

Alumni Association Dissertation Award Winners Spring 2004



Barbara Alfano, Ph.D. Candidate in Comparative Literature
(Adviser: Djelal Kadir)

Barbara's research examines the renderings of America from Italian writers, intellectuals and filmmakers to analyze how America is perceived in the world and why it is depicted in literature and other art forms the way it is depicted. Her dissertation title is "Subjecting the Nation: The United States in the First-Person Narrative and Film." She has published a number of articles and presented many papers in highly competitive and prestigious national and international congresses.



Ylva Besmer, Ph.D. Candidate in Ecology
(Adviser: Roger Koide)

The overall objective of Ylva's research is to determine if crop yields of subsistence farmers can be increased by optimizing interactions between plants and beneficial bacteria and fungi. The title of her dissertation is the "Role of Arbuscular Mycorrhizal Fungi in Subsistence Agriculture." She has published several peer-reviewed papers and has presented at numerous conferences. Ylva received a Life Sciences Consortium Scholarship from Penn State and a Swedish-American Foundation Scholarship. Since 2001, she has been a Root Biology Fellow, funded by the National Science Foundation.



Melissa S. Geiger, Ph.D. Candidate in Art History
(Adviser: Sarah Rich)

Melissa's dissertation topic, "A Socio-Historical Critique of Robert Rauschenberg's Electronic Works of the 1960s," is an original and significant contribution to studies pertaining to the relationship between art and technology in the post-war period. She has presented at numerous conferences and symposiums. In 2002, Melissa was awarded the Babcock Galleries Endowed Fund in Art History, and in 2003, she earned the Francis E. Hyslop Memorial Fellowship and the Susan and Thomas Schwartz Research Grant.



David R. Jansson, Ph.D. Candidate in Geography
(Adviser: Colin Flint)

David's research is an innovative, geographic investigation of the construction of national identity. His dissertation, "Voices of the Other: Racism, Class, and the Production of Southern Identity in the U.S.," explores the role of the Southern identity in the formation of a U.S. national identity. David has published four articles in peer-reviewed journals, as well as a number of book reviews. He has presented at numerous conferences and professional meetings. In addition to winning several student paper competitions, he was also awarded the E. Willard Miller Award in 2003.



Oleg Y. Kargaltsev, Ph.D. Candidate in Astronomy
(Adviser: George Pavlov)

Oleg's research is devoted to multiwavelength studies of neutron stars. His dissertation title is "X-ray and Optical Emission from Neutron Stars and Pulsar Wind Nebulae." His research on this topic has resulted in nine publications from leading journals and many conference proceedings. He has also participated in eight international conferences. He received a Braddock Fellowship from 1999-2001, and a travel grant from the Zaccheus Daniel Foundation for Astronomical Science in 2002.

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Girish S. Kirimanjeswara, Ph.D. Candidate in Pathobiology

(Adviser: Eric T. Harvill)

The title of Girish's dissertation is "Investigation of T cell help in antibody-mediated clearance of *B. pertussis*." His research is designed to understand the molecular mechanisms by which *Bordetella pertussis*, a non-enteric, gram bacterium that causes whooping cough in young children, is able to resist rapid clearance by serum antibodies and to understand how the host immune response overcomes this resistance in order to clear the bacteria. The outcome of this research is to provide a basis for developing a more effective *Bordetella* vaccine. Girish has published a number of articles and presented at two professional societies.



Jacob Loverich, Ph.D. Candidate in Mechanical Engineering

(Adviser: Gary H. Koopmann and George Lesieutre)

The objective of Jacob's dissertation topic, "A Next Generation High Power Piezoelectric Motor," is to develop a new piezoelectric motor that overcomes the limitations and far exceeds the performance of conventional electromagnetic motors. Jacob is a recipient of the NSF Young Foreign Researchers Fellowship in 2002, the Phi Kappa Phi Award of Excellence in 2000, and the Northern Arizona Academic Achievement Award in 1999, as well as a number of additional scholarships. He has also co-authored a number of articles in professional journals and presentations at professional meetings.



María Cecilia Mazzaro, Ph.D. Candidate in Electrical Engineering

(Adviser: Mario Sznaier)

María's dissertation, "System Identification, Model Validation, and their Applications to the Analysis of Human Dynamics," addresses a timely issue, with applications ranging from intelligent human-machine interfaces to smart surveillance systems. Her research deals with different challenges in the control-oriented or robust identification area in the analysis of human activity recognition and tracking. María has authored and co-authored two articles in top professional journals with two additional ones under review, a book chapter, and several conference presentations.



Srividya Ramasubramanian, Ph.D. Candidate in Mass Communications

(Adviser: Mary Beth Oliver)

Srividya's dissertation topic is the "Effects of Media Stereotypes on Implicit and Explicit Racial Attitudes." Her research has resulted in publications in three journal articles with two additional manuscripts currently under review, and several peer-reviewed papers presented at various professional conferences. Srividya also received the Top Three Paper Award at the NCA Doctoral Honors Seminar in 2003, the College of Communications' Dean's Excellence Award for Graduate Student Research in 2001-2002, the Sidney and Helen Friedman Endowed Scholarship in 2001-2002, and first prize in the Social and Behavioral Sciences category of the 2001 Graduate Exhibition.



Lana Saleh, Ph.D. Candidate in Biochemistry, Microbiology, and Molecular Biology

(Adviser: Joseph Martin Bollinger, Jr.)

Lana's dissertation title is "Mechanisms of Control of Oxygen Activation by Electron Transfer to the R2 Subunit of E. coli Ribonucleotide Reductase." Her research examines the role of R2 cofactor in the assembly reaction by which cells replicate. An understanding of this process might permit design of new drugs to be used in combination with existing treatments for cancer, AIDS, and/or herpes. Lana has co-authored several publications in professional journals and has presented at a number of international meetings. She received the Penn State Center for Biomolecular Structure and Function Travel Award in 2003 and the Penn State Women in Science and Engineering Travel Award in 2002.