

Schedule Overview

The Graduate Multidisciplinary Conference is an annual tradition meant to emphasize the important research produced by Clark University's graduate community. Sixty-nine graduate students are representing twelve graduate departments, including the Graduate School of Management, through oral and poster presentations.

Session start times	Themes
1 p.m.	Dimensions of Human Health; Learning and Change; Ecological Flows
2:15 p.m.	Borders and Boundaries; Environment and Growth; Markets and Outreach
3:30 p.m.	Movement and Exchange; Energy and Infrastructure
4:45 p.m.	Identity and Relationships; Networks and Layers; Sustainable Connections

Oral presentations will be held in the Higgins University Center, Room 100, on the second floor. Presentations will be held in the Higgins University Center, Room 100, on the second floor. Presentations will be held in the Higgins University Center, Room 100, on the second floor.

Poster sessions will be held in the Higgins University Center, Room 100, on the second floor. Poster sessions will be held in the Higgins University Center, Room 100, on the second floor. Poster sessions will be held in the Higgins University Center, Room 100, on the second floor.

Graduate Student Association (GSA)

The Clark Graduate Student Council serves the Graduate Student Association by planning student events, appropriating budgeted funds, sitting on university committees, and providing graduate student input to the administration. All students are welcome to participate in the activities of the council — meetings and events are announced periodically via email (gsc@clarku.edu).

In addition to officers, each department has a representative. There is no formal process to become a member; if your department needs a representative, simply start coming to the meetings and voice your opinion. Agenda items frequently include events planning, appropriation requests, health insurance, stipends, University policy, and campus services.

Current departmental representatives include: Casey Trimble (Physics), Linshu Wang (Chemistry), Matthew Law (History),

Oral Presentations

A : G. C. R., H. C.

A : C.

: Chitra Naidu

C : Michelle Latino, Todd Rosenberg,

Claire Rosenwasser, Justin Ackeray

D : Biology

A : Justin Ackeray

A : PLC-gamma is a conserved regulator of signaling pathways that are required for the proper growth and proliferation of many cell types. Overexpression of PLC-gamma is found in many common human malignancies, suggesting that inhibitors may have an important role to play in the fight against cancer. However, there are no molecules that specifically inhibit this phospholipase. This study aims to find a PLC-gamma inhibitor using *Drosophila melanogaster* as the model system.

A : Md Zul Kar Ali

Presenter: Md Zul Kar Ali

Department: Physics

Adviser: Ranjan Mukhopadhyay

A : In the hierarchy of interesting dynamical behavior in biology, oscillations have always attracted the modeling community. As biochemistry and molecular biology progressed we learned about many biochemical systems that oscillate: glycolytic oscillation, circadian rhythm, cell cycle, oscillation in protein concentration, etc. We have developed a minimal physically motivated model of protein-protein interaction networks and have applied this model to study neutral dri

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A. J. J.



development principles. Therefore, Ethiopian policymakers should enact a new policy framework that recognizes the SHGs' endogeneity and permits them to operate without compromising their endogenous features. This study also has implications for SHG-related research and implementation by establishing the SHG approach in a coherent theoretical framework for the first time.



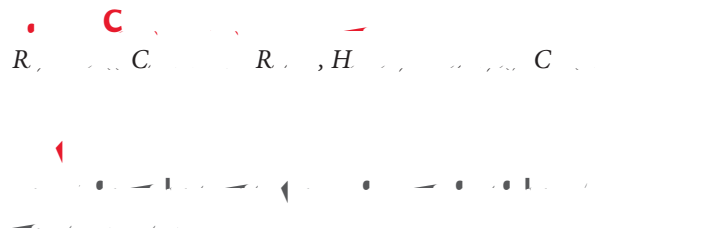
Presenter: Susan Nelson
Department: International Development, Community and Environment
Adviser: David Bell

Abstract: This study seeks to critically engage in the topic of secondary language acquisition to explore the role it plays in immigration, particularly as this relates to developing cultural competence. Further, the research examines the barriers to second language acquisition, and also makes recommendations for reducing those barriers. This will be done by examining literature that analyzes the role that secondary language learning plays in immigrants becoming culturally competent within the United States, and will look at this more in depth by focusing on Mexican immigrants who have come to the United States.



Presenter: Amina Musa
Department: International Development, Community and Environment
Adviser: Anita Fabos

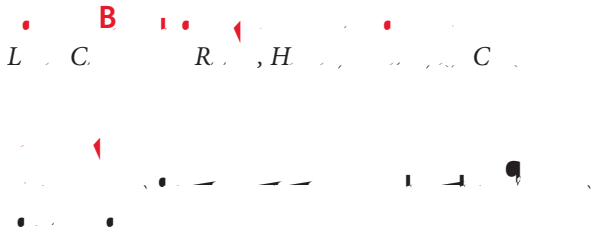
Abstract: This assignment centers the experiences of young Somalis raised abroad—outside the region, settling in Somaliland. This demographic has grown up in the shadows of the civil war and feel a collective responsibility to contribute to development. To capture their experiences, I carried out ethnographic fieldwork in Hargeisa, Somaliland over the summer of 2015. Through social media analysis, interviews and participant observation I was able to deconstruct their experiences, explore notions of belonging and claims to 'home.'



Presenter: Benjamin Allen
Department: Physics
Adviser: Arshad Kudrolli

Abstract: We discuss an experimental investigation of motion of a granular bed driven by a laminar fluid flow as a function of applied shear rate. This is a model system to investigate a variety of examples where such a situation arises including wind blowing over sand, sediment transport in rivers, slurries, and turbidity currents. We have developed an experimental apparatus which allows examination of the fluid as well as the grain dynamics both at the surface as well as deep into the bed under steady state conditions with refractive index matching technique. This allows us to obtain both the applied local shear stress by the fluid as well as the local strain rate inside the bed. We find that the granular flux as a function of depth decays exponentially into the bed. Further, the velocity profile is observed to exhibit a crossover from a regime where particles are fully suspended to where there is bed load transport. We





Presenter: Max Nyquist
 Co-authors: John Baker, Susan Foster
 Department: Biology
 Adviser: Susan Foster

Abstract: The introduction of invasive species is considered one of the major threats to biodiversity and ecology, comparable to climate change and habitat destruction, fragmentation and degradation. Among invasive species, introductions of top sh predators to freshwater environments are especially disruptive to ecosystem health and function. In addition to ecosystem disruption, top sh predators threaten the persistence of unique prey populations, as novel selective pressure may result in phenotypic change or local extinction of native prey species. In this study, populations from the reespine

enforcement in the oil and gas sector taking Ecuador as a case study. In 2008, the Ecuadorian state went through a substantial restructuring in the process of developing a new national constitution: the oil industry was nationalized while the Rights of Nature became legally integrated into its text. Since then, the budget as well as the regulatory competence of the Ecuadorian Ministry of Environment increased significantly. The overall question of this presentation asks how far these institutional changes have reached the actual enforcement of environmental laws in the oil and gas sector. More specifically, it asks: a) how and why (or why not) have these changes influenced the ability of the responsible environmental agencies to detect environmental damages and environmental breaches?; and b) how and why (or why not) did these changes influence their ability to react to potential detections in terms of the reparation of damage and sanctioning of environmental breaches? The presentation's methodological approach consists in a comparative analysis of the operations of the Ecuadorian Ministry of the Environment at the national and sub-national levels between the years 2005 and 2015. It combines an ethnographic research approach with spatially sensitive analysis of statistical data and official documents. The purpose of this presentation is to assess the consequences of recent institutional changes in environmental governance in Ecuador in order to determine ways to reduce negative impacts of oil and gas extraction.



Presenter: Mochamad Pasha
 Department: Economics
 Adviser: Marc Rockmore

Abstract: I investigate the linkage between sanitation and stunting. Stunting is a public health concern in the developing world, damaging both the physical and cognitive potential of children. As such, stunting has long-term repercussions on the quality of human capital in developing countries.

The pervasiveness of stunting despite nutrition campaigns led to researchers examining other potential causes besides malnutrition. Recent work in this field has found poor sanitation lead to stunting in children. However, those projects use cross-section and experimental approaches, which might not capture variations within the households or changes in sanitation behavior. I use a panel data approach to investigate the relationship between sanitation and stunting by utilizing a

rich panel data set from Indonesia. I find sanitation does impact stunting, however the linkage between them is more nuanced. While the degree of the impact of sanitation on stunting is far from conclusive, I demonstrate sanitation is one of the keys to understanding and averting the stunting pandemic in low- and middle-income countries.



Presenter: Wenjing Jiang
 Department: Geography
 Adviser: James McCarthy

Abstract: Rights to agricultural land in China are changing hands rapidly. Informal practices of agricultural land (re)distribution in place since the Communist Collectivization Campaign of the 1950s are being superseded by formal laws and regulations. Under current rules, local authorities formally subcontract collective-owned agricultural land ("contract land" below) to individuals or households, and only the use rights to such contract land can be transferred. My project aims to examine the contemporary agrarian transformation in China through the lens of the transfer of agricultural land use rights ("agricultural land transfer" below), and this paper presents two observations based on my preliminary research reading laws and policy documents at national level and a few second-hand cases. First, although the recent marketization of agricultural land use rights was led by the state, historical trajectory of both formal and informal practices at the national level has indicated that it was the informal practices that led the direction of formalization. Second, both the legal framework and many of the state policies have led to open a series of questions. As a result, what happened on the ground varies from place to place. The state reform policies supposedly address peasants' depressed incomes and growing inequalities, yet they often seem to exacerbate those problems, through classic agricultural land expropriation and through super-ficially voluntary participation in market exchanges. Preliminary research indicates heterogeneous implementation of reform policies across sites and regions, calling for an in-depth investigation into practices, politics, and dynamics of the contemporary agrarian transformation in China.

MC. . C

Presenters: Dhvani Badwaik and Alex Turgeon
Department: Graduate School of Management
Adviser: Becky Frieden

Abstract: The purpose of this database is to store data modeled after Clark University's GSOM Career Center, enforce integrity and consistency of that data, and ultimately serve as a proof of concept for a decision support system. By building up this data set and subsequently tracking the data modeled by our Entity Relationship Diagram via SQL queries, the end user will be able to identify areas of improvement and make well-informed, strategic decisions.

A. C

Presenter: James Lochhead
Department: International Development and Social Change
Adviser: Denise Humphreys Bebbington

Abstract: In the last few years, sugar cane production in El Salvador has increased from a miniscule 1,428 tons to 1,560,000 tons in the 2013/2014 growing season. This trend continued in 2015, with the government securing an additional \$15-20 million deal to export to China, making the export one of the few bright spots in a struggling economy. With the implementation of such trade agreements as CAFTA-DR, El Salvador has aggressively embraced American policies of free trade, strengthening markets and improving the opportunities for foreign investment, often at the expense of strong legislation on human rights and environmental protection. Rural communities find themselves bearing the negative costs of large scale sugar cane production including sub-poverty wages, disease and illness, soil depletion, greater exposure to chemicals, and diminishing agricultural and fishing production from environmental degradation. An indicator of the devastating effect on communities is the high prevalence of Chronic Kidney Disease, which is the second leading killer of men in the country and coincidentally has a high incidence among workers who harvest sugar cane on the Pacific Coast in Central America. The expansion of sugar cane production in the Bajo Lempa region becomes a case study demonstrating the challenges rural communities face and successes they achieve in maintaining sovereignty over their livelihoods in the era of the Washington Consensus.

A. B

Presenter: Rui Du
Department: Economics
Adviser: Junfu Zhang

Abstract: This paper is an attempt to assess the impact of the participation in a major sporting event — the Super Bowl — on the local economies. The identification strategy is to compare the winning and losing cities at the National Football League (NFL) conference finals under the assumption of similar pre-treatment trends. The stock market performances of firms headquartered in these cities are used to capture the sudden changes in local economic activities during a short time span.

The exogenous variations in the football game outcome allow a straightforward difference-in-differences approach to identify the causal effect. This study finds that the post-event trends in winning and losing cities diverge despite the fact that both cities have economically and statistically similar trends before the event. An empirical analysis provides suggestive evidence of a positive, significant local economic impact of conference final wins, possibly through city image enhancement. Further empirical evidence implies the presence of heterogeneous effects across industrial sectors, suggesting that city image enhancing effect might be empirically relevant for the changes in the composition of local industries. Furthermore, we also adopt a similar strategy to examine the local economic impact of the Super Bowl successes; however, we find no statistically significant effect.

A M

B C

Presenter: Muhammad Nasir
Co-authors: Marc Rockmore & Chih Ming Tan, Department of

Abstract: Exposure to violence has been found to affect behavioral parameters, mental health and social interactions.

The literature focuses on large scale political violence. The effects of high levels of criminal violence — a common phenomenon in Latin America and the Caribbean — are largely unknown. We examine drug violence in Mexico and, in particular, the effects of exposure to high municipal levels of homicides on risk aversion, mental health and pro-social behavior. Using a nonlinear difference-in-differences (DID) model and data from the 2005-06 and 2009-12 waves of the Mexican Family Life Survey, we find that the surge in violence in Mexico after 2006 significantly increased risk aversion

on the part of the Peruvian government and exclusion of civil society from voicing social and environmental concerns has exacerbated those concerns, most notably the issue of unprecedented migration into the region. Subsequent increases in illegal livelihood strategies such as gold mining and logging have, in turn, resulted from the increase of new citizens living in this region that was previously very rural and difficult to access. Consequently, these social issues have led to an increase in environmental degradation as rivers become polluted from mercury due to gold mining and deforestation depletes soil and stresses fragile ecosystems. Furthermore, this paper shows that areas designated as protected, including Bahuaja-Sonene National Park and Tambopata National Reserve, have done little to slow the incursion of these environmental issues. Finally, this paper closes with a discussion of how various NGOs and civil society initiatives have attempted to correct the oversight of an effective mitigation plan for these issues, and offers hope for how processes of inclusion and transparency can mitigate these issues during future infrastructure projects through the creation of “environmental citizenship” in order to establish a more just distribution of costs and benefits of development in Peru.

Presenter: Lelani Williams

Departments: Graduate School of Management/International Development, Community and Environment

Advisers: Jude Fernando, Lin Boldt

This project addresses three primary areas: deforestation, gender inequality and dirty fuel by the use of alternative energy for cooking. Haiti is one of the many countries that rely on unclean fuels that have depleted the forest by 97%. Deforestation has impacted the ability to find once readily available cooking fuel sources. A simple activity such as cooking has become time-consuming and dangerous. Because cooking is largely the responsibility of women, this shrinking fuel resource further contributes to the inequality faced by women. Solar cookers will not solve the gender inequality or deforestation issues in Haiti, but they are an opportunity to help lessen the problem. Solar cooking is simple to use, safe, and a convenient way to cook food without consuming unclean fuels. Our goal is to open a facility run by women that will assemble solar cookers and sell them in Haiti. Producing solar cookers locally and relying on a Haitian sales force will create jobs for women, and keep production and labor cost low. Providing an alternative cooking fuel for such a fuel-scarce region, will empower women to have jobs, contribute to their households, reduce the cost of food, and reduce the exposure women have to violence. We also hope to reveal that this method of cooking will contribute in some degree to the preservation of local environments.

Presenter: Kimberly Farias

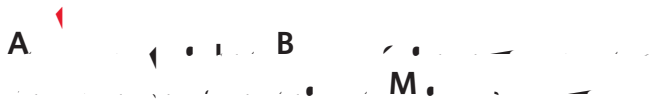
Department: International Development, Community and Environment

Adviser: Jude Fernando

This paper considers the case of “IIRSA Sur,” also known as the Southern Interoceanic Highway through Southern Peru, and explores how a lack of mitigation planning

bodies of literature, analyzing and synthesizing the research examining meditation and mindfulness in the context of intimate relationships. Since the publication of the last review of the literature examining meditation and mindfulness in the context of relationship satisfaction (Kozlowski, 2013), research in this area has expanded greatly. This growth of research, which spans a variety of contexts and theoretical orientations, necessitates a step back to take stock of where the field is, what has been recently added, and how research from different theoretical orientations can productively converse with one another. The present paper firstly provides an overview of the literature in meditation/mindfulness and intimate relationships, highlighting the key research findings and theoretical orientations. Secondly, we organize and thematize the various disparate approaches, variables, and findings into overarching categories to help better organize and conceptualize the current status of the field. Finally, we highlight gaps in the literature and propose new, generative directions and topics for the field as it moves forward.

agricultural technologies has policy implications. It suggests that research studies need to have a focus of equitable resource availability to reduce the gender gap in agricultural technology

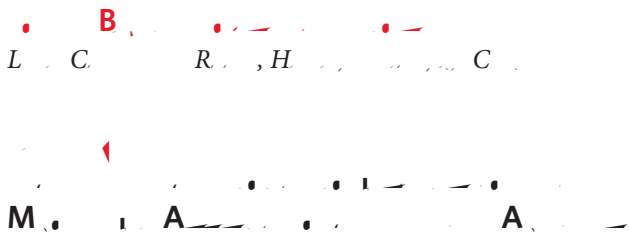


Presenter: Emily Albertson

Department: International Development, Community and Environment

Adviser: Cynthia Caron

Abstract: Recognizing the gender gap that exists in the adoption of improved agricultural technology is crucial in increasing agricultural productivity. A gender-disaggregated framework is used to examine key variables that guide different genders and women with different marital statuses in the decision to adopt improved agricultural technologies. Disaggregating the data by gender and marital status allows for differences in variables to be thoroughly examined and analyzed. Drawing on household data collected in two districts in Uganda, Luwero and Mbarara, and constructing a probability model, the different variables will be analyzed as to their significance in the adoption decision for improved banana cultivars. The analysis shows that gender is insufficient in fully understanding the adoption decision but other factors are significant. Using a thorough examination of the literature and data, the significant variables will be analyzed to determine the constraints that limit the adoption decisions of female farmers. Determining the significant variables in adoption of improved



Presenter: Joshua Boykin
 Department: Chemistry
 Adviser: Luis Smith

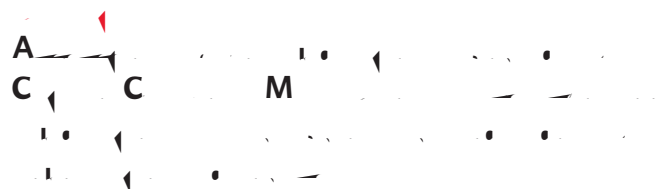
Abstract: Dion-Jacobson layered niobates have been extensively researched in recent years due to a variety of useful properties such as dielectric behavior, proton conduction, and solid acid catalysis. The behavior of these materials is strongly dependent on the interlayer surface environment, and use as a solid acid catalyst requires exfoliation into two-dimensional nanosheets. In this work, a novel method of partial grafting of n-alcohols into the layer interface of H₂Sr₂Nb₃O₁₀ with approximately 40% conversion has been developed using microwave irradiation to generate high temperature and pressure. This method has reduced the grafting reaction time by more than 97% while maintaining conversion rates consistent with conventional heating methods. Varying chemical shifts in the ¹H NMR spectra of these compounds indicates changes in the remaining protonated environments. Mixing the grafted materials with appropriate organic solvents, combined with microwave heating and sonication, generates a colloidal suspension of niobate nanosheets, as supported by XRD, SEM, TGA, and EDX data. This method of exfoliation should provide new routes to nanosheet synthesis and modification, and should be applicable to a variety of layered systems.



Presenter: Laura Sauls
 Department: Geography
 Adviser: Anthony J. Bebbington

Abstract: International efforts to promote programs for Reducing Emissions from Deforestation and Forest Degradation (REDD+), including through the United Nations and international conservation organizations, have generally focused on the technical aspects of setting baselines, estimating carbon stocks, and defining benefit-sharing models. These programmatic aspects may further marginalize indigenous

and traditional forest users, who are significantly co-located with extant tropical forests and in many cases have historically managed landscapes to include mosaics of forest and other land covers. Further, technical definitions of forest and forest loss in REDD+ often do not sufficiently take into account more dynamic approaches to ecosystem resilience or the landscape approaches incorporating longer time scales. This paper integrates concerns over equity in REDD+ and ecological literature on ecosystem dynamism to suggest an alternate model of socio-ecological resilience for long-term forest conservation and inclusive development.



Presenter: Esther Baumann
 Department: International Development, Community and Environment — Environmental Science and Policy
 Adviser: Greg Trencher

Abstract: As funding increases for climate change related issues in Sub-Saharan Africa there should also be an increase in research to understand how scientific literature in the environmental sector can assist in developing policy and implementing development projects. Using secondary research, this presentation centers on Malawi to develop an understanding of what is occurring in sub-Saharan Africa as a whole by means of quantifying what key areas and recommendations are being discussed in policy documents and development projects. The forestry and land-use sector is used as a point of examination, which displayed overlap among all three disciplines of science, policy, and practice was minimal. Gaps in afforestation, payment for ecosystem services,



Presenter: Richard Ramsawak
 Department: Economics
 Adviser: Sang Ho Bae

Abstract: Social capital can be viewed as another form of capital which can be leveraged to generate positive returns to individuals and communities. This paper examines the relative importance of individual and community level social capital among microenterprises operating in rural India. We find higher levels of individual social capital are positively associated with higher returns, greater access to credit, more business development and greater adoption of innovation. Increases in community level social capital create positive “spill over effects” by increasing access to credit, but can generate negative “competitive” impacts by limiting access to innovation and new business opportunities. Lastly, the study traces the impact of other social structures such as caste and kinship ties, which continue to have disproportionate impacts in terms of returns, particularly to minorities, which operate in communities dominated by larger higher caste groupings.

R. Ramsawak, C. ... R. ... H. ... C. ...



Presenter: Dexter Locke

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This paper concludes by recommending that the Panamanian government look towards community based conservation management in order to effectively achieve the preservation of the Canal Zones' valuable natural and cultural resources.



Presenter: Deniz Ozdiktas
Department: Economics
Adviser: Junfu Zhang

Abstract: The automotive industry is one of the primary employers in Europe, so any inconsistency in that sector causes a considerable change in the economic and social environment. Unfortunately, vehicle sales decreased staggeringly during the last global crisis so the European Commission adopted the European Economic Recovery Plan. The plan, which was a response to financial and economic crisis, included ten actions, and one of them was the support for clean technologies for cars. Later in 2013, new guidelines on financial incentives were created by the Commission. The aim was not only to promote energy efficient vehicles but also to increase the demand for low emission vehicles. As a result, every member country developed its own particular regulations. The purpose of this paper is to analyze the determinants of hybrid vehicle demand, focusing on gasoline prices, financial incentives and economic disincentives. The data for this research is sourced from several European Union organizations, many of which are currently engaged in "green car" research. The factors that influence the demand for hybrid vehicles include household income level, fuel prices, population, government regulations, education level, and household travel habits. In this research paper, the demand for hybrid vehicles in the European Union (26 countries) is assessed based on these factors. Additionally, multidimensional fixed effects models were used to investigate the demand. This study shows that the existence of government regulations is important, as is the type of regulations in place.



Presenter: Samantha Coccia
Department: International Development, Community and Environment
Adviser: Yelena Ogneva-Himmelberger

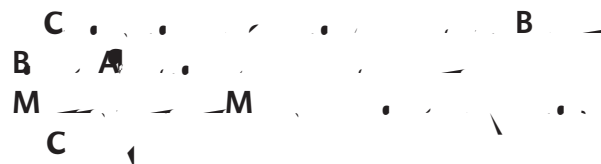
Abstract: Coastal development in the watersheds of the Caribbean islands is widely considered to be negatively impacting the health and viability of nearshore coral reefs. This research, a collaboration of NatureServe and NOAA, sought to improve management of coastal ecosystems by developing extensive information on land-based and direct threats to coral reef ecosystems, including identification of watersheds which contribute elevated levels of sediment and pollution to coastal waters. NatureServe's Vista tool was used to conduct cumulative effects assessment of direct and indirect threats and work with Marxan to prioritize land and sea conservation zones. Specifically, we addressed sources of land based threats to coral reefs in Puerto Rico's Northeast Ecological Corridor. The final product is a decision support toolkit for integrated land-sea planning.

Poster Presentations



Presenter: Samantha Arsenault
Department: International Development, Community and Environment — Community Development and Planning
Adviser: Laurie Ross

Abstract: A quantitative analysis of the effects of childhood trauma on violence, criminal activity, and gang involvement.

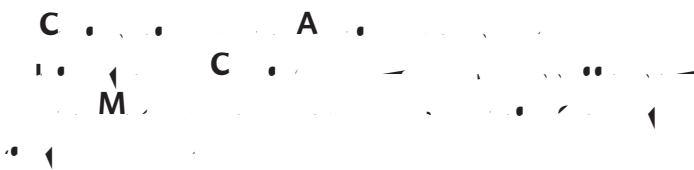


Presenters: Brian Caccavale, Kevin Longo, Ariel Maiorano
Department: International Development, Community and Environment
Adviser: Dr. Timothy Downs



pre-treatment trends. The stock market performances of firms headquartered in these cities are used to capture the sudden changes in local economic activities during a short time span.

The exogenous variations in the football game outcome allow a straightforward difference-in-differences approach to identify the causal effect. This study finds that the post-event trends in winning and losing cities diverge despite the fact that both cities have economically and statistically similar trends before the event. An empirical analysis provides suggestive evidence of a positive, significant local economic impact of conference national wins, possibly through city image enhancement. Further empirical evidence implies the presence of heterogeneous effects across industrial sectors, suggesting that city image enhancing effect might be empirically relevant for the changes in the composition of local industries. Furthermore, we also adopt a similar strategy to examine the local economic impact of the Super Bowl successes; however, we find no statistically significant effect.



Presenters: Jennifer Duong and Zhilan Deng
Department: International Development, Community and Environment/Geography
Adviser: Dr. John Rogan

This research study looks at H5N1 Avian Influenza outbreak occurrences in animals and its associated anthropogenic and environmental drivers in the Mekong Delta Region in Southern Vietnam from 2003 to 2007. A dataset of 172 H5N1 presence points and variables in the form of raster datasets (duck density, chicken density, distance to rivers, distance to roads, mean temperature, and mean precipitation) were applied to this study. In addition to this, we applied a cropland binary layer since this is the land cover type that makes up most of this delta region. We then ran our model both with and without cropland to see whether there were areas of disagreements between the two maps. Our results were obtained from extracting value points using the Spatial Analyst toolset in ArcMap 10.3, conducting an analysis of the histograms of all the continuous variables that were used, and from running a Species Distribution Model called Mahalanobis Typicality in TerrSet, using the H5N1 presence data. Our findings indicate that, overall, the variables used in this study

do have a positive relationship with the H5N1 presence points. Among the strongest relationships between the points and the seven variables are: distance to rivers, distance to roads, and precipitation. Further analysis is suggested for a more complete and accurate study of these findings.

of environmental conditions upon fruiting development, specifically an ultraviolet–blue light requirement for primordial or pileal development. A dikaryotic strain of *L. tigrinus* was used to investigate the wavelength of light, intensity, and exposure time that would produce an agaricoid or coralloid morphology. After primordial formation in darkness, *L. tigrinus* cultures were responsive to blue and ultraviolet light and required as little as ten minutes of exposure for the production of a normal pileus. Exposure to blue-ultraviolet wavelengths at any time during fruiting body development would result in an agaricoid form. The genomes of *L. tigrinus* and additional Agaricomycetes were examined for genes known to be involved in photoreception and downstream signaling during fruiting body development including *wc1* and *wc2* of the White Collar complex (WCC), *dst2*, and *cryA*. Almost all members of Dikarya, with the exception of Saccharomycotina, have at least a single copy of the WCC genes and *dst2* appears to be conserved to Basidiomycota. The red light receptor gene *cryA* is conserved throughout most of Dikarya with more variation than the WCC genes. The plasticity of *Lentinus tigrinus* allows the species to be a useful model system for fungal evo-devo.



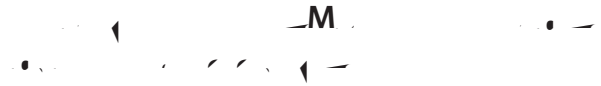
Presenter: Georgia Lawrence
 Department: Graduate School of Management/ International Development, Community and Environment
 Advisers: Ramon Borges-Mendez, John Dobson

Abstract: This research explores the purpose of learning laboratories to develop entrepreneurial skills among university students. It uses the Local Root, a student-run business venture at Clark University, as a case study of an entrepreneurial learning laboratory. I analyze and define the learning objectives of the Local Root. I conclude with recommendations on how to further enhance the organization's role as a learning laboratory on campus.



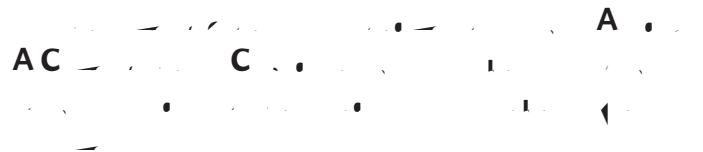
Presenter: Chris Markman
 Co-author: David Thompson
 Department: College of Professional and Continuing Education — Master of Science in Information Technology
 Adviser: Germinal Isern

Abstract: We're doing a feasibility study for the Makerspace in downtown Worcester as an independent study this semester.



Presenter: Adriana Medina
 Department: Psychology
 Adviser: Dr. Nicole Overstreet

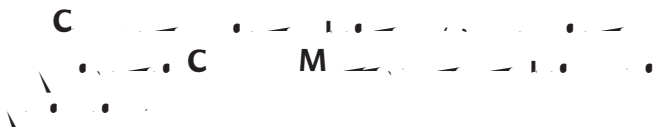
Abstract: The aim of this study is to explore whether dehumanization mediates the relationship between stereotypes about black women and the level of empathy and blame others have towards them when they are victims of intimate partner violence (IPV). We are looking for a link between stereotypes, two forms of dehumanization (super-humanized and infra-humanized) and how others perceive women in intimate partner violence situations (i.e., level of blame assigned to the victim; how much empathy is felt for these women).



Presenter: Toma Mengebier
 Department: International Development, Community and Environment
 Adviser: Professor Nigel Brissett

Abstract: The International Development, Community and Environment Department (IDCE) at Clark University is a physical, communal space where I have recorded public education around international development goals r[(nw)-6.9(h)8(o)1 0]





Presenter: Flor Monroe

Co-author: David Thompson

Department: International Development, Community and
Environment

a wildlife corridor to ensure the safe passage of species between Kasanka and Lavushi Manda National Parks. In this study, we identify the areas with high suitability for the potential placement of a wildlife corridor using multi-criteria analysis. We classify six Landsat 5 and 7 images in wet and dry season from 2000 to 2008 into five land cover classes. This creates a continuous map that identifies areas with water throughout the year using tasseled cap transformation of Normalized Difference Vegetation Index (NDVI) images. The areas that contain forested or grassland habitats have the highest suitability for forage and cover for migrating species. Developed areas containing roads, urban settlements and agricultural fields are unsuitable as animals risk exposure by areas opened by deforestation and hunting. The findings of our study identifies several suitable areas for wildlife corridor pathways in between the two national parks: one is a direct route through medium to high suitable areas and the other passes through the protected Mulembo Local Forest. The study highlights areas of increasing threats from encroachment by slash-and-burn agriculture and human development. This work contributes to the conservation planning and prioritization of land acquisition in corridor development between the protected national parks.

in regions that were inhabited by minority groups and were subsequently occupied or threatened by the Islamic State terrorist group. This project provides a more thorough understanding of human-environmental interactions caused by warfare. It also uses remote sensing coupled with ancillary data to better assess a complex situation where comprehensive and reliable on-the-ground reporting is not feasible.

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Abstract: We investigate the buckling instabilities of a thin sheet in the shape of a ribbon which is held at its ends and twisted under tension. Recently it was shown that such a system with clamped boundary conditions exhibited a rich variety of buckled shapes with longitudinal and transverse wrinkles as a function of applied twist and tension for a given ribbon aspect ratio and elastic modulus [1], which could be described by a far from threshold analysis of the covariant form of the Föppl-von Kármán equations [2]. Here, we focus on the effect of the boundary conditions on the observed buckling patterns by constraining the ends only at the midpoint towards imposing free boundary conditions normal to the ribbon. In particular, we compare and contrast the observed phase diagram and the shape of the longitudinal and transverse buckled modes as a function of applied constraints. [1] J. Chopin and A. Kudrolli,

