Special thanks to the John Glenn School of Public Affairs.
International Scholarship Symposium

9 – 9:10 a.m. Opening Remarks
William Brustein, Vice Provost for Global Strategies and International Affairs

9:15 – 10:45 a.m. Panel I: Social Actors in Changing Environments
Faculty Chair: Sharvari Karandikar-Chheda

Elizabeth Gardiner
“The role of domestic entrepreneurs in land grabing”

D. Rose Elder and Christopher Thomas
“Parent-child agriculture technology transfer”

Mark Erbaugh and Donald Larson
“Marketing research to improve smallholder incomes and Sorghum productivity in East Africa: Lessons Learned”

Laura Justice and Amy Pratt
“Promoting parent-child literacy interactions in indigenous Mayan communities”

10:50 – 12:20 p.m Panel II: Questions of Global Health
Faculty Chair: Wondwossen Gebreyes

Shu-Hua Wang, Xueliang Pan, Joan-Miquel Balada-Llasat, Jesse Kwiek and Jordi B. Torrelles
“Developing new point-of-care approaches for the diagnosis of tuberculosis in endemic area of the disease”

Ermias Mekuria Addo
“Antiproliferative constituents of the roots of Podocarpus falcatus (Podocarpaceae)”

Alison Norris, John Casterline, Jesse Kwiek, John Phuka, Abigail Norris Turner
“Collaborative Epidemiologic Research in Malawi: UTHA Study Design and Baseline Findings”
Hyun-Su Kim, Jennifer Rodis, Robert Brueggemeier and Kenneth Hale
“Global pharmacy initiatives at the Ohio State University College of Pharmacy”

12:20 – 1:45 p.m. Lunch and Poster Session

1:45 – 3:15 p.m. Panel III: Water Across the Planet
Faculty Chair: Philip Brown

Suzanne Gray
“Linking freshwater fish biodiversity and water quality in Uganda”

Daniel Leavell
“Water resource management in Alpine regions for an uncertain global future”

Jiyoung Lee
“Human health risks linked to water eutrophication in the U.S. and global implications under changing climate”

3:20 – 4:50 p.m. Panel VI: Social Justice and Agents of Change
Faculty Chair: Nina Berman

Yagoub Yousof Abdullah and Soheir Hussein Ahmed Elbialy
“School’s role in enhancing the citizenship values among selected students in Kuwaiti society: Practical study”

Carol Boram-Hays
“Continuity and change in modern and contemporary Zulu beadwork”

May Mergenthaler
“Poetic Justice: The romantic critique of metaphor”

Morgan Y. Liu
“Social justice ideals and Islamic revival realities”

5 – 6 p.m. Reception and Closing Remarks
Research Summaries

Social Actors in Changing Environments

The Role of Domestic Entrepreneurs in Land Grabbing

Elizabeth Gardiner, doctoral student, Department of Anthropology

Ten African governments, including Burkina Faso, have pledged land to domestic and international agro-businesses through the G8’s New Alliance for Food Security and Nutrition (2012-2022). Variable in terms of implementation and scale, scholars refer to these investments as large-scale land acquisitions (LSLA). LSLAs represent a shift in the approach to development, wherein land privatization and GDP are prioritized. Despite being cited as socioeconomically detrimental to households, the World Bank promotes/funds LSLAs as remedies for climate change and food insecurity.

Land purchases in Burkina Faso are dominated by domestic, middle-class entrepreneurs funded by World Bank development programs. To better understand the role of domestic entrepreneurs in the neoliberal development strategy, I employ a case study of Issaka Bougoum, owner of Ranch de Koba Burkina Faso. Communities who sell land to Issaka experienced ideological changes in: agricultural/land tenure practices, loan taking and political knowledge. To the community, the entrepreneur is the developer.

Traditionally, land is not sold; village chiefs allocate it to households. Entrepreneurs normalize land privatization and new laws that circumvent traditional methods of land allocation. Moving beyond landgrab rhetoric, the research is focused on how global development strategies are implemented through the variable practices of local entrepreneurs and regional institutions.

Parent-Child Agriculture Technology Transfer

Christopher Thomas, undergraduate student, College of Food, Agricultural and Environmental Sciences
D. Rose Elder, associate professor, Ohio State Agricultural Technical Institute

In response to high youth unemployment, Ghana’s government established the Youth in Agriculture Program (YIAP) “to increase employment opportunities and incomes, encourage entrepreneurship, and upscale food production,” (Domfeh, 2012). YIAP urges youth to reject the idea that farming is “dirty work” and instead “take up farming, cash cropping...to generate income and create wealth” across the value chain (Bennell 2007; Ghanaian Chronicle, 2010). Can parents influence youth to remain on the farm and
increase agricultural production?
Research on parent-child agricultural technology transfer is not readily available. Often, information transfer happens informally. This project matches farming parents with their junior high school children for a mutual exchange of parents’ traditional and children’s scientific agricultural technology in monthly workshops on animal husbandry, vegetable production, agrochemical safety, cropping, marketing, finances, record keeping and family communication. It studies changing parent-child interactions, tests the effect on agricultural production, and assesses youth interest in agriculture compared to a control group in Dzolo Kpuita.

In 2014, the project collaborated with nine Kpenoe parents and 13 children to craft workshops and administer pretests. Evangelical Presbyterian University College professors and a local extension agent are facilitating workshops. In 2015, students will participate in the capstone workshop and administer posttests.

Marketing Research to Improve Smallerholder Incomes and Sorghum Productivity in East Africa: Lessons Learned
- Mark Erbaugh, Director of International Programs in Agriculture
- Donald W. Larson, professor emeritus, Department of Agricultural, Environmental and Development Economics

Transitioning smallholder farmers in sub-Saharan Africa from subsistence to commercial production is an important development goal for improving livelihoods, food security and economic growth. Development researchers assert that smallholder production can be increased by accelerating the use of improved agricultural technologies, but this has been hampered by inadequate systems of technology transfer and lack of access to reliable output markets. These linkages were examined as part of a USAID project to increase sorghum production in Tanzania, Uganda and Zambia. The research objectives were to identify new market opportunities, examine constraints along the sorghum value chain that impede technology adoption and market access and make recommendations for resolving constraints. The research identified three new markets for sorghum. Additional lessons: Smallholders face many challenges accessing dependable input and output markets; farmers linked to markets are more likely to adopt production enhancing technologies which is linked to productivity increases; organizing smallholders into marketing associations and using forward contracting schemes between farmers and buyers can help link farmers to markets; and extension providers have an important role to play improving sorghum production but require in-service training on value chain analyses, organizing farmers, market linkages and contracting.
Promoting Parent-Child Literacy Interactions in Indigenous Mayan Communities

- Laura Justice, distinguished professor, College of Education and Human Ecology
- Amy Pratt, doctoral student, Department of Speech and Hearing Science

Illiteracy rates in indigenous communities in Yucatan state are among the highest in Mexico. There is a great need to develop and test innovative strategies for improving children’s literacy skills in the early grades. In this two-year project conducted in two Mayan villages (Mayapan and Teabu), 120 parents and their young children received culturally relevant, Maya/Spanish books and participated in four workshops over a nine-month period to promote parent-child literacy interactions. The goals were twofold: (1) to provide children with print resources to use in their home environment, and (2) to promote caregiver knowledge about early literacy development and how they might support their children’s growth in this area. Methods used in this work will be shared and information will be provided about the literacy skills of young Mayan children and their home learning environment.

Questions of Global Health

Developing New Point-of-Care Approaches for the Diagnosis of Tuberculosis in Endemic Areas of the Disease

- Joan-Miquel Balada-Llasat, associate director, Clinical Microbiology Laboratory
- Jesse Kwiek, associate professor, Department of Microbial Infection and Immunity
- Jordi B. Torrelles, assistant professor, Internal Medicine at the Center for Microbial Interface Biology
- Shu-Hua Wang, assistant professor, Internal Medicine in the Division of Infectious Diseases

One person dies of tuberculosis (TB) every 18 seconds. The recent emergence of extensively-, extremely- and totally-drug resistant M.tb strains in endemic areas is an uncontrollable burden for the fight to control global TB. The proposal is to develop and determine the performance of two low cost, non-invasive and point-of-care tests to strength the TB diagnostic capacity for public health action. These are the Alere Determine Urine LAM Ag (LAM test) and the Color Plate tests, which can diagnose M.tb infection in 25 minutes and drug resistance patterns in 14 days, respectively. Our current data, using laboratory control specimens, have successfully shown that the sensitivity of the LAM test can be increased 10-fold by enzymatically treating the urine.
Moreover, our results with the Color Plate test demonstrate that this is a valid test to determine drug-susceptible, MDR and pre-XDR-TB cases. We are currently initiating a large pilot study in high burden settings (Guatemala, Malawi and China) to determine the accurate estimate of the LAM Ag and Color Plate tests in the HIV-infected population. Correlations with CD4 counts, co-morbid conditions and social factors (i.e. diabetes, malnutrition, smoking, etc.) that may induce variability on these tests will also be evaluated.

### Antiproliferative Constituents of the Roots of Podocarpus Falcatus (Podocarpaceae)

- **Ermias Mekuria Addo, international scholar, Medicinal Chemistry and Pharmacognosy in the College of Pharmacy**

Cancer, which affects more than 32.6 million people worldwide, is becoming a global burden due to the toxicity of currently available anticancer drugs and their impotency due to the increasing resistance. Hence discovering new drugs with new mode of action, better selectivity and safety is desperately needed. Natural products including traditional medicinal plants are widely used in prevention and treatment of diseases. In the aim to discover anticancer drug scaffolds, we selected an Ethiopian medicinal plant: *Podocarpus falcatus* (Podocarpaceae), which is traditionally used in the treatment of bone fracture, fever, loss of hair and rabies. The decoction of roots of this plant is used in some part of Ethiopia for the treatment of cancer–like symptoms. Bioassay-guided fractionation and isolation, using the human colorectal adenocarcinoma cell line (HT-29), of the methanolic extract of the roots of this plant led to isolation of two new and six known antiproliferative totarane-type diterpenoids. The structures of the isolated compounds were determined based on 1D and 2D NMR, UV, IR, mass spectrometry, X-ray diffraction and comparison with the reported data. The presence of five totarane-type diterpenoids with potent antiproliferative activity in the Ethiopian *P. falcatus* justifies the traditional use of the plant.

### Collaborative Epidemiologic Research in Malawi: UTHA Study Design and Baseline Findings

- **Alison Norris, assistant professor of epidemiology, College of Public Health and College of Medicine**
- **John Casterline, professor in population studies, Department of Sociology**
- **Jesse Kwiek, associate professor, Department of Microbial Infection and Immunity**
- **John Phuka, senior lecturer at University of Malawi, College of Medicine**
- **Abigail Norris Turner, assistant professor, Department of Internal Medicine**
Methods: Child Legacy International (CLI), a non-governmental organization (NGO) located in a rural area in Lilongwe District, has an engaged relationship with its surrounding communities. During 2013 and 2014, faculty and students from Ohio State University (OSU) and Malawi College of Medicine (MCOM) spent extended periods of time collaborating with Malawian staff at CLI to build the Umoyo wa Thanzi (UTHA, Health for Life) research program. Together, we developed relationships with clinical and programmatic staff; met with village chiefs and other community leaders; created research protocols; and trained staff on research methods and data collection.

Joint projects to-date include a household census with geo-coded data from all 5,538 households in the CLI catchment area; qualitative investigations about sexual health, reproductive health, and material scarcity; and the launch of a cluster-randomized baseline survey, recruiting all women of reproductive age, plus male partners, in selected villages (to total ~1,000 households). The baseline survey focuses on sexual and reproductive health decision making. Data collection is ongoing.

Results: Each partner contributes to the collaboration and benefits from it. CLI provides physical infrastructure (office space, solar/wind generated electricity, internet) and staff effort, and benefits from excitement generated among community members, job creation, and educational opportunities for staff, as well as data to identify needs and improve programming. OSU and MCOM faculty provide funding and expertise in research methods, and benefit from excellent quality data that will improve feasibility of future health-promoting interventions. Community members give time and trust, and in return benefit from improved health care that addresses their health needs and concerns.

Global Pharmacy Initiatives at The Ohio State University College of Pharmacy

- Hyun-Su Kim, Global Pharmacy Education and Practice Fellow at the College of Pharmacy
- Jennifer L. Rodis, associate professor, Pharmacy Practice and Administration in the College of Pharmacy
- Robert Brueggemeier, professor emeritus, Medicinal Chemistry and Pharmacognosy in the College of Pharmacy
- Kenneth Hale, clinical professor, Division of Pharmacy Practice and Administration in the College of Pharmacy

The College of Pharmacy is engaged in multiple international collaborations with schools of pharmacy in other parts of the world. The College of Pharmacy established strong relationships with schools of pharmacy in Taiwan, including formal agreements for faculty and student exchanges, research experiences and PhD training. The college has formed educational partnerships with Hong Kong Baptist University’s (HKBU) Faculty of Science and School of
Chinese Medicine and The Thai-Thai Consortium for the Development of Pharmacy Education in Thailand. Short-term study abroad experiences expose bachelor of science in pharmaceutical sciences and PharmD students to pharmaceutical and healthcare issues in various international locations including London, Puerto Rico, Nicaragua, Honduras and Toronto. The College of Pharmacy, as a member of the Ohio State health sciences team, established formal agreements with universities in Ethiopia providing research training in the pharmaceutical sciences and capacity building in pharmacy. Students engage in on-campus learning through an elective course offered each year which includes annual video conferences. The college is expanding the educational partnership with international colleges and moving toward improving global health outcomes. As a part of the Global Pharmacy Initiatives, the College of Pharmacy added the first Global Pharmacy Education & Practice Fellow to the college’s leadership team for outreach and engagement. Lessons learned from these global partnerships and the college’s global pharmacy vision will be presented.

Water Across the Planet

- Linking Freshwater Fish biodiversity and Water Quality in Uganda
  - Suzanne Gray, assistant professor, School of Environment and Natural Resources

Human-induced environmental change is driving massive ecosystem alteration and biodiversity loss globally; freshwater ecosystems and fish are among the most threatened. The goal of the research is to understand how freshwater fishes, integral to ecosystem functioning and human subsistence, respond to environmental change. Supported by an Office of International Affairs SEED Grant, I am investigating the influence of two aquatic stressors of global concern – hypoxia and turbidity – on fish diversity in Uganda. These two stressors are often associated with forest and wetland clearing for agriculture, leading to decreased water quality. Using sites in Uganda ranging from “pristine” forest streams or intact wetlands to highly degraded rivers and lakes, I investigate how some fish species are able to cope with environmental stressors while others are not. Initial results suggest shifts in behavior, morphology and physiology across populations of a focal species experiencing different stressor regimes allow its continued persistence, although the case is not as clear for other species. Additionally, the need for local education projects that directly target the importance of wetlands and forests for good water quality as it pertains to the health of people in surrounding communities is needed; our conservation education program, in its fifth year, continues to expand throughout Uganda.
### Water Resource Management in Alpine Regions for an Uncertain Global Future

- Daniel N. Leavell, associate professor, Department of Geology at The Ohio State University at Newark

Alpine regions of the world store a great deal of the fresh water available for mankind. In North and South America, Europe and Central Asia; meltwater from glaciers augments the flow in major rivers, delivering fresh water to huge population centers and widespread agricultural basins. With each passing year the impact of climate change grows, and the mass of alpine glacial ice decreases. The 2-3 degree Celsius increase in global average temperature predicted for the 21st century may result in substantial water shortages in some of the world’s largest river basins, potentially impacting hundreds of billions of people.

In an attempt to understand these potential impacts and what is being considered today to manage water resources for the future, field studies have been undertaken in the central Peruvian Andes, the Indian Himalaya and the French Alps. Alpine ice and river systems provide water for hydropower generation, cooling water for nuclear and thermal generation, industrial and drinking water, and in many basins, water for irrigation of agricultural production. Water management professionals are just beginning to consider a future scenario of diminished river discharge, and are slowly responding to the challenges of water management in a changing climate.

### Human health risks linked to water eutrophication in the U.S. and global implications under changing climate

- Jiyoung Lee, associate professor, Division of Environmental Health Sciences in the College of Public Health and Department of Food Science and Technology

Human activities, such as urbanization and agricultural expansion, and population growth caused excessive nutrient loading in the receiving water bodies worldwide. Land use changes, especially increasing agricultural land and developed land in the drainage area of a water body greatly increases the nutrient concentrations of the water body. These eutrophicated water bodies are vulnerable to cyanobacterial blooms, since nitrogen and phosphorus stimulate the growth of cyanobacteria. Harmful cyanobacterial blooms present a global threat to human health. The most common cyanobacteria found in Lake Erie, Microcystis aeruginosa, can produce toxins that cause liver damage and cancer. The purpose of this study is to estimate the spatial distribution of cyanobacterial blooms in the United States and its link to non-alcoholic liver disease.
Social Justice and Agents of Change

School’s Role in Enhancing the Citizenship Values Among Selected Students in Kuwaiti society: Practical Study

Yagoub Yousof Abdullah, visiting professor, Department of Anthropology
Soheir Hussein Ahmed Elbialy, Ph.D., Tanta University, Egypt

This study examines the role of school in enhancing the values of citizenship among selected students in Kuwait. This study focuses on the students’ historical and constitutional knowledge. It tried to answer the following questions: (1) How much constitutional knowledge had these students gained in school, and (2) What is the relationship between citizenship values and the amount of knowledge? Sample of the present study consists of freshman students at Kuwait University; 466 students (m = 19.43; SD = 1.36) have been selected. The questionnaire was the main tool of this study. The questionnaire contained some demographic and sociocultural variables. In addition, two major scales were used, constitutional and historical knowledge scales. Also, a citizenship values scale was used. All of these scales have been used in other studies in Kuwait. SPSS (version 21) has been used for data entry and analysis. Results showed that the constitutional and historical knowledge were low among the sample. There was a significant difference between male and female knowledge, with male students having more constitution and historical knowledge than female students. No significant difference was found between Muslim, Sunni and Shiite students, while differences were found between Bedouin and Urban students. Results showed a significant positive relationship between the amount of constitutional and historical knowledge and citizenship values. Data showed that there is an importance of the constitutional and historical knowledge and information on the citizenship values.

Continuity and Change in Modern and Contemporary Zulu Beadwork

Carol Boram-Hays, history of art lecturer at Ohio State University, Marion

Since their defeat by the British in the late 19th century, the Zulu people of South Africa have tried to maintain their distinct cultural traditions. Yet, to maintain their culture, the Zulu have always realized that to remain relevant their traditions needed to be flexible enough to reflect the contemporary lives of people. This play between continuity and change is especially interesting in the use of beadwork as part of dress. While in the 19th century the use of beadwork was limited to the upper classes to show wealth, in the 20th century it came to be used to express regional, generational and
Poetic Justice: The Romantic Critique of Metaphor

May Mergenthaler, associate professor, Department of Germanic Languages and Literatures

Poetry has, at least since the European Romantic period, often been regarded as a means to formulate the Platonic triad of beauty, truth and virtue, through the expression of an individual’s – the lyrical speaker or lyrical I’s – emotions and longings for healed world, which all schisms have been overcome, including social inequality. Thus understood, poetry is an important agent of both social and cultural change; the poet becomes a prophet of a better future. At the same time, Romantic poets have from the very beginning voiced doubts in the ability of language, especially of poetic language, to express such a utopia adequately and truthfully. Language seemed incapable of doing justice to the world it represents, being too fanciful, or too trite, or too real and a slave to the apparent facts. One of the main targets has been metaphor – a major poetic device of Romanticism. Metaphor was supposed to help the (usually male) lyrical I to recognize himself in the gaze of a beloved women – commonly represented through nature metaphor, often the figure of the sun – and to thereby feel reconciled with the world. In this paper, I will critically explore, on the background of interdisciplinary contemporary theories of metaphor, how Goethe – one of the founders of Romantic poetry – employed and transformed the figure of the sun in his early poetry, from innovative metaphoric uses of the term to its allegorical concealment in “golden clouds,” that accompanied a shift in his concerns, from individual love to social unification.

Social Justice Ideals and Islamic Revival Realities

Morgan Y. Liu, associate professor, Department of Near Eastern Languages and Cultures

Islamic revival movements have seen an increase in adherence and prominence throughout much of the Muslim world since the early 20th century, but especially after 9/11, and recently with the “Islamic State” in Syria and Iraq. Such diverse movements promote Islam as the supreme guide to the political,
economic and moral constitution of humanity. Key to their mass appeal is their claim to bring social justice to societies plagued with poverty, oppression and corruption. For many Muslims, Islamic order is ultimately about just society.

The research looks at how Islamic movements translate their utopian ideals into lived realities, or fail to. The focus is on Central Asia after the collapse of the Soviet Union, tracing how oil industries affect societies in Kazakhstan and Azerbaijan. As a cultural anthropologist, my approach is to learn how people actually think and act. I want to know, do Islamic revivalists actually have a viable vision of social justice that poses a credible alternative to Western models founded on individual freedom, consumer capitalism and democracy? This inquiry raises fundamental questions about the very terms of desired change in response to global dilemmas like inequality, conflict and dictatorship.
Poster Session

“Differential colonization of Solanum sisymbriifolium and tomato by Ralstonia solanacearum strains”
Submitted by Mafruha Afroz

“Hypoxia Tolerance: A comparison between Bighead and Koi Carp”
Submitted by Alam Ashraful

“Chiatura, My Pride”
Submitted by Sarah Cowles

“Hydrologic redistribution and rhizosphere biology of Resource Islands and partnership to develop agroecology and extension programs in Senegal”
Submitted by Amanda Davey

“Innovative Agricultural Research Initiative (iAGRI)”
Submitted by Mark Erbaugh

“The roles of rural women work in agriculture and food production”
Submitted by Sharmin Sadeq

“Genetic variability of Sclerotinia sclerotiorum and integrated management of white mold of mustard”
Submitted by Mynul Islam

“Digital soil mapping for rice production”
Submitted by Boniface Massawe

“HPV genotypes prevalence in invasive cervical cancer in Ethiopia and single visit assessment cervical cancer prevention program in Ethiopia”
Submitted by Usha Menon

“The Male Odissi Body: Masculinity in Theory and Practice”
Submitted by Kaustavi Sarkar

“Genetic diversity and management of Ralstonia solanacearum strains in South Asia”
Submitted by Nagendra Subedi

“Enhancing soil and plant health for smallerholder tomato farmers”
Submitted by Anna Testen

“One Man, One Vote - One Family, One House”
Submitted by Emily Webster
“Assessing impacts of participatory agricultural research on livelihoods of Arabica coffee farmers: Evidence from Manafwa District, Uganda”
Submitted by Rosemary Isoto

“Bibliotheca Alexandrina subject authority file and linked data”
Submitted by Magda El-Sherbini