

**SCHOLARS IN ACTION: THE 2011 UNI SYMPOSIUM ON
RESEARCH, SCHOLARSHIP, AND CREATIVE ACTIVITY**

FEBRUARY 11, 2011 UNI MAUCKER UNION

ROOM: Oak

SLOT: 1

Atmospheric Structure During Episodes of High Particulate Concentration

Alan Czarnetzki, Professor of Meteorology, Earth Science

Abstract: The structure of the atmospheric boundary layer was examined for episodes of high concentrations of fine particulates as measured by the Potosi (Wisconsin) SLAMS monitor during 2006–2009. Fine particulates are defined as those having an aerodynamic diameter of 2.5 microns and smaller. The character and depth of the mixed layer as revealed by virtual potential temperature profiles will be summarized for days with the highest and lowest concentrations during this time period. Associations between concentration and the standard atmospheric variables of temperature, relative humidity, and wind direction are also presented. The results indicate that atmospheric structure is frequently and quantifiably different on days when particulate concentration is highest.

ROOM: Oak

SLOT: 2

Reaching Literacy Potentials for Students with Significant Disabilities: Factors Informing Professional Development. Amy Petersen, Assistant Professor, Department of Special Education

Abstract: This research study examines the process of professional development aimed at improving the literacy outcomes for students with significant disabilities.

ROOM: Oak

SLOT: 3

Green Iowa AmeriCorps

Ashley Wolter, Program Director, Center for Energy & Environmental Education

Justin Rose, Green Iowa AmeriCorps Marketing & PR Coordinator, Center for Energy & Environmental Education

Abstract: Green Iowa AmeriCorps was founded in the winter of 2009 to help rebuild the flood-devastated Iowan communities of Cedar Falls and Cedar Rapids. In the next year it will expand to Decorah and Dubuque. The program provides meaningful skill development of young people and allows them to work in communities on service projects. Members contribute to a comprehensive weatherization program in which they assess the needs of improvement in a home and provide energy efficiency improvements. Green Iowa AmeriCorps focuses primarily on lowering the cost of the homeowner utility bills, increasing the comfort of their home, and conserving their overall energy use. Members go into houses and perform simple insulation work. These tasks can hugely impact the energy usage of a home.

The Green Iowa AmeriCorps program was named one of the nation's 52 most innovative AmeriCorps Programs in the country by Innovations in Civic Participation (ICP) and America's Service Commission (ASC). The ICP and ASC report said that the Green Iowa AmeriCorps members are able to offset the cost of home weatherization, making it available and affordable to some of the least efficient properties. The services are provided to people who are either physically or financially unable to complete the work themselves. The program has exceeded targets for the number of energy conservation projects and weatherization workshops. They targeted 350 property owners on energy advice or weatherization and actually have helped over 6,200.

ROOM: Oak

SLOT: 4

Supporting Multidisciplinary Education in the Academy: Barriers and Opportunities

Catherine Zeman, Associate Professor/ Director, HD/HPELS and RRTTC

William Stigliani, Professor, CEEE

Abstract: Complex problems of environmental degradation and their relationships to human health and wellbeing call for interdisciplinary solutions. Practitioners who have a solid grounding in the basic sciences along with an ability to analyze environmental health sciences problems through a systems thinking lens will be best prepared to solve these problems.

Students receive a balanced introductory education to these principles through accredited well-designed, interdisciplinary environmental health science educational programs. Without such programs, students do not develop the important interdisciplinary thinking and framing skills necessary to effectively address complex real world issues.

This study investigated factors affecting the support for comprehensive environmental health education programs by exploring the barriers and enablers of interdisciplinary programs, in general, in the academy. This was explored with a cross-sectional study design using a convenience sample of faculty and staff at UNI. Questions explored job related demographics, respondent's views of barriers (i.e. funding, enrollment, promotion and tenure committees) and respondent's views of enablers (i.e. administrative support, alumni support, etc.). Findings can be used to provide leadership and develop policies and incentives both within and outside the academy that support and encourage these programs which can help to strengthen the program offerings of the comprehensive University.

ROOM: Oak

SLOT: 5

The Influence of Leadership Styles, Conflict Management, and Individual Characteristics on Motivation: A Cross Cultural Study of Business Supervisors

Mohammed Rawwas, Cross-Cultural Ethics, Marketing

Abstract: With business becoming more globalized, marketers need to understand the ethical beliefs of foreign consumers because of their effect on the outcomes of market expansion strategies. The ethical judgments of US consumers have been examined, but few studies have investigated similar attitudes in foreign-national settings. To understand the various types of consumer ethics, this study classifies ethical beliefs by linking Hofstede's cultural taxonomy to personality and ethics. This classification is achieved by comparing ethical judgments of consumers from eight different countries the USA, Ireland, Austria, Egypt, Lebanon, Hong Kong, Indonesia, and Australia. Strategic implications for marketers are also discussed.

ROOM: Oak

SLOT: 6

A Planning Decision Support System

Daniel J. Power, Professor, Management

Abstract: This poster explains a Planning Decision Support System (PDSS). It is a prototype built using open source web tools. PDSS is an example of a general purpose, decision process management application. The website, PlanningDSS.com, is still under development, so your suggestions and feedback are most welcome. Also, we are trying to identify "alpha" testing opportunities. We will host your use of the system. Also, we can customize a version of Planning DSS to integrate with a specific strategic decision process in an organization. This Web-based planning and decision process structuring program has been designed to improve anticipatory and reflective organization decision making.

ROOM: Oak

SLOT: 7

The Good Life: Beauty and Ethical Responsibility on an Acreage in Iowa

Deborah K. Deemer, Associate Professor, Educational Psychology & Foundations

Phil Fass, Professor, Art: Graphic Design

Abstract: In the summer of 2005 we bought five acres on the outskirts of Parkersburg, Iowa where we have been hybridizing daylilies. We have utilized writings within the literatures of environmental ethics to reflect on our practice in working the land. With this poster session we hope to evoke further conversation regarding what it means to live a life centered by an explicit acknowledgement of our embeddedness in, and relationship to, the natural world. In the past our thinking focused on the meaning of a good life in terms of ethical responsibility and aesthetic awareness. Our project here is to further the conversation by offering the poster and the work it represents as a 'boundary object' for envisioning interdisciplinary collaboration.

ROOM: Oak

SLOT: 8

Enso-Like Cyclicity in Late Pleistocene Varve Thickness Measurements from Two Alpine Lakes, Wind River Range, Wyoming, USA

Dennis Dahms, Professor, Geography, University of Northern Iowa
Anders Noren, Associate Professor, Geology & Geophysics, University of Minnesota
C. Geiss, Associate Professor, Trinity College
J. Dorale, Geosciences, University of Iowa
T. Johnson, Geography, University of Northern Iowa
A. Myrbo, University of Minnesota

Abstract: Spectral analyses of varve thickness measurements in sediment cores from two pro-glacial lakes in the Wind River Range of Wyoming, USA, reveal a 2.8-to-8-yr cyclicity consistent with that expressed by the El Nino-Southern Oscillation. Six macrofossil-based ^{14}C ages (AMS) combined with varve thickness measurements below the age-samples, when combined with magnetic secular variation and rock magnetic measurements, enable us to extrapolate the minimum age of the lake sediments to ~20 ka. The spectral power from the varved sediments in the lakes suggests that ENSO forcing can be observed into the western interior of North America. This study, together with the evidence reported from New England by Rittenour & Brigham-Grette (2000), allow us to infer that El Nino-like climate teleconnections apparently are detectable across North America during the Last Glacial Maximum (LGM).

ROOM: Oak

SLOT: 9

Iowa Teaching Quality Partnership Grant: Effective Teaching Past, Present and Future - A Research Synthesis and Model

Christina Curran, Assistant Professor, Special Education
Nadene Davidson, Interim Head, Department of Teaching and Director of P-12 Collaborations and Innovations, Department of Teaching
Jody Stone, Professor, Price Laboratory School
Mary Herring, Professor, Associate Dean College of Education
Stacy Snyder, Teacher Quality Partnership Project

Abstract: Teaching quality and effectiveness is at the forefront of professional discourse and policy initiatives in public as well as preservice teacher education (e.g. Barnett, 2010; Darling-Hammond, 2010; Hanushek & Rivkin, 2006). Calls for reform and accountability underscore a need to move from an end-point orientation of highly-qualified educator status to more dynamic conceptions and measures of teaching effectiveness that impact ongoing improved learning outcomes for all students, including those in high needs schools where diverse, unique teaching and learning conditions exist. UNI has partnered with the Iowa Department of Education, Stanford University, and UCLA in the 9 million dollar Iowa Teacher Quality Partnership (ITQP) grant to reform traditional university teacher preparation and improve learning and achievement in high needs schools. The purpose of this poster presentation is to share the emerging research synthesis which defines attributes of effective teaching past, present and future providing a cornerstone for the grant activities. The process used by the research team for determining effective teaching attributes, results of the research synthesis, and proposed use of these attributes in upcoming ITQP efforts integrating the attributes in teacher preparation at UNI and continued professional development for beginning and experienced teachers will be shared.

ROOM: OAK

SLOT: 10

IMPACT (IMPacting Achievement with Collaborations and Technology)

Doreen Hayek, IT Projects Administrator, ITS-ET
Alan Czarnetzki, Professor, Earth Science
Marcy Seavey, Iowa Academy of Science
Lori Seawel, ITS-ET

Abstract: The Iowa Educational Technology and Training Institute (IETTI) at the University of Northern Iowa (UNI) directs the IMPACT (IMPacting Achievement with Collaborations and Technology) program as an application of the MSP grant program and the Iowa Title II professional development program.

The focus of the IMPACT program is to integrate the earth science-based programs of STORM and GLOBE along with educational technology into existing PreK-12 science curriculum. Learning communities are formed between participating teachers, UNI science and college of education faculty, and educational technology staff. Activities for the learning communities include two-week Summer Institutes for teachers along with yearly, ongoing support, sharing and education for the participants. Teachers receive at least 100 contact hours of professional development.

The project intent is to improve and upgrade the status and stature of science teaching to positively impact student achievement. The professional development activities have been aligned with the Iowa Professional Development Model. All professional development materials are aligned with national content standards and with the Iowa Core. The IMPACT activities were based on the needs in teacher quality, professional development, and science content as found in the participating school's needs assessments.

ROOM: Oak

SLOT: 11

Examining One's Own Teaching: Self-Study in Mathematics Teacher Education

Elizabeth K. Hughes, Assistant Professor, Mathematics

Abstract: I share my journey from being a "reflective teacher" to informally studying my own teaching to a new step into formally examining my own teaching. I am exploring self-study methodologies. I am also embarking on a new adventure in teaching: team teaching.

ROOM: Oak

SLOT: 12

Online Data Collection with Youth: The Future is Now

Gene M. Lutz, Ph.D., Director, Center for Social and Behavioral Research

Disa Cornish, Ph.D., Program Evaluator, Center for Social and Behavioral Research

Melvin Gonnerman, Jr., Ph.D., Senior Research Methodologist, Center for Social and Behavioral Research

Abstract: Computers and the Internet are integrated into the daily lives of youth and younger adults. Today's youth live in an environment in which sharing private information about oneself online through e-mails and social networking is common. Hence, web-based research with youth may be more appealing than more traditional methods such as paper and pencil interviewing (PAPI). The transition from PAPI to online data collection is well underway in some health behavior research; this transition has yet to occur with the Youth Tobacco Survey (YTS), conducted by the Centers for Disease Control and Prevention (CDC). We conducted a pilot test of online implementation of the Iowa Youth Tobacco Survey (IYTS) through a multi-phase, multi-method study. Youth in Iowa are not concerned with privacy of their answers when completing an online questionnaire about tobacco use. Very few, if any, differences were seen in reports of tobacco use behaviors between the PAPI and online versions of the IYTS.

ROOM: OAK

SLOT: 13

Enabling Continuity of Life: The Role of Memory Boxes in Assisted Living Facilities

Gowri Betrabet Gulwadi, Associate Professor of Interior Design, School of Applied Human Sciences

Abstract: Current environments for dementia are influenced by empathetic design principles and therapeutic design goals, e.g., establishing a non-institutional character, increasing privacy in semi-private resident rooms (e.g., Brawley, 1997; Cohen & Weisman, 1991). This exploratory study adds to the design-for-dementia literature by documenting design features of hallway memory boxes in assisted living facilities. Each memory box - a display unit placed outside individual rooms in a care facility - holds personal memorabilia, and can act in multiple ways, e.g., to establish one's identity, serve as a cue for orientation and finding one's way to a room within the facility, and/or as a tool for reminiscence. A memory box takes on a high significance in dementia care centers because it addresses key therapeutic goals in dementia care - maximizing awareness and orientation, and establishing links to the healthy and familiar (Cohen & Weisman, 1991). Although different configurations and sizes are used, design aspects of memory boxes that might impact their usefulness have not yet been explored. This research documents the design characteristics and use of three types of memory boxes in retirement facilities (including dementia care). A content analysis of photographs of memory boxes (outside resident rooms) helped compile categories of commonly displayed items. Interviews with staff helped compile ways in which the memory boxes play a significant role at each facility. The findings present relevant design

features of memory boxes identified through the study, and the resulting discussion outlines design features that can be considered for further focused studies.

ROOM: Oak

SLOT: 14

Ultra Wide Band Radio Applied to Intra-Vehicle Wireless Control and Communications Systems

Hong (Jeffrey) Nie, Assistant Professor, Industrial Technology

Abstract: Modern automobiles increasingly rely on electronics and computing technologies to achieve enhanced vehicle control and intra-vehicle communications capabilities, resulting in large amounts of wiring and placing a considerable engineering burden on the designers of automobiles. Ultra Wide Band radio is a promising technology for intra-vehicle wireless control and communications applications since it is capable of achieving high-speed and robust transmissions within a short distance. However, in-vehicle channels introduce dense and extended multi-path components into received signals, and are sensitive to the movement of drivers and passengers. Hence existing Ultra Wide Band technologies need to be redesigned when applied to an in-vehicle environment. This NSF funded collaborative project firstly addresses the differential code shifted reference technology to capture more signal energy without performing channel estimation leading to an enhanced bit-error rate performance in a low complexity. Secondly, cognitive Ultra Wide Band radio will be used to proactively eliminate various in-band narrowband interferences. Finally, intra-vehicle control and communications systems necessitate an innovative research strategy and design methodology in order to meet the requirement on the coexistence of reliable real-time control message delivery and high-speed data communications.

ROOM: Oak

SLOT: 15

Rituals are Fun, Hazing is Violent: Rituals and Hazing in Sport

Jennifer J. Waldron, Associate Professor, School of HPELS

Abstract: Although hazing experiences in sport are commonly reported by the media, limited research exists. Using a psychosocial framework, Waldron and Kowalski (2009) found that many athletes believed their teams engaged in benign rituals, but not hazing. To these athletes, hazing only occurred when a line was crossed resulting in dangerous and damaging behaviors. Therefore, the current study examined athletes' perceptions of (a) how and when rituals turned into hazing and (b) the responses of hazers and hazingees to crossing the line. Individual, semi-structured interviews lasting 30 to 45 minutes were conducted with 11 college students (4 women and 7 men) who were former high school athletes from a variety of sports. The interview included discussion of scenarios. Athletes were asked whether the behaviors in the scenario represented rituals or hazing and how the behaviors could change to become either a ritual or hazing. Data analysis, consisting of familiarization, open coding, and axial coding, culminated in two higher-order themes. The higher-order theme of rituals transformed to hazing resulted in four lower-order themes including the clear line, the blurred line, crossing the line, and contradictions of the line. From the higher-order theme of social acceptance, the lower-order themes of complicity and being a real teammate emerged. Athletes struggled in elucidating when rituals crossed the line to hazing, and thus were often contradictory in their responses. Additionally, the study provides further evidence that the environment of sport and the need for social-approval both contribute to hazing practices.

ROOM: Oak

SLOT: 16

Enthusiasm, Anxiety, and Participation in Political Campaigns

Justin Holmes, Assistant Professor, Political Science

Abstract: Much of the coverage of the 2008 election has focused on two elements of the Obama candidacy. First, there seemed to be an unprecedented level of enthusiasm among his supporters. Second, the campaign appears to have been especially good at mobilizing volunteers and collecting small donations. On the other hand, Republicans did not seem particularly enthusiastic about John McCain, and his campaign seemed to be perpetually understaffed with volunteers. This volunteer element is especially important, because there is clear evidence that the face to face interaction provided by campaign volunteers can be decisive in winning elections. Does enthusiasm for your preferred candidate cause volunteering? Anxiety over the opposition candidate? Is there a gap in volunteering and other participation for winning and losing candidates? The current study uses NES data to examine the link between various emotional responses, campaign volunteering and ultimate electoral success.

ROOM: Oak

SLOT: 17

Wireless Sensor Networks for Infrastructure Monitoring

Jin Zhu, Assistant Professor, Industrial Technology

MD Salim, Professor, Industrial Technology

Abstract: Structural health monitoring is a routine maintenance to structural elements such as highway overpasses, bridges and roads. Traditionally infrastructure inspection is performed via infrequent periodical visual inspection in the field. Wireless sensor technology provides an alternative cost-effective approach for constant monitoring of infrastructures. The main goal of this IDOT sponsored project was to implement a wireless sensor network for monitoring the behavior and integrity of highway bridges. At the core of the system is a low-cost, low power wireless strain sensor node whose hardware design is optimized for structural monitoring applications. The key components of the systems are the control unit, sensors, software and communication capability. The extensive information developed for each of these areas has been used to design the system. The performance and reliability of the proposed wireless monitoring system is validated on a 34 feet span composite beam in slab bridge in Black Hawk County, Iowa. The micro strain data is successfully extracted from output-only response collected by the wireless monitoring system. The energy efficiency of the system was investigated to estimate the battery lifetime of the wireless sensor nodes. This presentation will demonstrate the system design, the method used for data acquisition, and system validation and field testing.

ROOM: Oak

SLOT: 18

Informing My Teaching Through Metaphors

Katheryn East, Associate Professor, Educational Psychology and Foundations

Abstract: This poster will present how I have used metaphors to study my teaching over the last decade. Multiple methods for eliciting metaphors will be demonstrated and the effect of the metaphors on my thinking about teaching will be presented.

ROOM: Oak

SLOT: 19

Validation of the POLAR Active! in Children and Adolescents

Kevin J. Finn, Associate Professor, HPELS

Renee Kidwell, Adjunct Faculty, HPELS

Chelsea Drumheller, Research Coordinator, HPELS

Abstract: The assessment of physical activity is a contemporary issue to identify individuals with low levels (sedentary) and higher levels (both moderate and vigorous) of physical activity in order to explain indices of health, fitness, and obesity. Accelerometers worn either on a limb or torso have been studied in research settings or developed to be incorporated in both clinical intervention and public health surveillance. POLAR Electro, Oy (Finland) is preparing to release to the market a single axial accelerometer (Polar Active!) that has been tested in their laboratories on a small sample of children. The manufacturers have determined cut points for discriminating between four levels of physical activity and sedentary behavior. The accelerometer will also provide an estimate of caloric expenditure using a prediction equation incorporated from a variety of activities commonly performed in the field. There is a need to validate these cut points and estimations using field based testing in children and adolescents. Researchers at the University of Northern Iowa have been contracted to assess these devices on a sample of children and adolescents using both criterion and concurrent validation methods. This presentation will provide results of these studies focused on the relationship between a criterion measure of energy expenditure (rate of oxygen consumption) and other commonly used accelerometers. In addition, information will be presented that suggest the additional benefits regarding the potential for this new assessment tool to promote physical activity in children.

ROOM: Oak

SLOT: 20

Undergraduate Major, LSAT score, and First-Year Law School Performance

Lisa Jepsen, Associate Professor, Economics

Ken McCormick, Professor, Economics

John Fordyce, Economics

Abstract: We use a two-stage least squares regression model and proprietary data from three top-25 law schools to test the effect of undergraduate major on first-year law school performance, as measured by law school grade point average at the end of the first year. Our results suggest that certain majors are positively related to LSAT scores and that LSAT scores are positively related to first-year law school performance.

ROOM: Oak

SLOT: 21

Current Trends in Library Web Site Redesign with Drupal CMS

Elaine Chen, Instructional Design Specialist, Rod Library

Abstract: Providing services, in house and online, to its home institution has been an optimal goal for an academic library. As library services continue to move online, having a powerful internet presence becomes even more important (Harris 48). However, maintaining a large library web site has been a challenge, especially for those sites with thousands of web pages to bring up-to-date; not to mention keeping abreast of the increasing levels of interactivity and social connectedness from our Net Gen students' expectations. To establish a more engaged user experience, Rod Library at the University of Northern Iowa has redesigned its web site with Drupal to implement shareable, reusable, syndicated, and dynamic information. By studying redesigned academic libraries that utilizing Drupal in North America, the purpose of this study is to identify design trends, navigation trends, and technology trends from redesigned academic library web sites with Drupal CMS.

ROOM: Oak

SLOT: 22

Gas Phase Fluorescence of Ozone-Sulfur Dioxide Complexes

Michael S. Elioff, Assistant Professor, Chemistry

Abstract: We are interested in the potential interaction between stratospheric ozone and sulfate aerosols. We have prepared ozone/sulfur dioxide van der Waals complexes which have different properties than either ozone or sulfur dioxide. We have begun to investigate the gas phase fluorescence lifetimes of the ozone-sulfur dioxide complexes. An apparatus has been designed and constructed to collect gas-phase fluorescence lifetimes of these ozone/sulfur dioxide complexes. To test the apparatus, sulfur dioxide molecules have been excited using the quadrupled output of a pulsed Nd:YAG laser at a wavelength of 266nm. Using a photomultiplier tube, we detected the fluorescence and determined its fluorescence lifetime to be 5.6ms. The lifetime we determined for the A1A2 • !X1A1 rovibronic transition was within the range of previously determined values for this transition in sulfur dioxide. We are currently in the second phase of the experiment, generating the ozone/sulfur dioxide van der Waals complexes in order to measure their fluorescence lifetimes.

ROOM: Oak

SLOT: 23

Computer Simulations of Tetracosane (C₂₄H₅₀) Bilayers Deposited onto Graphite

Michael W. Roth, Professor, Physics

Abstract: A collaboration involving a UNI undergraduate as well as faculty in France has resulted in computer simulations of long molecules on surfaces - tetracosane (C₂₄H₅₀) bilayers deposited on a graphite substrate - in the temperature range 100 K to 450 K. Both layers exhibit strong coupling between the internal molecular degrees of freedom and bulk behavior but because of the different boundary conditions between layers, they exhibit distinctly different dynamics and phase transition signatures. Structural, thermodynamic and bond - orientational distributions and parameters are utilized in understanding the solid, intermediate and liquid phases presented in and phase transitions presented by the system.

ROOM: State College

SLOT: 24

Building a Real Time Hydrologic Data Acquisition and Transmission Facility at UNI

Mohammad Iqbal, Professor, Earth Science

Abstract: This project is funded by a successful NSF-CCLI grant currently in effect. The objective of this project is to build a real time water quality monitoring facility by the Dry Run Creek on the south side of the campus. The long term goal is to turn this site into a model outdoor educational resource for students to study the critical elements of the hydrologic environment. Upon completion of the project, students will be able to look at the diurnal variations in the water quality through a website available for public viewing. Besides, they will have the opportunity to participate in a variety of research and learning activities directly at the site.

Four (4) pieces of instrument are in the process of being installed. The instruments are 1) YSI 6600 V2 extended deployment probe to measure water quality parameters in the Dry Run Creek (i.e., pH, TDS, conductivity, DO, temperature, turbidity, chlorophyll, etc.); 2) OTT RLS Radar to measure water level fluctuations in the creek; 3) Hydrolab MS5 mini-sonde to continuously measure pH, TDS, conductivity, DO, temperature, turbidity, and nitrate in a 70 ft deep ground water well; and 4) DL 3000 data logger to receive all data from the above 3 pieces of equipment and automatically upload them to a website. Site preparation, including digging trenches for data cable and electric wires has been completed. Instrumental calibration is in progress and the site is expected to be up and running by the end of spring.

ROOM: State College

SLOT: 25

Sports Quijotes and the Creation of a National Identity in Spain

Juan Carlos Castillo, Associate Professor, Modern Languages

Abstract: This presentation will study how certain Spanish sports heroes have been portrayed by the media as representatives of a "quixotic" Spanish national identity. After the 1898 disaster that left Spain without an overseas empire, and with the country facing rising nationalisms, there started a process to create an imagined Spanish national identity. It has been explored elsewhere how the so-called Generation of 98 writers contributed to the creation of this identity. One of its key elements is the use of Miguel de Cervantes' Don Quijote character as the epitome of Spanish national character. The dictatorial Franco regime (1939-1975) strengthened the role of such ideas in its search for a national identity. As part of this process, a series of sports figures were praised by their "quixotic" characteristics. This effort made these sports heroes so incredibly popular and their quixotism such an inherent part of their character, that their names are automatically invoked any time a new Spanish sports hero breaks through to become an international champion. This is true even today, three decades after Franco's death, as was the case when car driver Fernando Alonso won his first Formula 1 world championship in 2005. This presentation will explore, through the method of discourse analysis, how the media portrayed these sports figures as national heroes and thus helped promote this purported national quixotic identity as a model for all Spaniards.

ROOM: State College

SLOT: 26

Career Decisions of Senior Athletic Training Students and Recent Graduates of Accredited Athletic Training Education Programs.

Peter Neibert, PhD, ATC, Assistant Professor, School of HEPLS- Athletic Training Division

Abstract: *Context:* Athletic training students and graduates are faced with many factors that direct them into or away from the athletic training profession as a final career choice. *Objective:* The purpose of the study was to determine the career decisions made by athletic training students following graduation from an accredited professional athletic training education program (ATEP) and what work-related and ATEP program factors influenced their career decisions. *Design:* A 42-question self-reporting web-based survey was used. *Setting:* CAATE/CAAHEP-accredited ATEP programs. *Participants:* Seventeen hundred and ninety-two seniors and recent graduates of CAATE/CAAHEP-accredited programs from May 2005 through June 2007. *Outcome Measures:* Descriptive statistics were utilized to obtain frequency counts of the participants' responses. *Results:* The majority of the participants (82.4%) chose to pursue a career as an athletic trainer (AT), while the remainder (17.6%), indicated they did not seek employment as an AT. The college/university setting was the most frequently selected by those employed (45.6%) and those seeking employment (35.6%) as an AT. All 8 ATEP factors (clinical experience hours, clinical experience variety, roles/functions of a clinical instructor [CI] or approved clinical instructor [ACI], preparation to enter the field, level of confidence, CI or ACI attitude toward work setting, CI or ACI demonstration of professionalism, and encouragement from faculty, CI or ACI) were found to be

influential in the participants' decisions to pursue a career as an AT. Salary, number of work hours per week, found another profession more interesting, and uncertain or changing work schedule were the most influential factors reported for choosing to not pursue a career as an AT. *Conclusions:* The decision to pursue a career as an AT is influenced by ATEP faculty, ACIs, and CIs.

ROOM: State College

SLOT: 27

The Promise of E-Government: Trends in Citizen Engagement and Trust

Ramona McNeal, Assistant Professor, Political Science
Kathleen Hale, Associate Professor, University of Auburn

Abstract: This study analyzes citizen-government interaction (C2G and G2C) at the national, state and local level to identify factors that influence civic engagement, trust in government, and use of government online services. Quantitative methods are used to analyze data drawn from the Government Online survey conducted December 1, 2009, by the PEW Internet and American Life Project. This research contributes to a growing literature that explores the implementation of e-government practices beyond simple adoption. In the past decade, e-government practices have moved beyond Websites and static information displays to incorporate interactive information exchange ranging from voter registration to participation in public meetings. Analyses of e-government conducted in the early years of its diffusion across public administration demonstrated that e-government can increase the frequency of interaction between citizens and government, as well as improve perceptions of quality and trust in government more broadly. Early analyses of adoption also indicated that these aspects of improved civic engagement were not evenly across society. Findings suggest a continued digital divide on matters of trust in government, perceptions of quality, and frequency of interaction influenced by demographic factors including race, education and rural residence.

ROOM: State College

SLOT: 28

Family Dynamics and Special Education: The Key to True Collaborative Relationships

Susan Lund, MAE candidate, Special Education
Amy Petersen, Assistant Professor, Special Education

Abstract: The meeting begins in a cold middle school classroom on a brisk fall morning with eight people seated in student desks arranged in a circle. The mother of the child in discussion, Leslie, begins boldly by thanking everyone for taking the time to be at this meeting. She then reads a list of long-term goals for their son, Mark, a sixth grade student with Down syndrome. I am impressed with Leslie's courage and ability to begin this meeting, although later she will point out to me that her hands remained underneath the desk to mask their shaking. We had met on two previous occasions to ensure we had a plan for convincing the school district to include her son in the general education math class. What ensues from this point is the epitome of the ways in which school district employees wield power on parents who dare to shift the paradigm and attempt to change the delivery of special education services. In this qualitative study, I interview a variety of parents with different educational backgrounds and socio-economic status. Advocating for a child with a label is a laborious exercise. This study seeks to answer the question of how a parent is able to continually participate in this process. This study seeks to shed light on what kinds of supports do parents need to be more than a participant, but a true partner in their child's education.

ROOM: State College

SLOT: 29

The "Nuevo amanecer/New Dawn" Women's Cooperative: Vulnerability and Creativity in Postville Iowa

Jennifer Cooley, Associate Professor of Spanish, Modern Languages

Abstract: This presentation will report on my progress in the creation of a book-length study that traces the creation of the /Nuevo amanecer/ weavers' cooperative. This is a group comprised of Guatemalan women from Postville, Iowa who sought creative means to integrate traditional practices (such as weaving, cooking and storytelling) from their Mayan past into their daily lives in Iowa as a means of economic and personal survival. The cooperative emerged in the aftermath of the May, 2008 Immigration and Customs Enforcement raid at the Agriprocessors meatpacking plant in Postville, Iowa. The presentation will trace how I am documenting the reflections of populations whose voices have yet to be heard in the growing body of analysis about Postville: women, indigenous people and Spanish-speakers. I will highlight information from testimonials I have collected in Postville and other Midwestern communities and also in Guatemala in the

hometowns migrants left behind. In addition to sharing the women's stories, the presentation will also include visual documentation of the places and products that are linked to the creation of the /Nuevo amanecer/ cooperative in an attempt to offer a rich tapestry of information that can inform dialogue about the human impact of immigration policies.

ROOM: State College

SLOT: 30

Resistance of Transgenic Barley Expressing Gastrodianin to Fusarium Head Blight

Tilahun Abebe, Associate Professor, Biology
James E. Jurgenson, Professor, Biology

Abstract: The fungal pathogen *Fusarium graminearum* is the major cause of Fusarium head blight (FHB) in barley and other cereals. Infected crops have reduced yield and shriveled kernels. Kernels from infected plants are contaminated with trichothecene mycotoxins such as deoxynivalenol (DON) that are harmful to humans and animals. Barley has very limited resistance to FHB. As a result progress in breeding resistant lines has been slow. Introduction of anti-Fusarium genes through genetic engineering can aid breeding efforts to improve resistance to FHB. We have transformed barley with an anti-fungal gastrodianin gene. Gastrodianin is a 12 kDa, non-agglutinating, monomeric, mannose and chitin-binding lectin isolated from a Chinese medicinal plant *Gastrodia elata*. We have recovered fertile plants from ten transformation events. Most of the plants had abnormal phenotypes including slow maturation, stunted growth and reduced seed set. Abnormal plants have a tetraploid set of chromosomes. Greenhouse testing of seven transgenic plants identified one barley line with significant resistance to FHB. The resistant line had normal set of chromosomes compared with aneuploid plants. The resistant line has been crossed to an elite barley variety for field testing, which is currently underway.

ROOM: State College

SLOT: 31

The Influences of Computer Self-Efficacy: A Meta-Analysis

Rex Karsten, Associate Professor, Management
Atul Mitra, Associate Professor, Management
Dennis Schmidt, Professor, Accounting

Abstract: Computer self-efficacy (CSE), defined in the information systems context as an individual judgment of one's capability to use a computer, has become a significant construct in information systems research. More than two decades of empirical research conducted in a variety of settings and with a range of different study populations has consistently shown that computer self-efficacy has an important influence on user acceptance of technology, computer use, and a variety of other cognitive, emotional, and behavioral variables. The purpose of this meta-analysis was to quantitatively cumulate the existing body of empirical CSE research to investigate the true nature of these relationships. We also analyzed the influences of moderators such as study setting, sample, culture, computer task complexity, and the CSE measures employed. The meta-analysis included 85 CSE studies. We found significant relationships between CSE and attitudes toward computers, computer anxiety, intent to use computers, perceived usefulness of computers, ease of use of computers, computer use, and computer skills. In regard to study characteristics, while the type and length of CSE measure used was found to moderate the relationships between these variables and CSE, study setting, subjects, and culture did not. The results of this meta-analysis should be of interest and use to researchers, educators, and practitioners.

ROOM: State College

SLOT: 32

Can Online Wait Be Managed? The Effect of Filler Interfaces and Presentation Modes on Perceived Waiting Time Online.

Younghwa Gabe Lee, Associate Professor, Management

Abstract: Long waits online undermine users' evaluations of Web sites and their providers, triggering abandonment behaviors. Yet e-business researchers and practitioners have not perfected mechanisms to respond to online wait issues. A filler interface that runs during the wait for search results can influence online users perceived waiting time (PWT); however, no scientific investigation has attempted to design effective filler interfaces for managing online waits. By adopting resource allocation theory, cognitive absorption theory, and human computer interaction theories, we design diverse filler interfaces and investigate their effects on antecedents of PWT. The proposed research model considers cognitive absorption factors such as temporal dissociation, focused immersion, and heightened enjoyment as antecedents of PWT, which in turn triggers affective appraisals, cognitive appraisals, and Web site use intention. A multistage multi-method approach is used to test the research hypotheses. In the first stage, we compare a filler interface condition with a

no filler interface condition, and find the superiority of a filler interface with respect to inducing focused immersion and temporal dissociation. In the second stage, we conduct two controlled experiments to examine whether filler interfaces with various designs (the presence and relevance of image & text) distinctly influence antecedents of PWT and confirm their distinctive effects on focused immersion, temporal dissociation, and enjoyment. In addition, by conducting a structural equation modeling analysis, we find that our research model explains 51 percent, 51 percent, 44 percent, and 45 percent of the variance in PWT, affective appraisals, cognitive appraisals, and Web site use intention respectively.

ROOM: State College

SLOT: 33

Internationalization in the College of Business Administration

Chris Schrage, Instructor- CBA International Programs Coordinator, Marketing- CBA

Abstract: Activities recent past, present, and for the future to internationalize the curriculum, students and faculty in the College of Business Administration

ROOM: State College

SLOT: 34

Tundra Fires and Climate Change in the Arctic: A Spatiotemporal Analysis

Andrey Petrov, Assistant Professor, Geography

Abstract: The Arctic Fires Exploratory Study (AFES) aims to conduct an exploratory spatiotemporal analysis to reveal spatial patterns and temporal fluctuations of wildfire events in different parts of the Arctic. Tundra wildfires have an important impact on arctic ecosystems. Since tundra vegetation is very slow to recover, wildfires can substantially alter the amount of biomass and animal abundance in affected areas. Whereas boreal forest fires are well studied, the knowledge base about tundra wildfires is limited. Most arctic fires take place in remote areas and remain unmonitored from the ground or air. This study uses MODIS-derived active fire data to analyze spatial and temporal patterns of tundra wildfires between 2004 and 2008. The dataset incorporates locations of active fire events and estimates of fire radiated power (FRP).

On average there are 300-400 arctic fires registered by MODIS sensors every year. The largest number of fire events is recorded in 2005. The wildfires exhibit clear seasonality determined by seasonal changes in tundra landscapes with most fires occurring in July and August. We observed inter-year fluctuations when a fire season either started earlier (in June) or lasted longer (in to September). In terms of spatial distribution, the wildfires demonstrate a strong tendency to cluster, although year-to-year locations of clusters vary. Wildfires concentrated in Alaska and in Nenets, West Siberia and Chukotka sectors of the Russian Arctic. This is also true for the intensity of fires: in the five-year period the FRP values in some areas exhibited considerable spatial autocorrelation. Overall, Alaska was identified as the wildfire "hot spot" (a cluster of high intensity multiple fire events).

To analyze possible factors that determine spatiotemporal variation of arctic wildfires occurrence and intensity, we analyzed fire events in respect to geographic location (latitude/longitude), bioclimatic zones, vegetation types and proximity to points of human-caused disturbance (settlements, roads, pipelines, oil wells, etc.). The results clearly indicate the relationship between vegetation types and occurrences and intensity of wildfires: areas with larger amounts of combustible biomass and longer warm periods (mostly southern arctic ecosystems) having a greater number and more intensive fires. We were unable to detect a clear relationship between wildfire locations and elements of anthropogenic disturbance.

ROOM: State College

SLOT: 35

Integrating Research and Experiential Learning - Capstone in Southern Italy

Chad Heinzl, Assistant Professor, Earth Science & Science Education

Abstract: The premise of this course investigates the environmental and subsequent socio-political implications of climate change. My geoarchaeological research within Sicily continues to characterize the effects of anthropogenic and geologic processes upon the island's Holocene alluvial landscape developments. Interdisciplinary approaches have been used including geomorphic mapping, archaeological survey and excavations to characterize land-use practices through the mid to late Holocene. Landscape development changes are recorded in the alluvial sediments as a consequence of land-use by the indigenous and Roman settlers of Sicilian valleys in the Nebrodi and Polizzo Mountains. A marked change in erosion has been identified during the late Roman occupation of Sicily, likely as a product of intensive pastoralism and

land clearing. Sedimentation during indigenous hilltop occupation of north central and western Sicily was dominated by coarse-grained (cobble/boulder) deposits attributed to flash-flooding. Sedimentation that temporally coincided with the Greek and later Roman occupation of the adjacent valleys is marked by fine-grained deposits. These data continue to support the geologic and archaeological interpretations of human-landscape interactions in Sicily. Furthermore, such geoarchaeological data may be used in models to strengthen our present and future landscape conservation methods. The current models predict that Sicily will continue to become increasingly arid placing their current agricultural systems in jeopardy.

Our class visits historic Greek, Phoenician, and indigenous cultural and environmental centers while living amongst the Mediterranean melting pot, Sicily. Modern day Sicily offers direct linkages to Greek, Phoenician, Roman, and African cultures. Sicily contains a higher concentration of Greek temples than Greece itself.

ROOM: State College

SLOT: 36

Community Policing and Changing Governance in Northern Ireland

R. Allen Hays, Director, Graduate Program in Public Policy

Abstract: Community policing has been adopted by the Police Service of Northern Ireland (PSNI) as the model they are utilizing to overcome the historical distrust and divisions surrounding policing in that divided society. This presentation explores the current evolution of community policing strategies against the backdrop of changing governance structures, in particular the 2010 devolution of policing and criminal justice authority from the British government in London to the Northern Ireland Assembly and Executive. It is based on extensive interviews with police and community members conducted in the summer of 2010.

ROOM: State College

SLOT: 37

Do Girls Have a Chance? An Analysis of the Gender Earnings Gap for Working Children in Bangladesh

Shahina Amin, Associate Professor, Economics

Imam Alam, Associate Professor, Economics

Abstract: On World Day 2009, the International Labor Organization's (ILO) slogan was Give Girls a Chance: End Child Labour. The ILO and many other non-government organizations have noted that girls face a double burden or double discrimination throughout the world, due to both their gender and their age. Discrimination against girls and women is one of the main underlying causes of child poverty. It is well established in the literature that most child labor is rooted in poverty and is often associated with multiple disadvantages. Many girls work for lower pay and take on unpaid household work for their families, usually more often than boys. This heavy workload can impede any opportunity for school attendance and can present a physical danger to girls. Although the number of child workers has been declining, the global number of child laborers is 215 million according to ILO's 2010 estimate. Around the world, an estimated 100 million girls are involved in child labor. Using data from Bangladesh, this research measures and analyzes the gender earnings gap between working boys and girls in Bangladesh. Our results are robust to a variety of alternative specifications and estimation methods. We find some existence of discrimination against girls in the child labor market in Bangladesh, but child's own characteristics and occupational segregation play the most important role in explaining the gap.

ROOM: State College

SLOT: 38

Cultivating Entrepreneurship in Rural Communities: Culture, Communication, and Collaboration

Dale Cypert, Associate Professor, Management

Abstract: Entrepreneurship has become a focal point of rural economic development efforts and a method to create more attractive and sustainable small communities, but the evidence of many programs suggests that a lack of community support impedes consistent success. This project seeks insight into potential solutions through an analysis of the discourses surrounding rural economic development, using three Iowa communities as field sites. Previous work on the rhetorical norms of rural culture and small communities suggests that fundamental differences exist between the decision-making assumptions of small rural community members and those of state or regional economic development program designers. This study hypothesized that a reconciliation of disparate frames of reference might lead to more effective programs and better economic outcomes. A combination of interviews, textual examination, and network analysis is used

to identify the rhetorical culture of these three communities. The results will be used to suggest ways in which the success of entrepreneurial support programs can be improved.

ROOM: State College

SLOT: 39

The Determinants of Urban Land Values

Hans Isakson, Professor, Department of Economics

Abstract: This poster will display the presenters recent publications and ongoing research into the determinants of urban land values. The topics will focus upon the effects of (1) location, (2) parcel size, (3) zoning ordinances, and (3) ownership rights.

ROOM: State College

SLOT: 40

Design and Implementation of a 12 kW Wind-Solar Distributed Power and Instrumentation System as an Educational Testbed.

Recayi "Reg" Pecan, Professor, Industrial Technology

Hong "Jeffrey" Nie, Assistant Professor, Industrial Technology

Abstract: The main objective of this proposal is to design and build a 12 kW solar-wind hybrid power station and associated wireless sensors and LabView based monitoring instrumentation systems to provide a teaching and research facility on renewable energy areas for students and faculty members in Electrical and Manufacturing Engineering Technology programs at the University of Northern Iowa (UNI). This new project requires to purchase a 10 kW Bergey Excel-S wind turbine with a Power Sink II utility intertie module (208 V/240V AC, 60 Hz), eight BP SX175B 175W solar PhotoVoltaic (PV) panels, and related power and instrumentation/data acquisition hardware. A 100 ft long wind tower to house the new wind turbine is available at UNI campus. Furthermore, the electricity generated by this power station will be used as a renewable energy input for a smart grid based green house educational demonstration project to aid the teaching and research on smart grid and energy efficiency issues. 330:038 Introduction to Electrical Power/Machinery, 330:166 Adv Electrical Power Systems, 330:059/159 Wind Energy Applications in Iowa, 330:059/159 (2) Solar Energy Applications and Issues, and 330:186 Wind Energy Management are the classes that will use this proposed testbed. There are also workshops planned for the area STEM teachers as well as local farmers' education and training on wind and solar power systems. Previous workshops organized by UNI Continuing and Distance Education have been very successful.

Display & Activity Presentations

ROOM: Oak

SLOT: A

FREE@CEEE: Fabulous Resources for Energy Education

Pat Higby, Energy Education Outreach Coordinator, CEEE

Abstract: During the 2009-2010 school year the FREE program helped 826 K-12 educators and 14,959 students learn about the production and use of energy. The program includes a loan program, presentations on and off campus, professional development for teachers, and on-line resources such as videos, activities, and lesson plans. Our activities were featured on the Mall in Washington DC and were part of a six-state 4-H initiative called The Power of the Wind. The key to effective education is interaction, which is why we request that you participate with us during our FREE@CEEE performance

ROOM: Oak

SLOT: B

Business and Community Services: Intellectual Property and Technology Transfer

Alli Ingman, Grants and Communications Specialist

Abstract: This is a display highlighting information on technology transfer and intellectual property assistance available at UNI.

ROOM: Oak

SLOT: C

Recycling Reuse Technology Transfer Center

Catherine Zeman, Director, Jenny Bruss, Program Staff, Jeffrey Rose, Test Engineer

Abstract: RRTTC proposes an informational booth which highlights for faculty the manner in which research, education, and outreach is employed to engage the larger community surrounding issues of sustainability, recycling and environmental health education across Iowa. Through service to the University community, the K-12 school community, and the larger business and general community the RRTTC was able to reach over 27,000 people with valuable information and activities during the 09-10 academic year. The RRTTC has also been able to provide research opportunities to fund over 35 projects to date which impact solid waste streams in Iowa, assist Iowa businesses with by-product characterization and utilization issues, and provide meaningful research and/or internship opportunities for students in the solid waste and precision manufacturing and sustainability science areas.

Outreach, Education & Research plays a large role in the RRTTC program, through programs such as: a) UNI Earthweek celebration; b) local business and school health fairs; c) Iowa Children's Water Festival; d) East High School & Columbus High School "Ecology Days"; e) Iowa Recycling Association Convention; f) UNI Dorm recycling pilot program "Rider Recycling Revolution"; g) "Get Your Green On" Environmental Education program at all 6 Elementary schools in Cedar Falls, winner of the Iowa Governors Award of Excellence in Education; h) Ecology/Earth Science Summer Program at Price Lab School at UNI; i) Iowa Environmental & Public Health Association Conferences; j) RRTTC yearly research grant opportunities. Select programs will be highlighted at the RRTTC informational booth.

ROOM: Oak

SLOT: D

UNI Mathematics Department's Statistical Consulting Center

Mark Jacobson, Director

Abstract: The variety of services that the UNI statistical consulting center provides broken down according to the phases of the research process. The top ten tips/guidelines for the client, whether student, staff, or faculty. Overview of short courses on SAS, SPlus, SPSS, Minitab and R, including new program of online video tutorials. The role of communication in data analysis and the statistical consulting process.

Display & Activity Presentations

ROOM: State College

SLOT: E

Animal Camp. Linda Nebbe, Assistant Professor, Counseling Education

Abstract: Interaction with animals and nature is essential for human health and well being. This presentation explores the supporting research and presents a model of a university graduate project or class which includes the academic exploration of the fields of Animal and Nature-Assisted Therapy and a applied project. The applied project equals a 3 credit class. The first credit is academic, the second credit is research and preparation for an applied project, and the third credit is the project. Students can choose their own project or to take part in a group project which is a camp for children.

Animal Camp is a mental health camp for children held in a natural environment with animals present. The camp is 3 hours/day for five days. There are 10 to 15 counselors and an equal number of campers. The campers are recommended for the experience by local school counselors and other designated individuals because they have an interest or love for animals and nature and because it is determined the child will benefit from the camp experience. The goals of the camp are: 1) To present an environment of positive regard, genuine interactions, and caring; 2) To give each child a chance to explore and expand an area in which he/she profess an interest (animals and nature); and 3) To offer each child a successful experience. The overriding goal is that each child will benefit positively from the humanistic relationship and interaction with the natural environment and with animals.

The presentation will also involve an owl. I am a licensed wildlife rehabilitator and educator. Our camp is held on the premises of a Wildlife Rehabilitation Project. The owl will provide "demonstration" of some of the wildlife the children will come in contact with at the camp. The owl is safe and will be tethered. I do many educational presentations with her.

ROOM: State College

SLOT: F

Geographic Alliance of Iowa and Fulbright-Hays Group Projects Abroad to Nigeria, India, Bangladesh, and Chile. Kay Weller, Associate Professor, Geography

Abstract: This presentation will focus on the Fulbright-Hays Group Projects Abroad activities of the Geographic Alliance of Iowa. The curriculum development awards took Iowa teachers to Nigeria (1999), India (2003), Bangladesh (2007) and Chile (2009). This session will include photos, artifacts, and products generated by the teachers.

ROOM: State College

SLOT: G

Office of International Programs (OIP)

Sharon C. Silva, Coordinator of Special Projects, OIP and Nadia Korobova, Assistant Director, OIP

Abstract: The Office of International Programs provides leadership and a strategic framework for initiating programs and responding to opportunities that can integrate an international and intercultural dimension into the teaching, research, and service functions of the university. It works to identify and expand opportunities for faculty to develop international collaboration through research and teaching via international exchange programs and conferences, bringing international scholars to campus, faculty-led study abroad, Fulbright awards, internationally focused grants, and other activities and projects.