Lewis College of Human Sciences

ILLINOIS INSTITUTE OF TECHNOLOGY

PROGRAM

THIRD ANNUAL
LEWIS COLLEGE OF HUMAN SCIENCES
UNDERGRADUATE RESEARCH DAY

Friday, April 27, 2018

11 a.m–1:30 p.m.

Herman Hall Expo

Sponsored by Psi Chi

Table of Contents

Abstracts

1) **Evidence Based Interventions to Increase Calls to Congressional Representatives: Promoting "Call of the Wild"**

By: Jigar Dedhia

Faculty Mentor: Dr. Arlen Moller

Background. Big Cat Rescue is an exotic cat sanctuary that takes in neglected cats and cares for them for the rest of their life. Their main mission is to provide the best possible care as well as advocate for the termination of abuse towards these cats. One way they are trying to accomplish this is by passing a bill in congress, called the Big Cat Public Safety Act, which would end the private owner of large exotic cats, end breeding of large exotic cats, and end cub petting. Big Cat Rescue attempts to garner support by asking guests, at the end of a guided tour, to make The Call of the Wild, which is when guests call their their congressperson and tell them to support the bill.

Evidence Based Interventions. This paper looks at three possible intervention plans that can be implemented in attempt to increase the number of onsite Call of the Wilds. The first intervention plan looks at how asking for a small commitment can increase the likelihood an individual is willing to complete a larger request, also known as the foot-in-the-door phenomenon. The second intervention plan incorporates social norms such as descriptive and injunctive norms to influence individuals to make the Call of the Wild. The third and final intervention plan tries to increase an individual's perception of their behavior and its impact, known as self-efficacy, in order to increase the chance that individual will make the Call of the Wild.

2) **LDR 2.0**

By: Catherine Schweigert

Faculty Mentor: Dr. Steve Du Bois

This project is a replication of a study by Du Bois et al. in 2016. The original study investigated associations between relationship and health variables in individuals in long-distance relationships (LDR). While the original study used a community sample, the current study uses a student sample – in part because students are over-represented in the LDR population. The current study differs from the original in two ways: It is longitudinal instead of cross-sectional, allowing us to track changes over time in relationship and health variables; and, we will collect data from both members of the LDR dyad instead of one individual in the LDR. Hypotheses for the current study include (i) cross-sectional, bivariate health-relationship associations will be replicated

from the original study; and, (ii) health and relationship variables will co-vary over time. We also aim to test partner effects using the Actor Partner Interdependence Model as a framework. Participants must be in their relationship for 6+ months and in a LDR for 3+ months. At least one person in the couple must be an undergraduate or graduate student. Participants will complete an online survey assessing demographics, their relationship (e.g. satisfaction, maintenance, sex, stress), and their health (e.g. mood, exercise, diet, substance use), both at baseline and again six months later. To contribute to this study, I attended weekly lab meetings to discuss this project, created and edited our promotional flyer, created the screener and survey on Qualtrics, and began recruitment and advertising efforts while awaiting IRB approval.

3) A Bad Taste in the Mouth: Gustatory Disgust Influences Moral Judgment
By: Srushti Pai, Zan Syed, Citlalli Bueno, & Brittany McBrien
Faculty Mentor: Dr. Nikki Legate

In this study, we are looking at the effect taste has on morality with the purpose of replicating the original study to increase the reliability and generalizability of the results from the original research. Participants were randomly assigned to one of the three experimental conditions: sweet, bitter, and water. Participants were also asked to rate 6 moral transgressions along with other measures. They were also deceived about the true nature of the study, and only upon completion were they debriefed. Following the tests of the original study, we were not able to replicate the results.

4) QEEG: Instruction and Implementation
By: Jonathan Tacuri
Faculty Mentor: Dr. Jonathan Larson

Quantitative Electroencephalography (qEEG) is a procedure that processes the recorded EEG activity from a multi-electrode recording using a computer. In learning this practical skill to serve people in the future a template was made to help people understand the data from qEEGs in a more comprehensive way. The implementation of this template is described and the practicality is discussed.

5) How to reduce excessive military spending
By: Gufrana Baig
Faculty Mentor: Dr. Matthew Shapiro

The U.S government gives the military millions of dollars of funding. There are some major areas where the funding could be cut and invested into other projects. Two policy alternatives will be presented to attempt to decrease military funding by 10% without hurting the military strength.

6) American Diabetes Association Internship

By: Janki Patel
Faculty Mentor: Dr. Kazukauskas

My poster discusses my experiences during my internship with the American Diabetes Association. Being a non-profit health organization, the ADA deals with many fundamental issues in regards to providing inexpensive care to the community. For my internship, I helped plan the ADA's annual Health and Wellness EXPO, a free event for the community providing medical screenings, opportunities to speak with physicians, and fitness/dietary advice from professionals in the field. My poster discusses how my major in Behavioral Health and Wellness set me up for success throughout the internship and the diverse lessons/skills that I've developed throughout my role with the American Diabetes Association.

7) Stress and Sugar Intake Association in Overweight Children and Adolescents

By: Lindsay Zasadzinski
Faculty Mentor: Dr. Alissa Haedt-Matt

Psychological stress elicits an aversive emotional response and associated biochemical and physiological changes in the body. Research has shown that those who experience high levels of stress are more likely to consume highly palatable foods (i.e., high fat or high sugar foods) to act as a coping method for stress. The purpose of this study was to examine the association between stress and sugar consumption in a sample of overweight children and young adolescents using dietary recall and naturalistic assessment. Forty participants between the ages of 8 and 14 years completed ratings of stressful events multiple times per day for two weeks and reported 24-hour dietary recall of everything they have eaten or drank using the ASA-24 tool during three random days of the study. Given the repeated nature of assessments, a multilevel modelling approach was used to examine whether 1) stress levels the day of a dietary recall day were associated with sugar levels (in grams), and 2) stress levels the day before a dietary recall day predicted higher levels of sugar intake the following day. Results indicated that there was no significant association between concurrent or previous stress and sugar intake. This may suggest that the link between stress and highly palatable foods is not present among overweight and obese youth. However, more research on the association between psychological stress and food consumption is needed in order to replicate the findings.

8) Web (In)Accessibility: Exploring Solutions to Inequity of Access to Online Content

By: Josh Guberman
Faculty Mentor: Dr. M. Ellen Mitchell

Despite technical advances intended to create more accessible content, a substantial amount of the World Wide Web (Web) is inaccessible to individuals with various impairments. Historically, researchers and practitioners approached Web accessibility as a technical dilemma. Within this paper, I review advances in and problems with technical, economic, and sociotechnical approaches to Web accessibility. I conclude with an exploration of directions for future work towards making the Web universally accessible.

9) Policy alternatives for net metering

By: Shawn Finnigan, Blake Ehrenbeck, Uzziel Fernandez, Zhen Huang, & Travis Watson
Faculty Mentor: Dr. Matthew Shapiro

Energy policies impact the energy sector directly and in many different ways. If a private market is not moving in a desirable direction for the social and economic well-being of its citizens, the government must correct the course. In this project, we focus on the idea of net metering, which is the status quo renewable energy policy in the United States. Net metering allows a consumer to sell any energy generated on their property in excess of what is directly consumed back to the energy company at the same price that consumers purchase energy. Tax incentives and subsidies implemented by the government have kept down the cost of production for solar panels while providing incentives for consumers to purchase them. This has given a much-needed boost to the solar energy sector. After moving in the desired direction and becoming more self-sufficient subsidies may no longer be needed, while new policies are required to ensure that the energy market continues to grow. For the consumer, net metering provides a rate that can be easily assessed while calculating potential future returns from home energy generation. In other words, as the cost of energy rises, so will one's returns. For the energy providers, the benefit of net metering arises from not having to generate and transmit as much power while maintaining a reserve of alternative energy sources of which they can tap. However, there is a problem that arises with the application of net metering: the price of energy includes certain variables such as the cost of grid maintenance and employee salaries. However, when one is able to sell energy back to energy companies at that price, they are able to avoid these costs. This project examines two possible policy options to remedy this problem. The first is a buy all sell all policy that requires the consumer to buy all of the power that they use from

the power company, and sell all of the power that they generate back to the energy company. The second option is a policy called the Value of Solar which can be implemented as an upgrade to net metering, or in a buy all sell all format. Based on economic and political analyses, we have selected the Value of Solar as the most appropriate policy option.

10) Solar energy

By: Bryan Scott, Kohl Linder, Raja Patel, Shahzil Sheikh, Vilasay Rathahao
Faculty Mentor: Dr. Matthew Shapiro

Solar energy is considered to be one of the best renewable energy sources both now and well into the future. Most countries have realized that, if they do not expand solar energy as a share of their total national energy portfolio, it will be difficult to keep up with energy demand while satisfying renewable energy requirements. Currently, the United States follows a policy of solar tax credits, which is supposed to help increase the share of solar energy production in the United States. This paper looks into the following two policy options that stand apart from tax credits: feed-in tariffs and a market-led policy, the latter of which is analogous to removal of government intervention. The paper explores these policies based on their economic and political impacts. Regarding our economic analysis, we focus on the following three goals: fiscal health, socio-economic well being, and some relevant economic factors. Our political analysis shows that interest groups and government officials are in support of tax-credit and feed in tariff policies. Our broad conclusion is that feed-in tariffs are the ideal option given that the policy would promote long-run energy efficiency.

11) Student Burnout at Illinois Tech

By: Loretta Sutkus
Faculty Mentor: Dr. Mahima Saxena

School burnout is a growing area of research in the field of Psychology. Students have been found to experience burnout similar to workers in job settings. (Schaufeli et al, 2002) Previous research has assessed the negative effects that school burnout may have on students, but there is still quite minimal research exploring the negative effects that school burnout has on college student experiences. In this study, through an online survey, levels of burnout in students and various student experiences were assessed. A sample of 500 students from a U.S. university was collected and it was found that there was a significant negative relationship between student burnout and satisfaction levels with their program of study, satisfaction levels with the institution, the amount of time spent studying weekly, and their levels of mindfulness. Future research should address different mechanisms and programs to prevent the onset of burnout in students.

12) Gender, Trauma, and Weight: Perspectives of African Americans with Mental Illness

By: Cesar Armas, Janis Sayer, Sang Qin, Sonya Ballentine, Deysi Paniagua, Lindsay Sheehan

Faculty Mentor: Dr. Patrick Corrigan

Background: Individuals diagnosed with serious mental illness are disproportionately burdened by physical illnesses (de Hert et al, 2011). However, African Americans are at greater risk, as they have a higher prevalence of obesity than any other ethnic group (Flegal et al., 2016). It's important to address the disparities that African Americans face to provide better treatment programs.

Aims: This study sought to identify gender-specific and trauma related barriers experienced by African American men and women with mental illness in relation to weight.

Method: In this study a CBPR team was used to assist in the identification of both gender-specific and trauma related barriers to the attainment of weight goals, including social and community determinants that either support or hinder healthy behaviors. Participants were asked nine gender specific questions on their weight experiences, as well as five questions on how trauma has affected their weight.

Results: Gender specific findings included women preferring diets that are high in calories and having low physical activity levels. This was contrary to depictions of women being more weight and health conscious. Attitudes of women's bodies and weight varied with some respondents displaying acceptance of being curvy or big while others having the desirability of being thin. Stress and trauma affected eating and physical activity in both men and women as women tended to be emotional eaters, and both men and women tended to "hibernate" following a traumatic event. Several participants described community violence as a factor in not exercising outside.

13) From an SDT perspective: Dual mode of perfectionism and student-athlete burnout

By: Colt Scroggins

Faculty Mentor: Dr. Arlen Moller

Background

Current research has come to support a relatively new model of perfectionism called the dual mode of perfectionism which posits two modes: adaptive and maladaptive. Adaptive perfectionism is a healthy mode of perfectionism focused on striving for excellence, whereas maladaptive perfectionism is an unhealthy mode of perfectionism focused on avoidance of failure. Previous research has suggested that adaptive perfectionism negatively predicts student-athlete burnout, whereas maladaptive

perfectionism positively predicts burnout. The proposed study is building on this foundation by examining why different forms of perfectionism are related to burnout in opposite ways, and what factors cause these different forms of perfectionism.

Study Design & Methods

This study is aiming to recruit participants (N=50) that will consist of current student-athletes at the Illinois Institute of Technology and will consist of a two-stage recruitment process. Coaches will be asked for cooperation before recruiting participants. After cooperation is gained, an email recruitment script and survey link will be distributed by those coaches. Participants will have one week from when they receive the link to complete the survey on any internet accessible device. The measures include: Parenting Style Inventory-II, Behavioral Regulation in Sport, Athlete Burnout Questionnaire, Multidimensional Inventory of Perfectionism- Sport, and Controlling Coach Behaviors Scale. The survey should take approximately 25-30 minutes and will be run individually. A cross-sectional design will be used.

Hypotheses

H1: The relationship between dual modal perfectionism and burnout might be mediated by basic psychological needs satisfaction, based on social determination theory.

H2: The antecedent variables of authoritative parenting (H2a) and coaching behavior (H2b) will be predictors of the development of perfectionism in individuals.

14)Analysis of Federal Carbon Regulation Policies
By: Alex Kleiner, Amelia Rupp, Michael Machesky, Thomas Lomax, & William Nicholson
Faculty Mentor: Dr. Matthew Shapiro

Our project addresses the issue of global climate change by examining policies in the United States aimed at reducing carbon emissions. We examine the following policy options: the implementation of a nationwide cap-and-trade system, the implementation of a nationwide carbon tax, or the continuation of the status quo, which is the presence of limited market-based cap-and-trade initiatives. The analysis consists of two parts: one that is socio-economic and another that is political. The economic analysis is rooted in identifying the impact categories that operationalize the goals of fiscal health, social and economic well being, and environmental wellbeing. Data were gathered to create an understanding of how these impact categories change across the three scenarios. For the political analysis, the relevant political actors have been identified, and their views on each energy policy alternative have been recorded. Through these two analyses, we have determined that a nationwide cap-and-trade policy would be the most effective alternative due to its socio-economic benefits. However, issues remain in terms of implementation and political feasibility, namely that more public support exists for a carbon tax and the Trump administration remains highly opposed to any regulations of this type.

15) Starting high shrinks the pie: Replication of Schweinberg study
By: Alex Montgomery, Sean Leahy, & Jessalena Lee
Faculty Mentor: Dr. Nikki Legate

The purpose of this study was to replicate Schweinsberg et al. (in prep) study. It is important to replicate studies to determine if the primary findings of the original study can be applied to other people or setting. This practical approach has the ability to increase and strengthen the results. In comparison, this approach allows the improvement of the generalizability and quality of the research, prior to publication. Participants from Illinois Institute of Technology complete an online survey either through Qualtrics or through the Sona system. A sample of 191 participants was randomly assigned to two conditions, extreme first offer or moderate first offer. The task was to negotiate for a new phone and plan while paying the least amount. Both conditions consisted of the same self-report items, trustworthiness, information sharing, concerns, and negotiation enjoyment. There was a close statistically significant value of participants from polygenic societies who enjoyed negotiating with the seller in the moderate first offer condition. However, it was concluded that there were no mean differences nor statistically significant results between the extreme first offer and moderate first offer.

16) Optimizing online peer support networks for treating mental health
By: Madiha Muqeet,
Faculty Mentor: Dr. Arlen Moller

Background: Everyday thousands of people volunteer to listen to strangers talk about their problems online. Yet, little research has been done exploring the psychology of these listeners. This study examines how volunteer listeners' styles of providing social support shared identities and experiences with help-receivers, and levels of prosocial motivation, each may influence the level of benefit helpers obtained through participation. This literature review in particular analyzes the general effectiveness of online peer support networks for treating mental health and depression, in addition to determining what it is about mental health platforms like 7 Cups of Tea that prove particularly desirable and helpful to those with mental health issues.
Research Design: Undergraduate students were recruited using IIT's SONA System. Target enrollment was 50 participants. The study utilized a repeated measures survey design. Phase 1 involved completing a 30 minutes listener training session online. Phase 2 involved completing a short survey (30 minutes). Phase 3 involved volunteering to listen to others on the 7 Cups site for at least 30 minutes over a 2 week period. Phase 4 involved completing another short survey (30 minutes). Thus participant required 2 hours of effort spread over a 2 week period.

Materials: Key measures assessed at Times 1 and 2, included, among others: Scale of Positive and Negative Experience, Loneliness Scales, Flourishing Scale, General Health Questionnaire.

Hypotheses: (1) Overall adherence to active listening will be positively associated with wellbeing, (2) Pro-social motivation is positively associated with increased well-being, while egocentric motivation will be negatively associated, (3) Overall shared identity will be positively associated with increased well-being, reflecting greater intimacy and reappraisal.

Implications: The findings from this study can be used to improve the recruitment and ongoing motivation of volunteer listeners, helping to ensure the longevity of this valuable public health resource.

17) Volunteering To Provide Peer Support Online: Who does it? Why? And how does it affect them?

By Nadyah Mohiuddin
Faculty Mentor: Dr. Arlen Moller

Background. This research focused on attempting to determine individuals that are most likely to volunteer to provide peer support online, and continue volunteering. Typically, individuals that volunteer do so without pay and anonymously. Online peer support includes giving advice, emotional support, or guidance to peers. We hypothesized that different types of peer support, and rate of volunteering is associated with different benefits and costs. This study had two primary hypotheses. The first hypothesis (H1) suggested listeners would get psychological benefits from volunteering to listen to others. The second hypothesis (H2) suggested benefits from listening are stronger for individuals who volunteered for autonomous and empathetic reasons.

Methods. This study used a 4-phased correlational, repeated measures design. Phase 1 involved completing an online listener training course on the 7 Cups of Tea online peer support platform. Phase 2 involved a Pre-Listening Survey, with scales addressing the volunteers' experiences, how they felt through the process, and general health. Phase 3 involved listening on the 7 cups platform for at least 30 minutes over two weeks. Phase 4 involved completing a Post Listening Survey online. The scales in this survey were about the volunteers' feelings about their participation. The Fall 2017 semester recruitment goal was 100 participants; data were collected from 32 participants. Thus data collection is still ongoing.

Implications. Anticipated research implications include providing 7 Cups of Tea administrators feedback on practices for recruiting and retaining high quality volunteer listeners. These evidence-based suggestions may also apply to other similar online peer support platforms.

18) A Safer Chicago: Locational Analysis of Sexual Assaults
By: Yifan Yao
Faculty Mentor: Dr. Hao Huang

In the past four years sexual crimes are consistently increasing. There are total 10,263 sexual assault cases filed in the City of Chicago since 2014. It is believed improving lighting in the street increased the surveillance of potential offenders by increasing visibility and thus deter sexual assaults. This research investigates the spatial distributions and characteristics of sexual assaults and examines potential factors related to sexual assaults in the City of Chicago during last four years, employing spatial crime, street light, and socioeconomic data. Results show that both sex crimes and street lights are unevenly distributed across communities: sex crimes are mainly concentrated in Austin in the west side, Loop and South Shore in the south side. The effects of street lights on the sexual crime vary: the streets light in the neighborhoods of Austin, Englewood, and Near West Side are insufficient given that these neighborhoods have the high number of sex crimes.

19) Self-Esteem and School Engagement
By: Xing Chen
Faculty Mentor: Dr. Nikki Legate

Previous studies suggest academic self-competence is positively linked to classroom participation in fifth grade students and self-efficacy is significantly correlated with GPA in high school students. This study aims to examine how school engagement is correlated to self-esteem and age. The hypothesis is school engagement becomes less affected by self-esteem as students become older. 170 participants were recruited by the sona systems and completed a survey. Results suggest that school engagement is only correlated to self-esteem and the strength of such correlation is not significantly different between age groups.

20) Replication of the wealth and happiness study by Diener, Ng, Harter and Arora
By Medha Viswanath, Paulina Pys, & Gabriel Montesinos Corzo
Faculty Mentor: Dr. Nikki Legate

We are three undergraduate students at the Illinois Institute of Technology in Chicago Illinois, and we will be conducting a replication of Diener et. al (2010) "Wealth and Happiness Across the World". We are presenting the original measures to participants in the form of an online survey utilizing convenience sampling. We are recruiting IIT student participants through the IIt's SONA system and we plan to recruit the IIT working adult population by sending out the link to the survey over email. The original

study found that while satisfaction with standard of living based on things like income and luxury conveniences were positive predictors of life evaluations, those elements were not strong predictors of positive feelings; in that regard, psychological need fulfillment was a significantly a stronger predictor.

21)How Medical Students' Attitudes Towards Pharma Contribution Affects Work Motivation

By Pranathi Merneedi
Faculty Mentor: Dr. Arlen Moller

Background: The current literature on physician-industry interactions shows an association between industry payments and physicians' prescribing behavior. In 2010, the U.S. government passed the Sunshine Act, mandating that all contributions made by pharmaceutical companies to physicians be reported to a public database. The American Medical School Association (AMSA) publicly grades medical schools via scorecards with regards to conflict-of-interest (COI) policies. This study aims to assess medical students' attitudes towards industry payments while in medical school, and further, relate attitudes toward industry payments to potential antecedents and consequences (e.g., work motivation and occupational health).
Methods: The study will use a correlational, longitudinal design with data collection at two time points spaced 2 years apart. After securing IRB approval, 3rd year medical students from a range of universities will be recruited to complete an online survey. The AMSA scorecard for their respective universities will be acquired via public records. Individuals will be considered eligible if they have successfully completed their respective school's ethical COI course. The first survey will include measures of motivation, occupational health, and attitudes towards pharma payments. After two years, the same individuals will be invited to complete a second survey which will include the same measures.
Hypotheses: Hypothesis 1 is that medical students who go to a school with low AMSA Scorecard Grade regarding COI policies, and who anticipate higher student loan debt, will have more favorable attitudes toward industry payments. Hypothesis 2 is that students with more favorable attitudes toward industry payments will have worse occupational health.

22)Determining Factors involved with Team Allocation on Collegiate Teams

By: Reya Green
Faculty Mentor: Ron Landis

The purpose of this qualitative study is to gain better understanding and insight behind collegiate coaches' methods, thought processes, and motivations when determining player allocation to build the most effective teams during a competition. While there is

extensive literature on the components and qualities necessary to build successful teams, very little research has been conducted to examine why individuals of authority, such as coaches, choose to allocate individuals for certain roles on a team. Results from the standardized interviews produced commons trends as well as revealed inconsistency within how coaches determine playing time. To generalize results, replication of the study is necessary at universities where there are larger pools of participants. Current results may provide practical implications such as suggestions for building highly operative teams in the workforce.

Thank you for joining us at the Lewis College of Human Sciences Annual Undergraduate Research Day!