

THE COMPLEXITY OF

diversity

**Rethinking Gaps
and Leveraging
Differences**

UNIVERSITY OF MICHIGAN
Palmer Commons

Co-Sponsored by the National
Center for Institutional Diversity
and the Center for the Study of
Complex Systems

WITH SUPPORT FROM THE JAMES
S. MCDONNELL FOUNDATION

Center for the Study of
 **Complex Systems**

welcome

Welcome to the Complexity of Diversity Colloquium!

Over the past two decades, we have seen breakthroughs in the sciences of complexity. The result is a deeper understanding of how complex systems function and of how diversity and connectedness relate to system robustness and productivity. In this meeting, we bring together complexity theorists and diversity scholars to contemplate the complexities of diversity and to see how a complex systems perspective helps us better bridge gaps and leverage opportunities.

In this colloquium, we explore the benefits of considering the many gaps that we see in modern society using the tools of complexity theory. There is no shortage of simple explanations for the racial, ethnic, and gender disparities that we see in our society. Some attribute the cause to culture. Others believe that the cause is intentional discrimination. Still others believe that incentives are not structured properly.

In bringing complexity to diversity, we have four primary goals:

- 1** To highlight the potential for diversity to create productivity and robustness in a complex system and to identify conditions under which that potential can be realized.
- 2** To use complexity theory to show how some gaps may be self-reinforcing and therefore require structural changes.
- 3** To contemplate the extent and sway of the past, what complexity theorists call the path dependence, of the process of economic growth.
- 4** To begin to understand the complexity of the task before the University of Michigan's new National Center for Institutional Diversity.

We look forward to rich discussions over the next two days.



MISSION STATEMENT FOR THE CENTER FOR THE STUDY OF COMPLEX SYSTEMS

The Center for the Study of Complex Systems (CSCS) is a broadly interdisciplinary program at the University of Michigan designed to encourage and facilitate research and education in the general area of nonlinear, dynamical, and adaptive systems. Participating faculty represent nearly every college of the University. The Center is based on the recognition that many different kinds of systems which include self-regulation, feedback, or adaptation in their dynamics, may have a common underlying structure despite their apparent differences. Moreover, these deep structural similarities can be exploited to transfer methods of analysis and understanding from one field to another. In addition to developing deeper understandings of specific systems, interdisciplinary approaches should help elucidate the general structure and behavior of complex systems, and move us toward a deeper appreciation of the general nature of such systems.

Working Draft of the National Center for Institutional Diversity Mission Statement

The Center for Institutional Diversity aims to prepare people for active engagement in a diverse society and works toward building productive inclusive communities at the University of Michigan and beyond.

Inspired by the overarching vision of higher education's critical role in promoting knowledge, justice, and opportunity in a diverse democracy and global economy, the Center engages in several core practices:

- 1** Investigating diversity through multiple perspectives.
- 2** Identifying, evaluating, and supporting best practices for pursuing and benefiting from diversity.
- 3** Cultivating and moderating public and academic discourses on diversity.
- 4** Anticipating, preparing, and planning for an increasingly diverse and interconnected world.

These practices are enacted by convening scholars, practitioners, and leaders to study, evaluate, and design programs and initiatives that are models of successful, robust diversity. The Center's research and activities occur in a variety of contexts: K-12 education, industry, law, government, medicine, technology, public policy, arts, culture, and higher education.

colloquium format

Day One

Thursday, November 10th

8:00–8:45 **Check-in, Continental Breakfast**
Atrium 4

8:45–9:00 **Welcomes, Introductions, Framing Remarks**
Forum Hall
SPEAKERS:
Lester Monts
Senior Vice Provost, University of Michigan
Mary Sue Coleman
President, University of Michigan

PART 1: Diversity within a Complex System

9:00–10:40 **Complex Systems: An Introduction**
Forum Hall
SPEAKER:
Michael Cohen
University of Michigan

Diversity and Complexity
Forum Hall
SPEAKERS:
Scott Page
University of Michigan
Norman Johnson
Los Alamos National Labs
John Vandermeer and Ivette Perfecto
University of Michigan

10:40–11:10 **Full-group discussion**
Forum Hall

11:10–11:25 **Break**
go to breakout discussion rooms

PART 2: The Nature of Our Differences— Who We Are

11:25–12:00 **Small-group discussions of demographics report**
Breakout Rooms, 6th floor

12:10–1:10 **Lunch**
Great Lakes Central Banquet Room

1:15–2:15 **Identity and Action**
Forum Hall
SPEAKERS:
Roland Fryer
Harvard University
Elizabeth Anderson
University of Michigan
Robert Sellers
University of Michigan

2:15–2:45 **Full-group discussion**
Forum Hall

2:45–3:00 **Break**

The Nature of Our Differences—
How Do Our Differences Come to Be?

3:00–3:45 **Genes and Environments**
Forum Hall
SPEAKER:
David Moore
Yeshiva University

Culture, Emotion, and Cognition
Forum Hall
SPEAKER:
Shinobu Kitayama
University of Michigan

3:45–4:15 **Full-group discussion**
Forum Hall

4:15–5:15 **Wine reception, with informal conversation**
Great Lakes Central Banquet Room

5:30–7:30 **Dinner and Optional Planetarium Shows**
Museum of Natural History

Why are We Banqueting Here?
SPEAKER:
John Vandermeer
University of Michigan

Day Two

Friday, November 11th

8:00-8:45

Check-in

Atrium 4

Continental Breakfast

Atrium 6

PART 3: Gaps in the System

8:45-9:45

Racial and Income Sorting

Forum Hall

SPEAKERS:

Rajiv Sethi

Columbia University

Elizabeth Bruch

UCLA

Self-Reinforcing Gaps

Forum Hall

SPEAKER:

Daria Roithmayr

University of Illinois

9:45-10:00

Break

10:00-11:00

Memory in the System

Forum Hall

SPEAKERS:

Michael Chwe

UCLA

Richard Thompson Ford

Stanford University

Complexity of Closing Gaps

Forum Hall

SPEAKER:

Abigail Stewart

University of Michigan

11:00-12:15

Small-group discussions and lunch buffet

Breakout Rooms, 6th floor

12:15-12:45

Break

12:45-1:00

Report-outs from small group discussions

Forum Hall

1:00-1:45

Ethnic Violence

Forum Hall

SPEAKERS:

Ashutosh Varshney

University of Michigan

Ravi Bhavnani

Michigan State University

1:45-2:15

Full-group discussion

Forum Hall

2:15-2:30

Break

PART 4: Interacting our Differences

2:30-3:30

Effective Diversity in Groups

Forum Hall

SPEAKERS:

Jeff Polzer

Harvard Business School

Katherine Williams-Phillips

Kellogg School of Management,
Northwestern University

Cynthia Rabe

Intel

3:30-4:00

Full-group discussion and wrap-up

Forum Hall

colloquium speakers



Elizabeth S. ANDERSON

With a Ph.D. from Harvard University, Elizabeth Anderson is the John Rawls Collegiate Professor of Philosophy and professor of Women's Studies at the University of Michigan, as well as an adjunct professor at the U-M Law School. She teaches courses in ethics, social and political philosophy, philosophy of the social sciences, and feminist theory. She is the author of *Value in Ethics and Economics* (Harvard University Press, 1993) and numerous articles on democratic theory, equality, and feminist epistemology and philosophy of science in the *Journal of Applied Psychology*, *Ethical Theory and Moral Practice*, *Feminist Economics*, and *Hypatia*, among others. Her current research focuses on racial integration, affirmative action, and the formation of collective identities that transcend ethno-racial boundaries. Through publications, presentations, and public broadcasting, she has addressed racial integration as a compelling interest.

Ravi BHAVNANI

Ravi Bhavnani (Ph.D. in political science, University of Michigan) is an assistant professor at Michigan State University. He received his doctoral degree in comparative politics and methodology, with an emphasis on agent-based modeling and a degree certificate in complex systems. His research focuses on the micro-foundations of mass participation in ethnic violence, civil war, and popular rebellion in Sub-Saharan Africa and South Asia. He has also participated in a long-term project with the U-M Center for the Study of Complex Systems that involves the construction of agent-based models to explore various aspects of decision-making in closed political regimes.

He has published in the *Journal of Conflict Resolution* and the *Journal of Artificial Societies and Social Simulation*. His teaching interests include comparative politics, world politics, ethnic conflict, and computational modeling.

Elizabeth BRUCH

Elizabeth Bruch is a doctoral student in the Sociology department at UCLA, a masters student in the Statistics department, and an affiliate of the California Center for Population Research. Her research interests include microsimulation models of neighborhood formation and change, the statistical analysis of residential mobility data, and the development of techniques to evaluate the performance of agent-based models. Bruch is the recipient of a National Science Foundation Graduate Research Fellowship, and a National Science Foundation Dissertation Improvement Award. Her dissertation—which employs a microsimulation model of the movement of individuals—examines how neighborhood sorting along one dimension, such as race, may exacerbate or attenuate spatial inequalities along another dimension, such as income.



colloquium speakers

Michael CHWE

Michael Suk-Young Chwe is associate professor of Political Science at the University of California, Los Angeles. He specializes in game theory and its applications to collective action, communication, social networks, monetary theory, political identity, and violence, with a specific focus on how people coordinate their actions when each person wants to participate only if enough others do. His book *Rational Ritual: Culture, Coordination, and Common Knowledge*, which analyzes public rituals in terms of game theory, was published in 2001 by Princeton University Press. He has published articles in major journals in economics, political science, and sociology, and recently spoke in a conference on rational choice theory and the humanities. He has held positions at the University of Utah, New York University, and the University of Chicago, did undergraduate work at the California Institute of Technology, and received his doctorate in economics from Northwestern University in 1992.

Michael D. COHEN

Michael D. Cohen is the William D. Hamilton Collegiate Professor of Complex Systems at the University of Michigan, and serves as a professor in the School of Information, Department of Political Science, and Ford School of Public Policy. He is also an external faculty member of the Santa Fe Institute and an associate of the U-M Center for the Study of Complex Systems.

His research centers on processes of learning and adaptation that go on within organizations as they respond to their changing environments. His books include *Harnessing Complexity: Organizational Implications of a Scientific Frontier* (with Robert Axelrod) and *Leadership and Ambiguity*, a study of the organizational problems facing American college and university presidents. In addition to co-editing *Organizational Learning* (with Lee Sproull), he has written numerous articles contributing to the theory of organizational decision-making and structural conditions favoring cooperation.

Richard THOMPSON FORD

Richard Thompson Ford is the George E. Osborne Professor of Law at Stanford Law School, with an A.B. from Stanford University and a J. D. from Harvard Law School. He has published in the areas of civil rights, constitutional law, race relations, and anti-discrimination law in numerous periodicals, including the *Harvard Law Review*, the *Stanford Law Review*, *Slate*, the *Boston Review*, the *San Jose Mercury News*, and the *San Francisco Chronicle*. He has lectured on these topics internationally. In addition to authoring *Racial Culture: a Critique* (Princeton University Press, 2004), he has co-edited *Local Government Law* (with Gerald Frug and David Barron) and *The Legal Geographies Reader* (with Nicholas Blomley and David Delaney). From 1997–1998, he was the commissioner of the Housing Authority of the City and County of San Francisco, and he is currently an advisory board member of the National Voting Rights Institute.

colloquium speakers



Roland FRYER

With a Ph.D. from Pennsylvania State University and a B.A. from the University of Texas at Arlington, Roland G. Fryer is an assistant professor of Economics at Harvard University, a junior fellow in the Harvard Society of Fellows, and a faculty research fellow in the National Bureau of Economic Research. His primary fields of interest are applied theory, applied microeconomics, and labor economics.

Fryer has published on affirmative action, discrimination, and social economics in a variety of journals, including *The Journal of Economic Inequality*, *The Journal of Economic Education*, and *The Quarterly Journal of Economics*, among others. His current projects include investigations of racial differences in life expectancy, the plight of mixed-race kids, and school segregation.

He is also involved in a field experiment in 15 New York City public schools, titled "Incentivizing: An Intuitive Approach to Raising Achievement."

Norman L. JOHNSON

Dr. Norman L. Johnson is currently Deputy Program Manager for the Biological Threat Reduction Program Office at Los Alamos National Laboratory. He oversees many challenging projects where the key to success is enabling diverse teams to break limiting barriers and discover synergistic advantages of diverse contributions. His academic training is in rheology and polymer physics. His research and more than 50 publications cover a breadth of interests, including multiphase flows, self-organizing knowledge creation, diversity in collective systems, and developmental theories of evolution.

Johnson is the recipient of a variety of honors, including a DOE Award of Excellence, two Los Alamos Distinguished Performance Awards, and an award by industry for a collaborative project. He is the founder of the Symbiotic Intelligence Project, an investigation into the combination of the unique abilities of the Internet and human problem-solving to create a capability greater than the sum of the parts.

Shinobu KITAYAMA

Shinobu Kitayama is professor of Psychology and the Director of the Culture and Cognition Program of the University of Michigan. With a Ph.D. from the University of Michigan, he taught at the universities of Oregon, Chicago, and Kyoto before joining the Michigan faculty in 2003. He has investigated cultural diversity in a variety of psychological processes including self, cognition, emotion, motivation, and well-being. His long-term goal is to understand how the human mind is shaped, afforded, and completed through participating in historically constructed environments that are composed of local practices, meanings, and institutions.

Kitayama's most recent research has focused on within-culture variation of these processes as a function of a variety of social-structural and demographic factors such as social class, voluntary settlement, and aging. He is currently serving as an associate editor of the *Personality and Social Psychology Bulletin*.



colloquium speakers

David S. MOORE

David S. Moore is a professor of Psychology at Pitzer College and Claremont Graduate University in Southern California; he is currently on a two-year leave of absence in New York and working at both Yeshiva University and Sarah Lawrence College. He received his B.A. in psychology from Tufts University, earned his M.A. and Ph.D. in developmental psychology from Harvard University, and completed a one-year NIH post-doctoral fellowship at the City University of New York. Dr. Moore's research focuses on the development of perception and cognition in infants, neonates, and fetuses. His recent empirical work has examined infants' putative "mathematical" abilities and their perception of infant-directed speech; his theoretical work in the late 1990s led to the publication of his 2002 book, *The Dependent Gene: The Fallacy of "Nature vs. Nurture,"* which was recently nominated as the Cognitive Development Society's Best Authored Volume of 2002–2003.

Scott PAGE

Scott Page is a professor of Complex Systems, Political Science, and Economics at the University of Michigan, as well the Associate Director of the Center for the Study of Complex Systems, a senior research scientist at the Institute for Social Research, and Director of the NSF IGERT IDEAS Program. He has published papers in leading journals in the fields of complex systems, economics, and political science. He is currently finishing two books that are due out in 2006, the first on complex adaptive social systems (coauthored with John Miller), and the second on the logic of diversity. His current projects include research on diverse problem solvers, cultural diversity, path dependence, chain stores, public policy formation, public good provision, and mental model aggregation. From 1999–2005, Page has been an external faculty member of the Santa Fe Institute. He frequently gives talks on complex systems and diversity to academic and non-academic audiences, from Fortune 500 Companies to governmental organizations.

Ivette PERFECTO

Ivette Perfecto is an associate professor of Natural Resources at the University of Michigan, where she specializes in tropical ecology, agroecology, tri-trophic level interactions, and political ecology. Her current research centers on the function of biological diversity in the coffee agroecosystem in Southern Mexico, focusing on top-down processes associated with reduction of herbivory by predators and their impact on coffee yield, while a second major project examines ecological succession after natural (hurricane) and anthropogenic (agriculture) disturbance in the Atlantic lowlands of Nicaragua. With Helda Morales and John Vandermeer, she has secured grants from the USDA and NSF. Perfecto has published in many journals, including *Ecology*, *Science*, *Biodiversity and Conservation*, and *Conservation Biology*, among others. She has recently enjoyed teaching an undergraduate course that included a three-week on-site study of Cuba's advances in sustainable agriculture.

colloquium speakers

Katherine WILLIAMS PHILLIPS

Katherine Williams Phillips is assistant professor of Management and Organizations at the Kellogg School of Management at Northwestern University. Phillips received a B.A. in psychology from the University of Illinois and a Ph.D. in organizational behavior from Stanford University's Graduate School of Business. Her research focuses on understanding the processes that allow groups to benefit from social and task diversity.

Phillips' review of 40 years of diversity research published in *Research in Organizational Behavior* has been widely cited by researchers in law and medicine, as well as by others in her field. She has also published in other top-tier journals, including the *Journal of Experimental Social Psychology*. In 2004 she published an article revealing that women are less influential in groups than men, even when they are more "expert" than their fellow group members.

Jeff POLZER

Jeff Polzer is an associate professor of Organizational Behavior at Harvard Business School. His research explores how group affiliations affect people's decisions, perceptions, and social interactions, especially in diverse work teams. Jeff has worked with a variety of coauthors to publish research in several top management and psychology journals, such as the *Journal of Conflict Resolution* and the *Journal of Personality and Social Psychology*. He serves on the editorial boards of *Administrative Science Quarterly*, *Academy of Management Journal*, and *Organizational Behavior and Human Decision Processes*. He received his Ph.D. in organizational behavior from the Kellogg School of Management at Northwestern University in 1994, where he won the Kellogg School of Management's Doctoral Teaching Award. Before coming to Harvard Business School, he was an assistant professor at the University of Texas at Austin for four years and a visiting scholar in the Program on Negotiation at Harvard University for one year.

Cindy BARTON RABE

Cindy Barton Rabe is an innovation strategist for Intel Corporation, where she helps business managers create value through innovative thinking. She has 20 years of experience in business and marketing management roles for technology and consumer product/service companies including Ralston Purina and Eveready Battery Co.

At Intel, Rabe led the team that launched a new home product category. She has served as an advisor to "intrepreneurs" within the company's internal investment group, and spent a year leading diversity efforts for one of Intel's largest divisions.

At Eveready, she was a member of the product management team that introduced the Energizer Bunny® ad campaign. Cindy's experience in consumer products and technology gives her a unique perspective that helps her act as a catalyst for thinking differently. She is currently writing a book on the subject of innovative thinking.



colloquium speakers

Daria ROITHMAYR

Professor Roithmayr is a scholar of national and international renown in the area of critical race theory. She received her B.S. degree from UCLA and her J.D. magna cum laude from Georgetown University Law Center. Prior to joining the University of Illinois College of Law faculty in 1996, Professor Roithmayr twice served as special counsel for Senator Edward Kennedy on the Senate Judiciary Committee, advising him on the nominations of justices David Souter and Clarence Thomas. She has recently served as special counsel to the People for the American Way on the nominations of Chief Justice John Roberts and Harriet Miers.

Professor Roithmayr has published articles in numerous law reviews. She is currently at work on a book, *Locked in Equality*, which argues that racial inequality can become locked into institutions in much the same way that market monopolies can become locked into the market, even in the absence of continuing anticompetitive behavior.

Robert M. SELLERS

Robert Sellers is a professor in the department of Psychology and a research associate at the Institute for Social Research at the University of Michigan. He is currently serving as Chair of the Personality and Social Context Area in the department of Psychology. A native of Cincinnati, he attended Howard University where he earned All-American honors as a football player. Following his graduate work at the University of Michigan, he served as an assistant and an associate professor in the department of Psychology at the University of Virginia, where he was also the Director of the Task Force on Culturally-Competent Research within the Southeastern Rural Mental Health Research Center.

Since returning to the University of Michigan in 1997, Sellers has concentrated on the development of a conceptual model of the structure and processes associated with the significance and meaning that African Americans attribute to race in their lives. He has also published extensively on the life experiences of student-athletes.

Rajiv SETHI

Rajiv Sethi is currently associate professor of Economics at Barnard College, Columbia University, where he has taught since 1995. His recent research is concerned with the linkages between stereotypes, segregation, and the dynamics of group inequality. He is also interested in the manner in which stereotypes condition the behavior of victims and offenders involved in personal crimes, a topic he is exploring in two working papers with Dan O'Flaherty of Columbia University. He holds a B.Sc. in mathematics from the University of Southampton, England, and a Ph.D. in economics from the New School for Social Research in New York. He has published articles in numerous journals, including *Games and Economic Behavior*, the *Journal of Economic Theory*, and the *Journal of Economic Behavior and Organization*. In 2003, he received the Emily Gregory Award, a recognition of his excellence in teaching and service to the Barnard College community.

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Abigail J. STEWART

Abigail J. Stewart is Sandra Schwarz Tangri Professor of Psychology and Women's Studies at the University of Michigan and Director of the U-M ADVANCE project, supported by the NSF ADVANCE program on Institutional Transformation. She is former director of the Women's Studies Program (1989–1995), and of the Institute for Research on Women and Gender (1995–2002), and former associate dean for academic affairs in U-M's College of Literature, Science, and the Arts (2002–2004).

Stewart has published many scholarly articles and several books, focusing on the psychology of women's lives, personality, and adaptation to personal and social changes. Her current research includes comparative analyses of longitudinal studies of educated women's lives and personalities; a collaborative study of race, gender, and generation in the graduates of a Midwest high school; and research and interventions on gender and science and technology with middle-school-age girls, undergraduate students, and faculty.

John VANDERMEER

John H. Vandermeer is the Margaret Davis Collegiate Professor of Ecology and Evolutionary Biology at the University of Michigan, as well as an associate of the U-M Center for the Study of Complex Systems and faculty member of the Michigan Center for Theoretical Physics. He received his Ph.D. at the University of Michigan and did postdoctoral research at the University of Chicago with Richard Levins. From Chicago he took a job on the faculty of the University of New York at Stonybrook for a year before returning to the University of Michigan, where he has been on the faculty since 1972. His research is focused on theoretical aspects of biological diversity using a variety of analytical approaches. He combines his theoretical research with field work in Nicaragua and Mexico. He has authored several books, including *Population Ecology: First Principles* (with Deborah Goldberg), *Breakfast of Biodiversity*, and *Reconstructing Biology*.

Ashutosh VARSHNEY

Ashutosh Varshney is professor of Political Science at the University of Michigan. His research and teaching focus on ethnicity and nationalism, political economy of development, and South Asian politics and political economy. His most recent work, *Ethnic Conflict and Civic Life: Hindus and Muslims in India* won several honors. His other books are *Democracy, Development and the Countryside: Urban-Rural Struggles in India*; *India in the Era of Economic Reforms*, co-edited with Jeffrey Sachs; *Beyond Urban Bias*; and *India and the Politics of Developing Countries: Essays in Memory of Myron Weiner*.

He is currently working on a project on cities and ethnic conflict, drawing his materials from several countries, and on conflict and poverty.

In addition to serving on UN Secretary General Kofi Annan's Millennium Task Force on Poverty (2002–2005), Varshney has been a consultant to the World Bank, United Nations Development Program (UNDP), Human Rights Watch, Freedom House, the U.S. Department of State, and UK Department for International Development (DFID).