

2014

Graduate Showcase 2014: Education for the Future

The Graduate School, Grand Valley State University

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**Graduate Showcase 2014:
Education for the Future**

Presented by:

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Welcome to the Graduate Showcase 2014: Education for the Future

It is with great pleasure that we welcome you to Grand Valley State University's fourth annual Graduate Showcase. The theme "Education for the Future," reflects Grand Valley's commitment to the success of our students and our belief in graduate education as key to the ongoing well-being of our region, state, and country.

This showcase offers graduate students a unique opportunity to present their research, scholarship, and professional experiences. Each of the graduate programs at GVSU nominated students to take part in this event, representing the breadth, variety, and rigor of graduate study available at GVSU.

To those who may be considering enrollment in a graduate program, we invite you to tour the poster presentations and ask questions about graduate study, scholarship, and research. Our current graduate students who are presenting will be able to provide you with a first-hand perspective on their experiences at GVSU.

We appreciate the time and energy devoted to this event by our participating students, as well as by their graduate faculty mentors and program directors. We also extend our thank you to the many people who contributed to the success of this event including: John Stevenson, Jennifer Palm, Irene Fountain, Robert Smart, Anoush Kabalyan, Kelley Senkowski, Jacob Blossfeld, and Shannon Heynen.

As GVSU continues to create a lasting legacy, we look forward to the future success of our institution and our graduate students. We hope you enjoy the Graduate Showcase. Thank you for participating in this event!

Sincerely,



Thomas J. Haas
President



Gayle R. Davis
Provost and Vice President for
Academic and Student Affairs



Jeffrey A. Potteiger
Dean, Graduate
Studies

Richard M. DeVos Center – April 2, 2014

- 3:30 – Poster Presentations and Information Table
(Hager-Lubbers Exhibition Hall)
- 5:15 – Introduction from Dean Jeffrey Potteiger & Welcome from
Provost Gayle Davis
(Charles W. Loosemore Auditorium)
- 5:30 – Poster Recognition presented by Dr. Robert Smart, Dean
Jeffrey Potteiger, and Dr. Mark Luttenton
(Charles W. Loosemore Auditorium)

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POPULATION STATUS OF LAKE STURGEON IN THE MUSKEGON RIVER, MICHIGAN. Harris, B.; Biology Department, College of Liberal Arts and Sciences.

The Muskegon River is a Lake Michigan tributary that supports a remnant population of lake sturgeon (*Acipenser fulvescens*), but the status of this population remains largely unknown. The purpose of this work was to assess the status of this population since 2008. Each spring, adult lake sturgeon were sampled by gill netting in Muskegon Lake and boat electrofishing in the Muskegon River. Juvenile lake sturgeon were sampled with gill nets at fixed sites in Muskegon Lake each fall. In fall 2013, we implemented stratified-random sampling in addition to fixed-site sampling to assess the effectiveness of our sampling design. We captured 108 unique adult lake sturgeon (range = 103.5 – 191.0 mm total length [TL]) during this study; captures ranged from 8 to 31 adults in any given year. Juvenile lake sturgeon were captured each year of the study (n = 165; range = 23.1 to 98.5 cm TL), but age analysis shows only two strong year classes (2007, 2009) truncated by several weak year classes. Age determination of lake sturgeon (n = 181) indicated 27 year classes were represented in our catch (mean age = 7.2). We captured significantly more ($t_{10} = 4.078$ P = 0.002) lake sturgeon at the fixed location than random locations in Muskegon Lake during fall 2013. Our results suggest spawning runs in the Muskegon River are small, survival of juveniles is highly variable, and fall gill netting at one highly occupied spatial area (i.e., fixed-site sampling) appears to be mostly effective.

PREDICTIVE MODELING OF FLORAL BIODIVERSITY AND INVADEDNESS OF MICHIGAN PRAIRIE FEN COMMUNITIES. Kupisz, N. and Greer, G.; Biology Department, College of Liberal Arts and Sciences.

Prairie fen communities are classified as rare and vulnerable by the Michigan Natural Features Inventory. They contain high levels of biodiversity, including 19 plant and 18 animal threatened or endangered species. The goal of this project is to develop a predictive multiple regression model that can be utilized by land managers and conservation organizations to efficiently and effectively allocate resources towards fen protection and restoration. Floral biodiversity was surveyed in 22 fens located in eight southern Michigan counties during the 2012 and 2013 field seasons, ranging from 1.5-148 acres. Fens were sampled based on regression equations developed using Coleman Rarefaction curves from eight fens surveyed during the 2012 field season to maintain equal sampling effort. Biodiversity indices, including Shannon's and

Simpson's Diversity Indices and the Floristic Quality Index, were calculated for each fen used to compare plant dominance and evenness between fens. An NMDS was used to compare overall community composition between surveyed fens. Prairie fen connectivity, size, shape, underlying geology, and water table depth were measured and the surrounding environmental matrix of each fen quantified using Patch Analyst. A multiple regression predictive model was developed based on these environmental and physical fen attributes, the results of which will be presented.

Biomedical Sciences

(College of Liberal Arts and Sciences)

HYPERBARIC OXYGEN THERAPY ALTERS VASCULAR REACTIVITY INDEPENDENT OF ATP. Hake, B. and Sylvester, F.; Department of Biomedical Sciences, College of Liberal Arts and Sciences.

PURPOSE: The purpose of this study was to record the acute effects of hyperbaric oxygen (HBO) on vascular reactivity and determine the potential role of ATP in mediating these effects. **METHODS AND MATERIALS:** Porcine pulmonary arteries were dissected and mounted in isolated organ baths to record changes in tension in response to potassium chloride (KCl, 15-60 mM), phenylephrine (Phe, 10^{-7} - 10^{-4} M), and sodium nitroprusside (SNP, 10^{-7} - 10^{-4} M) following a 2-hour exposure to HBO (1.75 atm). **RESULTS:** HBO augmented responses to KCl and Phe compared to control arteries exposed to room air or nitrogen at 1.75 atm as well as to room air at 1 atm. Earlier studies in our lab demonstrated that HBO similarly altered vascular reactivity in mesenteric arteries. We hypothesized that HBO increased ATP production in vascular smooth muscle leading to enhanced vascular reactivity. Consequently, ATP levels were measured in mesenteric arteries but no significant differences in ATP levels were observed regardless of hyperbaric treatment. **CONCLUSION:** These results suggest that HBO alters vascular reactivity independent of ATP.

Biomedical Sciences

(College of Liberal Arts and Sciences)

EFFECTS OF NONYLPHENOL ON THE ORIENTATION ABILITY OF THE CRAYFISH, *Orconectes propinquus*. Page, K.J. and Bergman, D.A.; Department of Biomedical Sciences, College of Liberal Arts and Sciences.

Nonylphenol is a widely used surfactant subject to ethoxylation and subsists in the environment for significant amounts of time. It has industrial, agricultural, and domestic uses, and makes its way into the aquatic ecosystem despite treatment of wastewater. Detrimental effects of nonylphenol are varied, but most notably endocrine disruption has been examined. Crayfish are a crucial invertebrate in freshwater ecosystems. They

are omnivorous, and occupy a key position in the trophic web as both predator and prey. To determine if nonylphenol exposure has any effect on the orientation abilities of crayfish, we acutely (1 day) and chronically (4 days) exposed crayfish to a sub-lethal amount of nonylphenol. The crayfish then attempted to locate a food odor in a modified Y-maze. Both acutely and chronically exposed crayfish were significantly less successful at choosing the food odor arm than controls, and acutely exposed crayfish also spent significantly less time in the food odor arm. These differences indicate sub-lethal nonylphenol exposure impairs the orientation ability of crayfish to a food source.

Biostatistics

(College of Liberal Arts and Sciences)

PSM BIostatistics INTERNSHIP AT ASPEN SURGICAL. Peak, M.
Statistics Department, College of Liberal Arts and Sciences.

PURPOSE: Developing skills to apply and integrate with other professionals is a key objective in the PSM Biostatistics program. Working with engineers at Aspen Surgical I applied statistical techniques in a medical device manufacturing environment. **CHALLENGE:** Acting as the statistical subject matter expert on project teams I researched techniques and constructed recommendations independently. Also during my time at Aspen I was challenged to find solutions to unique problems using statistical tools. **EXPERIENCE:** Primarily my time was spent working with an engineering project team to optimize an injection molding process. I learned how to conduct a screening design with several factors and augment designs. I also determined a method to sort non-conforming product using regression principles to show a correlation and then built confidence limits. Other duties included performing process capability analysis and gauge R & R studies. **OUTCOME:** I was able to be a part of a team that increased the volume of production from 12% to 100% of capacity. We were able to quickly and accurately sort non-conforming product by using a statistical rationale. I provided capability analysis and various other statistically based reports. **IMPACT:** I was also able to apply statistical tools while collaborating with other professionals, which proved to be an integral part of my career development. I was able to communicate my recommendations and findings to a wide audience. Also, I was able to transition from knowledge of a technique to effectively applying it. Being able to explain my methodology and recommendations was key to my growth as a professional.

BIostatISTICS INTERNSHIP AT SPECTRUM HEALTH: AN

OVERVIEW. Plets, M. and Strominger, J.; Statistics Department, College of Liberal Arts and Sciences.

PURPOSE: In the world of research the ability to back up theories with relevant data, statistical techniques and results of analysis are vital to advancements in science and a successful career. Through an internship in the Spectrum Research Department, we were able to develop our statistical skills in a healthcare research setting. **CHALLENGE:** Currently the biostatistics interns are the main source of statistical support in the Research Department at Spectrum Health. It is often a daunting task to choose the appropriate technique and effectively communicate this methodology to non-statisticians, especially with limited statistical mentorship on the premises. Other challenges included meticulous organization and time management, as our statistical support extended over six Spectrum Health entities including Butterworth Hospital, Helen DeVos Children's Hospital, Fred and Lena Meijer Heart Center, Lemmen-Holton Cancer Pavilion, Blodgett Hospital and Zeeland Community Hospital. **EXPERIENCE:** Not only were we able to hone and expand our statistical skills, we came to fully understand the magnitude of being statisticians in a medical research setting. We worked independently and as a team to consult on issues of sample size, experimental design, and data collection techniques. Further responsibilities included conducting data analyses, drafting statistical portions of manuscripts, and creating graphical displays for presentations. This internship offered a real-world setting in which to develop our SAS programming, data visualization, and writing skills. **OUTCOME:** Through this internship we were able to enhance our communication skills with each other and with the entire research teams. We quickly learned effective techniques to explain statistical concepts and methodology to others who are not statistically minded. We received the opportunity to put together statistical designs, sample size and power calculations/analyses, write the statistical portion of papers, and help others narrow down their research questions to something measurable and therefore, obtainable. **IMPACT:** This experience has prepared us for the real world of statistics in a medical research setting. Not only were we given an amazing opportunity to be a part of revolutionary research, we were supported and encouraged by everyone in the department throughout our journey. The diverse skill set we learned and developed within the Spectrum Health Research Department will carry over into the next chapter of our careers and be forever useful.

MUSTAINABILITY: CAN GOING GREEN MEAN SAVING GREEN? Bair, N., Powsner, H., and VanKampen, J.; Business Administration, Seidman College of Business.

PURPOSE: The Grand Rapids Police Department is looking to implement an environmentally sustainable and economically sound police fleet. Summer Intern Rupert Griffin is responsible for comparing vehicles and compiling a list of driving best practices to help the department achieve this goal.

SUBJECTS: Comparisons were run between a Traditional Ford Police Interceptor and a Ford Fusion Hybrid sedan. **METHODS AND**

MATERIALS: Performance information on the vehicles was collected from the manufacturer's website, Ford.com. Information on vehicle emissions was gathered from the U.S. Environmental Protection Agency. A meta-analysis of reports from other cities and their police departments was performed to gather information on driver behavior and best practices.

ANALYSES: A meta-analysis of the data compiled through our research was performed to determine an optimal set of driving techniques and suggested emissions targets. **RESULTS:** The results of Rupert's research led him to recommend that the police officers highly consider addressing the drivers' behaviors for an up to 10% reduction in emissions and 14% reduction in fuel costs, as well as consider purchasing hybrids as they replace fleet vehicles.

CONCLUSIONS: Though Rupert was ready to present his research and options to his boss, the City of Grand Rapids ended up selecting a vehicle that was not in his initial comparison: the Ford Interceptor Utility. This vehicle was chosen for its more spacious interior, allowing increased space for the officers and their equipment.

HEALTH CHECK: ANALYZING TRENDS IN WEST MICHIGAN

2014. Jabaay, P. and Isley, P.; Business Administration, Seidman College of Business.

PURPOSE: Health Check provides an ongoing trend analysis of three major issues: Knowledge Foundations, Health Care Trends, and Economic Analysis.

SUBJECTS: The focus of the study is on a four county area: Kent, Ottawa, Muskegon, and Allegan (KOMA). **METHODS AND MATERIALS:**

Understanding Knowledge Foundations provides information on the supply of future workers in healthcare. Analysis of graduation rates and jobs data details supply and demand for the local industry; medical patents give insight to local innovation. Understanding Health Care Trends is beneficial

for preventative measures and areas to focus efforts on. The metrics used to monitor these trends include demographics, risk profiles, diseases, and overall health status. Economic Analysis provides comparable results to benchmark the industry's economic growth in the region. The comparable data pieces include other medical cities similar to Grand Rapids, a hospital survey analysis, and cost analysis of major medical conditions with emphasis on diabetes. **ANALYSIS:** Data was collected and weighted accordingly for the specific region of interest, in this case KOMA, from several databases and governmental resources, and from Priority Health and Blue Cross Blue Shield. **RESULTS:** Education facilities are graduating students with healthcare degrees at a rate that will supply the market needs for the foreseeable future; in some cases, there is a surplus of graduates for specific programs. Medical patents are remaining steady thanks in part to the Van Andel Research Institute. Health care trends in West Michigan fall in line with national trends, some instances are more promising than others. As a community, obesity and diabetes is on the rise, along with asthma. Obesity is the largest challenge our healthcare system faces in the future, and the changing demographics will compound the issue. As an industry, the healthcare system in West Michigan is growing. This is a result of either an unhealthier population, a sign the industry is drawing from a greater geographic area, or an increase in healthcare access. In terms of being a medical tourist location, Grand Rapids is gaining ground, but still trails behind Cleveland. It is also cost effective to conduct all tests and evaluations on diabetes patients during upon an initial examination. **CONCLUSION:** It is apparent the healthcare system in West Michigan is alive and well, and will continue to meet the needs of the local population. The labor force is strong; the educational structures are intact; the demand for services will continue to grow as the baby boomers continue to age; diabetes and obesity will continue to plague the community and health care systems. It is well documented that as we age past 40, our body composition changes over time by replacing muscle with fat. This physiological effect will be a major contributor to the deterioration of the quality of life of an aging population without education, community involvement, and accessible healthcare.

Cell and Molecular Biology (College of Liberal Arts and Sciences)

EMPIRICAL BIOSCIENCE INTERNSHIP. Brett Brockman; Department of Cell and Molecular Biology, College of Liberal Arts and Sciences.

The CMB Department's graduate program at Grand Valley State University has two different emphases: Biotechnology or Research. The Biotechnology emphasis gives a more hands on experience in the work field by allowing students to work in a professional lab setting. I did my internship at

Empirical Bioscience, formally known as Syzygy Biotech, from May 2013 through January 2014. Empirical Bioscience is a small startup company that is located on the 5th floor of CHS in downtown Grand Rapids. The main focus of Empirical Bioscience is to create products for the Polymerase Chain Reaction method. This included buffers, master mixes, and most importantly Taq Polymerase. The greatest challenge for me was working in a fast-paced environment where multiple projects were done at the same time. I had many different responsibilities in the company, but I was mainly involved in purifying Taq Polymerase. I purified many batches of Taq and Flashtaq, a modified version of Taq Polymerase, which were sold and are being used in biology labs across the country. I gained a lot of knowledge from working at Empirical Bioscience, including improvement of my laboratory skills, setting up shipping orders, create/improve protocols, test the products made, and most importantly, I learned how a biotechnology operates as a whole instead of being limited to just one aspect of the company.

Cell and Molecular Biology (College of Liberal Arts and Sciences)

INVESTIGATING TUMOR MICROENVIRONMENT AND BONE METASTASIS IN PROSTATE CANCER. Vander Ark, A.; Department of Cell and Molecular Biology, College of Liberal Arts and Sciences.

PURPOSE: Interning at the Van Andel Institute provided me with experience I would not obtain in a classroom setting. This component of the PSM program provides a great networking environment and fast-paced learning opportunity that only comes from working in a laboratory setting. **CHALLENGE:** Without having much research background, I had a lot to learn about how a laboratory runs as well as various techniques I had never used before. One of my goals was to examine the role of the lab manager to prepare myself for this potential career path. **EXPERIENCE:** The first few weeks of my internship involved learning many new techniques and becoming familiar with the flow of the lab. My PI and other lab mates were very helpful throughout the process and after I caught on to most of the new techniques, I began helping with existing projects as well as working on projects of my own. **OUTCOME:** I was able to work with mouse models and learn how to perform x-rays and collect various tissue types and culture them. My cell culture skills were enhanced throughout the experience as this was vital for most experiments, and I was able to observe the lab manager and determine the various components involved in running and managing a lab. **IMPACT:** I learned many new techniques and skills that I will be able to apply to my work in the future. I also made connections that will hopefully help my future employment as well as future PSM internship candidates.

SOCIAL MEDIA'S ROLE IN THE HIRING PROCESS IN WEST

MICHIGAN. Bokor, A.B.; School of Communications, College of Liberal Arts and Sciences.

PURPOSE: Social networks are viewed by corporations as a means of recruiting both passive and active candidates in a personal, yet professional, manner. Given that social media are becoming a vital part of the recruitment process, this research compares West Michigan data to national data as found in the "Jobvite 2013 survey." The survey regarding West Michigan was designed from two points of view - from the employee's perspective of social media readiness for the job market, and from the employer's perspective of using social media in the recruitment process. **METHODS AND MATERIALS:** The survey was administered via an online survey containing 10 multiple choice/rating scale questions. Volunteer participants in the study included individuals who are currently employed, those presently unemployed (including college students), and employers (corporations, businesses, and organizations). **ANALYSES:** Comparison of West Michigan and national survey data using descriptive statistics and t-tests. The data analyzed included both demographic and self-report data. **RESULTS:** The percentage of West Michigan employees with a well maintained social profile, and West Michigan employers who have a well-defined social media strategy in place for recruitment, is significantly ($p \leq .05$) lower than the percentages presented in the national results. **CONCLUSIONS:** West Michigan is well below the national average regarding social media usage in the recruitment and hiring process. Current and future employees, together with companies/organizations who may eventually hire them, do not place as much importance upon social media as a tool to market themselves as compared to national trends. Correspondingly, it can be surmised that companies/organizations, who participated in this survey, either do not allocate sufficient resources for social media, or they have not yet integrated social media into their recruiting/hiring strategies, or both.

Computer Information Systems (Padnos College of Engineering and Computing)**A COMPILER FOR AN IMPLICITLY PARALLEL FUNCTIONAL**

LANGUAGE. Fisk, Sean R.; School of Computing and Information Systems, Padnos College of Engineering and Computing.

Functional programming presents a relatively unexplored approach to achieving high-performance computing. Typically, the field has been dominated by imperative languages such as C/C++ and FORTRAN.

However, purely functional languages use functions without side effects, a characteristic that can prove useful when parallelizing code. The goal of this research is to create an automatic parallelizing compiler for functional programs. The compiler will use the LLVM infrastructure to transform Lisp-like source code into parallelized LLVM byte code. The LLVM byte code can then be used to generate machine code that executes on multiple processors with multiple cores. Parallelism is clearly a critical technology of the future, but presents new challenges to developers. Much as high-level languages with optimizing compilers have supplanted hand-written assembly, automatic parallelization optimized for specific architectures is poised to eliminate error-prone manual multiprogramming.

Criminal Justice

(College of Community and Public Service)

LASTING IMPACTS OF THE INSIDE-OUT PRISON EXCHANGE

PROGRAM: FOLLOWING UP WITH FORMER STUDENTS. Eavey, J. and Hilinski-Rosick, C.; School of Criminal Justice, College of Community and Public Service.

PURPOSE: The purpose of this project is to demonstrate a better understanding of the overall impact of the Inside-Out program, a recent development for Grand Valley which allows students to integrate and learn with qualified prison inmates. The 3-credit course allowed students to learn about prisons and corrections in a unique way. Students attended class at the Michigan Reformatory in Ionia, Michigan, and students included GVSU students and residents of the Michigan Reformatory. Prisoners and outside students interacted, shared experiences, and learned together, university-level material. **SUBJECTS:** Current and former GVSU students who completed the Inside-Out course between 2010 and 2012. A total of 50 GVSU students completed the course and were contacted for study participation. **METHODS AND MATERIALS:** Students were contacted via email regarding their experience during the course and asked to complete a survey consisting of 10 open-ended questions regarding thoughts and experiences of their course participation. **ANALYSES:** Qualitative data analysis of the open-ended responses was conducted. An open-coding scheme was used to record any themes that emerged from the data. Emergent themes were then applied iteratively to all responses. Multiple coders were used to ensure inter-rater reliability of the analysis. **RESULTS:** The data analysis indicated that students found the course valuable, were able to use what they learned in the course in their subsequent GVSU courses, and were also able to use knowledge and experiences gained through the course in their criminal justice-related positions in the field. **CONCLUSIONS:** Based on the student responses and the high value they placed on the course, the Inside-Out course

is a valuable addition to the CJ curriculum, and one, if possible, in which more students should participate. The program is beneficial to students in their subsequent college courses, graduate work, and their work in the criminal justice field.

Criminal Justice

(College of Community and Public Service)

THE IMPACT OF RACE AND OFFENDER STATUS ON SMALL BUSINESS HIRING DECISIONS. Teshima, E. G.; School of Criminal Justice, College of Community and Public Service.

PURPOSE: Institutional racism and offender reintegration are salient issues in contemporary American society. This study explored racial discrimination and biases against ex-offenders on a local, small-business level. It was hypothesized that white non-offenders would be the most preferred job applicants while offenders of color (specifically African Americans) would be viewed as least favorable to prospective employers. **SUBJECTS:** Seventy-nine hiring managers at businesses of Entrepreneur status in the Grand Rapids Area Chamber of Commerce participated in this study. The sample was predominantly white (89.9%, n= 71) and mixed in gender (59.5% female, n=47 and 39.2% male, n=31). **METHODS AND MATERIALS:** This audit study utilized a factorial design featuring one of six fictitious job applicants with varying racial and criminal backgrounds. Cover letters, resumes, and surveys were distributed by mail to assess hiring managers' reactions to and opinions of prospective applicants via numerical rankings and Likert scale items. **ANALYSES:** ANOVA and comparative means were used to analyze results. **RESULTS:** Though the anticipated racial and offender status hierarchies were congruent with expectations on some variables, they fluctuated on others. Ultimately, none of the findings achieved statistical significance and the null hypothesis was supported. **CONCLUSION:** Participants in this limited-scope study did not demonstrate a strong overall preference for candidates of a particular race group or offender status. Future studies may wish to replicate with larger samples.

Education-Higher Education

(College of Education)

EXPLORING STUDENT SUCCESS AND SERVICE-LEARNING. Kicinski, L.R.; Higher Education-College Student Affairs Leadership, College of Education.

This exploratory study examines the relationship between service-learning and student success at a two-year community college in the urban Midwest. Students who participated in service-learning during the 2010-2011 academic

year were identified by institutional research and planning (n=788); additionally students completed a survey regarding service experiences and learning outcomes (n=292). Student success is related to service-learning; 76% of participants met a success indicator compared to 62% of students at the institution. Additionally, students reported learning communication, critical thinking, diversity, interpersonal, and personal skills as a result of their participation in service learning.

Education-Literacy Studies

(College of Education)

EDUCATING NEWCOMER REFUGEE STUDENTS: A TRAINING FOR CLASSROOM TEACHERS. Graham, B.; Literacy Studies-Teaching English to Speakers of Other Languages, College of Education.

PURPOSE: Hundreds of newcomer refugee students enroll in West Michigan schools each year. Subsequently, they are placed into mainstream classrooms with teachers who may be unprepared for the difficulties they will encounter. While a lack of English proficiency is a challenge, refugee students and their families additionally face a plethora of other obstacles ranging from acculturation to emotional struggles resulting from past trauma. This project provides a comprehensive professional training for teachers that will better prepare them to meet the needs of newly arrived refugee students. **PROCEDURES:** A critical analysis of current research on the newcomer refugee experience in the classroom sets the foundation from which the training was derived. Following this analysis, a detailed program of professional development is presented. **OUTCOME:** The completed project consists of segments of presentation and collaboration among attendees. Participants will gain a deeper understanding of the language acquisition process, cultural and emotional needs of refugee students, and specific ways they can enhance the classroom experience for newly arrived refugee students. **IMPACT:** This project offers a valuable contribution to the education community. Teachers who have had inadequate training on how to best welcome newcomer refugee students into their classroom will be given the chance to further understand how to most successfully educate such students. Because the components of this project can be adapted to the specific needs of participants, it can be used in numerous circumstances within the professional education community. The implementation of this project will improve the education experience for newcomer refugee students.

Education-School Counseling

(College of Education)

BREAKING THE SILENCE TO SUPPORT LGBTQ STUDENTS. Gaunt, N. M.; School Counseling, College of Education.

PURPOSE: Research reveals that many educators enter the teaching profession unprepared to support and create an inclusive environment for their LGBTQ students. Faced with harassment and victimization in schools, sexual minority youth are especially susceptible to substance abuse, poor academic achievement and mental health issues including depression and suicidality. **PROCEDURES:** Literature suggests that during a time when sexual minority students are coming out in greater numbers and younger than ever before, secondary school educators need additional training and knowledge in order to support this population, as well as several suggested approaches to achieve this. **OUTCOME:** This project is a professional development workshop that is intended to challenge educators' attitudes towards LGBTQ individuals, increase their knowledge base surrounding this student population and provide them with tools needed to support sexual minority students. **IMPACT:** Results will be assessed through the implementation of a pre-test given before participating in the professional development to gauge educators' initial LGBTQ knowledge and comfort supporting this population of youth. A follow up assessment will be administered three months after the workshop to measure change in teachers' LGBTQ-related attitudes, behaviors and knowledge. With more involvement and support from educators, sexual minority students will achieve greater academic success and experience an overall healthier wellbeing.

Education-School Counseling

(College of Education)

SCHOOL COUNSELING INTERNSHIP EXPERIENCE. Switzer, M. A.; School Counseling, College of Education.

PURPOSE: Two 3-credit hour internships (300 clock hours each) are required in the school counseling master's degree program. During internships students complete specific tasks or projects related to their professional goals. Students are supervised by field supervisors who must be licensed or endorsed school counselors and provide one hour of weekly supervision on-site. **CHALLENGE:** The central challenge of this experience has been to develop my counseling skills in the areas of personal/social, career, and academic development through individual student planning, comprehensive guidance curriculum, responsive services, and systems support. **EXPERIENCE:** I am completing my internship within an urban setting at City High Middle

School (CHMS) which is part of Grand Rapids Public Schools. The lead counselor serves as my on-site supervisor and director of the school counseling department at CHMS. **OUTCOME:** It is expected that at the conclusion of this experience that I submit a final portfolio documenting activities completed over the course of the internship and the GVSU School Counseling program. My portfolio includes artifacts which demonstrate that I understand the philosophy, principles, and practice of school counseling, including the administration and coordination of professional relationships within school systems as well as professional knowledge related to ethical and legal issues. The portfolio also contains work samples that provide evidence of my development of professional skills in the field of school counseling. **IMPACT:** These internship experiences are designed to meet Michigan Department of Education requirements for school counseling licensure or endorsement. My internship experiences have also provided me with field-based learning opportunities designed to provide work experience in an area of school counseling.

Engineering (Padnos College of Engineering and Computing)

LITHIUM ION BATTERY RECYCLING THROUGH MATERIAL

SEPARATION. Li, H.; School of Engineering, Padnos College of Engineering and Computing.

PURPOSE: The purpose of this project was to develop a lab-scale procedure to recycle lithium ion batteries, which can be scaled up to an industrial process in the future. **SUBJECTS:** The batteries utilized for this project were from A123 Systems and contained a lithium iron phosphate (LiFePO_4) cathode active material. **MATERIALS AND METHODS:** The process developed included dismantling a battery cell inside a safety glove box with fume hood, using an acid leaching method for both the anode (sulfuric acid for copper) and cathode (nitric acid for aluminum) separation process. **ANALYSES:** The optimum recycling procedure was identified as allowing for the successful dismantling of an A123 cylindrical LiFePO_4 cell and complete separation of the coatings from the anode (copper) and cathode (aluminum) foils by utilizing the least amount of leaching agent, at the lowest temperature, and under the shortest time period. **RESULTS:** Full separation of the graphite coating from the anode's copper foil was achieved by using 0.5 mol/L of H_2SO_4 (sulfuric acid) at 40°C for 2 min. Full separation of the LiFePO_4 from the cathode's aluminum foil was achieved by using 0.5 mol/L of HNO_3 (nitric acid) at 50°C for 2 min. Alternative material separation methods have also been explored, but the optimal results were obtained from the acid leaching method. **Conclusions:** This project determined the first step

of the LiFePO₄ battery recycle process and will continue to be studied for development of a commercial recycling process.

Engineering (Padnos College of Engineering and Computing)

ENHANCING MOBILITY AND EXPLORATION IN YOUNG CHILDREN WITH MOTOR DELAYS. Farris, J., Kenyon, L., Sunny, N., Radhakrishnan, V., Hoque, M.M., Schutte, K.; School of Engineering, Padnos College of Engineering and Computing

PURPOSE: Young children with severe motor, cognitive, and communication deficits are often dismissed as either too young or too physically involved to use the common power mobility options such as power wheelchair, ride-on-toys for lack of external support necessary to ensure safety and effective access to motion initiators (joystick or switch). Given that self-initiated locomotion is critical in the development of you children's perceptual and social skills, the Play & Mobility Device affords an opportunity for them to safely explore power mobility while providing sufficient external support to optimize a child's safety, posture and access to motion initiators. **PROCEDURES:** The Play & Mobility Device was designed and built following medical device design procedure, which takes customer's requirements (sponsor's in our case) as inputs, develops the design and then the device using engineering know-how and skills, and finally validates the performance of the device through test runs by the customer. Safety, power mobility, maneuverability and control components constitute this device. Small size and maneuverability of the device, allows its transportation and storage without any special requirement. **OUTCOME:** A child can drive and control the device through the joystick or switch as interface. Parent or attendant of the child can set the speed of the device and override child's control as safe. Because of the use of FDA licensed, crush tested car seat with 5-point harness system, the child's posture remains secured. Use of a universal arm to hold the joystick or switch ensures any child's convenient access to these motion initiators. **IMPACT:** Building the Play & Mobility Device utilized the involved students' electromechanical and biomedical design know-how. The process got them through the regulator's manufacturing guidelines, licensing and patenting procedures. Engineering discipline enriched its footprints with the contribution of a performing device to the real field of pediatric physiotherapy.

English (College of Liberal Arts and Sciences)

OF FACT AND FICTION: AN EXPLORATION OF THE TILLIE OLSEN PAPERS. Curtis, R.L.; Department of English, College of Liberal Arts and

Sciences.

PURPOSE: The material of this presentation derives from a larger project in which I investigated various aspects of the Tillie Olsen Papers. One of the goals of my research was to better understand the nature of Olsen's writing process and the philosophical commitments that informed her work.

SUBJECTS: The Tillie Olsen Papers, Boxes 1, 2, 4, and 16 which include the drafts of Olsen's most famous text, "Tell Me a Riddle."

METHODS AND MATERIALS: Photocopy reproduction, key word classification, and passage notation. **ANALYSES:** Due to the nature of the discipline, statistical tests are not applicable. **RESULTS:** Olsen's compositional practices frequently included introspective writing in which she used first-person and second-person point-of-view in interesting ways. For Olsen, there existed a dynamic interplay between fact and fiction. So intertwined are they in her papers that it often becomes difficult for a researcher to decipher between them.

CONCLUSIONS: Various Olsen critics have noted the biographical nature of Olsen's characters and how Olsen's own life strongly informed her writing. The Tillie Olsen Papers stand as further evidence of Olsen's tendency to allow her life and writing to meld, and they reveal that the practice of synthesizing fact and fiction was integral to the creation of her poignant texts.

Health Administration

(College of Community and Public Service)

EFFECTIVENESS OF STATE SMOKING RESTRICTIONS REDUCING NUMBER OF SMOKERS. DeLong K.; School of Public, Nonprofit, and Health Administration, College of Community and Public Service.

PURPOSE: As of January 2014, 43 states, the District of Columbia and Puerto Rico have laws in effect requiring non-hospitality workplaces, bars and/or restaurants to be 100% smoke free. In addition to tobacco taxes, graphic public service announcements have been airing frequently to encourage smokers to kick the habit. The purpose of this study was to examine if a no smoking law in the state resulted in lower number of reported smokers. **SUBJECTS:** Adults 18 years or older (n= 50,569) who participated in the 2011 Behavioral Risk Factor Survey smoking question. **METHODS:** Data was obtained from 2011 BRFSS and relationships were calculated using SPSS. **ANALYSES:** The number of reported smokers was cross tabulated with state tobacco taxes as well as smoking restrictions, which were categorized into three levels ranging from none, some and completely smoke free. **RESULTS:** States that had no smoking restrictions in place accounted for 80.2% of former/nonsmokers, states that had some smoking restrictions accounted for 82.5% and completely smoke free states accounted for 84.0% of former/nonsmokers. Of the states with tobacco taxes at \$2.00 per pack of

cigarettes or higher, 88.2% were completely smoke free. **CONCLUSION:** Results show that states with higher tobacco taxes are more likely to be completely smoke free as well as have fewer smokers. States with some restrictions or completely smoke free laws in place have a higher incidence of former/nonsmokers.

Health Administration

(College of Community and Public Service)

DEVELOPING A PHYSICIAN STAFFING MODEL. Goodspeed, B. A.; School of Public, Nonprofit, and Health Administration, College of Community and Public Service.

PURPOSE: The primary purpose of this study is to identify the physician leadership and staffing required to support current medical programs and planned expansion into to other areas of care. The intent is to address the needs of the inpatient, outpatient, and network programs. Through this process, specialty advanced practice professionals may also be identified and recommended. Through this study we will deliver a fully developed physician leadership and staffing model which can be implemented, reviewed and updated annually, and utilized in future recruitment and planning.

SUBJECTS: Currently, there are seven medical inpatient programs. They are Amputee, Brain Injury, Oncology, Orthopedic, Pediatric, Spinal Cord Injury, and Stroke. This study is a comprehensive review of existing programs, future programs, and the physicians needed to support each program and other initiatives under consideration.

METHODS AND MATERIALS: Through contextual interviews with physicians, non-physician leaders, community stakeholders, and executive leadership from other rehabilitation hospitals, a baseline model has been developed. The model was then compared with similar facilities in a benchmarking comparison study. Physician utilization in clinic, inpatient, rounding at other hospitals, and academic and research activities have also been assessed. Trending in referrals, conversions, and case mix complexity have also been analyzed.

ANALYSES: Physician expertise is outlined against current and new medical programs. Physicians' personal preference for work/life balance, inpatient/outpatient care, geographic coverage, involvement in research activities has been identified in order to gain a clear picture of recruitment necessary.

CONCLUSIONS: Many of the frequently needed physician sub-specialties are difficult to access, some of which are no longer available in West Michigan. Along with the physician staffing model to be implemented, this study includes plans to ensure that our patients have access to the shortage specialties needed to provide quality care within a clinically integrated network.

Medical and Bioinformatics (Padnos College of Engineering and Computing)

VISUALIZATION MODEL FOR ANTICIPATED PRIMARY CARE PROVIDER NEED UNDER THE AFFORDABLE CARE ACT. Hoinski, M.E.; School of Computing and Information Systems, Padnos College of Engineering and Computing.

The goal of this project was to visualize the number of Primary Care Providers and the density of the 2012 insured population in each county in Michigan. Additional visualizations include the anticipated density of insured population under the new Affordable Care Act laws in each county. Using these visualizations I determined the additional number and anticipated location of PCP providers needed with regards to the new ACA laws implemented in 2014. As result I was able to develop a visualization model that can be applied to other locations in the US using the US Census Bureau statistics so that the necessary health care professionals could be made aware of the PCP need throughout the United States as each stage of the ACA is implemented. I hope with this information government, education and health officials can create the necessary steps to encourage the training and legislation to accurately address the additional PCP need.

Medical and Bioinformatics (Padnos College of Engineering and Computing)

GEOGRAPHICAL INFORMATION SYSTEMS ANALYSIS OF E.COLI SAMPLE LOCATIONS AND INTERVENTION PLANNING FOR PLASTER CREEK WATERSHED. Ward, H.S.; School of Computing and Information Systems, Padnos College of Engineering and Computing.

Humans are inextricably connected to water. Understanding human impacts on water quality continues to be a governmental focus. State and local agencies as well as other stakeholders are responsible for monitoring and selecting improvement sites in their own watersheds. Improvements to watershed monitoring and intervention site selection are needed. Previous analyses of water quality data have typically been limited to basic metrics such as minimum and maximum, average, and pass or fail. Furthermore, intervention sites are often selected based on ease of access. This project shows an improved model for water quality data analysis using geographical information systems (GIS). This model compiles data from different locations within a watershed, dates and results of testing, locations for potential pollution inputs, and potential intervention sites. Plaster Creek, a tributary of the Grand River, was chosen because it is currently designated as unsafe

for any form of human contact due to high levels of Escherichia coli (E. coli). Human contact with E. Coli may cause diarrhea, anemia, kidney failure, and death. This visualization deals with mapping and understanding E. coli levels in Plaster Creek. For the first time, Plaster Creek water quality stakeholders can easily determine if the current testing locations provide adequate information to choose high-impact intervention sites, monitor potential pollution inputs, select additional testing locations, and monitor long-term impacts of improvement efforts. Sustained use of this model to map watersheds will aid stakeholders in further water quality assessments in other watersheds as well.

Nursing-Doctorate

(Kirkhof College of Nursing)

AN EVIDENCE-BASED APPROACH FOR THE IMPLEMENTATION OF AN OSTEOPOROSIS EDUCATIONAL AND EXERCISE INTERVENTION AMONG PERIMENOPAUSAL WOMEN. Finazzi, J. M.; Doctor of Nursing Practice, Kirkhof College of Nursing.

PURPOSE: Osteoporosis is a chronic disease process estimated to impact over 8 million American women. The purpose of the pilot study was to examine the effectiveness of a 4-week, 4-session osteoporosis educational and exercise intervention among perimenopausal women at a health club. Specifically, participant osteoporosis knowledge, self-efficacy, and health beliefs were evaluated pre- and post- intervention. **SUBJECTS:** Eight perimenopausal women participated in the pilot study. Eligibility included: (a) club membership; (b) completion of the Osteoporosis Research Study Checklist and Demographic Survey; (C) ability to speak English; and (d) perimenopausal status. Exclusion criteria included a known diagnosis of osteoporosis; osteopenia; chronic renal failure; diabetes; cancer; heart failure; pregnancy; hip flexor and joint flexor problems; and postmenopausal status. **METHODS AND MATERIALS:** The design of the research study involved a one-group, pre-experimental, pretest, posttest approach. The Health Belief Model (HBM) and Iowa model were utilized as the conceptual frameworks. Measurement instruments included the Osteoporosis Knowledge Test, Osteoporosis Health Belief Scale, and Osteoporosis Self- Efficacy Scale. **Analyses:** The Statistical Package of Social Sciences Version 20 was utilized for data analyses that included descriptive statistics, paired *t*-test, and Pearson product-moment correlation coefficient. **RESULTS:** Preliminary statistical analysis indicated the intervention increased osteoporosis knowledge. The intervention elicited a self-reported confidence level regarding increased self-efficacy in nutrition and exercise and health belief changes in susceptibility, benefits of exercise and calcium intake, and barriers of exercise. **CONCLUSION:** These findings suggested that an educational

intervention and exercise practice for perimenopausal women increased knowledge and confidence regarding measures for preventing osteoporosis.

Nursing-Masters

(Kirkhof College of Nursing)

PAIN REASSESSMENT IN THE EMERGENCY DEPARTMENT. Scott, D.K.:
Master of Science in Nursing, Kirkhof College of Nursing.

PURPOSE AND BACKGROUND: Inadequate management of pain for patients in the emergency department (ED) is a significant problem resulting in decreased patient satisfaction as well as poorer patient outcomes. For proper pain management, interventions must be done and then reassessed, including the patients' pain perception, in a timely manner. In a local hospital ED, pain management was identified as a significant problem as evidenced by poor documentation of reassessment of pain in 80% of patients after initial intervention. The purpose of this project was to assess the environmental, educational and process barriers to pain reassessment and documentation in order to create a protocol to improve pain reassessment documentation in the emergency department that would result in better nursing management of pain. **LITERATURE REVIEW:** Literature supports the importance of consistent and frequent reassessment of pain as a crucial step in pain management. Evidence has also shown that providing education on pain management for nurses, along with individual feedback on performance, can be effective in improving pain reassessment. In addition, literature suggests patient satisfaction with pain management is improved with reassessments. **PROTOCOL/INTERVENTION:** The pain documentation process will be clarified and nurses will be educated as to the required documentation for pain reassessments. The possibility of simplifying the documentation process will be addressed to facilitate improved documentation, including addition of visual clues, for nursing to complete the pain reassessment. **OUTCOMES:** Improved patient satisfaction with pain management and increased completion of pain reassessment by staff, as well as decreased pain scores on discharge from the emergency department, will be targeted to improve with this protocol.

Physical Therapy

(College of Health Professions)

ACTIVITY AND PARTICIPATION LEVELS IN 6-12-YEAR-OLD CHILDREN WITH CEREBRAL PALSY: A PILOT STUDY. Kordick, L., Fisher, S., Fontaine, K., Peck J., Kenyon, L.K., Shoemaker, M.; Department of Physical Therapy, College of Health Professions.

PURPOSE: Adolescents with cerebral palsy (CP) are less physically active and often participate in less structured and lower intensity activities than their typically developing peers. The purpose of this study was to examine the intensity of functional and recreational activities of younger ambulatory children with CP, as well as their manual dexterity and communication skills, and to relate the findings to typically developing children. **SUBJECTS:** 3 male participants with CP, ages 9-11. **METHODS AND MATERIALS:** A RT3 triaxial accelerometer was worn for 2 school and 2 weekend days. The child and parent(s) completed an activity log and the CAPE/PAC measure. Each child was classified using the GMFCS, MACS, and CFCS. **RESULTS:** Child 1-3 reported high enjoyment for most of their activities; most activities were performed with family at home. All 3 reported the highest diversity, intensity and preference for recreational activities. The 3 children reported the lowest intensity for the physical activity category and the highest enjoyment for physical activity or skill-based activity. Participation in informal activities was more frequent and higher intensity than formal activities. Child 1-3 demonstrated total activity counts in school higher than after school. **CONCLUSIONS:** All children reported lower intensity for physical activity in comparison to recreation, social, skill-based, and self-improvement activities. While all three children identified several preferred activities, many barriers prevented the children from actually completing these activities. The children experienced higher activity counts during school activities, which identifies the benefit of scheduled, organized physical activity. In comparison to typically-developing, age-matched peers, all three children demonstrated a much lower amount of time per day spent in hard or vigorous activity.

Physical Therapy

(College of Health Professions)

EM-POWERING CHILDREN FOR MOVEMENT EXPLORATION AND SUCCESS: A CASE SERIES. Kenyon, L.K., Ripmaster, C.R., Farris, J.F., Hannum, N.H., Proctor, K.P., Roberts, K.R., Briggs, L.B., Cain, B.C., King, E.K., VandenBerg, A.V., Peck, J.P.; Department of Physical Therapy, College of Health Professions.

PURPOSE: Children with severe motor, cognitive, and communication deficits have limited self-mobility skills. Our Power Wheelchair Trainer (Trainer) provides an opportunity for children to safely explore power mobility and their environment. **SUBJECTS:** Three children (ages 18, 7, and 7 years) with cerebral palsy at Gross Motor Function Classification System levels IV or V. **METHODS AND MATERIALS:** The Trainer allows a manual wheelchair to be temporarily converted to a power wheelchair permitting children to practice power mobility in their own chair. The control panel

interfaces with traditional joystick or switch use. Examination procedures included the Caregiver Priorities & Child Health Index of Life with Disabilities (CPCHILD), the Power Mobility Screen, the Pediatric Evaluation of Disability Inventory Computer Adaptive Test, and assessment of power access options using switches or a joystick. Individualized interventions focused on structured repetition of mobility tasks and opportunities for self-directed exploration. Frequency and duration ranged from 30-60 minutes, 2-3 times per week for up to 12 weeks. **ANALYSES:** Beginning sessions were characterized by accidental activation. As familiarity increased, independent purposeful activation increased and movement exploration emerged. **RESULTS:** Increases in purposeful stops and obstacle avoidance were observed. All cases demonstrated improvements on the Power Mobility Screen and 2 on the CPCHILD. All participants' parents reported incidental benefits in contentment and engagement. **CONCLUSIONS:** With consistent, repetitive practice, participants demonstrated improvements in environmental exploration while simultaneously improving skills for power mobility. Future research includes the development of child-centered instructional methods and valid assessment instruments to optimize use of the Trainer.

Physician Assistant Studies

(College of Health Professions)

HPV VACCINE AWARENESS AND ACCEPTANCE: MASS MEDIA INFLUENCE ON THE PERCEPTIONS OF FRESHMAN COLLEGE STUDENTS. Phillipich, J. and Webb, M.; Department of Physician Assistant Studies, College of Health Professions.

PURPOSE: College freshmen in fall 2013 were the first group of adolescent females targeted by the proposed Gardasil® vaccine guidelines in 2006 for 11-12 year old girls, and the first group of adolescent males targeted in 2009 for 15-16 year old boys. The aim of this study was to evaluate this population's education about HPV/Gardasil® and determine if the media had an increased role in their reception of HPV knowledge and if the media influenced their reception of the HPV vaccine, Gardasil®. **METHODS:** One thousand randomly selected 18-19 year old freshmen students at Grand Valley State University were invited to participate in this cross-sectional quantitative pilot study using an on-line, anonymous questionnaire. Pearson Chi-Square tests, significance of the difference between two independent proportions test, score development, independent t-tests, and linear regression were tools used to analyze the data. **RESULTS:** One hundred forty six students completed the survey. 68% of respondents reported obtaining HPV and Gardasil® related information from the media, and 37% of respondents felt that the information presented in the media was not

believable. Respondents reported receiving the most believable HPV-related information from health education classes and healthcare providers. Individuals who received the vaccine scored significantly higher on the knowledge based questions ($M=3.64$, $SD=0.586$, $p\text{-value}=0.000$) than those who did not receive the vaccine ($M=2.45$, $SD=1.234$). **CONCLUSION:** The results of this study suggest that regardless of the amount of interaction students had with healthcare providers and/or the media, it did not affect their overall knowledge of HPV or Gardasil.

Physician Assistant Studies

(College of Health Professions)

AGE AND GENDER AS PREDICTORS OF POST-CONCUSSION SYNDROME MANIFESTATIONS FOLLOWING MINOR TRAUMATIC BRAIN INJURY.

Smith, A.R., Talaska, A.E., Otieno, S., and Bacon-Baguley, T.; Department of Physician Assistant Studies, College of Health Professions.

PURPOSE: Post-concussion syndrome (PCS), in its many forms, carries significant impact on quality of life. The purpose of this study was to determine if PCS manifestations could be predicted by gender, age (pre- or post-menopausal age groups), or by the length of time elapsed after injury. **SUBJECTS AND METHODS:** A retrospective medical chart review screened 510 adult patients with PCS who sought care at an outpatient post-concussion clinic from 1999–2004. **ANALYSES:** Data were evaluated to correlate PCS manifestations with predictors by backwards logistic regression and multiple regressions. **RESULTS:** Females in the premenopausal group were more likely to present with headache ($OR = 5.00$) and post-menopausal females are more likely to present with a combination of cognitive changes and headaches ($OR = 2.49$). Females have a higher likelihood of presenting with dizziness ($OR = 3.38$) and with both pain and headache ($OR = 2.85$) if within 3 months post-injury. Females are more likely to present with both dizziness/vertigo and balance changes 3 months post-injury or later ($OR = 2.13$). Further, the post-menopausal age group was more likely to have balance changes as a presenting symptom 3 months or greater post-injury than the premenopausal age group presenting within 3 months ($OR = 8.32$). **CONCLUSIONS:** This study found demographic predictors of presenting symptoms of PCS as well as symptom differences over the progression of time after injury. There was variation between symptoms common to premenopausal versus post-menopausal females, as well as symptoms in the first three months post-injury versus after 3 months.

CONNECTIONS AND OVERLAP BETWEEN CAPACITY BUILDING MEASURES, NONPROFIT MANAGEMENT COMPETENCIES, AND TRAINING NEEDS OF NONPROFIT MANAGERS. Choi, I.; School of Public, Nonprofit, and Health Administration, College of Community and Public Service.

PURPOSE: Studies conducted in the past twenty years have discussed capacity building needs of nonprofit organizations, nonprofit management competencies, and the training needs of nonprofit managers. However, many of these studies have been discussed in silos, separate journal articles and studied in different areas of the nonprofit management literature. There has been a scarcity of studies that document and track the common terms discussed across the nonprofit management literature. **SUBJECTS:** Common terms discussed across the nonprofit management literature. **METHODS AND MATERIALS:** Clustered social network analysis, and more specifically the open source software tool, Gephi, was used to identify the overlap in nonprofit capacity building measures, nonprofit management competencies and training needs terms listed in the literature. **ANALYSES:** The authors used social network analysis and identified 12 terms were the most commonly discussed across the literature. Then these 12 terms were compared to the nonprofit management education literature and the courses being offered in nonprofit graduate education. **RESULTS:** The findings revealed 12 terms were hubs, meaning 12 terms were the most connected across literature. These terms included: Leadership, Planning, Public Relations, Volunteer Management, Financial Management, Communications, Marketing, Governance, Data Utilization, Human Resources, Fundraising, Information Technology. Leadership was listed the most frequently across all studies. **CONCLUSIONS:** Findings revealed that nonprofit management education are missing some of the important competencies, skills and training needs of nonprofit managers as identified in the social network analysis.

STUDENTS' PERSPECTIVES AND EXPERIENCES WITH THE INTERDISCIPLINARY COMMUNITY ENGAGEMENT PILOT PROJECT: FAIR HOUSING 49507. Fisher, C.; School of Public, Nonprofit, and Health Administration, College of Community and Public Service.

PURPOSE: The purpose of this study is to assess the students' perspectives and experiences with the interdisciplinary community learning pilot project: *Fair Housing 49507*. The study is important because it will inform the university/community about the opportunities and challenges of implementing interdisciplinary community engagement within the classroom environment. **SUBJECTS:** 40 undergraduate students enrolled in five courses across five different academic disciplines at GVSU. **METHODS AND MATERIALS:** An electronic survey administered in March 2014. **ANALYSES:** The survey asks about each student's experience participating in the interdisciplinary community engagement pilot project: Fair Housing 49507. Analysis methods include frequencies and cross tabs analysis in SPSS. **RESULTS:** findings will be reported about students' attitudes and learning experiences during the pilot. **CONCLUSIONS:** This study will then provide recommendations for future interdisciplinary community engagement efforts at GVSU.

Public Administration and Social Work (College of Community and Public Service)

FEMALE BARTENDERS' PERCEPTIONS OF SEXUAL HARASSMENT BY MALE PATRONS. Fisher, V.; School of Public, Nonprofit, and Health Administration and School of Social Work, College of Community and Public Service.

This preliminary research examines the perceptions of three female bartenders in one bar in Grand Rapids, MI regarding sexual harassment they've experienced from male bar patrons. This exploratory qualitative study identified the following key themes from interviews: 1) the participants' definition of sexual harassment; 2) their feelings about their jobs as female bartenders; 3) their perceptions of the men who harass them; 4) how their significant others feel about their work; 5) the actions taken when a harassment incident occurs, and 6) the importance of setting personal boundaries with customers.

Public Administration and Social Work (College of Community and Public Service)

USING SERVICE LEARNING IN THE TEACHING OF AND RESEARCH ON PROGRAM EVALUATION. Ingraham, L., Bayer, N.; School of Public, Nonprofit, and Health Administration and School of Social Work, College of Community and Public Service.

PURPOSE: This project describes a graduate-level service learning course whereby the instructor divided students into small evaluation teams and assigned the teams one of two distinct models by which to evaluate the same non-profit organization. The goal of the study was to examine how the pedagogy of the class improved student learning. **SUBJECTS:** 19 students and 21 Stakeholders. **METHODS:** The teams were assigned either goal-free evaluation or success case method; and they conducted their respective evaluations independently and simultaneously. Each team was responsible for disseminating their findings to the program via a written report in addition to an oral presentation. At the conclusion of the course, the students were administered an attitude survey regarding their service learning experience; and upon reading the evaluation reports, the program's stakeholders were surveyed regarding the perceived utility of each of the evaluations. **MATERIALS:** Students completed a 20 item semantic differential regarding their feelings of the service learning aspect of the course. Stakeholders completed a 25-item semantic differential regarding their feelings regarding the student's evaluation reports. **RESULTS:** Students reported that they felt the class was very anxiety-provoking as well as disorganized. An open-ended survey question expressed these resulted from having to attend the evaluations outside of class time. Results from stakeholders reported feelings regarding the evaluation reports were dependent on the quality of writing, not the method of evaluation used. **CONCLUSIONS:** If the project was to be repeated, steps should be taken to reduce anxiety resulting from the out-of class aspect of the project.

Social Work

(College of Community and Public Service)

AGING- "IN-THE-WORLD": EXISTENTIAL PERSPECTIVES, SOCIAL WORK & AGING POPULATIONS. Mudgett, M.: School of Social Work, College of Community and Public Service.

PURPOSE: To encounter an aging or older adult and provide them with the most satisfactory services requires knowledge of the existential reality of old age (Langle, 2001). This means social workers and other helping professionals working with individuals in this population must be able to enter into the phenomenological world of the person as much as it is possible to do so. **PROCEDURE:** Provide a thorough review of the basic ideas expressed in the existential literature as it relates to individuals in the later stages of life and social work practice. This was completed by conducting a comprehensive search of relevant databases and books on the subject. **OUTCOME:** Literature is discussed and recommended practice applications are presented, however, the subjective nature of the topic under consideration has notoriously made conducting rigorous, objective research a difficult task.

Therefore, the majority of the review deals with how existential-philosophical concepts and themes inform practice. **IMPACT:** To increase awareness of the utility of incorporating existential perspectives into practice with aging populations.

Social Work

(College of Community and Public Service)

**ASSESSING THE NEED FOR MENTAL HEALTH/SUBSTANCE USE
DISORDER TREATMENT FOR MINORITIES IN KENT**

COUNTY. Thompson, A., and Youker, B.; School of Social Work, College of Community and Public Service.

A needs assessment of young adult minority males in Kent County was done from the perspective of agency staff and services providers. Twenty face-to-face, semi-structured interviews that took 30-45 min to complete were done at social service agencies, including agencies that serve the homeless, those with mental illness, and academic institutions. This diverse group of service providers also included individuals working in the criminal justice and other fields. The sampled population of African American and Hispanic males has a much higher percentage of being sent to prison often due to an illicit or prescriptions drug use charges and convictions compared to their Caucasian counterparts according to the “Human Rights Watch in 2000”. Service providers identified 5 major themes – culture, reduced stigma, employment, community, and identity - that are of importance when assisting minority males in mental health and substance abuse. Discussion included why culture is of such importance in treating mental health and substance abuse and both recent and older history seem to be factors. Most service providers felt that the need for mental health and substance abuse services can be avoided by the client if certain tenants are in place within the community and family and individuals are in place. Implications of progress with these needs include less crime, more employment and education within this population.

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