

COLLEGE OF

# Liberal Arts & Sciences



## Faculty Sponsored Research (July 1, 2009-June 30, 2010)

### Africana Studies

Thomas Rogers

Hunger and Environmental Destruction in Brazil's  
Forgotten Ethanol Boom, 1971-1990

Council for International  
Exchange of Scholars

### Anthropology

Diane Brockman

Agent Orange Exposure in Endangered  
Vietnamese Primates: Application of a  
Novel Fecal Dioxin Enzyme Immunoassay

Schwartz Family  
Foundation Trust

Dena Shenk

Gerontology Graduate Assistant to work  
with staff on development of Community  
Resource Connection (CRC)

Cabarrus Department of Aging

Charlotte Mecklenburg Council on Aging  
Graduate Assistantship

Charlotte Mecklenburg Council on Aging

All for Senior Graduate Assistantship for  
Website Expansion

All for Seniors

Cabarrus Department of Aging  
Graduate Assistantship

Cabarrus Department of Aging

Dena Shenk\*

Self-Care Practices Among Intergenerational  
African American Families with Chronic Illness

DHHS/NIH/NIA

### Biology

Kenneth Bost

MDMA alters immunity to infections of the  
peripheral and central nervous systems

DHHS/NIH/NIDA

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# Sponsored Research (Cont.)

(with Kenneth Piller)	Expressing Viral-Like Particles in Transgenic Soybean Seeds as a possible Fish Vaccine	NC Sea Grant College Program
(with Ian Marriott and Vinita Chauhan)	Induced Autoantigen Expression Exacerbates EAE	DHHS/NIH/NINDS
Mark Clemens	Regulation of Sinusoidal Perfusion in Shock	DHHS/NIH/NIDDK
	PhD Fellowship	Carolinas Healthcare System
	Graduate Research Assistantship for a Proposal entitled "Role of Aquaporins in Hepatic Stellate Cells"	Carolinas Medical Center
	Graduate Research Assistantship at Carolinas Medical Center for a project entitled "Development of Bioceramics for the Treatment of Hepatocellular Carcinoma"	Carolinas Medical Center
Mark Clemens*; Stanley Schneider*	IDBR Automated Image Analysis for Discovering Motion Behavior in Video	NSF
Sandra Clinton*	NC Biofuels - Charlotte Regional Biofuel Facility	Centralina Council of Governments
	Planning for an Industry/University Cooperative Research Center for Sustainable Integration of Buildings and Sites (SIBS)	NSF
	City of Winston-Salem Hydrologic Monitoring Project Assistance by the EAO	City of Winston-Salem
Julie Goodliffe	Mechanisms of Trans-Repression by Myc in Drosophila	DHHS/NIH/NCI
Valery Grdzlishvili (with Ian Marriott)	Role of RIG-like receptors in virally induced CNS inflammation	DHHS/NIH
Yvette Huet	Gender and Sex Steroid Hormone Effects on Developmentally-induced Responses to ALD	Carolinas Medical Center
Ian Marriott	Substance P exacerbation of CNS inflammation	DHHS/NIH/NINDS
	Novel Intracellular Pattern Recognition Receptor Expression by Resident CNS Cell	DHHS/NIH/NINDS
Pinku Mukherjee	Role of MUC1 in Pancreatic Cancer	DHHS/NIH/NCI
(with Jennifer Curry)	Delivery of immune-modulating agents directly to the tumor site in combination with a MUC1 vaccine for the treatment of breast cancer	Komen (Susan G) Foundation
James Oliver	Enhancement of Oyster Defensin Activity Against Pathogenic Vibrio spp.	NC State University

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# Sponsored Research (Cont.)

Matthew Parrow*; Sandra Clinton*	Baseline Water Quality Evaluation of Lake Howell	Water and Sewer Authority of Cabbarus County
Christine Richardson	Etiology of Translocations in Hematopoietic Cells	DHHS/NIH/NCI
Amy Ringwood (with James Oliver and Sandra Clinton)	Environmental Stress and Microbial Dynamics of Oysters and Marsh Mussels	NC Sea Grant College Program
Amy Ringwood	Environmental Stress and Microbial Dynamics of Oysters and Marsh Mussels	NC State University
Lopamudra Das Roy (with Pinku Mukherjee)	Evaluate the Mechanism of Enhanced Metastasis Induced by Arthritis	DOD/Army
Stanely Schneider	The Role of Aquaporin Water Channels in Hepatocellular Carcinoma Development and Progression	Carolinas Medical Center
	Plant Derived Antioxidants as Inhibitors of Alcohol-Depended Changes in Hepatocellular Carcinoma Progression	Carolinas Medical Center
	Polymer-mediated gene and oligonucleotide delivery for Muscular Dystrophy	Carolinas Medical Center
Inna Sokolova	CAREER - Physiological and molecular mechanisms of cadmium and temperature action on mitochondrial bioenergetics in marine mollusks	NSF
	LiT: Interactive Effects of Multiple Environmental Stressors on Mitochondrial Metabolism and Bioenergetics in a Model Marine Ectotherm, <i>Crassostrea Virginica</i>	NSF
	Collaborative Research: LiT: Interactive Effects of Elevated Temperature and CO <sub>2</sub>	NSF
Todd Steck	Investigating the abundance of bacteria present in the lungs of a CF patient	Sigma Xi
Jennifer Warner (with Tonya Bates)	Microbial Magic: A Workshop for Middle School Teachers Connecting Microbiology, Genetics and Biotechnology	NC Biotechnology Center
Jennifer Warner	Introductory Biotechnology Workshop for High School Teachers	NC Biotechnology Center
<b>Chemistry</b>		
Banita Brown	REU Site: Nanoscale Science Undergraduate Research Experiences (NanoSure) at UNC	NSF

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# Sponsored Research (Cont.)

Brian Cooper*	Annotating the Cis-Regulatory Binding Sites in Sequenced Prokaryotic Genomes	NSF
Markus Etzkorn	Synthesis, Characterization and Host-Guest Chemistry of Glycoluril-Derived Molecular Tweezers with Fluoronaphthalene Pincers	American Chemical Society
Kenneth Gonsalves	IPA between UNCC and ONRG for Dr Kenneth E Gonsalves as Associate Director-Americas ONR Global	Office of Naval Research Global
Marcus Jones	CAREER: Rationally Assembled Nanoparticles for Multi-Electron Transfer processes	Western Michigan University
Joanna Krueger	George Alyateem: Protein Stability Studies to Develop Potential Liquid Formulations	NC Biotechnology Center
Joanna Krueger*	Protein Stabilization in Ionic Liquids	DHHS/NIH/NIBIB
Craig Ogle	Regional Analytical Chemistry Laboratory Providing Services	RacheL - Multiple Industry Sponsors
	Local Drug Delivery Systems for the Treatment of Infections	Carolinas Medical Center
<b>CLAS - Dean's Office</b>		
Lilian Brannon	UNC Charlotte Writing Project	Department of Education
	National Writing Project Middle Grades Research	National Writing Project
	National Writing Project 2009 Continued Funding Application	National Writing Project
Bill Hill	Lewis Stokes Alliance for Minority Participation Phase IV	NC Agricultural Technical State University
Molly Shaw	Spring 2010 Charlotte Teachers Institute (CTI) Diversity Talk Series	Arts Science Council
	Charlotte Teachers Institute	Belk Foundation
<b>Communication Studies</b>		
Christine Davis	Gaston County Health Department H1N1 Flu Vaccine Message Testing	Gaston County Department of Health
Clifton Scott (with Alan Freitag)	Improving Grease Disposal in Multi-family Housing and Latino Populations	NC State University (WRR)

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# Sponsored Research (Cont.)

## Criminal Justice and Criminology

Robert Brame	Pathways to Desistance from SU Problems and Crime	University of Pittsburgh
Paul Friday	Cabarrus County Gangs	Cabarrus County
	Western & South China International Conference on Drug Issues	Open Society Institute
Vivian Lord (with Beth Bjerregaard and Kristie Blevins)	Study of Crisis Intervention Teams (CITs) in North Carolina	NC Governors Crime Commission
Michael Turner (with Beth Bjerregaard and Jennifer Hartman)	Gang of One Program Assessment and Analysis and the Mecklenburg County Gang Assessment and Analysis	Charlotte Mecklenburg Police Department

## English

Boyd Davis	Carolinas Conversations: a Multiethnic Digital Corpus of Speech for Older Persons	Medical University of South Carolina
	Racial Variations in Communication, Decision-Making and Diabetes Outcome	Medical University of South Carolina

## Geography and Earth Sciences

Craig Allen (with John Diemer)	Beaverdam Creek Watershed Monitoring	Charlotte (City of) Storm Water Services
	Impacts of forest management on the character and transport of dissolved organic matter and mercury in Boreal streams draining to Lake Superior	Ontario Ministry of Natural Resources
Eric Delmelle	Access to Health Care, Timeliness of Services, and Costs among Children with Birth Defects	March of Dimes
Martha Eppes	An Investigation of Physical Weathering on Mars Using New Web-Based, User-Friendly 3-D MER Data-Mining Software	NASA
Scott Hippensteel	Outer Banks Paleotempestology: Enhancing the Paleo-Storm and Sea-level Record for North Carolina	NC Sea Grant College Program
Gerald Ingalls	Charlotte Chamber of Commerce, Search for and Identification of Green Businesses	Charlotte Chamber of Commerce
Ross Meentemeyer	Phytophthora ramorum and sudden oak death: feedback between a generalist pathogen, hosts and heterogeneous environments at multiple spatial and temporal scales	NSF

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# Sponsored Research (Cont.)

	Modeling Historic and Future Urbanization in North Carolina	Reynolds (Z Smith) Foundation Inc.
	Adaptive Management of <i>Phytophthora ramorum</i> in the Big Sur Ecoregion: Links Between Sudden Oak Death and Fire. Continued Measurements.	USDA
Heather Smith	A Community-Based Participatory Approach to Improving Hispanic Health	Carolinas Medical Center
Janni Sorensen	Capacity Building in Charlotte Neighborhoods - City-University Partnership	City of Charlotte Neighborhood Development
Deborah Strumsky	Collaborative Research: RAPID: Developing Real Time Metrics on the Effects of ARRA Investments on Technological Invention	NSF
Jean-Claude Thill	NC BRIM External Evaluation	Rural Economic Development Center Inc. (Raleigh)
Qingfang Wang*	Mecklenburg County Community Food Assessment	Mecklenburg County Health Department

## History

Sonya Ramsey	Giving A Hand Up, Women's Organized Response to the War on Poverty, 1960s to the 1980s	Syracuse University
John David Smith	Racial Discrimination & Slavery Issues	Department of State

## Mathematics and Statistics

Joel Avrin	Funding for Research Assistantship Math/Stat 09	AGDATA
Wei Cai	Algorithms for Nonlinear Maxwell Equations in Nonhomogeneous Media and Photonic Resonant Waveguides with Coupled Microspheres	Department of Energy
	Multi-scale and Multi-physics Numerical Methods For Modeling Transport in Mesoscopic Systems	DOD/Army/Army Research Office
(with Andriy Baumketner and Donald Jacobs, Physics and Optical Science; and Shaozhong Deng, Mathematics and Statistics)	Numerical Methods for Fast and Accurate Calculation of Electrostatic Interactions in Biomolecular Simulations	DHHS/NIH/NIGMS
Shaozhong Deng*; Wei Cai*	High Performance Computing in Computational Biology	DHHS/NIH/NCRR

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# Sponsored Research (Cont.)

Yuanan Diao	Collaborative Research: Topological Characterization of DNA Organization in Bacteriophage Capsids	NSF
Jacek Dmochowski*	Fertility and Oral Contraceptive Use Study (FOCUS)	DHHS/NIH/NICHD
	Feasibility of Delivering a Text Messaging Enhanced Adolescent HIV Curriculum	DHHS/NIH/NINR
	The Enhancement of the Existing AWARE BASICS Program to a BASICS Stepped Care Recovery Model	DHHS/SAMHSA
	A Health Literacy Intervention for Latina Women with Diabetes	Johnson (Robert Wood) Foundation
Alan Dow	Set-Theoretic Methods in the Study of Compact Spaces	NSF
Jiancheng Jiang	Quantile Regression for Multivariate Time Series Models with Functional Coefficients	NSF
Michael Klibanov	Computational Optical Tomography for Anti-stroke Therapy	DNNS/NIH/NINDS
	The Second Generation of Globally Convergent Numerical Methods for Coefficient Inverse Problems	DOD/Army/Army Research Office
(with Michael Fiddy, physics and Optical Science)	Globally Convergent Inverse Reconstruction Algorithms for Detection and Identification of IEDs via Imaging of Spatially Distributed Dielectric Constants Using Microwaves	DOD/Army/Army Research Office
	Computers for Globally Convergent Numerical Methods for Coefficient Inverse Problems	DOD/Army/Army Research Office
Yanging Sun	Statistical Methods in HIV Vaccine Efficacy Trials	DHHS/NIH/NIAID
	Efficient Analysis of Competing Risks Model with Missing Data	NSF

## Philosophy

Rosemarie Tong	Bioethics Resource Network (BRN)	NC Biotechnology Center
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## Physics and Optical Science

Vasily Astratov	Mesoscale Structures and Photonics Devices based on Coupled Spherical Cavities	NSF
	Photonic Devices Based on Circuits of Supermonodisperse Spherical Cavities	DOD/Army/Army Research Office

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# Sponsored Research (Cont.)

Andriy Baumketner*; Donald Jacobs*	High Performance Computing in Computational Biology	DHHS/NIH/NCRR
Michael Fiddy	Collaborative Research: Planning Grant: I/U CRC for Metamaterials	NSF
Nathaniel Fried	Noninvasive Approaches to Male Sterilization	Family Health International
Gregory Gbur	Generation and Use of 'Superbeams' in Turbulence and Scattering Applications	DOD/Air Force/Office of Scientific Research
Donald Jacobs	Energy Transduction in Myosin	Pennsylvania State University
	Predicting Protein Flexibility and Stability (supplement)	DHHS/NIH/NIGMS
Eric Johnson (with Thomas Suleski)	3D Dielectric Meta-Optics for Next-Generation Laser Systems	DOD/Air Force/Air Force Research Laboratory
Eric Johnson	Intergovernmental Personnel Act	NSF
	Optical Retro-Reflecting Elements	VizorNet Inc
	Compact Semiconductor Blue Light Optical Source Arrays	DOD/Navy/Office of Naval Research
	Guided-Mode Resonance Filter Appliqués for Full Field Measurement of Strain	Prime Photonics
	Engineered Laser Filaments in Air For Defense Stand-Off Sensing and Interaction Applications	University of Central Florida
	Meta IR Concentrators	Lockheed Martin Corporation
	Multimode IR Detectors	Prime Photonics
	Guided Mode Resonance Filters for Multi-kW 2 $\mu\text{m}$ emission by spectrally combining many Tm fiber lasers	University of Central Florida
Yuri Nesmelov	Functional Dynamics of the Myosin Molecular Motor	DHHS/NIH/NIAMS
	The Mechanism of Myosin ATPase Actin Activation	DHHS/NIH/NIAMS
Irina Nesmelova	Heterophilic interactions as novel regulatory mechanism of chemokine system	American Heart Association
M. Yasin Raja	Process Development for Low Cost Solar Cells	Gratings, Inc.
Thomas Suleski*	High Speed Micro-Milling of Optical Devices for Infrared Beam Shaping and Imaging (Yr 2)	II-VI Foundation

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# Sponsored Research (Cont.)

Can Multi-scale Optics be Fabricated by Ultraprecision Systems - Hierarchical Fabrication Across Seven Orders of Magnitude? NSF

## Political Science

Maureen Brown (with Gary Rassel) Acquisition Risks in a World of Joint Capabilities NPS (Naval Postgraduate School)

Joanne Carman A Process Evaluation of the United Agenda for Children Council for Childrens Rights

James Douglas Public Service Fellowship for Iredell-Statesville Schools Iredell Statesville County Schools

Public Service Fellowship #2 for Seigle Avenue Partners Seigle Avenue Partners

Public Service Fellowship #2 with Goodwill Industries Goodwill Industries

Public Service Fellowship for the City of Charlotte Charlotte (City of)

Public Service Fellowship with Mecklenburg County Board of Elections Mecklenburg County Board of Elections

Public Service Fellowship for Information Services and Technology Mecklenburg County Information Services & Technology

Public Service Fellowship with Mecklenburg County Land Use & Environmental Service Agency Mecklenburg County Land Use & Environmental Service Agency

Public Service Fellowship for Joie Lassiter Gallery Joie Lassiter Gallery

Public Service Fellowship for the Arts and Science Council Arts Science Council

## Psychology

James Cook (with Ryan Kilmer) Evaluation of Mecklenburg cares Mecklenburg County

Using a Community Based Participatory Research Approach to Examine Family Support DHHS/NIH/NIMH

Virginia Gil-Rivas Integration of Mental Health and Primary Care Services Charlotte Community Health Clinic

Mason Haber Evaluation of the Relatives/Alexander Youth Network On Ramp program Mecklenburg County Area Mental Health

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# Sponsored Research (Cont.)

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Erid Heggstad	Training Knowledge and Skills for the Networked Battlefield	Colorado State University
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Richard McAnulty	Public Defender Office Request of Paid Internship	Mecklenburg County
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Jennifer Webb (with Charlie Reeve)	Biopsychosocial determinants of weight gain in Black first-year college women	DHHS/NIH
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## Religious Studies

Joanne Robinson	Assessment of Religious Studies Majors	Wabash College
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	Exploring Signature Pedagogies in Religious Studies	Wabash College
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## Sociology

Roslyn Mickelson*	ADVANCE: Institutional Transformation Award	NSF
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Stephanie Moller (with Elizabeth Stearns and Roslyn Mickelson)	Do Professional Communities Improve K-16 Curricula Mastery and Augment Mathematical Achievement?	Department of Education
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