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SCHEDULE

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Panel 1B: Social & Environmental Policy | Room 277
Laura Stancato, Davis Macke, Safina Beaty

Panel Session Two 10:10—11:10 A.M.
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Leslie Kutsenkow

Panel Session Three 11:20 A.M.—12:20 P.M.
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Lindsey Goldstein, Reed Rouch, Lillian Clarke, Kat Ellingson
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Abigail Comer, Zoe Swanson, Nicolo Lovinello, Regan Mangrum
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Liz Curran-Groome, Faryal Sharif

Lunch Reception 12:30—2:00 P.M.
First Floor Lounge
**Panel 1A: Environmental Policy**
Room 276
Panel Chair: Shannon Conley

**Politics and the Environment: How Democratic Institutions Shape Environmental Performance**
by Sophia Osterberg

This paper explores the relationship between levels of democracy and environmental performance. I use a regression analysis to evaluate the statistical association between democracy and environmental outcomes, controlling for confounding variables such as national economies and population characteristics. The model illustrates how the level of democracy in a nation’s government contributes to its environmental performance. I include nearly all countries in the world in the analysis, with 145 nations receiving a score on both the Environmental Performance Index and the Varieties of Democracy Index, along with the measurements of GDP per capita, population, urbanization, land area, and trade openness. The results show a positive relationship between the extent of democracy in a country and its environmental performance. As a preliminary conclusion, I find that nations with higher levels of democracy have better environmental outcomes, and the most important democratic indicators are high rates of equal protection and clean elections.

*Mentor: David Konisky, Lynton K. Caldwell Professor*

**The Effect of Renewable Resource Endowment on the Likelihood of Renewable Portfolio Standard Adoption in U.S. States**
by Eva Brungard

Renewable Portfolio Standards (RPS) are one of the most common policy instruments adopted by U.S. states to encourage shifts to renewable energy generation and reduce greenhouse gas emissions. A RPS sets a minimum percentage of electricity that must come from renewable resources, such as wind, solar, hydropower, or geothermal. Previous literature has focused on the effectiveness of an RPS to increase the renewable energy generation. Instead, this analysis focuses on the existing resources in a state to examine which factors best predict RPS adoption. Using a multivariate regression from 1990 to 2020, I evaluate how the theoretical renewable resource potential in a state affects its likelihood of adopting a RPS compared to other factors that impact adoption such as political ideology or economic conditions. A second regression analyzes these factors’ effect on the stringency of the RPS policy design itself. These findings assist in better understanding the adoption of environmental regulations in states and may be applicable to future attempts to pass a national renewable energy policy. This can inform the framing of future environmental regulations to increase their likelihood of adoption.

*Mentor: Alex Hollingsworth, Associate Professor*

**Panel 1B: Social & Environmental Policy**
Room 277
Panel Chair: Trevor Memmott

**How Legislation and Nonprofit Work Supports Survivors of Human Trafficking**
by Laura Stancato

Human trafficking is a violation of basic human rights that affects an estimated 200,000 people annually in the United States. To further understand the complexity of this issue, this research paper aims to answer the question: In what ways does the combination of legislation and nonprofit work support survivors of human trafficking? This paper relies on case study analysis of four states with varying strengths of state law and nonprofit action on human trafficking. I use expert informant interviews to show how these efforts work to support survivors. My analysis determines that a stronger combination of legislation and nonprofit work will allow for more comprehensive support of survivors. In terms of legislation, I find that state task forces and reframing policy to take more of a victim-centered approach are contributing positively to survivor outcomes. I also find that nonprofit efforts at supporting survivors rely on collaboration between organizations, as well as improvements to long-term aftercare. The end result shows the importance of states strengthening both their legislative and nonprofit attempts to support survivors.

*Mentor: Allison Schnable, Associate Professor*
Free Food as a Barrier? How Quality and Choice Impact the Success of Programs that Feed the Homeless

by Davis Macke

This study sought to determine if the quality and choice of food served to those experiencing homelessness in free food service programs are influencing factors regarding homelessness rates. The hypothesis of this study is that the quality and choice offered by free food service programs will not be an influencing factor for many but will be for those with cultural or medical dietary restrictions. This study uses as models three organizations in Bloomington, Indiana that regularly distribute free meals to those experiencing homelessness. Fifty individuals that have frequented these organizations were surveyed and asked about the food served and their experiences at these organizations. Respondents valued organizations that consistently provided nutritious and fresh meals in calm and welcoming environments, and they avoided organizations that provided spoiled or improperly prepared meals in unwelcoming or chaotic environments.

Mentor: Laura Littlepage, Clinical Associate Professor

Nationwide Improvements in Air Quality May Have Underlying Racial Disparities

by Safina Beaty

Pollution across the United States disproportionately affects minority communities. Minority communities, for decades, have faced disproportionate air pollution which adversely affects health. Despite efforts to reduce air pollution via laws and policies, and efforts to resolve environmental injustices throughout the United States, minority communities may still face disproportionate air pollution the same way they did several decades ago. By analyzing EPA pollution data available dating back to the 1980s and 1990s for the entire United States, these trends can be analyzed. The data is broken up by county. When county pollution data is combined with the demographic makeup of the counties, then trends can be analyzed between those factors. That information compared with overall nation trends in air pollution reduction of PM2.5, we can determine if minority communities have seen reductions in their air pollution levels and if so, if those communities have always been minorities or have seen demographic changes as a result of gentrification.

Mentor: Coady Wing, Associate Professor
The Relationship Between Interational Diversity and Student Development in Higher Education
by Haouliatou Barry

Racial diversity in colleges and universities has improved over the years. Diversity is a huge educational component that allows students from different backgrounds to come together to learn, socialize, and grow. Though higher education has frequently emphasized diversity, some still do not understand its importance and challenge affirmative action programs. This study examined the impact of interracial interactional diversity amongst students in colleges and universities. It explained how diversity-based activities affected student development. The data in this study comes from the Cooperative Institutional Research Program (CIRP) database of college students. Linear regressions and a bivariate correlation on the longitudinal student dataset allowed us to analyze and understand the relationship between diversity-related activities amongst students and student self-reported growth on multiple social and educational outcomes like the ability to understand people from different backgrounds, interpersonal skills, and leadership abilities. The data analysis indicated that there is a significant relationship between student development on educational and social outcomes and activities in college associated with interactions between students from different backgrounds.

Mentor: Henry Wakhungu, Teaching Professor

Title IX and NIL: Gender Equity in the New Era of College Athletics
by Margo Rogers

Stark changes surrounding the National Collegiate Athletic Association (NCAA) student-athlete name, image, and likeness (NIL) compensation policies leave student-athletes, institutions, fans, and other stakeholders in an unprecedented and uncertain era of college sports. Title IX’s impact on gender equity progress in college athletics is a frequently celebrated topic; however, it is critical to understand if the new NIL compensation structure is positively or negatively impacting gender equity trends in collegiate athletics. This study analyzes Title IX and NIL trends to attempt to answer the following questions: first, do NIL outcomes have an overall positive or negative impact on gender equity in collegiate athletics? Are the processes and outcomes of NIL consistent with the intended protection set forth by Title IX? And, if not, do NCAA member institutions have the ability and an obligation to support gender equitable NIL benefits?

Mentor: Kurt Zorn, Professor

The Impact of Declining State Appropriations on Public Higher Education Student Success
by Molly Koetter

For decades, there has been a trend of declining state appropriations following periods of economic recession in the United States. To offset the decrease in revenue stemming from state appropriations, universities are forced to increase enrollment of out-of-state and international students, decrease enrollment of low-income and minority students, increase tuition, and cut student programs. These decisions disproportionately impact historically disadvantaged groups and those lacking the ability to pay the total cost of the increased tuition. This research sheds light on the impacts of these actions on students enrolled in public Big Ten Conference schools by conducting a regression analysis on data pertaining to student success and state appropriations. This study found that declining state appropriations have a negative impact on student outcomes in reference to enrollment, retention rates, and graduation rates, with enrollment and retention rates being impacted the most heavily.

Mentor: Thomas Rabovsky, Associate Professor

Compulsory Voting and its Comprehensive Influence on Political Engagement
by Matthew McClarnon

In many countries, public opinion suggests that elitist policy reforms focus benefits on the upper class (Schneider & Kahn, 2020). The unequal representation in and distribution of knowledge of politics between socio-economic classes may explain this phenomenon. Compulsory voting could be an unorthodox, but beginning towards remedying these causes. However, existing literature offers an unclear answer to the impacts of compulsory voting policies. It suggests that people may be more politically informed in countries with compulsory voting, but that they may not be any more likely to engage in additional political participation beyond simply voting. This does not fit with the existing data in the U.S. that those who tend to vote are also those who are also who are very involved in other forms of political participation. Through quantitative research methods using empirical data collection and regression analysis, my study finds little or no relationship between compulsory voting and political participation or political knowledge. These inconclusive findings suggest that more in-depth research should be done on compulsory voting and political engagement to close the socio-economic gap between the types of policy reforms we see in governments worldwide.

Mentor: Jennifer Brass, Associate Professor
Historically, a gap has existed in voter turnout between young voters and other age groups. In the 2022 midterm elections, youth voter registration rates increased nationally, reaching one of the highest turnout rates amongst midterms. In contrast, voter registration decreased by 14% for young Hoosiers in Indiana. Literature suggests that education and voter turnout are positively correlated. With over 50% of youth attending college in Indiana, it is surprising that only 13% of the total Indiana youth population turned out to vote for the 2022 midterms. This study surveyed Indiana University students to examine the relationship between voting barriers and youth turnout. The four-week convenience sample of 300 respondents indicated relationships between voting influencers, levels of political awareness, and personal barriers. Despite being on a university campus, it was parental influences that were more important to voting. Also, while students consider themselves politically aware, they report a desire to be more informed. These survey findings indicate that universities can do more to civically engage their students. Some students stated they believe allocated class time and instruction on requesting absentee ballots would allow Indiana University to increase campus voting participation.

**What’s on the Ballot? How Opportunities for Direct Democracy Impact Political Trust**

by Jane Wright

In some U.S. States individuals have the opportunity to propose and vote directly on ballot initiatives that allow them to change state laws. These ballot initiative processes allow people to use their voice beyond simply voting for people to represent them. My study examines if an individual’s confidence in American government can be explained, in part, by their opportunity for direct democratic engagement. Existing literature provides evidence that both supports and disproves the idea that ballot initiatives are mechanisms for improved political trust and more effective governance. Using logistical regression models on public opinion data from 5,400 respondents across the U.S., I determine if the presence of ballot initiative processes in an individual’s state is related to their confidence in state government and their perceptions of election fairness. The results of this study have implications for democratic reform and improving civic engagement in the United States.

**Mentor:** Paul Helmke, Professor of Practice

**The Impact of Independent Living Programs on Educational Attainment and High-Risk Behaviors**

by Lydia Evanson

Foster youth aging out of care face drastically worse outcomes than their non-foster peers. For foster youth transitioning out of the child welfare system, states implemented independent living programs (ILPs) to equip foster youth with tools for adulthood. Despite the increased significance of ILPs in public policy, which programs are the most effective in improving outcomes for foster youth is still unknown. States can choose which ILPs they provide, and each ILP varies in what skills it focuses on. This study tests the effect of 15 ILPs on the educational attainment and prevalence of high-risk behaviors in foster youth. Using the National Youth in Transition Database’s most recent cohort data from FY2020, I ran a linear probability model to find the correlation between specific programs and educational attainment and the prevalence of high-risk behaviors. This paper’s findings highlight the importance of financial literacy and stability in improving outcomes. States can implement more effective programs by placing greater emphasis on education and other financial assistance programs. Future studies can build on these results by analyzing how programs may vary across states and how program eligibility requirements may impact outcomes.

**Mentor:** Richard Hansen, Adjunct Instructor

**The Effect of the Covid-19 Public Health Emergency on Maternal Mental Health in ACA Expansion and Non-ACA Expansion States**

by Tateana Cutter

One in five pregnant women experience poor mental health, negatively impacting both the mother and child during pregnancy and after childbirth. In March 2020, in response to the Covid-19 pandemic, Congress declared a Public Health Emergency (PHE) and imposed a continuous coverage requirement, which stopped state Medicaid programs from disenrolling people from the Medicaid program for any reason. In this study, I measure the effects of the PHE on the mental health outcomes of pregnant women. Specifically, I use difference-in-difference regressions, to compare mental health outcomes among pregnant women in ACA expansion and non-expansion states before and after the PHE. The data for the project comes from the 2018-2021 waves of the Behavioral Risk Factor Surveillance System.

**Mentor:** Coady Wing, Associate Professor

**Reproductive Health and the Environment: An Analysis of Environmental Pollutants on Traditionally Women’s Issues**

by Grace Brautigam

Pollution in the environment has been shown to result in negative reproductive health outcomes. However, minimal research studies the effects of environmental pollutants on issues such as ovarian dysfunction and ovarian cancer. This
study seeks to determine what pollutants are correlated with incidence of ovarian dysfunction and ovarian cancer across Indiana counties. Variables tested for their relationship to ovarian dysfunction and ovarian cancer were the number of Superfund sites, amount in tons per year of: NOX, NO2, PB, PM10, PM2.5, PM CON, SO2, VOC, and industry releases in pounds of solvents and metals. Several confounding health factors were also analyzed for their relationship to ovarian dysfunction and ovarian cancer. Results showed that the number of Superfund sites and releases of VOC per county had a statistically significant effect on the rate of ovarian dysfunction and ovarian cancer. However, no correlation was found between industry releases of solvents and metals and the negative reproductive outcomes studied. Several confounding health factors also had a statistically significant effect on the rate of ovarian cancer and dysfunction, most of which can likely be attributed to income, access to healthcare, and risky behavior.

*Mentor: Diane Henshel, Associate Professor*

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**PANEL 2D: GRADUATE CAPSTONE**

Room A223

**An Analysis of State CCUS/DAC Readiness and Policy Recommendations**

by Stephen Bessasparis

This analysis has five major components. First, all fifty states were analyzed across a variety of physical, economic, political, policy, and social dimensions to identify key factors affecting potential CCUS / DAC deployment. Second, a suite of state-level policy options for encouraging the deployment of CCUS / DAC were analyzed to determine their comparative advantages and circumstances of best fit. Third, a wide array of implementation considerations derived from similar historic projects were analyzed in relation to potential CCUS / DAC policies. Fifth, evaluation frameworks were constructed to assess the effectiveness of CCUS / DAC policies after implementation.

This analysis found a handful of states most prepared for increases in CCUS / DAC, these being California, Wyoming, Texas, Louisiana, and Indiana. Additionally, this report groups together other states to identify the factors prohibiting their CCUS / DAC potential as well as provide policy recommendations to overcome these hurdles. Ideally, policymakers and CCUS / DAC advocates will use this analysis to shape future policy efforts to encourage the deployment of CCUS / DAC.

*Mentor: John Rupp, Clinical Associate Professor*

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**PANEL 2E: GRADUATE CAPSTONE**

Room A201

**Indiana Youth Councils: Research and Recommendations for Accelerate Indiana Municipalities**

by Leslie Kutsenkow

Accelerate Indiana Municipalities (Aim) is a nonprofit membership organization that supports and advocates for Indiana municipalities. Its mission is, "to foster, promote and advocate for the success of Hoosier municipalities as laboratories of innovation, hubs of talent, and the engines driving our state's economy." Aim is committed to serve emerging leaders through youth councils, increasing the number of municipalities who run youth councils, and offering networking opportunities and leadership development for youth through their Youth Councils Network.

As requested by Aim, the Capstone will identify the purposes, organization, policies, and activities of youth councils in cities and towns throughout Indiana, as well as other areas for youth leadership development and engagement. The Capstone will prepare a project report and presentation with recommendations for Aim to expand its support for youth councils in the Aim member network.

*Mentor: Terry Amsler, Adjunct Lecturer, & Lisa Blomgren Amsler, Distinguished Professor*
Navigating Counterterrorism in a Post-9/11 World: A Case Study on Effective C/PVE Programs in Democracies

by Ariel Oeffinger

Social movements and protests are not a new phenomenon in America, and in fact have defined many of the most influential legislation in history, such as the Civil Rights Movement, Stonewall, and Black Lives Matter. The freedoms presented to United States’ residents provide a plethora of opinions and influence on current events and legislation throughout the country. However, these freedoms stall the Department of Homeland Security (DHS) and Federal Bureau of Investigation (FBI) from officially declaring many domestic groups as terrorist organizations. The United States is also not the only country to provide freedoms to their residents. Germany and Switzerland have a similar government structure and GDP but have fewer incidents of domestic terrorism. Counterterrorism and international law experts have suggested the United States look to European forms of C/PVE programs to decrease domestic violent extremism while providing youth education on how to obtain information and engage in safe social media and internet activities. Through enacting mandatory C/PVE programs and clearly defining terrorist organizations, the United States could decrease the number of domestic terrorist attacks within the country if done so skillfully and with democracy at the cornerstone of legislation.

Mentor: Susan Siena, Senior Lecturer

Financial Implications in Traffic Citations: a Comparative Case Study of Various State Highway Patrols

by Ian James

Traffic citations are a common occurrence in the United States, with estimates of 41 million issued in the United States per year. There are various examples of research being conducted into what influences an officer to make a traffic citation, however the research is limited on the side of financial factors. This paper uses a comparative case study of various agencies throughout the country. The samples are drawn from policing databases, or departmental annual reports. The samples for both are drawn from the calendar year 2021. All states were chosen due to where the fines from traffic citations go. In some, the money can go to law enforcement and court funds. In some, citation revenue only goes into general funds. [Preliminary results indicate that there is no significant change due to revenue]. This indicates that financial implications are not a concern of state law enforcement when deciding whether to give a citation versus a warning.

Mentor: Tara Ali, Visiting Lecturer

Comparing Public and Private Prisons: Leveling the Playing Fields

by Dorothy Reinhard

Despite centuries of experience in privatized justice systems, we know surprisingly little about the actual benefits and disbenefits of privatized prison services, nor are we able to adequately compare public and private programs in costs or long-term impacts. We review research comparing public and private prison outcomes to shed light on reasons why this is the case. In addition to the many challenges in collecting and analyzing the data on public and private prisons we find that much of the research omits important differences in inmate populations such as race, gender, age, education, mental illnesses and/or offense types. Not including these factors in analyses is in effect a failure to recognize spurious relationships, which can have serious consequences, such as perpetuating harmful stereotypes, fueling discrimination, and making poor policy decisions. By identifying the important differences in inmate populations that should be included in analyses, we hope to improve future research comparing public and private prison outcomes and to inform policymakers involved in making decisions on what prison services to privatize.

Mentor: Deanna Malatesta, Associate Professor

Improving Interactions between Foster Care Entities: Insights from Court Appointed Special Advocates

by Lindsey Goldstein

This paper aims to examine the perceptions of Court Appointed Special Advocates (CASAs) in their interactions with other actors within the foster care system. The foster care system is complex and involves many different entities, including social workers, foster care parents, and CASAs. These entities must interact in order to ensure the best possible outcomes for each child in the foster care system. However, this is not always the case and requires consistent communication and efforts. The study will survey CASAs on their experiences in working with other actors and how these interactions have impacted foster children’s final placement and facilitated or hindered their ongoing work as a CASA. The results of this research will provide valuable insights into the challenges faced by CASAs in the foster care system and inform efforts to improve communication and collaboration between all parties involved.

Mentor: Amandra Rutherford, Associate Professor
The Relationship between Facebook and Anti-Semitic Hate Crimes in the U.S.
by Reed Rouch

While mediation theory has examined the effects of procedural factors on the quality of a mediated outcome, this study examines how the items being disputed over can affect the likelihood of an adequate resolution. The relationship between substantive issues present in a dispute and the likelihood of a quality mediated outcome is examined by analyzing 207 court cases in which a judge was tasked with deciding to uphold a mediated decision. By coding each court case for relevant factors that could affect the quality of the mediation, I identified if there exists a correlation between factors and decisions that were or were not upheld. I found that a relationship between the substantive issues present in a mediated agreement was not present in the scope of this analysis, but further research using this method may be warranted to further understand the process of when mediation can be applied to certain types of issues present in a dispute.

Mentor: Daniel Griffith, Adjunct Faculty

Diversity Management through Vocational Training Programs: Analytical Case Study of U.S. and German Occupations
by Lillian Clarke

This paper seeks to answer how the presence or absence of vocational training programs in select German and U.S occupations affect the gender diversity of their working population. Variables such as education, federal employment laws, employer preferences, and gender demographic characteristics are included in my comparative study. My main hypothesis is that Germany’s reliance on federally instituted vocational training programs, to employ laborers, decreases their engagement in external recruiting, evident in the gender seen in their working population. I hypothesize that the United States, not bound to mandated vocational programs, has the flexibility to recruit different types of employees and will thus, have a greater gender variety seen in working population. I apply Hofstede’s Cultural Dimensions Theory to provide greater contextual understanding of the country’s culture and vocational training program involvement. The dependent variable for my study is noted by the presence or absence of vocational training programs, with my independent variable noted as gender diversity. Using the Wilcoxon and Chi Square statistical tests, this study shows that the relationship between employee genders and select occupations are independent of each other in both counties.

Mentor: Cheryl Hughes, Senior Lecturer

DME IT Implementation as a Contributing Factor of Attrition in the Federal Workforce: Does New Tech Have Gen X Ready to Throw in the Towel?
by Kat Ellingson

This research assesses the relationship between attrition in older federal employees and the implementation of Development Modernization Enhancement Information Technology systems (DME IT). As the federal workforce continues to grey, a common solution to attract new talent and increase agency efficiency is introducing new IT systems. This research examines the relationship between DME IT and older federal employees’ intent to resign. While IT may not be a primary factor in attrition recognizing that it is a consideration when a person chooses to retire is vital because it opens the door for further study regarding trends in attrition, best practices for internal knowledge sharing across agency levels, and effective agency-wide IT implementation. Preliminary results show that DME has a positive effect on employees under 40 and no statistically relevant relationship for employees over 40.

Mentor: Susan Siena, Senior Lecturer

Air Pollution and Environmental Injustice: County-Level Analysis of Asthma Prevalence in the Midwest
by Abigail Comer

Air pollution significantly contributes to asthma prevalence in the United States. It has been established that asthma disparities exist by race and income; however, current research has largely overlooked the confounding influence of other factors on asthma prevalence. Because of this, air pollution is an important topic in environmental justice as minority individuals experience worse health outcomes as a result of disproportionate exposure to harmful pollutants. Asthma disparities were assessed in this study through a county-level analysis of five states in the Midwest using national air quality, health, and census data. Univariate regressions were used to quantify the individual influence of multiple environmental, health/lifestyle, and sociodemographic indicators on asthma prevalence. The two most important covariates affecting asthma prevalence in this study were health and sociodemographic factors—most notably income and smoking prevalence. County-level air quality indicators were not positively correlated to asthma prevalence. These findings suggest that county-level exposure data does not reflect individual-level exposure to air pollution. Air pollution alone does not impact asthma prevalence as significantly as other non-environmental factors, showing that cofactors play a significant role in determining the observed health outcome of an individual. This study highlights the need for further research on the relationship between air pollution, health, and sociodemographic factors to determine potential causes of asthma disparities.

Mentor: Diane Henshel, Associate Professor
The Effectiveness of Mangrove Restoration Techniques: A Review
by Zoe Swanson

Mangrove forests are important habitats for a multitude of commercially important fish and invertebrate species and sequester large amounts of atmospheric carbon. However, deforestation threatens these forests, due primarily to coastal development and climate change. When conservation is not possible, mangrove restoration is vital, as the creation of new ecosystems oftentimes fails. How to effectively restore a mangrove forest is still unclear due to limited analysis of the success of different restoration techniques. A systematic literature review was conducted to determine which technique, direct planting or ecological mangrove restoration, has the highest relative efficiency. A sample of mangrove restoration studies was collected. Projects were sorted by restoration technique and scored for high, medium, and low success levels based on standardized values to compare techniques to one another. Direct planting was the most popular technique, while a combination of ecological mangrove restoration and direct planting was most effective. By informing environmental managers about restoration technique efficacy, this research can improve the success rate of restoration projects. Successful projects will result in more habitats for economically valuable species and increased mitigation of climate change via carbon sequestration from the atmosphere.

Mentor: Stephen “Chip” Glaholt, Lab Director

Investigating Physical Controls of Nitrogen Isotopes in Terrestrial Systems
by Nicolo Lovinello

Nitrogen isotopes provide a method to track important nutrients through ecosystems. Climate, a factor which varies across the globe, can affect this cycle. Much work studied the effects of climate on nitrogen isotope ratios over large spatial extents. This study continues this investigation using the relatively novel National Ecological Observatory Network’s database (NEON), focusing on terrestrial environments. This study will explore the correlation and combined predictive power of mean annual temperature, mean annual precipitation, length of growing season, soil moisture, pH, and organic matter content. Climatic factors may exhibit some control, particularly growing season, which has the strongest correlation with nitrogen isotope values, denoted δ15N. The weak correlation with mean annual temperature and mean annual precipitation indicates that climate plays a small role in predicting δ15N. Analysis showed that δ15N correlates strongly with other physical controls, indicating that δ15N of systems in North America are more accurately predicted with these physical controls over climatic ones. Using new data from NEON to establish an understanding of nitrogen cycling in the beginnings of the program will make way for research on nitrogen and how it relates to our changing climate.

Mentor: Todd Royer, Professor

Effects of Climate Change on Mosquito-Borne Illness: West Nile Virus in the Ohio Valley Climate Region
by Regan Mangrum

In the Ohio Valley Climate Region, it is unknown whether an increase in annual average temperature and precipitation will lead to more cases of West Nile Virus. Climate change is expected to affect the rate of West Nile Virus. This study aims to fill this gap by testing the association between annual average temperature and precipitation and the number of West Nile virus cases in Indiana, Ohio, Illinois, Kentucky, and Missouri, which are all in the Ohio Valley Climate Region. I hypothesized that the effects of climate change will increase the rate of West Nile virus. I used Microsoft excel to run regressions between the variables of annual average temperature and annual average precipitation and the number of West Nile virus cases for each state. The regressions found a positive association between annual average temperature and the number of West Nile virus cases and a negative association between annual average precipitation and the number of West Nile virus cases. This finding implies that droughts play a significant role in the rate of West Nile virus, but more research is needed to fully understand the relationship.

Mentor: Marc Lame, Clinical Associate Professor Emeritus

Reducing Methane Emissions in Turkmenistan
by Forrest Levy

As graduate students in the O’Neill School of Public and Environmental Affairs, researchers in the SPEAV-600 Capstone in Public Affairs: Reducing Methane Emissions in Turkmenistan have prepared recommendations to reduce methane emissions in Turkmenistan for their client, the U.S. Embassy in Ashgabat, Turkmenistan. This capstone course empowered graduate students to support the U.S. Department of State’s integrated country strategy in Turkmenistan by providing evidence-based and results-oriented recommendations to the embassy in pursuit of finding suitable actions to reduce climate-warming methane emissions in the country of Turkmenistan. As researchers have pursued this main objective, they have assessed the internal regulatory capacity within the nation and available external resources available to assist the integration and management of new systems and infrastructure investments in the oil and gas sector. The researchers have worked diligently to evaluate relevant background research, including the policy, economic, social, technological, legal, and environmental factors and circumstances that influence the magnitude, certainty, and likelihood of their recommendations being implemented. Further, the researchers have leveraged their training from their graduate programs to incorporate benefit-cost analyses for new technological investments, map geospatial analyses that assist with data visualization, and engage with technical consultants outside of the O’Neill School, including oil and gas industry experts and former diplomats. In all, the researchers have developed a set of con-
clusions that prioritize the economic and techno-policy approaches that can make meaningful contributions to efforts that will reduce emissions from a global leader in climate-warming methane emissions.

Mentor: John Rupp, Clinical Associate Professor

PANEL 3E: GRADUATE CAPSTONE
Room A201

Faith in Philanthropy
by Abigail Knipstine

The Aspen Institute recently launched the Religion & Philanthropy initiative with the aim of helping secular and faith-inspired philanthropic organizations understand each other and work together. The director, Allison K. Ralph, PhD, wants O’Neill School capstone students to help advance the initiative by providing research on the current state of the field, collecting data on the perceptions and experiences of secular foundations that provide grants to faith-based organizations and vice versa, identifying and assessing a sample of institutional funder groups.

Mentor: Brad Fulton, Associate Professor

PANEL 3F: GRADUATE CAPSTONE
Room 169

Membership, Development and Organizational Structure: Democrats Abroad Germany
by Liz Curran-Groome

Assessing the scope and depth of a new Executive Committee position, the Member Development Coordinator, outlining the duties, responsibilities and resources necessary to expand active engagement throughout the client’s membership. Expounding upon various components of the overall chapter development strategy, including identifying chapter structures, defining relationships within a chapter, developing leadership onboarding and creating chapter action plans. Identifying opportunities and enhancements to the client’s academic outreach strategic initiatives, including partnership strategies, campaign conceptualization and succession planning.

Mentor: David Audretsch, Distinguished Professor

Positioning Martinsville for Growth
by Faryal Sharif

The City of Martinsville, IN is located along the I-69 corridor between Bloomington, IN and Indianapolis, IN. It is geographically positioned to be a key destination for businesses as well as new residents who are looking for a more affordable place to live. Compared to similar cities located near Indianapolis, Martinsville has not yet seen the same level of growth and economic development. With many new contracts being signed that will improve the infrastructure of the city (including broadband internet and housing development), the City is clearly picking up renewed momentum for growth. A capstone team of 19 students worked with the City and the Chamber of Commerce to make recommendations in four key areas, provide strategies to help the city manage future growth, and help create what is hopefully a future partnership with Indiana University.

Mentor: Mark Levin, Clinical Associate Professor