different areas of mathematical physics. His work has influenced understanding of string theory in low dimensions, topological strings, the dynamics of supersymmetric gauge theories, and the quantum states of black holes. A distinguished public policy adviser and passionate advocate for science and the arts, Dijkgraaf previously served as President of the Royal Netherlands Academy of Arts and Sciences (2008–12) and has been Co-Chair of the InterAcademy Council since 2009.

# School of Historical Studies

*Administrative Officer: Marian Gallagher Zelazny*

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, but rather supports all learning for which historical methods are appropriate. The School embraces a historical approach to research 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 Far Eastern civilizations, with emphasis on Greek and Roman civilization, the history of Europe (medieval, early modern, and modern), the Islamic world, and East Asia. The School has also supported scholars whose work focuses on other regions, including Central Asia, India, Africa, and the Americas.

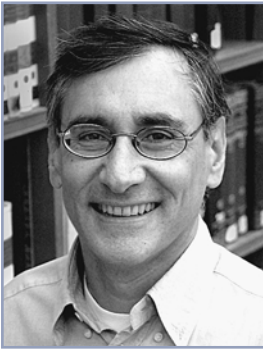
The Faculty and Members of the School do not adhere to any one point of view but practice a range of methods of inquiry and scholarly styles, both traditional and innovative. Uniquely positioned to sponsor work that crosses conventional departmental and professional boundaries, the School actively promotes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



### Yve-Alain Bois

*Professor · Art History*

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



### 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, and identity. He is interested in previously unexplored aspects of the ancient world in a dialogue with other disciplines.



### Nicola Di Cosmo

*Luce Foundation Professor in East Asian Studies · East Asian Studies*

Nicola Di Cosmo's research focuses on the relations between China and Inner Asia from prehistory to the early modern period. He is interested in the history and archaeology of China's northern frontiers, cultural contacts between China and Central Asia, and the military, political, and social history of Chinese dynasties of Inner Asian origin. 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.

## FACULTY

**Patrick J. Geary***Professor · Medieval History*

Patrick 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. Many of his essays and books remain standard literature in the field and have been translated in multiple languages. He has directed the St. Gall Plan Project, an Internet-based initiative funded by the Andrew W. Mellon Foundation that provides tools for the study of Carolingian monasticism. 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 cemeteries in Hungary and in Italy.

**Jonathan Haslam***George F. Kennan Professor · International Relations*

Jonathan Haslam is a leading scholar on the history of thought in international relations and the Soviet Union whose work builds a bridge between historical studies and the understanding of contemporary phenomena through critical examinations of the role of ideology. His studies of Soviet foreign policy are expansive in their quality and range, demonstrating his keen originality of thought, supported by insightful and comprehensive archival research.

**Jonathan Israel***Andrew W. Mellon Professor · Modern European History*

Jonathan Israel's work is concerned with European and colonial history from the Renaissance to the eighteenth century. His recent work focuses on the impact of radical thought (especially Spinoza, Bayle, Diderot, and 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.

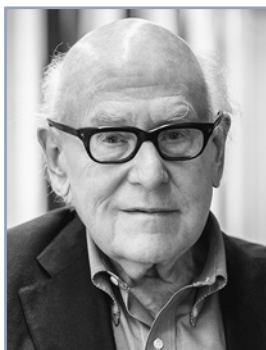




### **Sabine Schmidtke**

*Professor · Islamic Intellectual History*

Sabine Schmidtke is a scholar of Islamic intellectual history whose research has transformed perspectives about 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 postclassical period (thirteenth to nineteenth centuries) 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 Spain. She is also engaged in a comprehensive study of the Muslim reception of the Bible, a topic on which she has published extensively.



### **Glen W. Bowersock**

*Professor Emeritus · Ancient History*

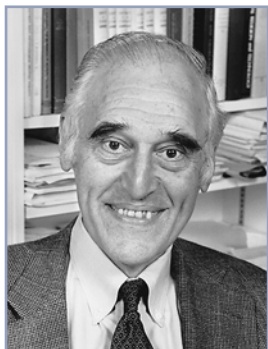
Glen Bowersock is an authority on Greek, Roman, and Near Eastern history and culture as well as the classical tradition in modern literature. The author of numerous important volumes and articles, he uses his exceptional knowledge of classical texts in many languages, together with inscriptions, coins,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



### **Caroline Walker Bynum**

*Professor Emerita · European Medieval History*

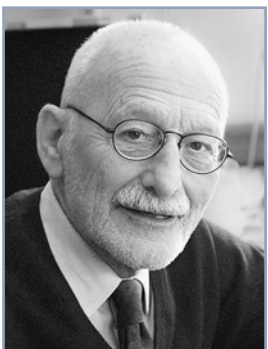
Caroline Bynum studies the social, cultural, and intellectual history of Europe from the early Middle Ages to the early modern period. Her books have explored women's religious movements, the history of the body, the role of sacrifice in religion, and the materiality of late medieval art and devotion in its social context. She is currently working on a comparison of Western and non-Western pieties and on the significance of religious objects in women's monastic houses in Germany before and after the Protestant Reformation.

**Giles Constable***Professor Emeritus · Medieval History*

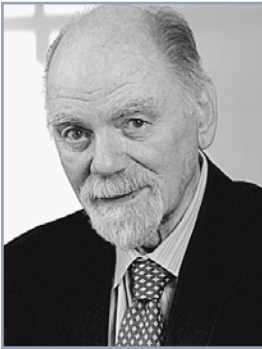
The medievalist Giles Constable is the author or editor of more than twenty books in the area of medieval religious and intellectual history concerning, among other subjects, the origins of monastic tithes, Peter the Venerable, the people and power of Byzantium, medieval religious and social thought, the reformation of the twelfth century, Renaissance Florence as seen through the case of Antonio Rinaldeschi, twelfth-century crusading, the history of Cluny, and the fourteenth-century crusading propagandist William of Adam. A work on the California Gold Rush is forthcoming, and he is at work on a short book on early medieval monasticism.

**Christian Habicht***Professor Emeritus · Ancient History*

Christian Habicht is among the leading historians of the Hellenistic period. He is an authority on Greek epigraphy and on the history of Athens between Alexander the Great and Augustus. He has published books on the Hellenistic ruler-cults, on the Maccabees, on Cicero, and on Pausanias. He has edited hundreds of previously unpublished inscriptions from important sites in Greece and Asia Minor. To a new bilingual edition of Polybius, he contributed the introduction and explanatory notes; six volumes were published in 2010–12. An updated English edition of his doctoral dissertation, submitted in German in 1951, is scheduled to be published as “Divine Honors for Mortal Men in Greek Cities: The Early Cases” by Michigan Classical Press.

**Irving Lavin***Professor Emeritus · Art History*

Irving Lavin is one of America's most distinguished art historians. He has written extensively on the history of art from late antiquity to modern times, including numerous studies on Italian painting, sculpture, and architecture of the Renaissance and Baroque periods. His interests have focused primarily on the correlation between form and meaning in the visual arts. The first two volumes of a projected six-volume edition of his collected works have been published as *Visible Spirit: The Art of Gianlorenzo Bernini* (2007–09), while the third volume has appeared as *Bernini at St. Peters: The Pilgrimage* (2012). A gathering of his essays on modern art has appeared in Italian as *L'Arte della storia dell'arte* (2008).



### Peter Paret

*Professor Emeritus* · Modern European History

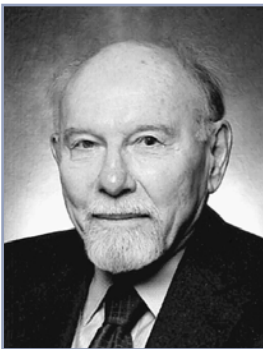
Peter Paret is a cultural and intellectual historian with particular interest in the interaction of war and society since the eighteenth century, how historians integrate war with their interpretation of other historical forces, and the relationship between tradition and modernism in the art of nineteenth and twentieth-century Europe. His most recent books are *Myth and Modernity: Ernst Barlach's Drawings on the Nibelungen* (2012), written with Helga Thieme, which discusses a modern interpretation of a medieval myth as a document of German history in the 1920s and '30s, and *Clausewitz and His Time* (2014), essays in the cultural and intellectual history of thinking about war.



### 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. to the fifth century A.D. Drawing on a wide range of scientific, philosophical, and religious sources, he has contributed to the transformation of the history of ancient science and medicine, particularly of the Hellenistic period. His current research is on the role of animals in ancient scientific theories and practices, on genres of scientific and medical literature in antiquity, and on the “semantics of matter” in ancient science and medicine.



### Morton White

*Professor Emeritus* · Philosophy and Intellectual History

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

## MEMBERS AND VISITORS



### Wendi Adamek

*Chinese Buddhism* · University of Calgary  
*The Starr Foundation East Asian Studies Endowment Fund Member*

Wendi Adamek is researching a sixth-century Chinese text on buddha-nature soteriology that uses the Nirvana-sūtra characterization of *nirvāṇa* as permanence, joy, self, and purity. Her work approaches this rubric and its instantiations as important historical artifacts that contribute to contemporary investigation into theories of agency and efficacy.



### Gianfranco Agosti

*Greek Epigrams in Late Antiquity* · Università degli Studi di Roma, La Sapienza · s  
*Funding provided by the Patrons' Endowment Fund*

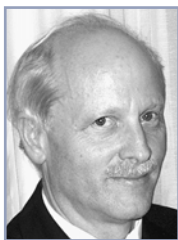
Gianfranco Agosti is pursuing a comprehensive study of the social and cultural role of inscriptional Greek poetry in late antiquity. He plans to reexamine inscriptional poems as literature, considering their social role as vehicles of display and diffusion of learning in the urban space of late antique Eastern Mediterranean cities.



### Hassan Farhang Ansari

*Intellectual and Legal Studies* · Institute for Advanced Study  
*Elizabeth and J. Richardson Dilworth Fellow*

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



### Jeffrey Barash

*History of Political Thought* · Université de Picardie Jules Verne, Amiens  
*Friends of the Institute for Advanced Study Member*

Jeffrey Barash's project concerns the genesis and historical transformations of political myth in its specifically modern forms. It aims to elucidate the plastic character of myth and of its political articulations throughout the modern period in order to identify the unique significance and ongoing potency of myth in our time.



### Marisa Bass

*Renaissance Art* · Washington University in St. Louis  
*Funding provided by the Herodotus Fund*

Marisa Bass is writing a microhistory of the Dutch Revolt and its impact on the art and intellectual culture of the later sixteenth-century Netherlands. Her study centers around the artist Joris Hoefnagel, his itinerant career, his encyclopedic inquiry into the natural world, and his psychological response to wartime upheaval.



## MEMBERS AND VISITORS



### **Sarah Bassett**

*Late Roman and Byzantine Art* · Indiana University  
*Funding provided by The Andrew W. Mellon Foundation*

Sarah Bassett plans to study the concept of style in the late antique visual arts. She will first explore the definition of that style as it emerged in nineteenth-century intellectual and artistic circles, and then examine ancient approaches to this material as evidenced in late antique literary sources.



### **Joshua Billings**

*Classics* · Princeton University · s

Joshua Billings is investigating drama and intellectual culture in Athens at the end of the fifth century B.C.E. His book project considers links between tragedy and comedy on one hand, and currents in philosophy, rhetoric, and historiography on the other, in relation to concepts of enlightenment.



### **Thomas Biskup**

*Political History, History of Science* · University of Hull  
*Gerda Henkel Stiftung Member*

Thomas Biskup's project combines the history of political culture and the history of science to examine a global web of exchanges and dependencies in the field of natural history, which linked Germany, Britain, and parts of America, Africa, and Asia in the eighteenth century. Britain's European and transoceanic interconnections will be highlighted, as will the patterns by which Germans interacted with the extra-European world.



### **Mark Evan Bonds**

*Aesthetics and Philosophy of Music* · University of North Carolina at Chapel Hill  
*Edward T. Cone Member in Music Studies*

Perceptions of the relationship between a composer's works and innermost self have changed radically since the Enlightenment. The Romantic paradigm of music as emotional autobiography contrasts starkly with earlier and later understandings of expression as artifice. Mark Bonds is examining the cultural, philosophical, and economic forces that have driven these changes.



### **Courtney Booker**

*Carolingian History, History of Drama* · The University of British Columbia

## MEMBERS AND VISITORS



*Funding provided by the Fund for Historical Studies*

Courtney Booker's research investigates the awareness and understanding of drama in the early Middle Ages—a period allegedly devoid of formal theater, but highly sensitive to affectation and enactment, and urgently concerned with discerning the interior, scrutinizing conscience, and finding truth. He plans to explore the prevailing function of ancient drama in this early medieval forensic pursuit.



### Stephen Burnett

*Early Modern Jewish History* · University of Nebraska–Lincoln  
*Elizabeth and J. Richardson Dilworth Fellow*

Stephen Burnett is working on a book that focuses on arguments presented in Luther's three polemical treatises from 1543—*On the Jews and their Lies*, *On the Ineffable Name*, and *On the Last Words of David*—and Luther's intended purpose in writing these works, taken in the context of his career and the politics of the time.



### Daniela Caglioti

*Modern European History* · Università degli Studi di Napoli Federico II · *f*

*Elizabeth and J. Richardson Dilworth Fellow*

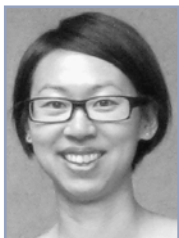
Daniela Caglioti is preparing a transnational history of the treatment of enemy aliens during and in the aftermath of the First World War. In particular, her project will explore the ways in which nation and ethnicity affected citizenship and property rights.



### Matthew Canepa

*Ancient Iranian Art and Archaeology* · University of Minnesota · *s*

Matthew Canepa is working on a multivolume project on art, architecture, and landscapes of power in ancient Iran. At IAS, he plans to research the transformation of the Iranian royal image between Alexander and Islam.



### Janet Chen

*History of Modern China* · Princeton University  
*Frederick Burkhardt Fellowship funded by the American Council of Learned Societies*

Janet Chen's current research focuses on the creation of a spoken national language in China and Taiwan. Her project explores how ordinary people learned to speak "Mandarin" and how the multiple realities of a national language intersected with their lives.

## MEMBERS AND VISITORS



### Wen-Shing Chou

*Buddhist Art and Architecture* · Hunter College, The City University of New York

*The Andrew W. Mellon Foundation Fellowships for Assistant Professors*

Wen-shing Chou is examining the transcultural artistic and literary productions surrounding the sacred mountain range of Wutai Shan in northern China during the Qing dynasty, when the mountain range became a unique site of shared religious devotion, diplomacy, and trade among the multiethnic constituents of the empire.



### Albrecht Diem

*Medieval Monastic Studies* · Syracuse University

Albrecht Diem is investigating the role of normative texts in organizing and ordering closed communities and shaping collective identities. He plans to focus on the development of Western monasticism between the fifth and ninth centuries and particularly on the corpus of roughly thirty monastic rules produced in this period.



### Carolyn Eichner

*Women/Gender in Modern Europe and Empire* · University of Wisconsin–Milwaukee

Carolyn Eichner works on feminism and radical politics in nineteenth-century France and empire. Her current project examines the name as a site of political engagement and of personal and collective identity. It explores the evolution of state and customary naming regulations, and subject populations' navigations of these restrictions.



### Nahyan Fancy

*Premodern Islamic Science and Medicine* · DePauw University · *f*  
*Ralph E. and Doris M. Hansmann Member*

Nahyan Fancy is working on the theoretical and practical sections of eleven Arabic medical commentaries produced between 1200 and 1520 in Islamic societies. These commentaries have been ignored thus far by medical historians. His project aims not only to chart the evolution of medical discussions over the three centuries, but also to situate them within the intellectual, institutional, and social contexts of these societies.



### Rozaliya Garipova

*Islamic History* · University of Pennsylvania · *f*  
*Funding provided by the Fund for Historical Studies*

Rozaliya Garipova's research focuses on Muslim communities of the Volga-Urals in the Russian Empire. She will be investigating the transformation of Islamic law and religious authority in this region during the nineteenth century.

## MEMBERS AND VISITORS



### Eric Goldberg

*Early Medieval Europe, Late Antiquity* · Massachusetts Institute of Technology

*George William Cottrell, Jr., Member*

Eric Goldberg studies the history of early medieval Europe and the Carolingian Empire. At IAS, he will research hunting and identity in the Frankish world, from 312 to 987 C.E.



### Bryna Goodman

*Modern Chinese History* · University of Oregon · s

*The Starr Foundation East Asian Studies Endowment Fund Member*

Bryna Goodman is examining Chinese understandings of economics and culture, from early translations of Western economics to a 1921 financial bubble and its aftermath. Her project will map the translation of finance capitalism in theory and practice, and show how economic information and new political and financial institutions took shape in everyday consciousness.

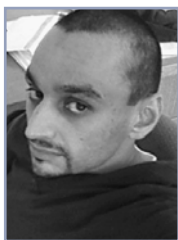


### Margaret Graves

*History of Islamic Art* · Indiana University, Bloomington

*Funding provided by the Herodotus Fund*

Margaret Graves is exploring the intellectual and representational functions of ornament in the plastic arts of the medieval Islamic world. She plans to investigate the use of architectural forms and motifs on three-dimensional objects.



### Christine Guth

*Material Culture and Design History* · Royal College of Art · f

*Funding provided by The Andrew W. Mellon Foundation*

Christine Guth's current research seeks to better understand early modern Japanese society (1600–1868) through the lens of material culture. Her study will explore how the meanings of things, and changing attitudes toward materials and materiality, were constructed in dynamic relationship to the physical properties of materials and changing technologies.



### Najam Haider

*Islamic Studies* · Barnard College · s

*Edwin C. and Elizabeth A. Whitehead Fellow*

Najam Haider studies the links between Islamic historical writing and the Classical rhetorical tradition. Muslim historians depicted events, whose broad parameters were well-known, in a rhetorical manner, making them relevant to contemporaneous circumstances. This maneuver was understood by an audience that accepted a degree of narrative flexibility in historical writing.

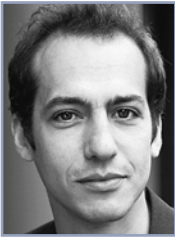




### Julia Hairston

*Early Modern Italian Literature* · University of California, Rome · s  
Felix Gilbert Member; additional funding provided by the Hans Kohn Membership Fund

Julia Hairston's research focuses on gender in early modern Italy. At IAS, she will be writing an intellectual biography of Tullia d'Aragona, a sixteenth-century writer, musician, philosopher, and courtesan.



### Matthew Hopper

*African History* · California Polytechnic State University, San Luis Obispo · f  
William D. Loughlin Member

Matthew Hopper studies the history of slavery and the African diaspora in the Indian Ocean. He is researching the history of liberated Africans captured at sea by the British Royal Navy in the western Indian Ocean between 1858 and 1888 and relocated to seven outposts between Bombay and Cape Town.



### Paulin Ismard

*Ancient Greek History* · Université Paris 1 Panthéon-Sorbonne  
The Gladys Krieble Delmas Foundation Member

Paulin Ismard plans to examine legal aspects of chattel slavery in Greek cities during the classical and Hellenistic periods. Drawing upon recent studies in anthropology and history that have expanded our understanding of slavery structures, he aims to explore economic roles and legal structures related to slavery in order to further illuminate the great complexity of Greek civic societies during these periods.



### Willem Jongman

*Roman History, Economic History* · University of Groningen · f  
Funding provided by The Andrew W. Mellon Foundation

The Roman Empire was the largest economic system the world had ever seen, and remained so for many centuries. At IAS, Willem Jongman is examining the following questions: how do we measure the Empire's economic performance, and how do we explain its successes and failures?



### Hodong Kim

*History of the Mongol Empire* · Seoul National University  
Funding provided by the Fund for Historical Studies

Hodong Kim is exploring a new perspective on the history of the Mongol Empire (ca. 1206–1388), focusing on its unity and expansiveness. By also emphasizing the Mongol perception of the empire, he hopes to overcome regional perspectives, whether they be Chinese, Islamic, or European.

## MEMBERS AND VISITORS



### Michael Kulikowski

*Late Antiquity/Early Middle Ages* · The Pennsylvania State University  
*Funding provided by the Fund for Historical Studies*

Michael Kulikowski is a historian of the later Roman Empire, working on the second of a four-volume history and commentary on the Latin chronicle tradition from its beginnings to the sixth century C.E. At IAS, he will be researching the earliest chronicles, calendars, fasti, and consularia (annotated and unannotated consular lists respectively).



### Michael Kunichika

*Russian and Soviet Culture* · New York University  
*Willis F. Doney Member; additional funding provided by the Herodotus Fund*

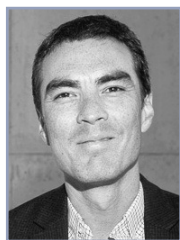
Michael Kunichika pursues interdisciplinary approaches to the study of Russian and Soviet literature and culture, with a particular focus on the modernist period and the cinema of the silent era. His project will examine a range of discursive and visual materials—from novels, films, art historical accounts, and cartographic practices—in considering the values ascribed to archaeology in late socialist culture.



### Rhodri Lewis

*Literary and Intellectual History* · University of Oxford  
*Willis F. Doney Member*

At IAS, Rhodri Lewis plans to complete work on an edition and translation of Francis Bacon's early philosophical writings. Written all but exclusively in Latin, these texts comprise the first drafts of the systematic reform of natural philosophy and logic that Bacon would propose in his *Instauratio Magna* (1620), the most famous portion of which is the *Novum Organum*.



### Eugenio Menegon

*Late Imperial China* · Boston University · *f*  
*Agnes Gund and Daniel Shapiro Member*

Eugenio Menegon is reconstructing the political networking, economic infrastructure, and daily life of European missionary scientists and technicians at the Qing court in the long eighteenth century. This research contributes to a deeper understanding of the informal dimension of court politics, and of the global connections between the Qing court, the Catholic missions, and the maritime networks centered on Macao and Canton.



### Jason Moralee

*Late Antiquity* · University of Massachusetts, Amherst  
*The Gladys Krieble Delmas Foundation Member*

Jason Moralee studies the physical and imaginative transformations of memorial spaces. His project examines the multiple afterlives of Rome's Capitoline Hill from the third to the twelfth century and what these can tell us about the formation and transmission of knowledge about the Roman cityscape in late antiquity and beyond.



### Negin Nabavi

*Modern Iranian History* · Montclair State University · s  
Elizabeth and J. Richardson Dilworth Fellow

Negin Nabavi's project explores the shaping of publics and public spheres in the context of late nineteenth- and early twentieth-century Iran. It focuses on a range of public spaces that emerged in Iran as part of an unfolding modernity, and examines how they came to be and changed over time.



### Martti Nissinen

*Assyriology, Biblical Studies* · University of Helsinki · s

Martti Nissinen is investigating the social, political, economic, and religious role and impact of the Western population (Aramean, Phoenician, Israelite, and others) in the Assyrian mainland during the Neo-Assyrian period (ninth through seventh century B.C.E).



### Giuseppe Pezzini

*Latin Literature* · University of Oxford · s  
Funding provided by the Fund for Historical Studies

Giuseppe Pezzini is preparing an edition of the *Self-Tormentor* by Terence, for centuries a most popular Latin playwright. An African by birth, Terence's work is an early attempt at providing Rome with a literature to compete with Greece's, as well as containing brilliant character portrayals and raising universal questions about the relationship between generations and cultures.



### Andrea Piras

*Iranian Studies* · Università Degli Studi Di Bologna · s  
Funding provided by the Fund for Historical Studies

Andrea Piras's project deals with Manichaeism and focuses on reconstructing a pattern of uses of religious images involving therapeutic aims. The use of images is a characteristic of Manichaean book art and points to an early Gnostic background of symbolic visualizations and didactic implications.



### Maurice Pomerantz

*Arabic Literature/Cultural History* · New York University Abu Dhabi  
The Andrew W. Mellon Foundation Fellowships for Assistant Professors

Maurice Pomerantz is writing a literary history of Arabic picaresque tales. His research examines how the imaginary itineraries of these tales' rogue characters reflect the intellectual, social, and economic networks of Muslim merchants in North Africa, the Middle East, and South Asia from the eleventh to the nineteenth century C.E.

**Eric Ramírez-Weaver***Medieval Art History · University of Virginia**The Andrew W. Mellon Foundation Fellowships for Assistant Professors*

Eric Ramírez-Weaver specializes in the joint histories of medieval art and astronomy. This year, he is studying Bohemian visualizations of the heavens, drafting a study of astrology, cosmology, and philosophy in late medieval Prague, while exploring how books at Wenceslas IV's court pictorialized strategies of knowledge, power, and control.

**Camille Robcis***Intellectual History · Cornell University · s**AMIAS Member*

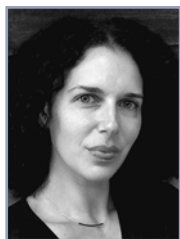
Camille Robcis is writing a history of institutional psychotherapy, a psychiatric reform movement born after World War II. Anchored in Marxism and in Lacanian psychoanalysis, institutional psychotherapy advocated a radical restructuring of the asylum, shaping clinics throughout the world and influencing thinkers and activists such as François Tosquelles, Jean Oury, Félix Guattari, Frantz Fanon, and Georges Canguilhem.

**Felipe Rojas***Classical Archaeology · Brown University**The Andrew W. Mellon Foundation Fellowships for Assistant Professors*

Felipe Rojas will be completing a book that deals with how and why people in the past imagined their own past through the physical and intellectual manipulation of material remains. Specifically, he examines the interactions of the inhabitants of Greek and Roman Anatolia with objects, monuments, and landscapes from the Bronze and Iron Ages.

**Maria de Lurdes Rosa***Medieval/Early Modern European History · Universidade Nova de Lisboa · f*  
*Funding provided by the Herodotus Fund*

Maria de Lurdes Rosa plans to examine largely unknown or unstudied archival materials from noble/elite families dating from the fourteenth through the nineteenth centuries, in order to reconstruct “documentary information” that will shed light on aspects of these families’ lives, including wealth management, inheritance conflicts, literacy, and symbolic practices.

**Els Rose***Medieval Latin, Medieval Liturgy · Utrecht University · f**Funding provided by the Herodotus Fund*

Els Rose studies medieval liturgical practices, specifically the language of prayer in the early medieval West. At IAS, she plans to examine the evidence of liturgical sources to study Christian corporate prayer in the interplay of word and ritual and to explore the dynamics of ritual literacy in this period.





### Rebekah Rutkoff

*Cinema Studies · Institute for Advanced Study*

*Funding provided by the Fund for Historical Studies*

Rebekah Rutkoff's research explores the crossroads of cinema studies, theories of magic, and ancient and contemporary discourses about dreaming and cure. She is currently writing about the American avant-garde filmmakers Robert Beavers and Gregory Markopoulos.



### Emmanuelle Saada

*Law and Colonialism · Columbia University · f*

*Hans Kohn Member*

Emmanuelle Saada's research concerns the invention of the "native" in Algeria and, more broadly, in the French Empire throughout the nineteenth century. This investigation will show that the couplet "European" and "Native" was the product of a fifty-year process of categorization in which law played the central role.

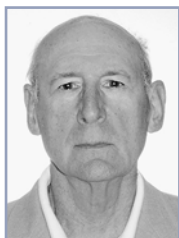


### Carlo Scardino

*Graeco-Arabica · Heinrich-Heine-Universität Düsseldorf*

*Martin L. and Sarah F. Leibowitz Member*

Carlo Scardino is researching the process of cultural transfers between Greco-Roman late antiquity and early medieval Arabic culture. The goal of this research is the completion of a critical edition with translation of the Arabic translations of Anatolius Berytius's Greek agricultural compilation (fourth to fifth century C.E.), whose Greek original is lost.



### Daniel Smail

*History and Anthropology of Medieval Southern Europe · Harvard University · s*

*Friends of the Institute for Advanced Study Member*

Daniel Smail works on the history and anthropology of Mediterranean societies between 1100 and 1600. This year, he is developing a "documentary archaeology" of later medieval Europe, using postmortem inventories and other sources for material culture.



### Paul Smith

*Chinese History · Haverford College · f*

*Funding provided by the Herodotus Fund*

Paul Smith studies the intersection of war and politics in China from the first major Sino-Tangut war of 1040 to Yue Fei's execution in 1142. His project highlights the impact on literati control and the rise of military entrepreneurs through successive wars of necessity (the 1040s), choice (1068–1125), and desperation (1127–1142).

## MEMBERS AND VISITORS



### Mingwei Song

*Modern Chinese Literature* · Wellesley College · s

*Elizabeth and J. Richardson Dilworth Fellow*

Mingwei Song plans to explore the political, aesthetic, ethical, and epistemological connotations of the posthuman, a central literary motif in twenty-first-century Chinese fiction, particularly science fiction, which challenges the conventional ideas of humanity, culture, and technology.



### Deborah Steiner

*Classics/Ancient Greek Literature* · Columbia University · f

*Funding provided by the Hetty Goldman Membership Fund*

Deborah Steiner's current research explores two aspects of chorality in the archaic and early classical Greek literary and visual sources: first, the paradigmatic choruses deployed by poets and artists to depict singing and dancing ensembles; and second, the technological, architectural, and religious practices on which these representations drew.



### Noël Sugimura

*History of Enlightenment Cultures* · Georgetown University



*Funding provided by the Herodotus Fund*

Noël Sugimura's current research focuses on John Milton and eighteenth-century literature and culture. It explores how, on the one hand, early eighteenth-century English readers of Milton sought to contain the dangerous radicalism to which Milton's poetry tends, and how, on the other, their response to the aesthetics of the poetry inadvertently proved destructive to the clerical conservatism that their readings otherwise promoted.



### Kenneth Swope

*Chinese Military and Social History* · University of Southern Mississippi · f

*Funding provided by the Patrons' Endowment Fund*

Kenneth Swope's project focuses on the traumatic Ming-Qing dynastic transition in seventeenth-century China by examining the peasant rebel Zhang Xianzhong's reign of terror in Sichuan province. Using rare contemporary materials and applying techniques from trauma and memory studies and anthropology, Swope will provide a detailed narrative analysis of these events and how they have been remembered.



### Meredith Terretta

*African History, Law and Transnational Activism* · University of Ottawa  
*Louise and John Steffens Founders' Circle Member*

In her current project on transnational legal and humanitarian activism in Africa from the 1920s to the 1970s, Meredith Terretta focuses on the ways activist lawyers invoked international and humanitarian law to claim rights for colonial populations under European administration, particularly in League of Nations mandate and United Nations trust territories.



### Stephen Tracy

*Greek History and Epigraphy* · The American School of Classical Studies at Athens · *v*

Stephen Tracy is helping English and Australian colleagues prepare a new edition of Athenian decrees of the late fourth to third century B.C.E. He is also working on Athenian letter cutting of the second half of the fifth century B.C.E. and on the hands of the so-called "Athenian Tribute Lists."



### John Tresch

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

John Tresch is studying Edgar Allan Poe's writings on science and technology. In the 1830s and 40s, scientific reformers forged centralized, explicitly imperial institutions to put down quackery and build the United States' technical infrastructure, while in the press and popular forums, unruly, heterodox visions of knowledge and nature flourished. Poe's natural philosophy and fiction illuminate these worlds.



### Karina Urbach

*Modern International Relations and Jewish Family History* · University of London · *v*

Karina Urbach works on the role of elites in the international relations of Europe in the first half of the twentieth century. Her new project focuses on the impact that former Nazis had on German society after 1945.



### William Van Andringa

*Roman Archaeology and Religion in Late Antiquity* · Université Lille 3 · *s*  
*Funding provided by the Florence Gould Foundation Fund*

Starting from the results of recent excavations that show important changes in the pagan sanctuaries of the Roman West, even before the conversion of Constantine and the rise of Christianity to official religion, William Van Andringa plans to reassess the fundamental problem of religious transformations in late antiquity.

## School of Mathematics

*Administrative Officer: Mary Jane Hayes*

THE SCHOOL OF MATHEMATICS, established in 1933, was the first School at the Institute for Advanced Study. Oswald Veblen, Albert Einstein, John von Neumann, and Hermann Weyl were the first Faculty appointments. Kurt Gödel, 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 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 seventy-five years owe their major impetus to discoveries that took place at the Institute. As an example, the creation of one of the first stored-program computers, which von Neumann built on the Institute's campus, influenced the development of today's computers and formed the mathematical basis for computer software.

Ian Agol of the University of California, Berkeley, will be the School's Distinguished Visiting Professor during the 2015–16 academic year. Agol will lead a special program on geometric structures on 3-manifolds. The goal of the program is to investigate further the recent advances connected to such structures and to understand better relations between them.

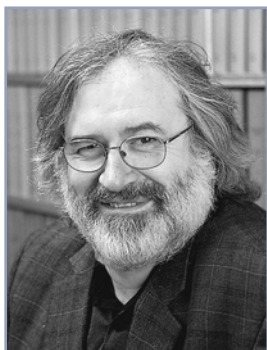
Other programs associated with the School are the Institute for Advanced Study/Park City Mathematics Institute (PCMI), an innovative program integrating mathematics research and mathematics education, and the Program for Women and Mathematics, jointly sponsored with Princeton University, which brings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



### Jean Bourgain

*IBM von Neumann Professor*

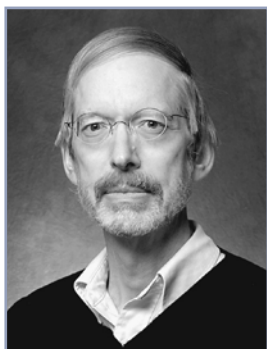
Jean Bourgain's work touches on many central topics of mathematical analysis: the geometry of Banach spaces, harmonic analysis, ergodic theory, spectral problems, and nonlinear partial differential equations from mathematical physics and combinatorial number theory. His contributions have solved longstanding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



### Helmut Hofer

*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."



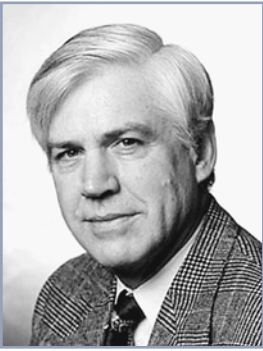
### Robert MacPherson

*Hermann Weyl Professor*

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

**Peter Sarnak***Professor*

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*

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 also has 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.

**Richard Taylor***Robert and Luisa Fernholz Professor*

A leader in the field of number theory and in particular Galois representations, automorphic forms, and Shimura variations, Richard Taylor, with his collaborators, has developed powerful new techniques for use in solving longstanding problems, including the Shimura-Taniyama conjecture, the local Langlands conjecture, and the Sato-Tate conjecture. Currently, Taylor is interested in the relationship between  $l$ -adic representations for automorphic forms—how to construct  $l$ -adic representations for automorphic forms and how to prove given  $l$ -adic representations that arise in this way.





### Vladimir Voevodsky

*Professor*

Vladimir Voevodsky is known for his work in the homotopy theory of schemes, algebraic K-theory, and interrelations between algebraic geometry and algebraic topology. He made one of the most outstanding advances in algebraic geometry in the past few decades by developing new cohomology theories for algebraic varieties. Among the consequences of his work are the solutions of the Milnor and Bloch-Kato conjectures. Currently, he is interested in type-theoretic formalizations of mathematics and automated proof verification. He is working on new foundations of mathematics based on homotopy-theoretic semantics of Martin-Lof type theories.



### Avi Wigderson

*Herbert H. Maass Professor*

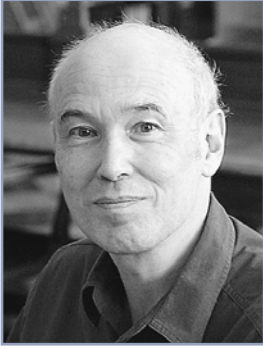
Avi Wigderson is a widely recognized authority in the diverse and evolving field of theoretical computer science. His main research area is computational complexity theory. This field studies the power and limits of efficient computation and is motivated by such fundamental scientific problems as: Does  $P=NP$ ? (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*

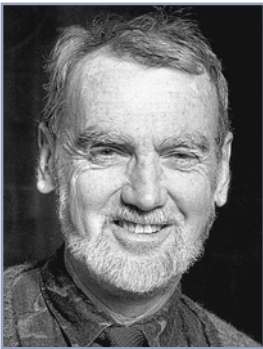
Enrico Bombieri, a Fields Medalist for his work on the large sieve and its application to the distribution of prime numbers, is one of the world's leading authorities on number theory and analysis. His work ranges from analytic number theory to algebra and algebraic geometry, and the partial differential 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 on how to solve equations and inequalities in integers and rational numbers.

**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 chairs 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 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. He has spent some of his time in recent years studying lattice models of statistical physics and the attendant conformal invariance.

## MEMBERS AND VISITORS



### Karim Alexander Adiprasito

*Combinatorics in Algebra, Geometry, and Topology* · Institute for Advanced Study · *s*

*Funding provided by the National Science Foundation*

Karim Adiprasito is interested in the topology of subspace arrangements, the generalization and application of Stanley–Reisner theory, and deformation spaces of combinatorial objects (including framework rigidity and the relation to toric algebraic geometry).



### Ian Agol

*3-Manifold Topology* · University of California, Berkeley · *dvp*

*Funding provided by the Charles Simonyi Endowment*

Ian Agol studies 3-manifold topology principally in relation to hyperbolic geometry.



### Benedikt Ahrens

*Univalent Foundations* · Institute for Advanced Study

*Funding provided by the National Science Foundation*

Benedikt Ahrens is interested in logic, category theory, and the formalization of mathematics in computer proof assistants. During his stay at the IAS, he will work on models of type theory in univalent foundations.



### Noga Alon

*Combinatorics* · Tel Aviv University · *vp, f*

Noga Alon is working on questions in discrete mathematics and theoretical computer science. His current research focuses on problems in extremal and probabilistic combinatorics, information theory, combinatorial number theory, and discrete probability. At the Institute, he plans to combine combinatorial tools with algebraic and probabilistic techniques.



### Nils A. Baas

*Algebraic Topology, Systems Biology* · Norwegian University of Science and Technology · *s*

Nils Baas plans to study higher structures in topology and geometry, especially related to cobordism categories and higher categories. In systems biology, he plans to study topological analysis of biological data.

## MEMBERS AND VISITORS



### Christopher Beck

*Mathematics · Institute for Advanced Study*

*Funding provided by the National Science Foundation*

Christopher Beck has published on time-space tradeoffs in proof systems and sampling lower bounds for circuits. At IAS, his research deals with proving lower bounds against proofs and circuits of various kinds, as well as some other models of computation.



### Valentin Blomer

*Number Theory · Georg-August-Universität Göttingen · *vnf**

*Funding provided by the National Science Foundation*

Valentin Blomer is an analytic number theorist with a strong interest in the arithmetic, analytic, and geometric aspects of automorphic forms. He plans to continue his work on automorphic forms for higher rank groups and their associated L-functions. His more arithmetic interests include points of bounded height on algebraic varieties.



### Danny Calegari

*3-Manifolds, Group Theory, Dynamics · The University of Chicago · *f**

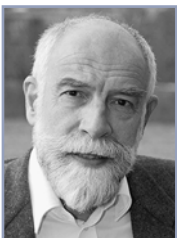
*Funding provided by the Ellentuck Fund and the Oswald Veblen Fund*

Danny Calegari is interested in extremal problems in topology and how their solution often comes from geometry—either hyperbolic geometry (negative curvature) or symplectic geometry (causal structures).



## MEMBERS AND VISITORS





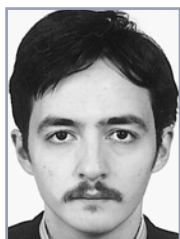


## MEMBERS AND VISITORS





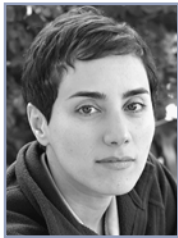
## MEMBERS AND VISITORS





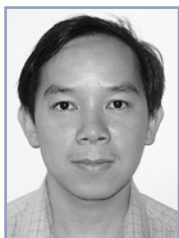
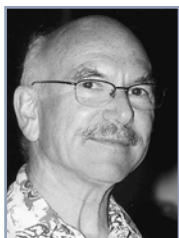
## MEMBERS AND VISITORS







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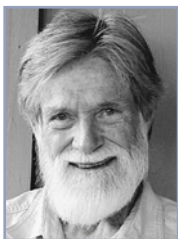




## MEMBERS AND VISITORS



MEMBERS AND VISITORS





## MEMBERS AND VISITORS



# School of Natural Sciences

*Administrative Officer: Michelle Sage*

*Executive Director and Administrator*

*The Simons Center for Systems Biology: Suzanne P. Christen*

THE SCHOOL OF NATURAL SCIENCES, established in 1966, provides a unique atmosphere for research in broad areas of theoretical physics, astronomy, and systems biology.

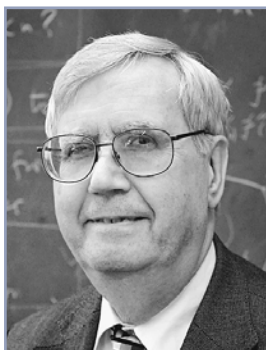
From its earliest days, the Institute has been a leading center for fundamental physics, contributing substantially to many of its central themes, which now interrelate with mathematics, astrophysics, and biology. Members in the astrophysics research group employ an array of tools from theoretical physics, 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. This collaborative and pioneering approach to the sciences, which extends to the Institute's School of Mathematics, Princeton University, The Rockefeller University, and the larger scientific community, has transformed research in these fields and presents opportunities for powerful and important discoveries.

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, and in some cases focusing on understanding disease processes.

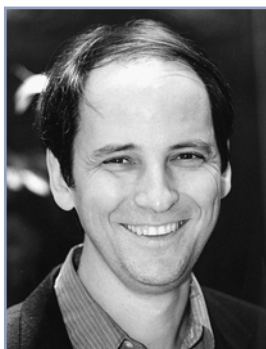
The School also sponsors Prospects in Theoretical Physics, a two-week residential summer program held at the Institute for promising graduate students and postdoctoral scholars, who attend lectures and sessions on the latest advances and open questions in the field of theoretical physics.

**Nima Arkani-Hamed***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.

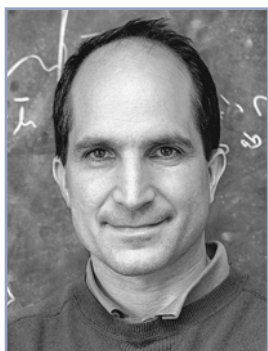
**Peter Goddard***Professor · Mathematical Physics*

Peter Goddard's research concerns quantum field theory and string theory. With his collaborators, he has made pioneering contributions to these areas, including string quantization and its consistency, 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, he was Master of St. John's College and Professor of Theoretical Physics in the University of Cambridge, England, where he played a leading role in establishing the Isaac Newton Institute for Mathematical Sciences and the University of Cambridge Centre for Mathematical Sciences.

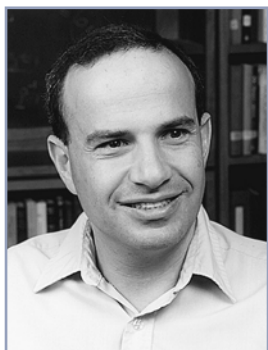
**Stanislas Leibler***Professor · Biology*

Stanislas Leibler has made important contributions to theoretical and experimental biology, successfully extending the interface between physics and biology to develop new solutions and approaches to problems. Interested in the quantitative description of microbial systems, both on 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.

## FACULTY

**Juan Maldacena***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***Professor · Mathematical Physics*

Nathan Seiberg's research focuses on various aspects of string theory, quantum field theory, and particle physics. His work has shed light on the worldsheet description of string theory as a two-dimensional conformal field theory and its space-time manifestations. Seiberg has contributed to the understanding of the dynamics of quantum field theories, especially supersymmetric quantum field theories. His exact solutions of such theories have uncovered many new and unexpected insights, including the fundamental role of electric-magnetic duality in these theories. These exact solutions have led to many applications in physics and in mathematics. He has also clarified how supersymmetry can be dynamically broken, and has explored the phenomenological consequences of supersymmetry breaking. These consequences will be tested at the Large Hadron Collider.

**Scott Tremaine***Richard Black Professor · Astrophysics*

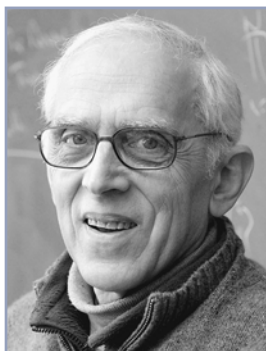
Scott Tremaine has made seminal contributions to understanding the formation and evolution of planetary systems, comets, black holes, star clusters, galaxies, and galaxy systems. He predicted the Kuiper belt of comets beyond Neptune and, with Peter Goldreich (Professor Emeritus, School of Natural Sciences), 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***Charles Simonyi Professor · Mathematical Physics*

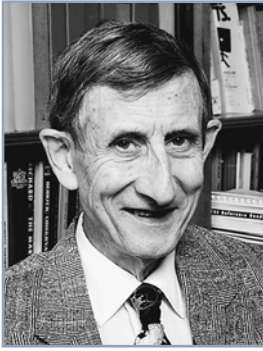
Edward Witten's work exhibits a unique combination of mathematical power and physics insight, and his contributions have significantly enriched both fields. He has greatly contributed to the modern interest in superstrings as a candidate theory for the unification of all known physical interactions.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

**Matias Zaldarriaga***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, the faint glow of radiation generated by the Big Bang. His recent research has focused on intergalactic hydrogen gas in the early universe, and he is at the forefront of developing machinery to study this gas using the spectral line from neutral hydrogen at 21-centimeter wavelength.

**Stephen L. Adler***Professor Emeritus · Particle Physics*

In a series of remarkable, difficult calculations, Stephen Adler demonstrated that abstract ideas about the symmetries of fundamental interactions could be made to yield concrete predictions. The successful verification of these predictions was a vital step toward the modern Standard Model of particle physics. In some of his more recent work, he has been exploring generalized forms of quantum mechanics, both from a theoretical and a phenomenological standpoint. He has developed new algorithms for multidimensional numerical integration, and is currently exploring a particle unification model based on boson-fermion balance without full supersymmetry.



### Freeman J. Dyson

*Professor Emeritus · Mathematical Physics and Astrophysics*

Freeman Dyson's work on quantum electrodynamics marked an epoch in physics. The techniques he used in this domain form the foundation for most modern theoretical work in elementary particle physics and the quantum many-body problem. He has made highly original and important contributions to an astonishing range of topics, from number theory to adaptive optics. His most recent research, in collaboration with William Press of the University of Texas, found new strategies for Prisoners' Dilemma, a game used by population biologists as a model for the evolution of cooperation.



### 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 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 and heads the Simons Center for Systems Biology at the Institute, which concentrates on research at the interface of molecular biology and the physical sciences: on genetics and genomics, polymorphisms and molecular aspects of evolution, signal transduction pathways and networks, stress responses, and pharmacogenomics in cancer biology.



### Victor Alexandrov

*Biology* · Institute for Advanced Study  
*Starr Foundation Member in Biology*

Victor (Vitya) Alexandrov is interested in several topics in biophysics, especially evolutionary biology and big data problems. He plans to work on topological approaches to evolutionary networks.



### Dionysios Anninos

*Quantum Gravity* · Institute for Advanced Study  
*Funding provided by the National Science Foundation*

Dionysios Anninos is studying how holographic notions are applied to cosmological spacetimes such as an expanding universe. He also studies the structure of black holes, as well as geometries containing multiple, fragmented horizons. Both subjects have curious connections to the physics of glasses, which he is currently exploring.



### Valentin Assassi

*Astrophysics* · University of Cambridge  
*Infosys Member*

Valentin Assassi's research focuses on the physics of inflation and its implication for cosmological observations today. He is also interested in the large-scale structure of the universe and using the effective field theory principles to describe structure formation on large scales.



### Tobias Baldauf

*Cosmology* · Institute for Advanced Study  
*AMIAS Member; additional funding provided by the National Science Foundation*

Tobias Baldauf aims to use the large-scale structure of the universe to provide answers to fundamental questions in physics. In particular, he is trying to understand how matter distribution evolves from linear initial conditions, where galaxies form, and how fundamental physics and initial conditions imprint themselves on the final galaxy clustering pattern.



### Ben Bar-Or

*Astrophysics* · Weizmann Institute of Science  
*Funding provided by the National Science Foundation and NASA*

Ben Bar-Or is interested in the statistical mechanics of stellar systems, particularly in the context of Keplerian systems such as nuclear star clusters and planetary systems.



## MEMBERS AND VISITORS



### Christopher John Beem

*Theoretical Physics · Institute for Advanced Study*

*Frank and Peggy Taplin Member; additional funding provided by the National Science Foundation*

Christopher Beem studies quantum field theory and string theory, with an emphasis on the geometric structures that play a role in each. His present work includes the application of conformal bootstrap techniques to superconformal field theories.



### Timothy David Brandt

*Astrophysics · Institute for Advanced Study*

*NASA Exoplanet Science Institute Carl Sagan Fellowship*

Recent technological advances enable us to directly image the most massive exoplanets around nearby young stars. Timothy Brandt is studying the hardware and image processing needed to see smaller and fainter planets, and ultimately, another Earth. He also plans to use statistics to constrain these exoplanets' properties and demographics.



### Gustavo Burdman

*Particle Physics · Universidade de São Paulo*

*Funding provided by The Ambrose Monell Foundation*

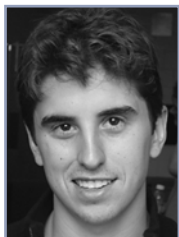
Gustavo Burdman is researching extensions of the Standard Model of particle physics that can solve some of the theory's problems, including the origin of flavor, the hierarchy problem, and the nature of dark matter. He is currently studying quantum field theories that can be obtained from the deconstruction of extradimensional theories, in order to apply them to model-building in particle physics.



### John Joseph M. Carrasco

*Particle Physics · Stanford University*

John Carrasco's interests are broad: from formal questions involving the UV finiteness of quantum field theories of gravity through sharp phenomenological questions involving next-generation cosmic microwave background and large-scale structure observations. He plans to pursue all of these at IAS, with some concentration on looking for the algebra governing the emergence of the color-kinematic duality of gauge theories.



### Clay Cordova

*Theoretical Physics · Harvard University · m*

*Schmidt Fellow; supported by Eric and Wendy Schmidt and the U.S. Department of Energy*

Clay Cordova works on quantum field theory and mathematical physics with connections to related topics in string theory and geometry. His current focus is supersymmetric field theories in diverse dimensions.



### Raffaele Tito D'Agnolo

*Particle Physics* · Institute for Advanced Study

*Marvin L. Goldberger Member; additional funding provided by the U.S. Department of Energy*

Raffaele D'Agnolo's research interests cover different aspects of particle phenomenology and experimental high-energy physics, including Higgs and flavor physics, supersymmetry, and collider searches at high jet multiplicities.



### Liang Dai

*Cosmology* · Johns Hopkins University

*NASA Einstein Fellowship Program*

Liang Dai is studying the phenomenology of the large-scale structure of the universe and the various cosmic objects it consists of, and how they can be used to make inferences about the physics of the very early universe. The focus of his recent research includes modeling and quantification of the nonlinear dynamics of the large-scale structure, gravitational lensing, and possible probes of gravitational waves.

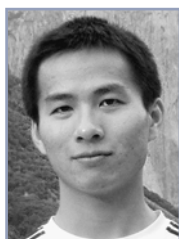


### Neal Dalal

*Astrophysics* · University of Illinois · *jvp, f*

*Funding provided by The Ambrose Monell Foundation*

Neal Dalal's work is mainly in cosmology, with a focus on the formation of cosmic structure on both large scales and small scales. At IAS, he plans to investigate neutrino effects on large-scale structure, cosmic voids, and gravitational lensing.



### Xi Dong

*Theoretical Physics* · Stanford University

*Zurich Financial Services Member*

Xi Dong's research interests range from formal questions in quantum gravity and quantum field theory to phenomenological aspects of particle physics and cosmology. He is currently exploring the connection between quantum entanglement and emergent spacetime, especially in the context of better understanding the holographic duality between string theory and quantum field theories.



### Maxime Gabella

*Theoretical Physics* · Institute for Advanced Study

Maxime Gabella's research is about a correspondence that arises in string theory between supersymmetric gauge theories and the geometry and topology of 3-manifolds.

**Abhijit Gadde***Theoretical Physics* · Institute for Advanced Study*Roger Dashen Member; additional funding provided by the National Science Foundation*

Abhijit Gadde is interested in understanding strongly coupled quantum field theories as well as conformal field theories. Most of his work has focused on exact computations in supersymmetric field theories. The interplay of physics and mathematics fascinates him.

**Vera Gluscevic***Cosmology, Astrophysics* · Institute for Advanced Study*Funding provided by the W. M. Keck Foundation Fund*

Vera Gluscevic's research focuses on using the cosmic microwave background to test physical theories, including those invoked to explain dark energy and inflation. She is also investigating a range of other topics, such as the direct detection of dark matter, probes of reionization, and the origins of magnetic fields in the universe.

**David A. Huse***Theoretical Condensed Matter Physics, Statistical Physics* · Princeton University*Addie and Harold Broitman Member in Biology*

David Huse is studying the quantum many-body physics of ultracold atoms, both in and out of equilibrium, many-body localization at nonzero temperature, and other topics in phase transitions and quantum and classical statistical physics.

**Shinta Kobayashi***Biology* · Chugai Pharmaceutical Co., Ltd., Japan · *v*

Shinta Kobayashi works on cancer and stem cells. He plans to establish stem cell-derived cancer organoid models that have the potential to improve preclinical testing and validation of anti-tumor drugs.

**Juna Kollmeier***Theoretical Astrophysics* · Carnegie Observatories, Carnegie Institution of Science and Princeton University · *jvp*

Juna Kollmeier's research focus is on cosmology and cosmic structure formation, including black holes, stars, galaxies, and intergalactic gas. She will continue to work on these themes at the Institute, and she plans for her research to take new and unexpected directions in its uniquely stimulating intellectual environment.

**David Kosower**

*Quantum Field Theory, Particle Physics* · Saclay Nuclear Research Centre

*Funding provided by The Ambrose Monell Foundation*

David Kosower's research is centered on scattering amplitudes in quantum field theories and in quantum chromodynamics in particular. He works on unitarity-based techniques for computing scattering amplitudes, and on applying them to computing background processes in experiments at the Large Hadron Collider.

**Dmitry Krotov**

*Biology* · Institute for Advanced Study

*Charles L. Brown Member in Biology*

Dmitry Krotov is a physicist studying various problems in theoretical and computational biology. The central theme that runs through his research is the impact of microscopic noise on the collective properties of biological systems at the “network” level. He is interested in both purely theoretical problems and data-motivated questions.

**Doron Kushnir**

*Astrophysics* · Institute for Advanced Study

*John N. Bahcall Fellow*

Doron Kushnir's areas of interest include a number of problems within the field of high-energy astrophysics and, in particular, deflagration-to-detonation transitions in supernova explosions of type Ia and non-thermal processes in galaxy clusters.

**Sangmin Lee**

*Quantum Field Theory, String Theory* · Seoul National University

*IBM Einstein Fellow*

Sangmin Lee is studying dualities in string theory, M-theory, and quantum field theory. His recent work concerns geometry of scattering amplitudes, holography of 3d-3d correspondence, and quantum field theories on branes probing toric Calabi-Yau cones.

**Jennifer Lin**

*Particle Physics* · The University of Chicago

*Schmidt Fellow; supported by Eric and Wendy Schmidt and the U.S. Department of Energy*

Jennifer Lin is interested in quantum field theory, string theory, and quantum gravity. Recently, she has been studying quantum entanglement and its implications for gauge/gravity duality. She is also interested in supersymmetric gauge theory.

## MEMBERS AND VISITORS



### Matthew Low

*Particle Physics* · The University of Chicago  
*The Peter Svennilson Membership*

Matthew Low works on various topics within particle physics, including collider physics, dark matter, and supersymmetry. His research interests center on understanding the physics at the weak scale via the Large Hadron Collider but also extend to general properties of quantum field theories.



### Marta Luksza

*Biology* · Institute for Advanced Study · *ra*  
*Janssen Fellow*

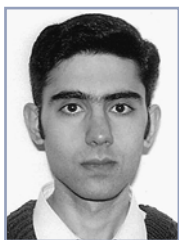
Marta Luksza is interested in questions at the interface of computer science, information theory, and biology. She is studying the evolution of viruses to understand the patterns of adaptation on the genetic and phenotypic levels.



### Carlos Mafra

*String Theory* · University of Cambridge  
*Funding provided by the National Science Foundation and the Paul Dirac Fund*

Carlos Mafra's research is focused on the computation of superstring scattering amplitudes at higher genus and higher multiplicity. In particular, he is using new superspace techniques based on the pure spinor formulation to try to uncover the underlying simplicity of string amplitudes and their field-theory counterparts.



### Mehrdad Mirbabayi

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

Mehrdad Mirbabayi's research focuses on theoretical cosmology using the effective field theory approach.



### Tejaswi Venumadhav Nerella

*Cosmology, Astrophysics* · California Institute of Technology  
*Schmidt Fellow; supported by Eric and Wendy Schmidt and the Fund for Memberships in Natural Sciences*

Tejaswi Nerella's primary research lies in cosmology. He aims to study the physical principles underlying futuristic probes, such as the 21-cm signal from cosmic dawn and the epoch of reionization, in order to shed light on both the practical challenges involved and their potential applications for studying the early universe.

## MEMBERS AND VISITORS



### Hirosi Ooguri

*Particle Physics* · California Institute of Technology · *vp, f*

Hirosi Ooguri works on quantum field theory, quantum gravity, and string theory.



### James Owen

*Astrophysics* · Institute for Advanced Study

*Space Telescope Science Institute Hubble Fellow*

James Owen is interested in star and planet formation, particularly the interaction between the parent star, the planet forming disc, and planets themselves. His research plans include understanding exoplanet structure and evolution along with the final stages of planet formation.



### Luca Peliti

*Biology* · Sezione di Napoli, Istituto Nazionale di Fisica Nucleare

*Martin A. and Helen Chooljian Member in Biology*

Luca Peliti works on the physical processes of thermodynamic equilibrium based on information handling that relate to the basic workings of life—maintenance, growth, and reproduction. He plans to exploit the recent progress in nonequilibrium statistical mechanics to obtain a more fundamental understanding of their behavior from a physical point of view.



### David Poland

*Particle Physics* · Yale University · *jvp*

*Martin A. and Helen Chooljian Founders' Circle Member*

David Poland's research is focused on quantum field theory and its connection to particle physics, condensed matter physics, and quantum gravity. He has pioneered the use of an approach called the conformal bootstrap for constraining and solving conformal field theories in general dimensions.



### Pavel Putrov

*Theoretical Physics* · California Institute of Technology

*Funding provided by the U.S. Department of Energy*

Pavel Putrov is interested in obtaining exact results in supersymmetric gauge theories. One of the directions that he plans to explore further at IAS is the relation between d-dimensional geometry and the physics of superconformal field theories in 6-d dimensions, arising from compactifications of fivebranes on d-manifolds.



## MEMBERS AND VISITORS



### Roman Rafikov

*Astrophysics* · Princeton University · *jvp*

*IBM Einstein Fellow; additional funding provided by The Ambrose Monell Foundation*

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



### Loganayagam Ramalingam

*Particle Physics* · Institute for Advanced Study

*Funding provided by the U.S. Department of Energy*

Loganayagam Ramalingam's research is in theoretical high-energy physics, including string theory, black hole physics, and quantum field theory, with a focus on real-time, finite temperature quantum field theory.

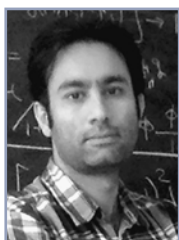


### Mauricio Romo

*String Theory* · University of Tokyo

*Funding provided by the U.S. Department of Energy*

Mauricio Romo's current research lies at the interface between physics and mathematics. He has been focusing on two-dimensional field theories associated to the quantum geometry of compact Calabi-Yau manifolds and, recently, on three-dimensional theories related to invariants of 3-manifolds and knots.



### Yasser Roudi

*Statistical Physics, Statistical Inference, Theoretical Biology* · Norwegian University of Science and Technology

*Starr Foundation Member in Biology*

Yasser Roudi's research focuses on the principles of information processing and their relation to statistical mechanics and biological implementation. An organism's survival depends on the successful processing of environmental signals. Understanding the mechanisms that underly this and how they have been formed through evolution is the focus of Roudi's work at IAS.



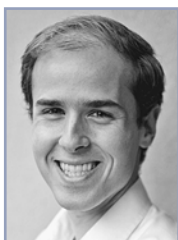
### Kris Sigurdson

*Particle Astrophysics, Cosmology* · University of British Columbia · *jvp*

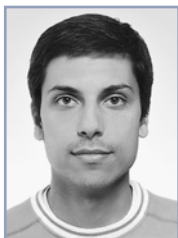
*Friends of the Institute for Advanced Study Member*

Kris Sigurdson's research spans diverse topics in cosmology, particle physics, and astrophysics, including dark matter, baryogenesis, cosmological perturbations, cosmic microwave background, 21-cm fluctuations, and all-sky radio interferometry. At the Institute, he plans to focus on developing frameworks to include realistic models of dark matter physics into calculations of cosmological and astrophysical observables.



**David Simmons-Duffin***Particle Physics* · Institute for Advanced Study · *m**William D. Loughlin Member; additional funding provided by the U.S. Department of Energy*

David Simmons-Duffin's work concerns conformal field theories in diverse dimensions, with an interest in both their phenomenological applications and their implications for quantum gravity.

**Marko Simonović***Cosmology* · Institute for Advanced Study*Funding provided by the Raymond and Beverly Sackler Foundation Fund*

Marko Simonović is researching different aspects of theoretical cosmology, including inflation, primordial non-Gaussianities, and large-scale structure. At IAS, he plans to focus on the study of large-scale structure as a tool to investigate statistics of the initial conditions and possible modifications of gravity.

**Douglas Stanford***Theoretical Physics* · Institute for Advanced Study*Funding provided by the Simons Foundation*

Douglas Stanford is studying quantum gravity, quantum field theory, and string theory. He has worked on the AdS/CFT description of black hole interiors and the relationship to chaotic dynamics in quantum field theory.

**Rashid Sunyaev***Astrophysics* · Max-Planck-Institut für Astrophysik · *vp**Maureen and John Hendricks Visiting Professor*

Rashid Sunyaev has made major contributions in the fields of physical cosmology and high-energy astrophysics. His current research interests include the cosmological recombination of hydrogen and helium, the physics of gas accretion onto neutron stars and black holes, the problem of matter, and radiation interaction under extreme astrophysical conditions.

**Tsvi Tlusty***Biology* · Institute for Advanced Study · *m*

Tsvi Tlusty is interested in what distinguishes living matter from the lifeless and looking at living systems as evolvable molecular information processors. He is focusing on how the function of proteins as information channels that operate under distinct biochemical constraints may explain the unique physical properties of this state of matter.

## MEMBERS AND VISITORS



### Yuko Urakawa

*Cosmology* · Nagoya University · *v, f*

Yuko Urakawa works on cosmology and quantum field theory, particularly the physics of the early universe. She studies the infrared issues of primordial perturbations. She is also interested in exploring a possible way to holographically describe the de Sitter space.



### Aron Wall

*Particle Physics, Gravity* · Institute for Advanced Study

*Martin A. and Helen Chooljian Member; additional funding provided by the National Science Foundation*

Aron Wall studies the thermodynamics of black holes and other horizons, mostly by proving theorems that connect gravity to information theory. He would like to find out what to postulate about the microstates of quantum gravity in order to get these thermodynamics principles to arise naturally.



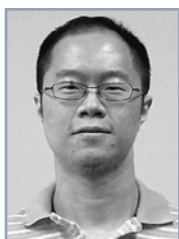
### Juven Chun-Fan Wang

*Theoretical Physics* · Massachusetts Institute of Technology · *s*



*Schmidt Fellow; supported by Eric and Wendy Schmidt and the National Science Foundation*

Juven Wang's research concerns the emergence-reductionism interplay between condensed matter and high-energy physics. Inspired by the physical problems from exotic entangled quantum matter, he investigates the statistical and geometrical properties that emerge from both quantum and classical many-body systems, reconciling the issues of symmetry, topology, anomalies, lattice and strong interactions.



### Xiao-Gang Wen

*Theoretical Condensed Matter Physics* · Perimeter Institute for Theoretical Physics · *s*

Xiao-Gang Wen is working on strongly correlated electronic systems, which include the theory of highly entangled quantum systems, the mathematical foundation of many-body entanglements, the theory of high temperature superconductors, the theory of quantum Hall effect and non-Abelian statistics, and the origin and unification of elementary particles.

## MEMBERS AND VISITORS



### BingKan Xue

*Biology* · Institute for Advanced Study

*Eric and Wendy Schmidt Member in Biology*

BingKan Xue works in systems biology and studies evolutionary dynamics and adaptation mechanisms from a theoretical perspective. He is interested in the phenomena of phenotypic variations and transgenerational inheritance among biological populations in response to changing environments.



### Masahito Yamazaki

*Particle Physics* · Institute for Advanced Study

*Funding provided by the Adler Family Fund*

Masahito Yamazaki is working on theoretical high-energy physics, particularly supersymmetric gauge theories and string theory. Recently, he has been studying exact results in supersymmetric gauge theories and their mathematical structures.



### Ellis Ye Yuan

*Theoretical Physics* · Perimeter Institute for Theoretical Physics

*Funding provided by the Corning Glass Works Foundation Fellowship Fund and the U.S. Department of Energy*

Ellis Yuan is interested in string theory and quantum field theory. His current research focuses on general aspects of the scattering amplitudes and the mathematical structures therein.

### Nadia Zakamska

*Astrophysics* · Johns Hopkins University · *jvp, s*

*Deborah Lunder and Alan Ezekowitz Founders' Circle Member*

Nadia Zakamska's research interests range from extrasolar planets to extragalactic astronomy. Most recently, she has been working on supermassive black holes, their formation and evolution, and their role in galaxy formation.

# School of Social Science

*Administrative Officer: Donne Petito*

FOUNDED IN 1973, THE SCHOOL OF SOCIAL SCIENCE takes as its mission the analysis of contemporary societies and social change. It is devoted to a pluralistic and critical approach to social research from a multidisciplinary and international perspective.

The School operates under the guiding principles of informality and collegiality and with a shared understanding that the social sciences are not to be narrowly defined. Each year, the School brings together scholars with various perspectives, methods, and topics, providing a space for intellectual debate and mutual enrichment. Scholars are drawn from a wide range of fields, notably political theory, economics, law, psychology, sociology, anthropology, history, philosophy, and literature, to examine historical and contemporary problems.

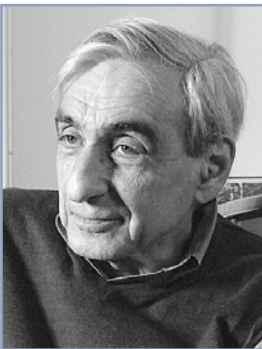
Each year, the School designates a theme, which is neither exclusive nor excluding. The theme for the 2015–16 academic year is “Borders and Boundaries.” The external limits of territories (borders) and the internal delimitations within societies (boundaries) have long been thought of in different terms: immigration, nationality, and citizenship in the first case; racial, ethnic, religious, caste, and class differentiation in the second. If globalization has hardened rather than abolished borders, it has also produced new realities and anxieties concerning social boundaries. The immigrants of yesterday have often become the minorities of today. Whether one considers the parallel rise of xenophobia and Islamophobia in Europe, the links between undocumented immigrants and Latino politics in North America, the conflicts between neighboring countries involving oppressed minorities in Asia, the repression of ethnic or religious groups in Africa, or the transnational circulation of terrorist networks, the reconfiguration of borders and boundaries in both war and peace raises anew classical problems of state formation, nation-building, and social contract. Under the direction of Professor Didier Fassin, scholars in the School will explore a range of related questions, including: How to analyze the continuities and discontinuities in the making of borders and boundaries? How to interpret contemporary insecurities concerning immigration and identities in relation with economic and cultural tensions? How to envisage the consolidation of racial, ethnic, and religious differences in a context of transnational circulation of goods and people? How are class and gender inequalities recomposed in the changing patterns of the nation-state? How do public policies, political parties, social movements, and non-governmental organizations address these issues? Scholars invited to work on this theme, or outside of it, come from higher education institutions of the six continents.

**Didier Fassin***James D. Wolfensohn Professor*

Didier Fassin is an anthropologist and a sociologist who has conducted fieldwork in Senegal, Ecuador, South Africa, and France. Trained as a physician in internal medicine and public health, he dedicated his early research to medical anthropology, illuminating important dimensions of the AIDS epidemic, mortality disparities, and global health. More recently, he has developed the field of critical moral anthropology, which explores the historical, social, and political signification of moral forms involved in everyday judgment and action as well as in the making of international relations. He is currently conducting an ethnography of the state, through a study of police, justice, and prison, and analyzes the possible contribution of the social sciences to a public debate regarding security, punishment, immigration, and inequality.

**Joan Wallach Scott***Professor Emerita*

Joan Scott's groundbreaking work has challenged the foundations of conventional historical practice, including the nature of historical evidence and historical experience and the role of narrative in the writing of history. Her recent books have focused on the vexed relationship of the particularity of gender to the universalizing force of democratic politics. More 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.

**Michael Walzer***Professor Emeritus*

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



### Ari Adut

*Sociology* · The University of Texas at Austin

Ari Adut is working on a book that proposes a new explanation for the violent radicalization of the French Revolution. The project also has general implications for the social and political dynamics unleashed in times of state breakdown.



### Angel Aedo

*Anthropology* · Pontificia Universidad Católica de Chile

Angel Aedo's project focuses on the experiences of immigrants on Chile's northern border, examining how care and control initiatives (deployed through government programs and non-governmental organizations) place a population of immigrants as both dangerous and endangered. These experiences at the edges, where social boundaries and territorial borders intertwine, can become pivotal instances of putting "forms of life" to the test.



### Tugba Basaran

*Political Science* · University of Kent · *v*

Tugba Basaran's research centers on security, violence, and law, specifically in relation to fundamental rights, borders, and social boundaries. Her previous work focused on border controls and the legal geographies of liberal democracies. Her current project analyzes techniques of governing collective indifference to human suffering.



### Linda Bosniak

*Law, Legal Theory* · Rutgers, The State University of New Jersey

Linda Bosniak is a legal theorist who has written about conceptions of justice in various citizenship and transnational migration settings. Her current work on irregular migrants in liberal states analyzes questions of whether, and how, irregular migrants can be said to have committed a wrong against the state, and in turn how an assessment of "wrongness" bears on claims made on behalf of immigrants' rights.



### Serguey Braguinsky

*Economics, Development, Industry Behavior* · Carnegie Mellon University

## MEMBERS AND VISITORS



*Roger W. Ferguson, Jr., and Annette L. Nazareth Member*

While we know that poor institutions are the main culprits behind economic failures, the most promising way of understanding how nations succeed appears to be studying the interaction between technological opportunity, human capital, market demand, and institutional rules governing rent appropriation. Serguey Braguinsky is using detailed “nanoeconomic” data from Meiji-era Japan to examine this issue.



**David Ciepley**

*Political Theory and Intellectual History · University of Denver*

*Frederick Burkhardt Fellowship funded by the American Council of Learned Societies*

David Ciepley’s research challenges the reclassification of corporations over the past two centuries from “bodies politic” to private enterprises—a legal status that exempts them from any duty to, accountability to, or even publicity to the public, and that endows them with legal rights and protections that they ought not to have.



**Brian Connolly**

*History · University of South Florida*

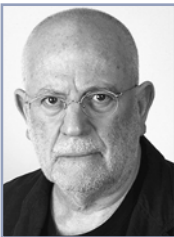
Brian Connolly is researching kinship, religion, and law in the nineteenth-century United States. Exploring six sites where kinship and religion intertwined in the context of the rise of international marriage law (representations of Hindu and Muslim kinship in India and North Africa, slave maroon communities, Mormonism, spiritualism, and ethnography), his study will offer genealogies of secularism, national sovereignty, and modernity.



**Anne-Claire Defossez**

*Sociology · Institute for Advanced Study · v*

Anne-Claire Defossez’s current work addresses the question of women’s political participation and representation by exploring the trajectory and experience of women formally involved in politics at local and national levels in France. In particular, she is analyzing how family background and personal history, as well as class, residence, and ethnicity have influenced their engagement, career, and practices in politics.



**Ilana Feldman**

*Anthropology and History · George Washington University*

*Friends of the Institute for Advanced Study Member*

Ilana Feldman’s project is based on extensive archival and ethnographic field research covering sixty-five years (from 1948 to the present) and five fields of displacement (Jordan, Lebanon, Syria, West Bank, and Gaza Strip). Exploring the complex world constituted by and through humanitarianism, her study aims to provide a comprehensive account of the Palestinian experience of living with humanitarian assistance across this full time and space.





### Chaim Gans

*Political Theory* · Tel Aviv University

Chaim Gans is studying the relationship between cosmopolitanism and nationalism implied by proprietary, hierarchical, and egalitarian types of nationalism. Under the egalitarian type, nationalism and cosmopolitanism are compatible, mutually dependent, and complementary. He plans to discuss the details of their dependence as political visions and defend a cosmopolitan account for the distribution of national/cultural rights.



### Alice Goffman

*Sociology* · University of Wisconsin–Madison

Alice Goffman's project is an ethnographic inquiry into the formation of human bonds and human identity. What are the situations that generate, sustain, and end our bonds to people and things? What are the experiences, large and small, that make us who we are? The ideas come out of field notes, but most of the examples in the text come from novels and non-fiction.

### Carol C. Gould

*Political Philosophy* · The Graduate Center, The City University of New York

Carol Gould is addressing the motivation for taking seriously the human rights and basic needs of others across borders—e.g., those affected by extreme poverty or climate change—and for standing in solidarity with them. Drawing on theories of deliberative democracy, care ethics, and social movements, her project will investigate how empathy can make reasoning more effective and recognition more inclusive.



### Abdoulaye Gueye

*Race Studies* · University of Ottawa

Abdoulaye Gueye is completing a study of racial boundaries in France, with a specific focus on blackness. This research examines the collective process by which social actors are assigned distinct racial groups, and more importantly come to understand when race is at play, and in turn convey this knowledge. It will thus unveil the behavioral and rhetorical mechanisms with which individuals teach and learn racial boundaries.



### Tod G. Hamilton

*Immigration, Health, and Race* · Princeton University

*Deutsche Bank Member*

Between 1960 and 2013, the number of black immigrants in the United States increased from approximately 125,000 to approximately 3,793,000 individuals. Tod Hamilton is working on a project that investigates the magnitude of black immigrants' health advantage, how these advantages differ among immigrants by both country of origin and arrival cohort, and whether health selection is a primary driver of observed differences in health outcomes.

**Enze Han***Political Science · University of London**Friends Founders' Circle Member*

Enze Han is looking at the process of state building and nation formation in the multiethnic borderland region in upland Southeast Asia. Utilizing an interactive theoretical framework, he plans to provide a detailed and comparative analysis of the nation and state building strategies of China, Myanmar, and Thailand, and how they influence each other during and after the Cold War periods.

**Firoozeh Kashani-Sabet***History · University of Pennsylvania*

Firoozeh Kashani-Sabet works on Middle Eastern history with a focus on Iran, the Ottoman Empire, and the Persian Gulf. Her research discusses the significance of land and border disputes in the process of identity and nation formation. She plans to complete a book that expands on her arguments about frontiers, migration, nature, and border communities in Middle Eastern modernity.

**Nannerl O. Keohane***Political Theory · Princeton University ·  $v, f$* 

Nannerl Keohane is currently researching the theory and practice of leadership in democratic societies. At IAS, she plans to work on a book about democratic leadership, with particular attention to issues of inequality, institution building, and working together for the common good.

**Monica Kim***History · New York University**AMIAS Member*

Monica Kim is working on a trans-Pacific history of decolonization told through the experiences of two generations of people creating and navigating military interrogation rooms of the Korean War. Through this prism, her study tells the story of how this U.S. and United Nations "police action" generated a new paradigm for liberal warfare—the war of intervention.

## MEMBERS AND VISITORS



### Beth Lew-Williams

*History* · Princeton University · *v*

Beth Lew-Williams is a historian of race and migration in the United States who specializes in Asian-American history. Her current project is a new history of Chinese Exclusion that maps the tangled relationships between local racial violence, federal immigration policy, and U.S. imperial ambitions in Asia.



### Duncan McCargo

*Politics* · University of Leeds · *v, f*

Duncan McCargo is writing a study of politics and justice in Thailand, which draws upon his fieldwork spent attending political trials and embedded with the Bangkok police. His work also addresses broader questions about the recent revival of notions of treason and the shortcomings of the transitional justice paradigm.



### Maurizio Meloni

*Sociology* · University of Sheffield · *v*

Maurizio Meloni is a social theorist working on the historical, conceptual, and political implications of the life-sciences, in particular, post-genomics and epigenetics. At IAS, he plans to investigate the conceptual and political implications of the new wave of biosocial studies that look at the way in which social structures shape human biology and, in the case of epigenetics, even at possible transgenerational effects.



### Francesca Merlan

*Anthropology* · Australian National University  
*Wolfensohn Family Member*

Francesca Merlan is completing a book that focuses on the relational precipitation of indigenous–nonindigenous boundaries, and their changing character over time. This study is ethnographically informed by her long-term research in northern and central Australia, and comparatively informed with particular reference to other indigenous–settler states.



### Basile Ndjio

*Anthropology* · University of Douala

Basile Ndjio is working on a project that analyzes the forging of sexual nationalism and citizenship in Cameroon. The research will focus on the construction of heterosexual subjects promoted as good citizens, and the alienation of homosexual persons construed as “alien” citizens and “uprooted” Africans.

## MEMBERS AND VISITORS



### **Paul Nugent**

*Political Science, History* · The University of Edinburgh

Paul Nugent's current research explores the way in which the state in Ghana and Uganda is being reconfigured at the margins. Starting from a comparison of state-making processes over the past hundred years, the project seeks to bring together an analysis of policy formulation covering border regions with a bottom-up appreciation of how official interventions are received, appropriated, ignored, and subverted.



### **Rhacel Salazar Parreñas**

*Sociology* · University of Southern California

*Deutsche Bank Member*

Rhacel Parreñas is researching the conditions of servitude for migrant domestic workers in Singapore and the United Arab Emirates. In both countries, migrant domestic workers lack employer or labor market flexibility. Relying on in-depth interviews with migrant domestic workers and employers, this study explores servitude so as to interrogate and define the state of being unfree in the twenty-first century.



### **Sylvain Perdigon**

*Anthropology* · American University of Beirut

*Funding provided by the Florence Gould Foundation Fund*

Sylvain Perdigon's research concerns moral selfhood, power, and kinship or "the mutuality of being" (M. Sahlins) in the Middle East. He plans to complete a book that explores how contradictory historical processes fostered by the politics of empire, nationhood, and sovereignty in the Eastern Mediterranean are refracted through everyday modes of obligation and affiliation in a Palestinian refugee community in Tyre, South Lebanon.



## Program in Interdisciplinary Studies

THE PROGRAM IN INTERDISCIPLINARY STUDIES explores different ways of viewing the world, spanning a range of disciplines from physics and astrophysics, geology, paleontology, and biology, to artificial intelligence, cognitive psychology, and philosophy. The most recent interdisciplinary focus is on questions related to origins of life and the nature of complexity. The program is headed by Professor Piet Hut.

### Piet Hut

*Professor*



One focus of Piet Hut's research is computational astrophysics, in particular multiscale multiphysics simulations of dense stellar systems. Another focus is interdisciplinary explorations in the areas of cognitive science and philosophy of science centered around questions involving the nature of knowledge. A third focus is the question of the origins of life, on Earth as well as elsewhere in the universe, for which he is a foreign Principle Investigator at ELSI, the Earth-Life Science Institute at the Tokyo Institute of Technology. The author of more than two hundred publications, Hut was honored in 2004 when a main-belt asteroid was named "17031 Piethut" by the International Astronomical Union's Committee on Small Body Nomenclature.



### Catherine Chung

*Writing* · Adelphi University ·  $\nu$ ,  $s$

Catherine Chung is researching and writing a novel that will explore math and physics, as well as history, race, gender, and war, and how seemingly distant, unrelated stories, lives, and ideas can turn out to be inextricably linked to each other.



### Henderson (Jim) Cleaves

*Chemistry* · Carnegie Institution of Washington ·  $\nu$

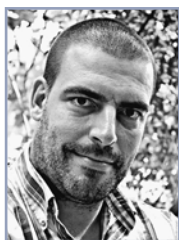
Jim Cleaves is studying the origin of life on Earth and elsewhere, specifically with the question of how chemistry becomes biology. He is interested in how simple organic compounds are produced from cosmically abundant inorganic compounds under geochemically plausible conditions, and how these compounds self-organize to form more complex and potentially self-replicating systems.



### Douglas Duckworth

*Philosophy* · Temple University ·  $\nu$

Douglas Duckworth works on the relationship between ontology and epistemology in Buddhist philosophy. He is interested in the intersections of phenomenological and ontological approaches to meaning. His research involves inquiry into the nature of subjectivity and cognition and the ways each is constituted, enacted, and constructed.



### Donato Giovannelli

*Biology* · Rutgers, The State University of New Jersey ·  $\nu$

Donato Giovannelli is interested in how life co-evolved with our planet. He is using model microorganisms from deep-sea hydrothermal vents in an attempt to reconstruct the emergence and evolution of metabolism and to better understand the interplay between the biosphere and the geosphere.



### Reiner Grundmann

*Sociology* · University of Nottingham ·  $\nu$ ,  $s$

Reiner Grundmann's current research interests are twofold. He wants to analyze the public discourse on climate change in various countries, in a comparative fashion. He is also interested in the relation between knowledge and decision making, focusing on the role of expertise in modern society.

## VISITORS



### Hyun Ok Park

*East Asian Studies* · York University ·  $\nu, f$

Hyun Ok Park is exploring the practice of comparison and the grounds for comparability in the humanities and social science. Her current book project investigates the latest return of universal politics in and beyond South Korea, which departs from both modern emancipatory and postmodern identity politics.



### Michael Th. Rassias

*Mathematical Analysis, Analytic Number Theory* · Universität Zürich ·  $\nu$

Michael Rassias's research interests lie in mathematical analysis, analytic number theory, and more specifically in exponential/trigonometric sums, zeta functions, approximation theory, functional equations, and analytic inequalities. He is also interested in the distribution of prime numbers, the analytic investigation of elliptic curves, and cryptography.



### Edwin L. Turner

*Astrophysics* · Princeton University ·  $\nu$

Edwin Turner is working on statistical biases and estimators for samples of exoplanets detected using various techniques, on the Strategic Exploration of Exoplanets and Disks with Subaru Telescope project, and on implications of complexity in cellular automata systems for the limits of reductionism, as well as related topics in the philosophy of science.



## Director's Visitors

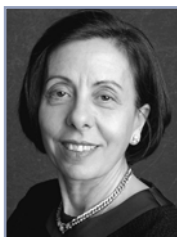
DIRECTOR'S VISITORS CONTRIBUTE MUCH to the vitality of the Institute. Scholars from a variety of fields, including areas not represented in the Schools, are invited to the Institute for varying periods of time, depending on the nature of their work.



### KC Cole

*Journalist; Professor, University of Southern California*

KC Cole writes about math, physics, and social issues, often intertwined, for most major U.S. magazines and newspapers. She also organizes an art/science/politics/whatnot series called Categorically Not!—which she'll be bringing to IAS in April. The theme of the event, as well as her research, will be real and imagined boundaries, limits, and horizons within and between disciplines; the work represents a sequel of sorts to her most recent book, a biography/memoir of her mentor, the late Frank Oppenheimer.



### Carmela Virillo Franklin

*Professor of Classics, Columbia University*

Carmela Virillo Franklin studies Latin, Greek, and Old English texts within the manuscript culture of the Middle Ages. While at IAS, she will be reconstructing the lost *Liber Pontificalis* [Book of the Popes] of the twelfth century for a critical edition to be published in the *Monumenta Germaniae Historica*.



### Marc Henneaux

*Theoretical Physicist; Professor, Université Libre de Bruxelles;  
Director, International Solvay Institutes (Brussels)*

Marc Henneaux's research interests cover gravity and quantum field theory. His current work deals with higher-spin gauge fields in three and higher spacetime dimensions, as well as the hidden infinite-dimensional symmetries of hyperbolic Kac-Moody type that have been conjectured to underlie various theories involving gravity (the most notable one being  $E(10)$  related to maximal supergravity).

## Artist-in-Residence Program

THE ARTIST-IN-RESIDENCE PROGRAM was established in 1994 to create a musical presence within the Institute community and to have in residence a person whose work could be experienced and appreciated by scholars from all disciplines. Composer Sebastian Currier continues as Artist-in-Residence, curating the Edward T. Cone Concert series and hosting conversations with artists, while pursuing his creative and intellectual work as part of the Institute's community of scholars.

### Sebastian Currier

*Composer*



Sebastian Currier is a composer of complex and imaginative works, which have been performed by such eminent artists and ensembles as Anne-Sophie Mutter, Berlin Philharmonic, Kronos Quartet, and the New York Philharmonic. A recipient of the prestigious Grawemeyer Award, Currier has received numerous honors including the Berlin Prize, the Rome Prize, a Guggenheim Fellowship, and an Academy Award from the American Academy of Arts and Letters, and he has held residencies at the MacDowell and Yaddo colonies. He received a D.M.A. from the Juilliard School, and from 1997–2007 he taught at Columbia University. In the 2015–16 season, the Boston Symphony will perform *Divisions*, a work they co-commissioned, first in Boston at Symphony Hall, and then in New York at Carnegie Hall. The Cincinnati Symphony will give the world premiere of *Flex*, a concerto for orchestra, in November.

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