The Franke Program in Science and the Humanities
Yale University

Made possible by the generosity of
Richard (’53) and Barbara Franke

Richard O. Prum
Director, The Franke Program in Science and the Humanities
William Robertson Coe Professor of Ornithology,
Ecology and Evolutionary Biology
Curator, Peabody Museum of Natural History

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William Rankin
Assistant Professor of History of Science
Gary Tomlinson
Director, Whitney Humanities Center
John Hay Whitney Professor of Music and Humanities
The Franke Program in Science and the Humanities is the realization of the creative vision and generosity of Richard (’53) and Barbara Franke. When I first met Rich during the initial process of planning the program, I was impressed by his energy and passion for bringing academic disciplines closer together and bridging the gaps in the undergraduate educational experience. The Franke Program in Science and the Humanities was the result of the Frankes’ generous gift, and it has been a pleasure to work with them and others at Yale to bring the program to life.

Specialization within academic disciplines has contributed to increasing intellectual isolation among fields within the university. Such isolation leads to misunderstanding between disciplines and missed opportunities for interdisciplinary connections that can lead to novel insights and new paths for research and thinking.

The mission of the Franke Program in Science and the Humanities is to foster communication, mutual understanding, and collaborative research and teaching among diverse scientific and humanistic disciplines. Initiated in 2012, the Franke Program has sponsored lectures, symposia, discussions, seminar classes, workshops, screenings, artistic performances, post-graduate scholars, and undergraduate research fellowships. It is a pleasure to report on our first three years.

Activities have included many memorable experiences for me and, I hope, for others in the Yale community. Among them:

- the first performance in over 150 years, by the Yale Symphony Orchestra, of a virtually “extinct” symphony written in the 1850s by the Bohemian-American composer Anthony Philip Heinrich about the passenger pigeon.

- a breakfast with Michael Pollan and Yale undergraduate writers discussing the craft and profession of non-fiction writing about food and science.

- a spellbinding lecture by Princeton physics professor Paul Steinhardt about his search in Islamic mosaics and Siberian minerals for quasicrystals brought to Earth by ancient asteroids that predate our solar system.

- a presentation by Franke Undergraduate Research Fellow Lillian Xie ’15, on the development with her advisor, biochemistry professor Andrew Miranker, of a new technique using fluorescent antibodies to distinguish authentic blue glazes in ancient Chinese pottery from modern forgeries.

- a co-sponsored colloquium by Emily Coates (Theater Studies) and Sarah Demers (Physics) about their intellectually inspiring and energetic collaboration on physics and dance.

- and many more!

One of the simplest and most powerful impacts of the Franke Program has been to bring diverse audiences together to explore ideas that span academic disciplines. These interactions lead to conversations and friendships that grow into new intellectual networks that bring different corners of the university into closer connection.

The Franke Program is particularly eager to influence undergraduate intellectual experience at Yale. Therefore, we have been proud to sponsor the ongoing Shulman Lecture series, which supports interdisciplinary undergraduate seminar courses and brings outside scholars to campus to participate in these classes. Each year we support ten Franke Undergraduate Research Fellows to conduct interdisciplinary research for their Senior Essay or Senior Research projects. Through these activities, we hope to model the new, emerging interdisciplinary world that Yale undergraduates will help create when they leave the university.

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All of our activities depend upon the intellectual inspiration and participation of the Yale community of academics, students, and curators. More than anything, I hope this report will inspire new ideas for events and programs from the Yale community. I look forward to partnering with any department, museum, library, institute, or program on campus to build new interdisciplinary connections across campus.

Since the inception of the Franke Program, the Whitney Humanities Center has provided us with extraordinary facilities, logistic and administrative support, and a strong tradition of broad intellectual outreach. Most importantly, the Whitney has been a vital partner in our mission to affect intellectual life at Yale. We are thankful to Director Gary Tomlinson and to all the Whitney Humanities Center staff for their support. During these first few years, the Franke Program has been aided immeasurably by the work of Assistant Directors Virginia Jewiss and Justin Eichenlaub. Justin has recently left to return to teaching, and I am grateful for his work in the program. To all these people I extend my sincere thanks.

The goals of the Franke Program are ambitious indeed. We aspire to support the flourishing of interdisciplinary intellectual experiences at Yale. It is clear that no university in the United States, or anywhere else in the world, has yet emerged as the premier example of intellectual progress and leadership at the interface of science and the humanities. In the coming years, the Franke Program hopes to continue to develop and grow our interdisciplinary activities at Yale and to provide a national and global example of thoughtful interdisciplinary engagement and progress.

Richard O. Prum
Director, Franke Program in Science and the Humanities
William Robertson Coe Professor of Ornithology,
Ecology and Evolutionary Biology
Curator, Peabody Museum of Natural History

Letter from the Dean
The Franke Program in Science and the Humanities, which is made possible by the generous support of Richard ('53) and Barbara Franke, has demonstrated the fruitful connections that can be made when students and professors work together across diverse disciplines. In the three years since the program’s launch, its achievements have clearly demonstrated the rewards of cross-disciplinary partnership. The program has provided essential support to the innovative and collaborative research at which Yale students and scholars excel.

The significant accomplishments of the Franke Program over the last two years would not have been possible without the dedicated and visionary leadership of its director, Rick Prum, William Robertson Coe Professor of Ornithology in the Department of Ecology and Evolutionary Biology, and Curator of Ornithology in the Peabody Museum of Natural History. Professor Prum has been able to forge new connections among humanists, scientists, and artists across campus. The deeply interdisciplinary nature of his own research and writing make Professor Prum a particularly able leader for the Franke Program, as he understands how to find and make fertile the common ground between scientific and humanistic disciplines.

I look forward to the many productive avenues into cross-disciplinary dialogue that will be opened by the Franke Program in the years to come. I encourage you to take advantage of the extraordinary opportunities to engage in innovative thought and intellectual discovery that the program offers. Your contributions to these conversations will help to continue the tradition of collaborative discovery that is so crucial to intellectual life at Yale.

Tamar Szabo Gendler
Dean, Faculty of Arts and Sciences
Vincent J. Scully Professor of Philosophy
Professor of Psychology and Cognitive Science
Letter from the WHC Director

The inaugural year of the Franke Program in Science and the Humanities, three years ago, coincided with my stepping into the directorship of the Whitney Humanities Center. It has been a singular pleasure to watch the progress of the program, so generously funded and envisaged by Rich and Barbara Franke and so creatively led by Rick Prum. I am delighted to support the program and to offer the Whitney as the venue for most of its events.

The Franke Program could not have come at a better time. The bridges it builds between scientific and humanistic thinking, at all levels of the educational mission, are important new avenues for thought. Now more than ever, the large questions that face us reach out toward the humanities and the sciences. The nature of consciousness, the evolutionary history of our species and related ones, the roles of technology in our lives, the impact of humanity on the global environment and climate, the interactions of humans with other animals, food studies and sustainability studies—all these and many more are arenas that are witnessing vibrant contributions from both humanists and scientists.

I am tempted to say that no humanities center today should stand aloof from these questions, traditionally thought of in scientific terms; but perhaps this is too prescriptive of others’ needs and agendas. At the very least, I am delighted that Yale’s humanities center has, through the Franke Program, engaged with these issues and built these bridges. And to Rick, Rich and Barbara, and the many others who have made this program a reality I offer my hearty thanks and congratulations.

Gary Tomlinson
Director, Whitney Humanities Center
John Hay Whitney Professor of Music and Humanities
LECTURES AND EVENTS

Spring and Fall 2012

January 18
*Galileo, Mathematics, and the Arts*
Mark Peterson, Professor of Physics and Mathematics, Mt. Holyoke College

November 1
*The Better Angels of Our Nature: Why Violence Has Declined*
Steven Pinker, Johnstone Family Professor in the Department of Psychology, Harvard University

November 2
*How Should We Think about Violence?*
A panel discussion with Steven Pinker and Yale professors Stephen Darwall (Philosophy), Inderpal Grewal (Women’s, Gender, and Sexuality Studies), Stathis Kalyvas (Political Science), and Laurie Santos (Psychology), moderated by Richard O. Prum

December 12
*Religion and Human Evolution*
A discussion with Robert Bellah, Elliott Professor of Sociology, University of California, Berkeley, and Yale professors Dale Martin (Religious Studies) and David Watts (Anthropology), moderated by Richard O. Prum

December 14
*Phylogenetics and Linguistics Workshop*
Co-sponsored with the Department of Linguistics

Spring 2013

March 1-2
*Theory of Flight: A Fantasia of Avian Obsession*
A play written and performed by Anna Lindemann ’09 and Lucy Fitz Gibbon ’09

March 30
*Michael Pollan Raw*
Michael Pollan and New Haven writer Jack Hitt

April 22
*Once Upon a Time in Kamchatka: The Extraordinary Search for the First Natural Quasicrystal*
Paul Steinhardt, Albert Einstein Professor of Science and Theoretical Physics, Princeton University
Co-sponsored with the Department of Physics

The Spring 2013 Shulman Lectures in Science and the Humanities

**Freud and Science in the Twenty-First Century: The Nature of Human Nature**
Professors William H. Sledge, Moira I. Fradinger, and Linda Mayes

January 30
*Wisdom Won from Illness: Psychoanalysis, Self-Consciousness, and the Peculiarity of Human Entanglement*
Jonathan Lear, University of Chicago

February 19
*The Psychobiology of Parenting and Attachment*
Linda Mayes and Helena Rutherford, Yale University

March 5
*How the Mind Models the World: New Ideas from fMRI Findings*
Andrew Gerber, Columbia University

April 9
*Perfectionism’s Ironic Transport (Reading Now, Voyager after Cavell)*
David Rodowick, Harvard University

April 16
*Holding Your Horses: Ancient and Modern Strategies for Regulating Internal Strife*
Tamar Szabó Gendler, Yale University
May 1

**Bug Music: A Celebration of the Return of the Seventeen-Year Cicadas**

A lecture by John Cooley, University of Connecticut, and musical performance by David Rothenberg, Professor of Philosophy and Music, New Jersey Institute of Technology

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October 2

**The History of Mind**

*Biology, Individuality, and the Humanities*

Maxwell Bennett, Professor of Neuroscience, University of Sydney

October 3

**The History of Consciousness**

*Biology, Individuality, and the Humanities*

Maxwell Bennett, Professor of Neuroscience, University of Sydney

October 8

**What Makes Us Who We Are? The Promise (and Perils) of Behavioral Genetics**

David A. Dobbs, journalist

*Co-sponsored with the Poynter Fellowship in Journalism*

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October 29

**Information in Living Systems**

*Biology, Individuality, and the Humanities*

Paul Griffiths, Professor of Philosophy of Science, University of Sydney

October 31

**Order in Living Systems**

*Biology, Individuality, and the Humanities*

A conversation between Paul Griffiths, Professor of Philosophy of Science, University of Sydney, and Günter Wagner, Professor of Ecology and Evolutionary Biology, Yale University

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November 4

**A New Paradigm for Brain Imaging**

*Biology, Individuality, and the Humanities*

Robert Shulman, Professor Emeritus of Molecular Biophysics and Biochemistry, Yale University

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Spring 2014

January 28

**The Forest Unseen: Biology, Literature, and Contemplative Practice**

David Haskell, Professor of Biology, Sewanee: The University of the South

*Co-sponsored with the School of Forestry and Environmental Studies*

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February 5
Insights from Individual Crises for Understanding National Crises
Jared Diamond, Professor of Geography, University of California, Los Angeles

February 24
Integrating Generic and Genetic Explanations of Development
Biology, Individuality, and the Humanities
Alan Love, Professor of Philosophy of Science, University of Minnesota

February 26
Historical and Conceptual Perspectives on the Status of Evo-Devo
Biology, Individuality, and the Humanities
A seminar with Alan Love, Professor of Philosophy of Science, University of Minnesota

March 3
Physics Club: Physics, Dance, and the Higgs at Yale
Emily Coates, Lecturer in Theater Studies, and Sarah Demers, Horace Taft Associate Professor of Physics, Yale University
Co-sponsored with the Department of Physics, Dance Studies, and Theater Studies

April 1
The Metaphysics of Homology: The Molecular Basis of Character Identity
Biology, Individuality, and the Humanities
Günter Wagner, Professor of Ecology and Evolutionary Biology, Yale University

The Spring 2014 Shulman Lectures in Science and the Humanities

The Question of Evidence
Professor Rüdiger Campe
February 11
Darwin’s Sleepwalkers: Taxonomic Evidence in the Presentation of Darwin’s Species Theory
Peter Dear, Cornell University

February 25
The Experience of Evidence (Freud)
Ben Kafka, New York University

April 8
All That Matters Is Invisible: How Latency Dominates Our Present
Hans-Ulrich Gumbrecht, Stanford University
PAUL STEINHARDT  Princeton University

Once Upon a Time in Kamchatka: The Extraordinary Search for the First Natural Quasicrystal

April 22, 2013 • 4PM
Luce Hall Auditorium, 33 Hillhouse

cosponsored by the Department of Physics

THE FRANKE PROGRAM IN SCIENCE AND THE HUMANITIES

David Haskell
Sewanee: The University of the South

January 28, 2014 • 4:30
Burke Auditorium
Kroon Hall

THE FRANKE PROGRAM IN SCIENCE AND THE HUMANITIES

He writes with a scientist’s meticulous attention to detail and a poet’s way with words. As he spins his tales of the tiny and the ordinary, we see the big picture . . .

David Haskell

Sewanee: The University of the South

January 28, 2014 • 4:30
Burke Auditorium
Kroon Hall
April 21

**Life Cycles and Natural Selection**  
*Biology, Individuality, and the Humanities*  
Peter Godfrey-Smith, Professor of Philosophy, City University of New York Graduate Program

May 1

**The Postgenomic Condition: Ethics, Justice, Knowledge after the Genome**  
Jenny Reardon, Professor of Sociology and Director of the Center for Science and Justice, University of California, Santa Cruz

Fall 2014

October 11  

**Extinction: Biology, Culture, and Our Futures**  
A daylong symposium on extinction featuring seven scholars from the sciences, humanities, and arts: Resit Akçakaya, Professor of Ecology and Evolution, Stony Brook University; Neely Bruce, Professor of Music, Wesleyan University; David Harrison, Professor of Linguistics, Swarthmore College; Ursula Heise, Professor of English, University of California, Los Angeles; Ben Novak, lead researcher of “The Great Passenger Pigeon Comeback,” The Long Now Foundation; David Sepkoski, research scholar, Max Planck Institute for the History of Science; and Kristoffer Whitney, Postdoctoral Fellow, University of Wisconsin, Madison

October 11  

**The Columbiad; or Migration of American Wild Passenger Pigeons**  
A symphony performed by the Yale Symphony Orchestra, in conjunction with the Extinction symposium

November 3  

**Reorganizing Ourselves**  
A conversation with Deborah Hay, dancer and choreographer; Alva Noë, Professor of Philosophy, University of California, Berkeley; and Michèle Steinwald, performing arts manager  
*Co-sponsored with the School of Art*

November 5  

**Ebola Breakout from the Hot Zone**  
Richard Preston, contributing writer for *The New Yorker*  
*Co-sponsored with the Poynter Fellowship in Journalism*

November 11  

**The Sixth Extinction: An Unnatural History following The Sixth Extinction**  
Elizabeth Kolbert, staff writer for *The New Yorker*  
*Co-sponsored with the Poynter Fellowship in Journalism*
Spring 2015

February 11
Episodic Memory, Time, and Agency: Some Constraints from Neuropsychology
Carl Craver, Professor of Philosophy-Neuroscience-Psychology, Washington University in St. Louis
Co-sponsored with the Magnetic Resonance Research Center

February 12
Graphing the Brain’s Dark Energy: Network Models and Neural Mechanisms
Carl Craver, Professor of Philosophy-Neuroscience-Psychology, Washington University in St. Louis
Co-sponsored with the Magnetic Resonance Research Center

February 25
Extinctions: Vanishing Fauna and the Caribbean's Environmental Imagination
Lizabeth Paravisini-Gebert, Randolph Distinguished Professor of Hispanic Studies, Vassar College
Co-sponsored with the Council on Latin American and Iberian Studies, Environmental Studies, and the School of Forestry and Environmental Studies’ Student Interest Group in Latin America

April 18
Playing God
A bioethics rock opera by Corky Laing and the Perfect Child
Co-sponsored with the Yale Interdisciplinary Center for Bioethics

April 21
Mechanical Explanations and the Direction of Time
A conversation with David Albert, Frederick E. Woodbridge Professor of Philosophy, Columbia University, and Tim Maudlin, Professor of Philosophy, New York University
Co-sponsored with the Department of Philosophy

June 8
Before the Beginning and Beyond Eternity
Sir Roger Penrose, Emeritus Rouse Ball Professor of Mathematics, Mathematical Institute of the University of Oxford
Co-sponsored with the Department of Physics, Site Projects, and Pelli Clarke Pelli Architects

The Spring 2015 Shulman Lectures in Science and the Humanities

Habits of Mind
Professors Paul Bloom and Tamar Szabó Gendler
February 9
Understanding the Moral Mind
David Pizarro, Cornell University
March 2
Gesture as a Mechanism of Change
Susan Goldin-Meadow, University of Chicago
March 30
Matter Over Mind: Situational Strategies for Self-Control
Angela Duckworth, University of Pennsylvania, and James Gross, Stanford University
April 30
Far from the Tree
Andrew Solomon, writer
Soumya’s interests span the history, religion, and art of South and Southeast Asia, connections between built forms and landscape, gender and sexuality, and trade networks between South and Southeast Asia. Through the Franke Program, she will continue work on current projects, which include the representation of plant forms on Cambodian temples and their connections to local beliefs surrounding the sanctity of forests, and the links between imagery and ritual practice.

The Franke Program in Science and the Humanities Visiting Fellows are engaged in research that makes connections between the humanities and the sciences. As an interdisciplinary collaborative project spanning cultural studies and biomechanics, Soumya plans to explore how cultural factors as well as neural and biomechanical factors influence dexterity and variety of hand gestures in Cambodian dance. Individuation of our digits, for assuming hand postures, is partly a function of biomechanical and neural coupling. She plans to study how the culturally evolved hand gestures in dancers are influenced by the biologically evolved neural and biomechanical constraints that affect all humans. This work, which combines art history and performance studies with human motor control, will be carried out in collaboration with roboticists and biomechanical engineers at Yale.
Extinctions
Vanishing Fauna and the Caribbean’s Environmental Imagination

Lizabeth Paravisini-Gebert
Randolph Distinguished Professor of Hispanic Studies, Vassar College, New York

Wednesday, February 25 – 5:00 pm
Whitney Humanities Center, Room 208 – 53 Wall Street, New Haven

For more information visit our website at http://frankeprogram.yale.edu or email justin.eichenlaub@yale.edu.

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Extinctions
Vanishing Fauna and the Caribbean’s Environmental Imagination

Jonathan Lear
Professor of Philosophy, Cornell University

Wednesday, January 30, 2013 – 5:30 pm
Whitney Humanities Center, 53 Wall Street

Wisdom Won from Illness: Psychoanalysis, Self-Consciousness, and the Peculiarity of Human Entanglement

Mechanical Explanations and the Direction of Time
Lectures and a Conversation on Topics in the Philosophy of Physics

David Albert
Professor of Philosophy, Columbia University

Tim Maudlin
Professor of Philosophy, New York University

Tuesday, April 21 – 4:00 – 7:00 PM
Whitney Humanities Center, Room 208 – 53 Wall Street, New Haven

For more information visit our website at http://frankeprogram.yale.edu or email justin.eichenlaub@yale.edu.

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In 2014 The Franke Program in Science and the Humanities announced the winners of its inaugural Undergraduate Research Awards. The undergraduate fellowships offered by the program support the work of seniors at Yale College whose research is at the intersection of humanistic, artistic, and scientific fields.

From an impressive field of applicants, the following nine students were chosen in 2014 to receive awards of between $1000 and $2000: Derek Braverman (Molecular, Cellular, and Developmental Biology), Patrick Cage (Environmental Studies), Deena Gottlieb (Cognitive Science, Religious Studies), Lamtharn (Hanoi) Hantrakul (Applied Physics, Music), Theresa Oei (Molecular Biophysics and Biochemistry), Maureen O’Hanlon (Architecture), Yeon Woo Park (Molecular Biophysics and Biochemistry), Maria Ratskevich (Cognitive Science), and Lillian Xie (Economics).

In 2015, eight students were awarded fellowships: Hans Bilger (Ecology and Evolutionary Biology), Alexander Borsa (undeclared), Catherine Colford (Architecture), Cecilia Dumouchel (History of Science, Medicine, and Public Health), Caitlin Miller (Classics), Julia Rothchild (English), Caroline Sydney (Humanities), and Duncan Tomlin (Humanities).

Awardees attend dinners with Franke Program faculty in the Fall term and present the results of their projects in the Spring term.
2014–2015 Awardees

Derek Braverman
“Experimental Philosophy Research
Investigating Health Care”

Patrick Cage
“‘To Till It and Keep It:’ Religious
Environmentalism in Place on Land-
Based Christian Intentional Communities”

Deena Gottlieb
“The Psychological, Cognitive, and
Evolutionary Bases of Supernatural and
Religious Ideas”

Lamtharn (Hanoi) Hantrakul
“Surrogate Soundboards for Novel Real-
Time Transmission of Instrumental Audio”

Theresa Oei
“Navigating the Reductionist Model Across
Disciplines”

Maureen O’Hanlon
“Apprenticeship in Material Craft for New
Perspectives on Sculpture and Esthetics,
with Brent Howard”

Yeon Woo Park
“Science and Religion: The Historical
Origin of Scientific Realism”

Maria Ratskevich
“Early Childhood Literacy Program
Research and Implementation with
‘Cerebrum: Neuroscience, Education, and
Human Development’”

Lillian Xie
“Identifying Ming Dynasty Blue-and-
White Porcelain through Chemical
Characterization of Manganese Oxide
Contaminants in Cobalt Pigment”

2015–2016 Awardees

Hans Bilger
“Ecologies of Sound”

Alexander Borsa
“Truvada Who? PrEP, Biopolitics, and the
Construction of Sexual Subjectivity”

Catherine Colford
“Wooden Sculpture Building: Generative
Design with Analog Tools”

Cecilia Dumouchel
“The Rise of Medical Specialization and
the Death of Holistic Medicine in America”

Caitlin Miller
“Natural History and Narrative in Greek
Literature”

Julia Rothchild
“The Mother Tongue of Our Imagination:’
The Natural World in George Eliot’s
Novels”

Caroline Sydney
“The Complex Geometry of William
Morris and the Kelmscott Press”

Duncan Tomlin
“Painting World Order: Network Analysis
of Religious Art and State Theology in
Buddhist East Asia and Early Christian
Europe”
JENNY REARDON
UNIVERSITY OF CALIFORNIA SANTA CRUZ

THURSDAY, MAY 1, 2014
Whitney Humanities Center • 53 Wall Street • 4 pm • Auditorium

THE POSTGENOMIC CONDITION:
GENOME
ETHICS, JUSTICE, KNOWLEDGE
GENOME
AFTER THE GENOME
GENOME

Whitney Humanities Center Auditorium, Yale University, 53 Wall Street, New Haven

MICHAEL POLLAN

FRIDAY, MARCH 20 • 4 pm
THE DURSTEN OF DESIRE with Michael Pollan
A screening of the PBS documentary based on his best-selling book followed by a discussion with Michael Pollan, the director Michael Schwarz, and the composer Martin Bresnick

SATURDAY, MARCH 30 • 11:30 am
MICHAEL POLLAN "RAW"
A conversation with Michael Pollan and Jack Hitt about cooking, eating, and writing