

# Mizzou Advantage Grants Awarded Round Two

For the second round of Mizzou Advantage grants, nearly 140 proposals were received totaling over \$5 million in requests. Mizzou Advantage will fund 16 seed and 12 network projects; additionally, the Chancellor's Fund for Excellence will fund ten projects that have potential for major external collaborations and/or have major components in the Arts and Humanities. In all, 38 projects have been funded for a total of slightly more than \$1.4 million.

Lead PIs are listed below, but each project also involves co-PIs from all areas of campus as well as external organizations. Nearly 450 individuals are involved in the winning grants.

## Seed Grants

### **Biomass Refinery Operation: Upstream and Downstream Processing at High Pressure**

Sustainable Energy

*Biomass is our carbon resource. This requires implementation of the biomass refinery concept. This project integrates existing expertise at Mizzou to address important issues that hinder widespread implementation of this concept. These issues involve upstream processing (slurry and solids feeding) and downstream processing (separations). Both of these challenges are addressed at high-pressure, enhancing the utility and impact of the work.*

[Lead PI\(s\)](#)

William Jacoby

### **Building a Relevance-based Search Engine for Quality Online Media**

Disruptive/Transformational Technology, Media of the Future

*The abundance of news information generated by non-professionals raises significant concerns about the quality and credibility of online news, potentially jeopardizing the functioning of democracy. This project seeks to explore new ways to develop a news credibility model, a content relevance model, and a personalized semantic search engine that leverages these models for news media consumption, analysis and production. The project will strengthen the relationships and leverage the expertise among faculty in Journalism, Computer Science, Information Science & Learning, Life Sciences, business, and external collaborators. It has the potential to help shape quality online media, result in larger project proposals, and create new spin-off businesses.*

[Lead PI\(s\)](#)

Wenjun Zeng

### **Contemplative Studies in Higher Education:**

#### **Balancing Old and New Transformational Technologies**

Disruptive/Transformational Technology, Education, Media of the Future, One Health/One Medicine

*Our goal is to establish a think tank and outreach center to investigate and practice, through research, teaching, and service to the MU community, the ways that old contemplative technologies—including meditation, breath awareness, contemplative reading, etc.—beneficially intervene in the cognitive and health disruptions that emerge alongside the benefits of new, transformational technologies. Contemplative practices are ancient transformational technologies that can bring balance to contemporary lives and education that are increasingly dependent on new ones. In other words, these practices bring essential health and cognitive benefits that complement and help to manage the use of new digital technologies.*

[Lead PI\(s\)](#)

Kennon Sheldon  
Donna Strickland  
Terry Wilson

## "Ediciones Vigia" and the Aesthetics of Bricolage

Disruptive/Transformational Technology, Media of the Future, Sustainable Energy

*This collaborative and multidisciplinary Mizzou Advantage initiative will be developed around Ediciones Vigia at the intersection of Media of the Future, Sustainable Energy and Understanding and Managing Disruptive and Transformational Technologies. We propose to explore the press' innovative and experimental aesthetics, graphic design, practices of book creation through bricolage, its institutional organization as collective entrepreneurship, and its implications as related to "new media," as well as disruptive and transformational innovation.*

Lead PI(s)

Juanamaria Cordones-Cook

## Exploring Human-Companion Animal Interaction for Families of Children with Autism

Media of the Future, One Health/One Medicine

*Seed grant funds are requested for a preliminary study opening a promising area of inquiry that addresses One Health and Media of the Future. The study will identify the roles of companion animals (dogs) in families of children with autism, to what extent pet ownership is beneficial or problematic, and will apply semantic mapping of the messages provided to these families about pet ownership through social media such as the blogosphere, twitterverse, and Facebook.*

Lead PI(s)

Rebecca Johnson

## Exploring the Health Benefits and Economic Opportunities of the Bioactive Compounds Isolated from Eastern Redcedar in Missouri

Education, One Health/One Medicine

*Eastern Redcedar (ERC) is an important source of bioactive secondary metabolites. More than 17 bioactive compounds isolated from ERC not only have shown strong inhibitory activities against melanin biosynthesis, but also strong anti-microbial activities against a wide range of pathogenic bacteria. An interdisciplinary collaborative approach was proposed to 1) characterize the modes of action against human and animal pathogens, 2) develop a pilot-scale production process, and 3) identify the immediate and potential commercial applications. The knowledge generated from the proposed study will provide the opportunities to turn abundant, low-value, renewable materials from the ERC into a lucrative industry in Missouri.*

Lead PI(s)

Chung-Ho Lin

XiaoQin Zou

## The Food Dialogue Center

Disruptive/Transformational Technology, Food for the Future, Media of the Future, One Health/One Medicine, Sustainable Energy

*The Food Dialogue Center focuses on the Food for the Future strategic initiative while incorporating initiatives related to safe, healthy and abundant food supplies. The Food Dialogue Center capitalizes on the Commercial Agriculture Program's strengths of systems-based teams addressing agricultural production goals of safe, environmentally responsible and economically sustainable food. The Food Dialogue Center will develop a national consumer-focused food center for disseminating food production information by funding: agricultural, educational and journalistic collaboration, documenting agriculture's capacity to feed the world while preserving the environment and maintaining human health. Deliverables include an implementation and marketing plan for the consumer food center.*

Lead PI(s)

Raymond Massey

Craig Payne

Rex Ricketts

## Health, Wealth & Society

Media of the Future, One Health/One Medicine

*"Health, Wealth & Society" would be a new, interactive reporting "desk" covering issues surrounding the health and wealth of citizens, families and communities in our region, and putting a light on the impact of state economic and health care policy on Missourians, through engaging, in-depth reporting and dialogue across media platforms.*

*The "Health, Wealth & Society" desk would be based on MU's campus, at KBIA radio, and would bring together important research and resources from campus experts and beyond, utilizing data analysis and computer-assisted reporting expertise, combined with the new-media know-how of our partners, to provide interactive, engaging information and dialogue on air, online and in the community. Through produced series, panel discussions, public forums and community outreach on air, online and in public spaces, the reporting would document the effects of place, ethnicity and socioeconomic status on individual and family health, wealth and quality of life in mid-Missouri communities.*

Lead PI(s)

Janet Saidi

## Identification and Pharmacological Targeting of the C-peptide Receptor

Disruptive/Transformational Technology, One Health/One Medicine

*C-peptide originates from proinsulin and is released with insulin. An injectable synthetic C-peptide has been successfully used in clinical trials for the treatment of diabetic complications; however, the molecular target of C-peptide is not known. For FDA approval, the drug target must be known. This project is designed to test the widely held hypothesis that C-peptide activates a G protein-coupled receptor(s) and to initiate a drug discovery process based on the identified receptor(s). This discovery will hasten FDA approval of synthetic C-peptide and eventually allow for the development of orally viable drugs that target the C-peptide receptor(s).*

Lead PI(s)

Thomas Quinn

## Imagine Democracy

Disruptive/Transformational Technology, Media of the Future

*The purpose of this submission is to raise the seed funding necessary for the initiation of the ImagineDemocracy multi-platform media project. Its two key elements are: (1) a theatrical documentary film retracing – and building upon -- Alexis de Tocqueville's many journeys across America in search of democracy (we, too, will be in search of American Democracy, circa 2011); and (2) the creation and build-out of the DemocracyChannel, an online portal and cable channel that will be available to cable systems nationally and throughout the world. The creative concept of the ImagineDemocracy project was conceived by two innovative entrepreneurs in the media industry. The project is similar in nature to the birth of The History Channel and the National Geographic Channel, now billion dollar businesses, that also grew from a simple but elegant concept.*

*The transformational content of the DemocracyChannel will include original programming as well as acquired/licensed films. It will break new ground by uploading innovative digital media from citizen journalists, students of all ages, independent producers, network archives, and studio libraries from domestic and international sources.*

Lead PI(s)

William Carner  
Richard Johnson  
Randall Smith  
Antonie Stam

## In utero exposure to the endocrine disruptor, bisphenol A: a root cause for a wide range of epigenetic-based diseases

Disruptive/Transformational Technology, Education, Food for the Future, One Health/One Medicine

*At 8 billion lb per annum, bisphenol A (BPA) is one of the highest volume chemicals produced worldwide. Our studies in male deer mice indicate that in utero exposure to BPA leads to post-natal neurobehavioral and testicular abnormalities. Our goal is to seek the underlying cause of these pathologies, and particularly whether BPA exposure induces chemical changes in the DNA of genes that drive key developmental events in the brain and testes as the male deer mouse fetus ultimately becomes an adult animal. As boys appear to be more at risk than girls to adverse developmental conditions, in general, and to BPA, in particular, our work will also provide useful information about these sex differences in susceptibility to environmental insults while the fetus is in the womb.*

Lead PI(s)

David Geary  
Cheryl Rosenfeld

## Information Overload: Creating a More Readable Electronic Health Record (EHR) Model

One Health/One Medicine

*Federal initiatives will drive widespread Electronic Health Record (HER) adoption across the US. However, barriers to HER adoption include useability, productivity loss, and divergent stakeholder information needs all crammed into one form-factor.*

*We propose a model of a multi-layer HER of physician documentation, with several distinctly displayed layers aimed at different stakeholders.*

*We will (1) identify information display needs of key stakeholders (physicians, patients, auditors), and (2) create a working model of HER display targeted at those needs.*

*We will develop this model further with external funding from AHRQ, and pursue commercialization through the Tiger Institute.*

Lead PI(s)

Jeffrey Belden

## **Intense Beam Loading and Shock Compression of Deuterium Loaded Palladium for LENR Studies**

Disruptive/Transformational Technology, Sustainable Energy

*In late 2009, the Defense Intelligence Agency (DIA) issued a report stating; "DIA assesses with high confidence that if low-energy nuclear reactions (LENR) can produce nuclear-origin energy at room temperatures, this disruptive technology could revolutionize energy production and storage." By leveraging the unique resources of various entities both inside and outside of the University, we propose a series of never performed LENR experiments, possible within the limited funding and time constraints of the Mizzou Advantage program. These experiments will produce data for much larger research proposals to outside funding agencies, who have already demonstrated interest in the topic.*

Lead PI(s)

John Gahl

## **Midwest Renewable-Energy Generation and Storage Solutions (Seed)**

Sustainable Energy

*This project is aimed at supporting the Mizzou Advantage strategic initiative in the area of Sustainable Energy. In particular, the project focuses on preparatory studies that will enable us to compete for national funding and recognition in the area of Renewable Energy resources. This proposal will fund exploratory efforts for understanding: 1) Midwest wind and solar energy resources, 2) Midwest options for storing renewable energy, and 3) Midwest policies and economics which impact these efforts. The project will culminate in a one-day symposium for presenting project results, for identifying national funding opportunities, and for assessing the success of this work. These efforts will draw from participants across Missouri's energy sector for the purposes of building a network of collaboration. A companion networking proposal is also being submitted to Mizzou Advantage.*

Lead PI(s)

Noah Manning

## **MU GLOBAL CONNECT - Proposal for the Development of a Digital Global Studies Undergraduate Certificate Program**

Disruptive/Transformational Technology, Education, Food for the Future, Media of the Future, One Health/One Medicine

*The Digital Global Studies Undergraduate Certificate is a 15 hour project-oriented and interdisciplinary program that allows students to explore the impact of technology, in particular digital technology, in two key areas: business/entrepreneurship and the nonprofit (NGO) sector. The certificate emphasizes the relationship between cultural diversity, globalization, and digital communications and their effects on international business and the NGO sector. The major desired outcome is to mentor and guide students to gain a high degree of cultural competence in the uses, ethics and stakes of digital technology globally, thus preparing them for work in the digital age. Additionally, students will gain hands-on experience in international business and the NGO sector through internship/volunteer work in global organizations and businesses.*

Lead PI(s)

Monika Fischer

## **National Hunger Atlas and Summit**

Food for the Future

*The Interdisciplinary Center for Food Security, which has achieved national prominence for its Missouri Hunger Atlas, proposes activities to establish MU as home to the National Hunger Atlas. These activities include 1) additional networking with MU researchers, technology specialists, and development officers; 2) bridging to other universities and establishing an academic/agency/private sector partnership, and 3) hosting a 3-day National Summit combining public activities and a working conference for researchers, agencies, national ngos, funders, and policy-makers to develop the objectives, research, scope, media, funding and other steps preparatory to establishing the first US National Hunger Atlas.*

Lead PI(s)

Sandy Rikoon

## **Rapid Molecular Detection of GBS in Pregnant Women**

One Health/One Medicine

*The ultimate goal of this project is to transfer electrochemical DNA biosensing technology (MU patent pending) to outpatient- and hospital-based care for rapid detection of pathogens, using the detection of the Group B Streptococcus [GBS] as a proof of concept. The sensitivity of this nanostructured and three-dimensional DNA biosensing device has made it feasible to directly detect infectious agents in clinical samples. The funding through Mizzou Advantage will enable us to achieve our short-term goal of detecting clinical specimens and help us to create longlasting funded projects through NIH R01/SBIR grants for successful transfer of the technology to clinical applications.*

Lead PI(s)

Michael Sherman

## **Regenerating Intestinal Crypt Culture for Biomedical Research**

One Health/One Medicine

*Unlike other organs, a major limitation to intestinal disease research has been the failure to develop a culture system that recapitulates the intestinal lining. Recent breakthroughs have enabled culture of stem cells from millions of intestinal glands (crypts). Multicellular “organoids” are produced that mimic the intestine and can be amplified in number for drug testing, etc. However, application to biomedical research has yet to be realized. The proposed project will validate the utility of the culture system for this purpose and, through collaborations at MU, will establish MU as an early leader for this technological advancement of gastroenterological research.*

Lead PI(s)

Lane Clarke

## **Selective Controlled Femtosecond Laser-Induced Chemical Reactions in Peptide Systems**

Food for the Future, One Health/One Medicine

*This interdisciplinary project brings together three faculty members from three departments at MU to join their expertise in proof-of-principle research proposal to create the basis of a novel technology of selective and controlled modification and/or destruction of peptides by femtosecond laser pulses. The technology is based on chemical reactions that are selectively initiated and precisely controlled by the laser pulses. The capability of selective and controlled modifications of peptides opens up tremendous opportunities for developing medical technologies of targeted and safe regulation of peptide content in tissues. Once proof-of-concept has been established this research has an exceptional potential for longterm external support from NIH, USDA, and the food industry. It will significantly elevate the stature and impact of MU in several promising research areas. The chances of success of this research are very high.*

Lead PI(s)

Jay Thelen

## **Socially Intelligent Computing in Action: A Community-Driven Platform for Host-Pathogen Interactions**

Disruptive/Transformational Technology, Education, One Health/One Medicine

*Infectious diseases in humans, animals, and plant claim millions of lives and have an economic impact of billions dollars every year. A pathogen causing an infectious disease generally exhibits extensive interactions with its host at the molecular level. Unfortunately, the data on host-pathogen interactions are scattered, often organized by a specific pathogen or disease. By employing the state-of-art bioinformatics and human-computer interaction methods, we propose to integrate the automated literature mining with the community-driven data gathering and annotation into a centralized platform for host-pathogen interaction data. This seed proposal will be further expanded to an NIH R01 grant.*

Lead PI(s)

Dmitry Korkin

## **Soy Protein Gold Nanoconjugates, with PTP 1B Inhibition Activity, for Metastatic Breast Tumor Therapy**

One Health/One Medicine

*Metastatic breast cancer remains a largely incurable disease. A recent statistics shows that after documentation of metastasis, the median survival time of the patient is 2 years. Thus, further advances in the treatment of metastatic breast cancer will require the development of new therapeutic modalities and novel approach targeting this disease. The utilization of sophisticated technologies such as nanotechnology, in the design of new therapeutic agents will provide the future advances in treatment of patients with metastatic breast tumor. Nanoparticle mediated therapy technique treats the cancer at cellular level processes thus, possesses the potential to cure metastatic breast cancer.*

Lead PI(s)

Raghuraman Kannan

## **Treating Autism Spectrum Disorders: A Technological Innovation for Children’s Health Care**

Disruptive/Transformational Technology, Education, Media of the Future, One Health/One Medicine

*Funding of this proposal will permit the participants to complete the initial, formative steps in developing a technology startup that markets a computer/Web based product that can assess the needs of children with ASD, determine resources to meet those needs, and then generate applications for public private programs that provide care. At the conclusion of this phase, the participants will have resolved technological issues, determined market and demand, and begun the process of developing a business plan to support requests for investment capital for the creation of new technology company based in Columbia, Mo.*

Lead PI(s)

Janet Farmer

Michael Grinfeld

## Use of Botanicals in Chronic Pain Research

### One Health/One Medicine

*New and innovative advances are needed in every area of pain research, from the molecular sciences to the behavioral/social sciences, and in the translation of this research to improved healthcare. The Project has two primary aims: 1) to bring to and further develop at Mizzou, a convenient, tractable rodent model of radicular (back) pain suitable for molecular and behavioral studies of botanicals that mitigate and help individuals manage chronic pain; 2) to form a collaborative, interactive network of molecular, behavioral and plant scientists who will contribute to the identification, characterization and development of botanical medicines suitable for mitigating and managing chronic pain.*

#### Lead PI(s)

William Folk

# Network Grants

## Bio2Cor: The Biomass/Biofuel Corridor along the Mississippi/Missouri River

Sustainable Energy

*The goal of this proposal is to strengthen the development of a world-class consortium with an ambitious agenda to create a biomass/biofuel corridor along the Mississippi/Missouri Rivers. There are over 100 individual researchers/industry leaders participating in this project. This interdisciplinary team includes agronomists, soil scientists, foresters, molecular biologists, biochemists, landscape ecologists, wildlife biologists, supply-chain management specialists, economists, transportation specialists, chemical engineers, industrial engineers, sociologists, statisticians and modelers. The outcomes will include a conference, a formal MU-led regional consortium - Bio2Cor, potential \$45 million funding, opportunity to compete for other external funding, enhanced regional biomass-biofuel production/supply chain, and new educational opportunities.*

Lead PI(s)

Shibu Jose

## Bioterrorism and Complex Systems

Disruptive/Transformational Technology, Food for the Future, Media of the Future, One Health/One Medicine

*Bioterrorism and Complex Systems represent an area of national and international concern. The field is composed of many concerns touching on four key areas in Mizzou Advantage (Disruptive and Transformational Technologies, Media of the Future, One Health, One Medicine and Food for the Future.). The need for an interdisciplinary approach to a bioterrorism event has been an international priority. This group has been assembled to address the issues of integrating campus wide expertise along with national expertise to set up a framework for an interdisciplinary collaboration by hosting a workshop in the area.*

Lead PI(s)

Glen Cameron

Beth Fisher

John Gahl

Sheila Grant

Mark Prelas

Annette Sobel

George Stewart

## Collaborative Portals for Interdisciplinary Working Groups: Evolutionary Studies and Science Studies

Disruptive/Transformational Technology, Education, Food for the Future, Media of the Future, One Health/One Medicine

*We have successfully established two widely interdisciplinary working groups – Evolutionary Studies and Science Studies. We will expand these collaborations and their impact by building interactive Web 2.0 “Collaborative Portals.” The resulting multi-functionality will facilitate discussions between researchers; provide a platform for blogs and discussions; showcase talks and interviews by scholars (conducted by student journalists); and establish a wiki-dictionary for explaining terms across disciplines. The platform we construct will be useful for other networks across campus and beyond. It will also contribute to our expanding visibility, which has already led to a planned collaboration with three international partners in Evolutionary Studies.*

Lead PI(s)

Stefani Engelstein

## Columbia Pecha Kucha

Disruptive/Transformational Technology, Education, Food for the Future, Media of the Future, One Health/One Medicine, Sustainable Energy

*We propose to establish a monthly series of Pecha Kucha events in Columbia beginning in April, 2011 at Ragtag Cinema. Speakers will use 20 slides at 20 seconds each to present a creative idea. A Steering Committee will review and screen presenter nominations. Members of the Steering Committee have been selected to provide wide-ranging interests and connections in the community and on campus. Our goal is to extend MU networks beyond campus in all of the MA areas, using these events to bring individuals with creative ideas together in a fast-paced presentation format at events that foster making personal connections.*

Lead PI(s)

Roger Cook

## **Creative Convergence Network (CCN): International Symposium on Assessment and Facilitation of Creativity in New Media**

Disruptive/Transformational Technology, Education, Media of the Future

*We propose a network for understanding creative behavior in new media by involving an interdisciplinary team from architecture, art education, textile design, film studies, theatre, psychology, information science, and computer science. The goal is to understand and discuss assessments in select new media across disciplinary areas in the hope to identify, evaluate and facilitate environments for creative behavior. The topic is appropriate for disruptive technologies because it identifies problems and potential in creative behavior. The topic is appropriate for the media of the future because it involves virtual reality worlds, remote collaboration, and visualization interfaces as a subject of the study.*

### Lead PI(s)

Bimal Balakrishnan  
Suzanne Burgoyne  
Roger Cook  
Newton D'souza  
Sanda Erdelez  
Matthew Kritis  
Kennon Sheldon  
Jeffrey Uhlmann  
Kathleen Unrath  
So-Yeon Yoon

## **Current Textile Labeling Requirements: Disruptive and Transforming?**

Disruptive/Transformational Technology, Sustainable Energy

*In response to U.S. Federal Trade Commission's (FTC) call for rigorous research and public discourse about green and/or sustainability-related labeling practices in textiles and apparel for policy improvement, this project proposes to hold a Summit, in order to establish relationships and to create a new collaborative network among MU faculty, consumer advocacy groups, policy makers, and policy administrators. Through these networking activities, we expect to situate MU as a MAJOR contact/collaborator for FTC's textile label regulation efforts. At the moment, there is no other academic institution with which FTC is collaborating on this topic. This project supports for Disruptive and Transformational Technology and Sustainable Energy initiatives.*

### Lead PI(s)

Jung Ha-Brookshire

## **Formation of an International Symposium Series on Muscle and Mineralized Tissues**

One Health/One Medicine

*This collaboration will draw together leading musculoskeletal tissues researchers from Mizzou and UMKC. Together we will plan the first international symposia, to be thereafter held biannually in Kansas City. This series will bring together leading researchers and their students; draw international attention to the excellent research done in Missouri and the Midwest Region; and serve the international community of dental and musculoskeletal tissues researchers by creating a venue for the rapid and open exchange of ideas and research results in this important field. The first such symposium will be held in late 2012, with the first planning meeting for this event to be held in April, 2011 for which we are requesting support.*

### Lead PI(s)

Lynda Bonewald  
Rob Duncan

## **Gateway to the West: Launching Digital Humanities at Mizzou**

Disruptive/Transformational Technology, Education, Media of the Future

*Our network will initiate a major digital humanities project, "Gateway to the West," to further harness and advance campus expertise in this interdisciplinary field; to create new scholarly and pedagogical opportunities; and to increase potential for external funding and visibility. We intend to draft a five-year plan for digitizing unique manuscript and print materials related to Missouri's role in Western expansion. Crucial to this plan will be the mentoring of graduate and undergraduate students who will work on faculty-led teams. An important part of our collective work will be to propose a graduate certificate in digital publishing and electronic editing.*

### Lead PI(s)

Michael Holland  
Berkley Hudson  
Devoney Looser



## **The Impact of Federal Health Care Reform Legislation on Missouri Citizens and Institutions**

Disruptive/Transformational Technology, Education, One Health/One Medicine

*The Patient Protection and Affordable Care Act will bring about changes in health care delivery that no single department at MU is equipped to research and understand. The goal of this proposal is to bring together a network of faculty from diverse units to help establish MU as a leader in research and teaching issues relating to the changes in health care delivery. The project is important to MU and appropriate for Mizzou Advantage funding because it will make it possible for new and better research and education efforts under the one health and transformational technologies initiatives.*

### Lead PI(s)

Victoria Osborne  
Paul Rainsberger  
Lilliard Richardson  
Molly Vetter-Smith

## **Missouri Metagenomics Symposium**

Disruptive/Transformational Technology, Food for the Future, One Health/One Medicine

*We shall organize and host a national Symposium on the emerging field of metagenomics at the University of Missouri-Columbia in Fall 2011. We shall recruit internationally recognized researchers in mammalian, plant, insect, viral, microbial and ecological metagenomics to come to the Columbia campus to present their work and establish scientific relationships with our faculty. The objective of this Symposium is to educate our faculty and students on the tools and approaches being used to study the biology of symbiotic species and to establish collaborative relationships which will facilitate our ability to recruit world class faculty to the University.*

### Lead PI(s)

Michael Calcutt  
Mark McIntosh  
Daniel Oerther  
Jack Schultz  
Gary Stacey  
Jerry Taylor

## **MU Environmental Policy Network to Enhance the Stature and Impact of Mizzou Advantage Strategic Areas**

Education, Food for the Future, Media of the Future, Sustainable Energy

*The aim of this project is to enable productive collaborations among faculty from various MU Departments and experts outside campus to bring MU to greater national and international prominence in the environmental policy arena by establishing the MU Environmental Policy Network. The Environmental Policy network will facilitate a stronger position for the University in education and research areas thus deepening MU's presence in three specific Mizzou Advantage initiatives. The Network will facilitate the creation of a Graduate Certificate Program, a Speaker Series, and a Student Essay contest.*

### Lead PI(s)

Mark Ryan

## **New Media, New Technologies, and the Future of the Arts**

Disruptive/Transformational Technology, Media of the Future

*New media and technologies are profoundly changing the way we create, disseminate, and receive art. Electronic, digital, and networked creative processes are rapidly finding their place alongside traditional production methods, and new delivery systems are similarly changing the way art reaches the public. Understanding these new media and technologies will be essential for anyone wanting to participate in today's rapidly evolving cultural conversations. By exploring these developments, we expect to stimulate a conversation that can lead to future planning, answering the question, What must MU do today to prepare the campus and - more broadly - Missourians for the art of tomorrow?*

### Lead PI(s)

Andrea Heiss  
Robert Shay

## **Overcoming Barriers for Regulating Environmental Endocrine Disrupting Chemicals**

Disruptive/Transformational Technology, One Health/One Medicine

*In 1991 participants in a workshop, Chemically Induced Alterations in Sexual Development: The Wildlife-Human Connection released "The Wingspread Consensus Statement" and a book identifying the previously unrecognized hazard posed by endocrine disrupting chemicals with recommendations for public health policy makers. The purpose of the proposed workshop is to explore barriers that have prevented governments from incorporating findings from endocrine disruption research and taking regulatory action to reverse the trends in endocrine related disorders. Fifteen external and three internal participants with the following expertise: science, medicine, environment, communications, policy, regulations, economics, history, and national and international security will attend.*

Lead PI(s)

Frederick Vomsaal

## **Reality-Based Filmmaking: Journalism and the New Documentary in the Twenty-First Century**

Education, Media of the Future

*What accounts for the growing public fascination with documentary film? What does that interest and enthusiasm tell us about the seismic shifts in media presently challenging traditional modes of newsgathering? Through public workshops, a conference, and a publication, this initiative analyzes the crossing boundaries between nonfiction storytelling forms, the appeal of advocacy in that storytelling, and the cultural and ethical implications of journalism and documentary film's convergence. Taking advantage of key academic resources on campus as well as in the Columbia community, the project will heighten MU's visibility by establishing it as a center for research in this emerging area.*

Lead PI(s)

Roger Cook

Stephanie Craft

Joanna Hearne

Brad Prager

Katherine Reed

Paul Sturtz

Tim Vos

## **Regional Symposium on RNA Structure and Function: CornBelt RNA 2011**

Food for the Future, One Health/One Medicine

*RNA biochemistry and RNA biology have been a defining focus of the molecular life sciences for over 40 years, exemplified by the awarding of five Nobel prizes for work in this area since 2001. This area is relevant to Mizzou Advantage initiatives in Food, Health and Transforming Technologies (synthetic biology). RNA science is a significant strength at the University of Missouri, with over a dozen interactive research groups. Smaller-scale growth has taken place at universities in Missouri and bordering states. We propose building this network by hosting "Corn Belt RNA" in November 2011.*

Lead PI(s)

Donald Burke

Brenda Peculis

Frank Schmidt