life sciences institute

lsi.umich.edu

Evolutionary Biology:

150 YEARS AFTER *THE ORIGIN*

TUESDAY 28 APRIL

University of Michigan Life Sciences Institute

EIGHTH ANNUAL SYMPOSIUM

BIOMEDICAL SCIENCE RESEARCH BUILDING AUDITORIUM

Welcome 8:45 am

Alan Saltiel

Mary Sue Coleman Director of the Life Sciences Institute

MORNING SESSION

Lecturers

Alan Walker, PhD

Antonis Rokas, PhD

John Doebley, PhD

AFTERNOON SESSION

Lecturers

D. Graham Burnett, PhD

Joan Strassman, PhD

David Queller, PhD

Daniel Weinreich, PhD

Reception 4:30 pm

Public invited

EVOLUTIONARY BIOLOGY

life sciences institute

lsi.umich.edu

8:45 am

Welcome
Alan Saltiel
Mary Sue Coleman Director of the Life Sciences Institute

MORNING SESSION

9:00 am

Mary Sue and Kenneth Coleman Life Sciences Lecture:
The Human Body as an Evolutionary Patchwork
Alan Walker, PhD
Evan Pugh Professor of Biological Anthropology and Biology
Penn State University
Introduced by U-M President Mary Sue Coleman

Dr. Walker, the Evan Pugh Professor of Biological Anthropology and Biology, is a renowned paleoanthropologist who works on primate and human evolution, concentrating mainly on the Neogene record from East Africa. He endeavors to extract ancient behaviors from the fossil and taphonomic record. Teeth record information about an individual's life history and semicircular canals are tuned to a species' rapidity of locomotion. Dr. Walker is now developing nondestructive methods for examining tooth enamel and measuring fossil labyrinths so that rare hominoid and hominid specimens can be used. Dr. Walker has made many distinguished discoveries including the discovery of a previously unknown species in the human lineage, Australopithecus anamensis. He also pioneered the use of electron microscopes to study the diet and eating habits of ancient humans.

In addition to his appointment at Pennsylvania State University, he is a research associate of the National Museum of Kenya and has had many collaborative field programs with the Museum, the latest being at Allia Bay, east Lake Turkana. Dr. Walker was named a MacArthur Fellow and is a member of the American Academy of Arts and Sciences and a Fellow of the British Royal Academy.

10:00 am

Break
Refreshments will be served in Seminar Rooms ABC

AFTERNOON SESSION

10:15 am

The Arborescent Bush of Life
Antonis Rokas, PhD
Assistant Professor in the Department of Biological Sciences
Vanderbilt University

Dr. Rokas is an Assistant Professor of Biological Sciences at Vanderbilt University. He received his PhD in 2001 from Edinburgh University for research on the evolutionary ecology of oak-feeding gallwasps. In 2002 he received a Human Frontier Science Program Long-Term fellowship for postdoctoral studies in Professor Sean B. Carroll's lab at the University of Wisconsin-Madison, where he employed genomic data to address long standing questions in the study of evolutionary trees and animal evolution. In 2005 he became a Research Scientist at the Microbial Genome Analysis team at the Broad Insitute. Dr. Rokas is one of the 2008 Searle Scholar award recipients.

11:10 am

Evolution Under Domestication: Evidence from Maize and Other Crops
John Doebley, PhD
Professor of Genetics
University of Wisconsin-Madison

Dr. Doebley is Professor of Genetics at the University of Wisconsin-Madison, where he also earned his PhD in Botany. His laboratory focuses on the genetics of morphological evolution in plants, using maize and its relatives as a model system. Dr. Doebley is interested in understanding the genetic events responsible for the domestication of maize from its ancestor, teosinte. His research has earned him widespread recognition in the field of complex trait genetics, and election to the National Academy of Sciences in 2002.

12:05 pm

Lunch
Please note that lunch will not be provided

1:30 pm

Who Selects? Charles Darwin, Natural Man, and Natural Selection
D. Graham Burnett, PhD
Associate Professor, Department of History and Program in History of Science
Princeton University

D. Graham Burnett is an editor at Cabinet, in Brooklyn, and a member of the faculty at Princeton University, where he has directed the Program in History of Science, and served on the Science and Technology Committee. He is the author of four books, most recently Trying Leviathan (2007), a study of changing ideas about the order of nature between Linnaeus and Darwin. The recipient of a 2009 Mellon New Directions Fellowship, Burnett is currently finishing a book on twentieth-century environmentalism.

2:25 pm

What Can Sociobiology Tell Us About Social Amoebae?

Joan Strassmann, PhD
Chair and Harry C. and Olga K. Wiess Professor of Ecology and Evolutionary Biology
Rice University

What Can Social Amoebae Tell Us About Sociobiology?

David Queller, PhD
Harry C. and Olga K. Wiess Professor of Ecology and Evolutionary Biology
Rice University

As Chair and Harry C. Olga K. Wiess Proffessor of Ecology and Evolutionary Biology, Dr. Strassman's research centers upon cooperative alliances that have proven successful both evolutionarily and ecologically. Dr. Strassman is particularly interested in how these alliances came to be, how conflicts are subsumed into cooperation, what conflicts remain and how they influence sociality.

Dr. Queller, Harry C. and Olga K. Wiess Professor, is interested in the evolution of social interactions in contexts that involve cooperation, conflict or both. He has studied wasps and stingless bees to determine the benefits of sociality, the role of genetic relatedness and the extent of conflicts within social insect societies.

Strassmann and Queller currently have turned their focus toward Dictyostelium discoideum, using well-developed genetic and genomic resources for the social amoebae to find genes involved in social interactions, and they are using those genes to test evolutionary hypotheses, such as whether social evolution is particularly rapid.

3:35 - 4:30

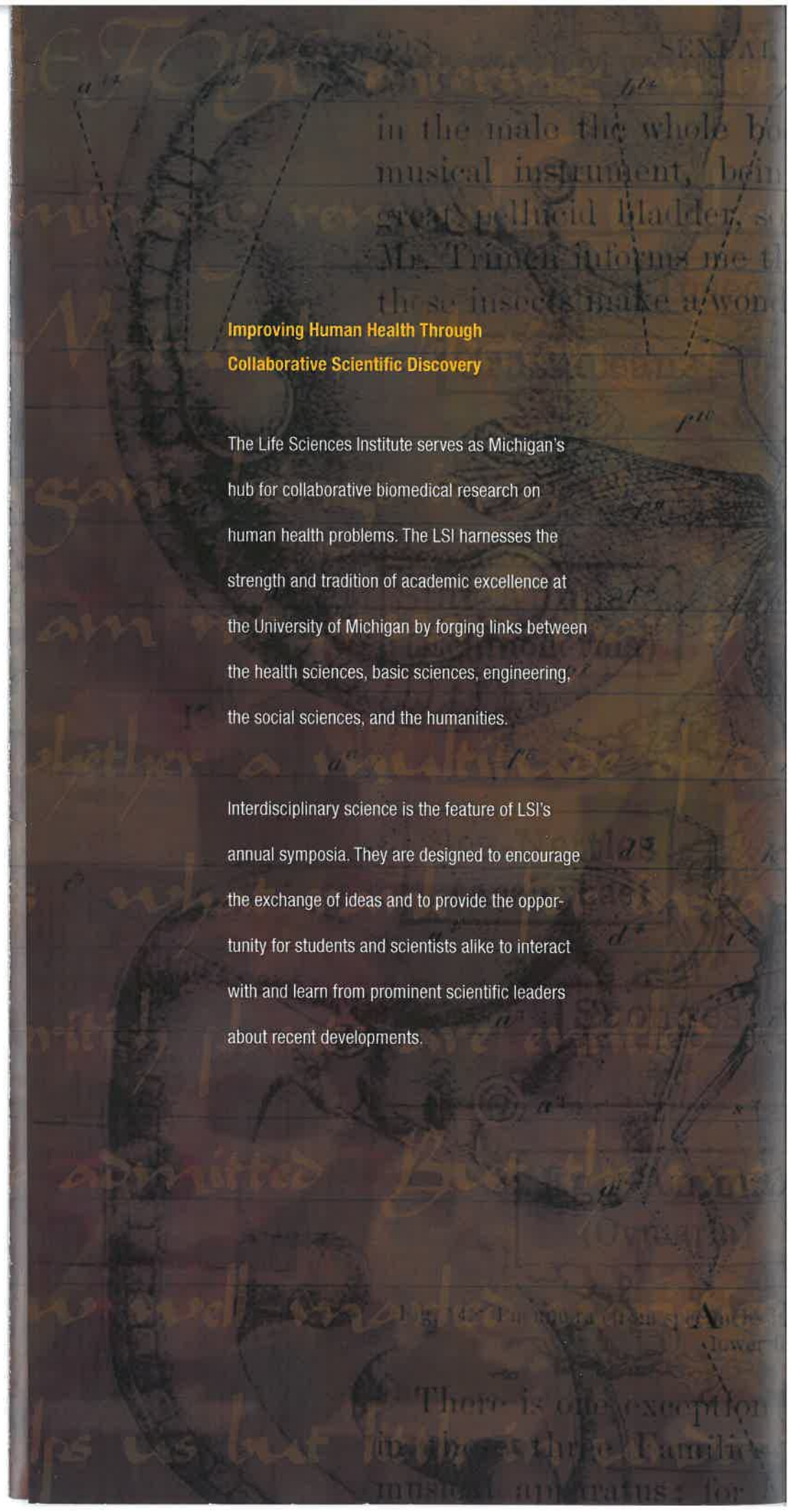
Predicting Evolutionary Trajectories in Principle and Practice

Daniel Weinreich, PhD
Assistant Professor of Biology
Brown University

Professor Weinreich received his bachelor's degree in computer science from the University of Michigan in 1983. Computer science has a long tradition of interest in the algorithmics of Darwin's paradigm and this provides the formal framework for Weinreich's research. After nine years as a software engineer, he began his graduate studies in evolutionary and population genetics at Harvard University. He received his PhD in 1998 and did postdoctoral work at Brown University (1998-2000), the University of California (2000-2001) and at Harvard University (2001-2006). Professor Weinreich was appointed an Assistant Professor in the Department of Ecology and Evolutionary Biology at Brown University in January 2007. He is also a member of the Brown Center for Computational Molecular Biology.

4:30 pm

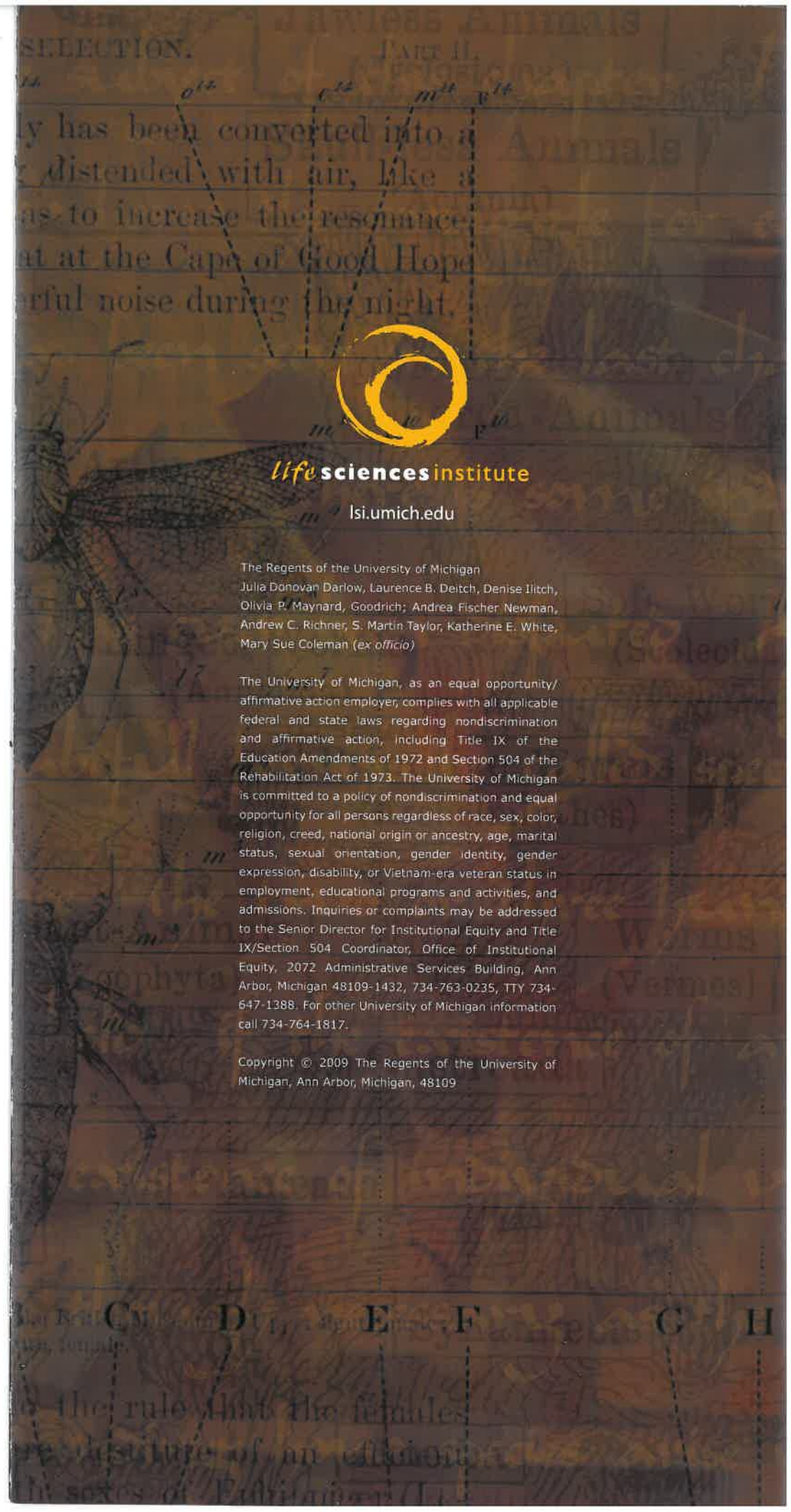
Reception with speakers
Refreshments will be served in Seminar Rooms ABC



Improving Human Health Through Collaborative Scientific Discovery

The Life Sciences Institute serves as Michigan's hub for collaborative biomedical research on human health problems. The LSI harnesses the strength and tradition of academic excellence at the University of Michigan by forging links between the health sciences, basic sciences, engineering, the social sciences, and the humanities.

Interdisciplinary science is the feature of LSI's annual symposia. They are designed to encourage the exchange of ideas and to provide the opportunity for students and scientists alike to interact with and learn from prominent scientific leaders about recent developments.



life sciences institute

lsi.umich.edu