Graduate Student Celebration

December 5, 2014

Hager-Lubbers Exhibition Hall and
Charles W. Loosemore Auditorium

Presented by the Office of Graduate Studies
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in collaboration with the
Graduate Student Association (GSA)
www.gvsu.edu/gsa

Program

5:00 PM: Refreshments and Social Hour (Hager-Lubbers Exhibition Hall)

6:00-7:30 PM: Awards Presentation Ceremony (Loosemore Auditorium)

- Introduction: Alaina Clarke, GSA President

- Welcome: Dr. Jeffrey A. Potteiger, Dean of Graduate Studies

- Graduate Dean's Citation Awards Recognition:
  Dr. Jeffrey A. Potteiger, Dean of Graduate Studies,
  Dr. John R. Stevenson, Associate Dean of Graduate Studies, and
  Mr. Steven Lipnicki, Assistant Dean of Students

- Graduate Student Association Faculty Awards Recognition:
  Alaina Clarke, GSA President, and
  Samantha Lynn, GSA Vice-President

Award recipients please note: group photos will be taken immediately following the award ceremony.

Welcome!

Dear members and friends of Grand Valley's graduate community,

Tonight we have the great pleasure to honor individuals who have distinguished themselves in graduate education at Grand Valley State University. The Dean's Citation Awards for Academic Excellence recognize the accomplishments of our students and faculty and celebrate their achievements. Established in 2006, this proud Grand Valley State University tradition originated through the combined efforts of the members of Graduate Council and the Graduate Program Directors. The Graduate Student Association and the Office of Graduate Studies are co-hosts for this evening's activities.

The Dean's Citation Awards acknowledge excellence in academic performance in several categories. Graduate students are nominated for these awards by staff or faculty members, advisors, graduate program directors, and departmental chair or school directors. The Dean of Graduate Studies reviews the nominees and approves the final selection. Each recipient receives a certificate of recognition and a graduate honors cord, which may be worn at commencement. Additionally, we honor several of our graduate faculty members who have distinguished themselves in mentoring and serving our students at Grand Valley. Their dedication helps to create a rich and vibrant learning environment.

Grand Valley State University proudly celebrates the accomplishments of our graduate students and faculty members. I wish each and every one of our award winners a successful future.

Congratulations to all!

Jeffrey A. Potteiger, Ph.D., FACSM
Dean of Graduate Studies
Grand Valley State University

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Congratulations to the Fall 2014
Graduate Student Association Faculty Award Recipients!

GRADUATE DEAN'S CITATION FOR ACADEMIC EXCELLENCE IN THE MAJOR
Fall 2014

Seidman College of Business

- **Rebecca A. Glover, Master of Science in Accounting**

  The faculty in the School of Accounting note that although Rebecca "has been at the top of almost every class that she has taken, she is an incredibly humble person." She has also been very active while at GVSU. She is a Beta Alpha Psi alumna and participated in a study abroad program in London. She completed two internships in taxation and has served as a graduate assistant, tutoring students in managerial and financial accounting principles and assisting faculty with research. She will join the tax staff at the CPA firm Plante Moran in January 2015.

- **Daniel J. Johnson, Master of Business Administration**

  Daniel is an exceptionally hard working student. On top of maintaining a very high GPA in his MBA courses, Dan actively seeks additional opportunities to learn and develop, including small discussions hosted by the Ethics Center and events with outside speakers. He works to apply his learning from his MBA courses to his work at Whirlpool Corporation. In addition, Dan has brought his unique work experiences to the classroom in the form of class discussions and formal presentations. Faculty in the Seidman College of Business state that Dan's passion for learning and supporting the learning of others has significantly contributed to the MBA program at GVSU.

- **John E. Vande Guchte, Master of Science in Taxation**

  "John's classroom performance is outstanding." Faculty note that his thoughtful comments in discussions distinguish him among his peers and demonstrate a thorough understanding of complex tax issues and applications. He joined Monroe, Sweeris & Tromp in 2006 and became a tax partner with the firm in 2013. His focus includes servicing his clients in the area of corporate and individual taxation in addition to general consulting in the areas of succession planning, budgeting, and cash flow analysis. John has provided

services to small, mid-size, and large businesses over his career in the health care and service industries.

College of Community & Public Service

- **Nathan Baar, Master of Health Administration**

  The MHA Committee in the School of Public, Nonprofit & Health Administration selected Nathan for this award, noting he "has set a high standard for his work and attained excellence." He has frequently selected challenging topics for assignments in an effort to maximize the development of the skills he could attain in all of his courses. Nathan is a Clinical Coordinator in Emergency Services at Metro Health Hospital. He is a member of the Omicron Delta Kappa National Leadership Honors Society as part of the MHA program at GVSU. His leadership skills are evident by his participation in the classroom and his work with Metro Health Hospital.

- **Susan R. Kragt, Master of Public Administration**

  Susan has earned a perfect GPA in the program, but that alone does not adequately tell her story or why she deserves this award. She regularly asked advanced questions that often took class discussions to a higher level which benefitted everyone. Susan continuously conveys her will to learn and creates synergy with her job as executive director of a nonprofit here in Grand Rapids that serves refugees. She brought her work examples into the classroom and also applied what she learned at her organization. The faculty stated that "Susan represents everything we would want a student to be and get out of our program."

College of Education

- **Lauren A. Garrigan, Master of Education in Literacy Studies**

  Lauren is an excellent teacher candidate in the TESOL (Teaching English to Speakers of Other Languages) program at GVSU. Her perfect GPA speaks to the excellence of her academic work. She is a student whose contributions have always been outstanding. Professors both in the English Department and in the College of Education have a high opinion of her academic work and achievement. Because Lauren excels in literacy, she has been offered a position

as a literacy developer at the Literacy Center of West Michigan in Grand Rapids.

- **Aaron D. Hobson, Master of Education in School Counseling**

  Aaron is a gifted student who completed his graduate program requirements at GVSU while enrolled in his first year as a doctoral student at the University of California-Berkley. He was awarded a fellowship from the Research in Cognition and Mathematics Education program that trains pre-doctoral students to contribute to advances in research, theory, and practice in K-12 mathematics education. Aaron has had a variety of experiences with diverse youth, and he has demonstrated his interest in providing services to support their healthy development. He has acquired the skills necessary to respond effectively and efficiently to the various issues presented by those he serves.

Padnos College of Engineering & Computing

- **Nathan J. Taylor, Master of Science in Computer Information Systems**

  Nathan has excelled in the graduate program and is among the very best CIS graduate students at GVSU. For his master's project, Nathan was responsible for helping deploy iBeacon devices in and around the University Bookstore in the Kirkhof Center. He also integrated software features in the GVSU Laker Mobile app on iPhones that provide notifications to end users who move within range of the iBeacon devices. Nathan worked closely with bookstore staff to develop a content management server to manage the offers or information the notifications contain. He recently accepted a position as a software developer with Cognitive Medical Systems in California.

College of Health Professions

- **Andra E. Talaska, Master of Physician Assistant Studies**

  The Physician Assistant Studies faculty is in complete agreement that Andra has demonstrated outstanding academic achievement as well as clinical skills that exceed the average. She has consistently been the top-performing student from the Class of 2014. She has shown great academic achievements not only in the classroom, but in the clinic as well. While also a student, Andra has worked as a Critical Care Paramedic for Life EMS Ambulance in Grand Rapids, as well as volunteered with Michigan Blood and the American Cancer Society Relay

for Life. She is dedicated to learning and puts forth tremendous effort to becoming a competent and caring physician assistant.

College of Liberal Arts & Sciences

- **James I. Smit, Master of Science in Biology**

  James demonstrated his academic excellence not only through his grades, but also through his achievements, which include being awarded several grants to help support his research. James was deliberate in his research direction; he wanted to ensure his findings had real-world application. He has presented his research at numerous regional and international conferences, one of which resulted in an award for best presentation (Environmental Risk and Decision Making Symposium in Lansing, MI). His research findings have been submitted to the scientific journal *Wetlands* and currently are in review. His findings are being incorporated into a wetlands restoration design, which is a testament to the quality of James' work.

- **Jeanne M. Holladay, Master of Science in Cell and Molecular Biology**

  Jeanne entered the Professional Science Master's program in Biotechnology two years ago and has maintained an excellent GPA in a demanding sequence of courses. In addition to outstanding academic performance, she carried out a successful internship at the Michigan Department of Environmental quality where she was able to utilize some of the laboratory skills she developed in the program. Jeanne has been a very effective graduate assistant with duties to help prepare for, and assist in, laboratory techniques and tissue culture labs. Her supervisors reported that she was a leader, communicated effectively, and did an excellent job of lab preparation.

- **Nicholas G. Katsarelas, Master of Science in Communications**

  Nicholas exhibits a level of mastery of the subject matter that is indeed rare among graduate students nationally. His academic performance in all his classes was superlative and in every case far-exceeding the expectations of the program. Not only does he possess a vast reading knowledge of communication theory, but he can skillfully apply theory and conceptual principals to practical communication problem-solving situations: the hallmark of true excellence in the Communications graduate program. The faculty is

confident that Nick will continue to be a major contributor to the field of professional communication throughout his career.

- **Maureen D. Divirgilio, Master of Arts in English**

  Maureen has been an outstanding student in the English graduate program. She has a quick intelligence, is an exceptionally good writer, and is a voracious and astute reader. In classes, she consistently volunteers perceptive comments that invite discussion. She is a pleasure to teach. As a Graduate Assistant, she traveled to Ghana and worked on a new edition of poems by an important Ghanaian poet. Her help was invaluable to the completion of the project, on which she will be a co-author. The book is now in the hands of the publisher. In the Fall 2014 semester, Maureen also passed her comprehensive exams with a High Pass - a rarity for the English Department to grant.

Kirkhof College of Nursing

- **Marie Vanderkooi, Doctor of Nursing Practice**

  Marie has demonstrated her academic excellence with a GPA of 4.000 in her graduate study. She has a deep and passionate commitment to ongoing learning. Following receiving her Master of Nursing degree, she also attended the University of Maryland and received a post-master's certification and national certification as a nurse informaticist. She is a joy in both the classroom and clinical arena as she participates at a very high level. She stimulates the thinking and reflective learning for her peers, and is highly respected by both her peers and the Kirkhof College of Nursing faculty.

- **Diane K. Ullery, Master of Science in Nursing**

  Diane is an experienced nurse with a deep and passionate commitment to ongoing learning. She has established herself as a "go to" person within her student peer group. Her positive attitude and unwavering commitment to quality has been apparent in all of her academic work. She set very high standards and goals for herself during her graduate work. Diane is an outstanding student who has demonstrated the academic leadership and qualities of excellence as a scholar, a health professional, and a leader. She is an example of the excellence GVSU graduates demonstrate as community leaders.

GRADUATE DEAN'S CITATION FOR OUTSTANDING DOCTORAL DISSERTATION
Fall 2014

Kirkhof College of Nursing

- **Marie Vanderkooi, Doctor of Nursing Practice**
  - **Dissertation Title:** An Evidence Based Evaluation of Medication Barcode Scanning Acceptance in a Community Hospital
  - **Dissertation Committee:** Dr. Cynthia Coviak (Chair) - Kirkhof College of Nursing, Dr. Barbara Hooper - Kirkhof College of Nursing, Dr. Guenter Tusch - School of Computing and Information Systems, Mr. Brian Brasser - Spectrum Health United

  Marie's dissertation provides a foundation for several scholarly publications, including an innovative synthesis of a well-known quality model and the technological-human interaction framework. She is working on her manuscript as she finishes her course of study at GVSU.

  Marie's interest in the chosen topic arose from her area of specialty practice as a nurse informaticist, as well as her aspired role as a doctorate-prepared nursing leader. Over the course of her work experience, she has increased her expertise in the nursing informatics field – an area of great importance. With the nursing workforce shortage, the leadership of her immersion setting could utilize her skills to a great organizational advantage.

  Marie appropriately interpreted and communicated her findings to the hospital staff, and in the true method of a clinical scholar, utilized the findings to develop a plan for action in collaboration with the organizational leaders. As she finished her project, she simultaneously assisted these leaders to execute the plan and identify realistic next steps for the resources and capacities of the site. Her work truly exemplifies an outstanding example of the work expected of those who have chosen the practice doctorate as their path to a terminal degree in nursing.

  Marie is also the recipient of the Graduate Dean's Citation Award for Excellence in the Major from the Doctor of Nursing Practice program.

ABSTRACT

Information technology, such as barcode scanning during medication administration, is a powerful tool to prevent errors and support patient safety. In spite of the significant patient safety benefits, there is a lack of adoption and acceptance of healthcare information technology by organizations and individual health care providers. The purpose of this project was to increase acceptance and adoption of barcode scanning during medication administration at a community hospital in a rural setting. An evidence based assessment, utilizing a survey instrument based on the technology acceptance model, was conducted to understand barcode scanning barriers and facilitators. Forty-four people, 38 nurses and 8 respiratory therapists, participated in the survey. Data analysis was performed using SPSS with descriptive statistics, Kruskal-Wallis, Mann-Whitney U, and Spearman rho tests. The subscales for the intention to use barcode scanning and the influence of others on the participants' use of scanning variables were rated highest. The subscales for the training and technical support variables received the lowest ratings. There were significant differences among the departments, with the acute inpatient area reporting the highest subscale ratings and the surgical services/procedural reporting the lowest ratings. There were no differences in the survey subscales in regards to participants' age and years of computer use at work. There were several themes identified related to barcode scanning issues and concerns as the survey results were shared with the staff members. Recommendations to address the survey results and the barcode scanning issues were developed.

GRADUATE DEAN'S CITATION FOR OUTSTANDING MASTER'S THESIS
Fall 2014

College of Education

- **Pamela S. Scott, Master of Education in General Education**
  - **Thesis Title:** From Verification to Guided-Inquiry: What Happens When a Chemistry Laboratory Curriculum Changes?
  - **Thesis Committee:** Dr. Douglas Busman (Chair) - College of Education, Dr. Deborah Herrington - Department of Chemistry, Dr. Thomas Pentecost - Department of Chemistry, Ms. Jacque Melin - College of Education

The College of Education faculty is pleased to recommend Pamela's thesis for this award. She has written a unique thesis in the emphasis area for Advanced Content Specialization in Science. Her work provides insights and answers to the question "How does the degree or level of inquiry-based laboratory instruction impact student performance and student perseverance in the laboratory portion of a first-semester general chemistry course?"

Pamela's work resulted in a publication in the *Journal of College Science Teaching* on which she was a co-author. She is employed at Grand Rapids Community College as a Chemistry Laboratory Instructor and has contributed to publications in *Chemosphere Environmental Chemistry* and *The Science Teacher.* She has an extensive background as an analytical chemist, research chemist, and quality assurance chemist. She combines her strong science background with the foundations of education and teaching learned in her graduate program to be an excellent instructor to students, engaging them in the content and curriculum of her courses.

ABSTRACT

How does the degree or level of inquiry-based laboratory instruction impact student performance and student perseverance in the laboratory portion of a first-semester general chemistry course? In 2008, a two-year community college sought to answer this question by replacing the traditional verification laboratory curriculum with a guided-inquiry laboratory curriculum. This change provided a case study of the 'new' guided-inquiry curriculum vs. the 'old' traditional verification curriculum. Researchers utilized a modified version of The Continuum of Scientific Inquiry Rubric (Fay, 2007) to assess both laboratory curricula and establish the level of inquiry incorporated into each laboratory experiment and both laboratory curricula overall. Student performance was evaluated via laboratory report average final grades and individual laboratory report scores, while student perseverance was measured by comparing overall completion rates for laboratory reports by curriculum to determine if any relationships exist between level(s) of inquiry and student performance and student perseverance.

- **Eric J. Moore, Master of Education in Special Education**
  - **Thesis Title:** Postsecondary Inclusion for Individuals with an Intellectual Disability: A Comparative Case Study
  - **Thesis Committee:** Dr. Amy Schelling (Chair) - College of Education, Dr. Paula Lancaster - College of Education, Dr. Mary Bair - College of Education

Eric consistently produces work above the required standards and he has demonstrated the ability to think deeply and critically about educational issues. At the same time, he displays the ability to draw conclusions about how knowledge of learning and strategies for effectively educating students with cognitive impairments connects to the K-12 classroom and students.

Specifically related to his thesis research, Eric demonstrated a deep understanding and meaningful execution of all of the components of an outstanding thesis. Eric designed his study in a way that extends the current literature and provides additional insights into postsecondary educational options for individuals with intellectual disabilities. Particularly, the literature called for a greater focus on outcomes of postsecondary programs and Eric

designed his study to respond to this need and also included a comparison of different types of postsecondary educational options.

Eric was also accepted into a doctoral program at the University of Tennessee Knoxville which he began this fall and was awarded the Diversity Enhancement Fellowship for his doctoral studies, as well as being awarded a position as a graduate assistant, teaching in UT's postsecondary program for individuals with intellectual disabilities (known as the FUTURE Program).

ABSTRACT

Postsecondary education programs for individuals with intellectual disabilities have emerged exponentially in the United States over the last decade. Research regarding these programs has largely been descriptive, and thus there exists a need for qualitative, outcome-based research. In this comparative case study, graduates from two types of postsecondary education programs for individuals with intellectual disability are surveyed regarding employment outcomes and other personal developments. The results from each program are compared with one another and also with a comparison group of individuals with intellectual disabilities who did not attend a postsecondary program (utilizing the 2009 National Longitudinal Transition Study-2). This case demonstrates significant positive employment-related outcomes for individuals with intellectual disabilities who attend postsecondary programs compared to those who do not attend such programs and highlights similarities and differences regarding outcomes of the two program types under consideration.

Padnos College of Engineering & Computing

- **James M. Gurisko, Master of Science in Engineering**
  - **Thesis Title:** A Quantitative Tool for Identifying the Epileptogenic Zone using Network Connectivity
  - **Thesis Committee:** Dr. Samhita Rhodes (Chair) - School of Engineering, Dr. Paul Fishback - Mathematics Department, Dr. Konstantin Elisevich - Michigan State University

James completed the articulated B.S.E-M.S.E. program at GVSU with an emphasis in Biomedical Engineering. His thesis work represents a milestone in the continuing collaboration between faculty in the School of Engineering and

the Department of Mathematics at GVSU with the Division of Neurosurgery at Spectrum Health. James' work was also presented at the annual meeting of the Biomedical Engineering Society in San Antonio, TX in October 2014.

James' thesis continued research focusing on understanding the mechanisms responsible for propagation of epileptic seizure activity. Using sophisticated and advanced signal processing techniques, James was able to identify areas of the brain responsible for initiating and sustaining focal epileptic seizures. Currently, the only recourse for patients who suffer from these types of seizures and in whom seizure activity has not responded to antiepileptic drug regimens, is the surgical removal of epileptogenic brain tissue. James' work is of tremendous clinical significance since it allows the neurosurgeon to minimize the resection volume by focusing only on the tissue within the epileptogenic zone.

For his exemplary collaborative research work and his successful dissemination efforts, the faculty in the School of Engineering wholeheartedly recommends James for this award.

ABSTRACT

Approximately one-third of patients diagnosed with focal epilepsy do not respond to medication and may be candidates for surgery to remove epileptogenic tissue known as the epileptogenic zone. A detailed pre-surgical evaluation is required and often includes invasive video electroencephalographic monitoring (IVEM) using intracranial surface and depth electrodes, and a camera. The resulting large pools of electrocorticorticographic (ECoG) data are manually analyzed by an expert epileptologist to determine epileptic events. The process is time consuming and prone to human error. This thesis investigates the use of measures to identify the causal relationship between ECoG signals during propagation of a seizure in order to delineate a possible epileptogenic zone. These measures are based on concepts of network connectivity derived from the frequency spectrum of recorded signals called the spectrum-weighted directed transfer function (swDTF) and the full-frequency directed transfer function (ffDTF). The goal of the thesis is to implement a measure that may aid the surgeon in the decision-making process to optimize the outcome of surgery and possibly minimize the resection volume. *Continued on next page.*

A time-variant adaptive version of both the swDTF and ffDTF was applied to a simple simulation model. The adaptive swDTF achieved higher sensitivity than the ffDTF (93% vs. 86%) for the detection of epileptogenicity. Both measures achieved a specificity of 99%. Two time-variant versions of the swDTF were compared: 1) an adaptive approach to frequency spectrum estimation using a Kalman filtering algorithm and 2) a short-time spectral estimation approach using overlapping Hamming windows. Each method was successfully applied to a simple simulation model. The measures were then applied to electrodes of clinical ECoG data obtained from Spectrum Health's Epilepsy Monitoring Unit. Sixteen seizures in two patients were analyzed and compared to channels indicated as having seizure activity by the epileptologist. The adaptive approach was able to identify the electrodes containing seizure activity consistent with expert findings (within 10 mm) in 14 out of 16 (88%) seizures. The short-time approach was able to identify an area within the region of interest (within 30-100mm) as noted by the epileptologist in 12 out of 16 (75%) seizures. The short-time swDTF reduced computation time by 95% compared to the adaptive approach. The short-time approach is more susceptible to noise and appears to be less selective whereas the adaptive approach is better able to pinpoint a single channel (± 10 mm). The adaptive measure is preferred due to its robustness to input parameters and ability to pinpoint channels. It is suggested that the short-time approach be used to gain quick insight into the region of interest identified by the 3-10 electrodes with the largest elevated output values and to later isolate single electrodes using the adaptive measure.

College of Health Professions

- **Leah M. Lyons, Master of Physician Assistant Studies**
  - **Thesis Title:** Neuroprotective effect on an α-7 nicotinic acetylcholine receptor agonist and a positive allosteric modulator in an *in vitro* model of glaucoma
  - **Thesis Committee:** Dr. Martina Reinhold (Chair) - Department of Physician Assistant Studies, Dr. David Linn - Department of Biomedical Sciences, Dr. David Geenen - Department of Physician Assistant Studies

Leah completed her master's thesis on the topic of glaucoma and retinal ganglion cell death. This in vitro research was not only time consuming, but truly excellent. Leah continued her undergraduate research on glaucoma upon

entering the Physician Assistant Studies program, where she studied the role of an acetylcholine receptor against, PNU-282987 and a positive allosteric modulator on the survival of retinal ganglion cells.

The results of Leah's studies have the potential to identify target pathways aimed at reducing retinal ganglion cell death, ultimately leading the way to further research identifying clinically effective treatment for glaucoma. Her dedication to the project and knowledge of the topic are truly exemplary. She has presented on her research at the 2014 Midwest Graduate Research Symposium at the University Toledo, as well as at the 2014 Grand Rapids Medical Education Partners Research Day, where she was awarded first place for a student presentation. The Physician Assistant Studies department highly recommends Leah for the Outstanding Thesis Award.

ABSTRACT

Glaucoma is one of several neurodegenerative diseases of the central nervous system for which a pharmacologic cure is yet to be discovered. In previous studies acetylcholine (ACh) has provided neuroprotection for retinal ganglion cells (RGC) in the mammalian retina under glaucomatous conditions (Wehrwein et al., 2004). More specifically, an $\alpha 7$ nicotinic Ach receptor (nAChR) agonist has demonstrated neuroprotection for RGCs in both in vitro and in vivo models of glaucoma (Iwamoto et al., 2014). In this study, this $\alpha 7$ nAChR agonist was combined with a positive allosteric modulator (PAM) in dissociated adult porcine retinas to evaluate its effect on isolated RGCs and identify a potential molecular signaling pathway of neuroprotection. Porcine retinas were dissociated using a two-step panning technique to isolate RGCs. Once isolated, RGCs were cultured under various pharmacologic conditions and incubated for 3 days. Pharmacologic conditions utilized throughout the course of this research included: agonist alone, agonist with low, medium or high dose PAM, and PAM without agonist. In subsequent experiments, enzyme inhibitors were applied thirty minutes prior to pharmacologic intervention to evaluate effects of the drugs in the absence of specific proteins utilized in their hypothesized cellular signaling pathway. *Continued on next page.*

Retinal ganglion cells treated with the α7 nAChR agonist alone demonstrated a 28.0% (± 12.8%) increase in cell survival over untreated control. This agonist in combination with medium or high dose PAM resulted in increased cell survival at 43.0% (± 11.6%) and 52.0% (± 20.9%), 8 respectfully. However when the PAM was used as monotherapy, cell survival increased by only 3.2% (± 10.4%) over untreated control, supporting its hypothesized allosteric mechanism of action. Enzyme inhibition results suggest that the α7 nAChR agonist utilizes the PI3 to Bcl-2 signaling pathway to produce this neuroprotective effect, and that the PAM works in an allosteric manner through PI3 kinase to produce an enhanced effect. These studies provide support for future research in analyzing the effects of an α7 nAChR agonist and PAM in in vivo models of RGC death. Further understanding of these pharmacologic agents could provide important information in the development of new therapeutic options for glaucoma and other neurodegenerative diseases.

College of Liberal Arts and Sciences

- **Nicholas C. Albrecht, Master of Science in Biology**
  - **Thesis Title:** Muskegon River Juvenile Steelhead Survival and Production: Quantifying Seasonal Thermal Stress
  - **Thesis Committee:** Dr. Mark Luttenton (Chair) - Department of Biology, Dr. Carl Ruetz - Annis Water Resources Institute, Dr. Joseph Feldhaus - Department of Biology

  Nicholas demonstrated an extraordinary ability to comprehend the system he studied, conceive appropriate research questions, design the research to address those questions, and complete the research and analysis.

  Nick played a central role in coordinating and implementing a large, three year study. Nick kept the research group on task during extreme weather conditions, maintained organization of very large data sets, and completed a number of complex population models. He independently gathered a large volume of physical data for the system, and mastered very complex analyses to identify trends in physical conditions before and after modification of a hydroelectric facility. In the end, Nick pulled the information together into a collective, cohesive thesis which has provided a more comprehensive understanding of a complex aquatic ecosystem. Nick also exhibited a level of

clarity in his writing that was a true pleasure to read.

Nick's thesis work provides important insights into the dynamics of this complex river system. His data will significantly influence the long-term management of Michigan's coastal river resources. Currently, Nick is working for the U.S. Fish and Wildlife Service in Entiat, WA. His research focuses on evaluating the current abundance, survival, growth, and production of natural juvenile salmonids in the Entiat River, Washington.

ABSTRACT

The lower Muskegon River is one of the most heavily fished rivers in the state of Michigan and is a valuable component of the multi-billion dollar sport fishery in the Great Lakes. Although significant stocking effort has been invested to maintain and improve the steelhead (*Oncorhynchus mykiss*) fishery in the Muskegon River, natural recruitment has been severely limited due to high summer water temperatures. The goal of this research project was to evaluate the success of a diffuser system installed in 2008 at Croton Dam to moderate high summer water temperatures in the lower Muskegon River. I estimated natural juvenile steelhead abundance, survival, and production in the Muskegon River and compared that with previous work to see if there has been a population level response to the installation of the diffuser. In addition, I used heat shock protein analysis to confirm whether juvenile steelhead are experiencing thermal stress in the Muskegon River.

First, I used water temperature data from the USGS gauging station on the Muskegon River from 2006-2008 and 2010-2012 to compare stream temperatures before and after the installation of the diffuser. Based on the summary of the mean monthly average temperature, temperatures in August remained similar before and after the installation of the diffuser even though temperatures in July 2010-2012 were 0.8^{0}C higher than July 2006-2008. Based on the results from this study, stream temperatures in the Muskegon River do not appear to have improved since the installation of the diffuser. *Continued on next page*.

Pass depletion surveys were used to estimate parr survival, production and growth in the Muskegon River and Bigelow Creek during 2011-2013. Average fall density of parr in Bigelow Creek was 48-fold higher than in the Muskegon River. Average summer daily mortality rate of parr in the Muskegon River was nearly six-fold higher than in Bigelow Creek. High mortality rates in the Muskegon River corresponded to average summer water temperatures exceeding 21^{0}C. Our results were similar to previous work completed on the Muskegon River and suggest that natural steelhead production in the Muskegon River is still severely limited due to high summer water temperatures.

The final object of this study was to investigate whether juvenile steelhead in the Muskegon River and Bigelow Creek are experiencing thermal stress as a result of high summer water temperature using fin tissue to conduct heat shock protein analysis. We found that there were significant differences in fin heat shock protein 70 (hsp70) levels across sites and seasons. Relative hsp70 levels for each site in August varied significantly from June and October in all of our sites, except for our site in Bigelow Creek, which had lower summer water temperatures. Collectively, these results suggest that juvenile steelhead in the Muskegon River are still experiencing prolonged exposure to elevated temperatures and thermal stress, which result in physiological consequences that could ultimately affect the survival of naturally reproducing steelhead in the Muskegon River.

GRADUATE DEAN'S CITATION FOR OUTSTANDING MASTER'S FINAL PROJECT
Fall 2014

College of Education

- **Son Tung Le-Nguyen, Master of Education in Educational Leadership**
  - **Project Title:** Student-Centered Behavior Management: A Holistic Approach to Reducing Overall Discipline While Minimizing the Disproportionate Racial Gap
  - **Project Advisor:** Dr. Richard Geisel - College of Education

  Son Tung's work addresses the very timely and troublesome problem that many schools currently face regarding a record of disproportionate discipline rates between African American students and White students. Tung explores the potential reasons such discrepancies exist, and presents a research-based solution for proactively addressing this problem.

  Not only is Tung a strong writer who presents a clear and compelling academic voice as he navigates the problem and reviews corresponding research and potential solutions, but he also did what so many students are unable or unwilling to do; namely, he kept an open mind and allowed the research to lead him toward the best solution rather than the one he originally conceived as a potential "solution." From beginning to end, the College of Education faculty stated it was a pleasure to work with Tung on this project.

- **Michael J. Nelson, Master of Education in Instruction and Curriculum**
  - **Project Title:** Implementing an Online Digital Curriculum in a Catholic School
  - **Project Advisor:** Dr. Douglas Busman - College of Education

  Michael has developed a unique capstone project for his graduate program in Secondary Education. The project features an online digital citizenship curriculum which delivers video and written content, and utilizes computer adaptive assessments both to assess student learning and to help remediate areas not yet mastered. His project was a nominee for the College of Education Dean's Award for Outstanding Master's Project.

Michael is a full-time instructor in the Department of English at Catholic Central High School in Grand Rapids. In 2014, he presented at the Michigan Association for Computer Users in Learning Annual Conference. He also presented his work at Catholic Central High School prior to the start of the academic year.

In addition, Michael served in the United State Marine Corps Reserves in Battle Creek, MI and presented as a No Marine Left Behind instructor.

- **Vera V. Grishkina, Master of Education in Literacy Studies**
  - **Project Title:** First steps to Developing English for Specific Business Purposes Course: Project Manager Target Situation Analysis
  - **Project Advisor:** Dr. Nagnon Diarrassouba - College of Education

Vera's project is located in the area of "English for Specific Purposes," a field that is still in its infancy stages, compared to many sectors of the vast domain of English teaching and curriculum development. Researchers in business English have usually focused on communications for people living in countries that do not speak English as a native or first language. English Native speaking settings have often been overlooked and when they are approached, studies deal with cultural and general language acquisition.

This project's merit is to attract researchers, business, and government decision makers' attention on the need to analyze professional settings in order to meet the needs of project managers, who are often non-native speakers of English. Project managers' professional situations or target situations are new areas that researchers and ESP practitioners struggle to understand, as it involves intricacies in language usages, which oftentimes are unknown to many native speakers of English.

Because Vera contributes in a novel way to the field of English for Specific Purposes, the College of Education strongly recommends her project for this award.

College of Health Professions

The Department of Physician Assistant Studies has selected four recipients of this semester's Outstanding Final Project Award as part of a group project.

- **Brett D. Applebach, Paige A. Boldt, Erica M. Fedewa, and Tyler A. VanNoord, Master of Physician Assistant Studies**
  - **Project Title:** The Impact of the Affordable Care Act on A Free Urban Health Clinic in Michigan
  - **Project Advisor:** Dr. Theresa Bacon-Baguley - Department of Physician Assistant Studies

- **Brett D. Applebach, Master of Physician Assistant Studies**

  Brett completed his undergraduate degree at GVSU in 2012 and was admitted to the Physician Assistant Studies program. His clinical rotations include Saint Mary's Psychiatric Medical Unit, Clinica Santa Maria, Lakeshore Medical Center, and Kigoma Baptist Hospital in Kigoma, Tanzania. Brett has also served as an ER Unit Tech for Holland Hospital while completing his graduate studies, as well as a volunteer for the Oasis of Hope Center in Grand Rapids.

- **Paige A. Boldt, Master of Physician Assistant Studies**

  Paige earned a Bachelor of Science in Nuclear Medicine Technology from Ferris State University. Her clinical experiences include Crystal Lake Health Center, Dayspring Family Health Center, and East Paris Internal Medicine. She received a student volunteer scholarship at the 2014 Annual Conference for the Christian Community Health Fellowship. Paige has served the Oasis of Hope Center since 2011.

- **Erica M. Fedewa, Master of Physician Assistant Studies**

  Erica earned her undergraduate degree at GVSU in 2012 and was admitted to the Physician Assistant Studies program. Her clinical rotations include Pine Rest's Inpatient Adolescent Program, Mary Free Bed Rehabilitation Hospital, and Mercy Health Hospital. She is also employed as a Patient Transport and Brian Injury Safety Attendant at Mary Free Bed Rehabilitation Hospital. Erica also served as a Medical Assistant Lead at the Oasis of Hope Center.

- **Tyler A. VanNoord, Master of Physician Assistant Studies**

  After completing his undergraduate degree in Allied Health Science at GVSU, Tyler began the Physician Assistant Studies program. His clinical experiences include Lakeshore Medical Center, Hackley Behavioral Health, Hackley Hospital, and Mercy General Health Partners. Tyler also worked as a Unit Tech, Unit Clerk, and Triage Tech for Holland Hospital while completing his graduate program.

  This group has exemplified a strong commitment to research and dedication to advancing medical knowledge and health care as related to the Affordable Care Act. Their research project is a great example of the high level of research that graduate students at GVSU perform. This group worked very closely with Oasis of Hope, a free clinic in Grand Rapids to identify the impact that the ACA will have on patient volume. This project was not only well done and benefited the students, but also beneficial to the Oasis of Hope free clinic.

College of Liberal Arts & Sciences

- **Kyle A. Hudecz, Master of Science in Communications**
  - **Project Title:** Knowledge Creation and Innovation
  - **Project Advisors:** Dr. Alex Nesterenko - School of Communications and Dr. Roy Winegar - School of Communications

  Kyle's project is exceptionally relevant in that he explores the problem of knowledge creation and innovation in corporate America. His conclusions include significant concerns regarding the concept of net neutrality and the place of the Internet in communicative activity. The thoroughness Kyle demonstrates in investigating his topic for this project and the final result is worthy of notice and celebration. He is a most capable student and has the drive, determination, curiosity, and ambition that will make him highly successful in the communications industry.

  The faculty in the School of Communications noted that Kyle "vociferously approaches his work; earnestly defends his positions; and meticulously follows his tonality throughout his work…His depth of resources and thought exceeded expectations."

Kirkhof College of Nursing

- **Julie L. Polanic, Master of Science in Nursing**
  - **Project Title:** Documentation at the point of care: Increasing patient safety
  - **Project Advisor:** Dr. Rebecca Davis - Kirkhof College of Nursing

Julie has demonstrated commitment to excellence in education and practice. She is well liked and well respected by both peers and faculty.

Her participation at her clinical practicum site was outstanding. She worked collaboratively with the staff at the Kirkhof College of Nursing Family Health Center. In her project, she identified the need to implement the Medicare Wellness Visit program. This is a program designed to meet some of the nurse sensitive preventative health needs of community dwelling seniors. She set very high goals for herself and attained all of them, plus made a major contribution to her practicum site.

Her project is an excellent example of the types of collaboration that GVSU graduate students demonstrate as community leaders.

GRADUATE DEAN'S CITATION FOR EXCELLENCE IN SERVICE TO THE COMMUNITY OR PROFESSION
Fall 2014

College of Community & Public Service

- **Paula J. Woodhouse, Master of Health Administration**

  Paula has attained high marks while volunteering many hours with local hospitals – centering her work on pediatrics. Paula previously attended GVSU and completed the Master of Public Administration program with an emphasis in Nonprofit Management and Leadership. Her own encounters with the health care system on behalf of a disabled child led her to pursue the MHA degree program while maintaining her high level of community engagement. The combination of these programs have engaged and combined Paula's passions, an asset which makes her a strong advocate in both nonprofit and health administration.

- **Claire M. Fisher, Master of Public Administration**

  Claire is enthusiastic about working with and engaging the community. She has worked as a community outreach staff and community organizer for the East Hills Council of Neighbors, and was an eager assistant to GVSU's Office for Community Engagement's efforts. In addition, Claire is a natural advocate, thinking about issues that affect populations with less of a voice and ways to include them in the conversation. Claire is currently serving as a Volunteer Services Coordinator for Hospice of Michigan, where she trains and supervises hospice care volunteers. She is also a member of the Phi Kappa Phi honors society.

College of Health Professions

- **Paige A. Boldt, Master of Physician Assistant Studies**

  Paige started volunteering at Oasis of Hope Center, a free health clinic for the poor, homeless and indigent, prior to acceptance into the physician assistant studies program and throughout her time in the program. Additionally, she chose an elective rotation at a rural location that services the disadvantaged and indigent. She has been an advocate for raising money for Oasis of Hope

through an annual 5K walk/run. Paige has been an outstanding example of what a physician assistant is made of by her demonstration of knowledge and empathy for underserved populations. She is determined and focused as well as gentle and compassionate, and always willing to follow her heart in determining where she goes from here.

Kirkhof College of Nursing

- **Sylvia J. Simons, Doctor of Nursing Practice**

  Sylvia is a consummate professional. She has been a volunteer for the Seeds of Promise initiative (partnered with the Health, Wellness, and Nutrition Impact Team). Sylvia embraced this project from day one. She has been diligent in this work to keep the group on task and on target. She was instrumental in researching, creating, and implementing a neighborhood survey for the Impact Team, volunteering her own time to assist with data collection. Sylvia also wrote a successful small grant to secure funds to support a community event to discuss the findings. Her efforts have helped a local neighborhood create a safer, healthier environment for its residents.

- **Erin F. Micale, Master of Science in Nursing**

  Erin is a professional, goal directed, and high achieving student. Her work, dedication, and professionalism are all stellar. Erin exhibits a love and passion for nursing and learning in all of her work. She was instrumental in establishing the first graduate student organization group in the Kirkhof College of Nursing. Erin served as vice-chair, providing support and services to KCON graduate students. Her willingness to be involved in the development of the group and her leadership made it a success. Erin's dedication to nursing and to GVSU is evident in her active involvement as a student and a leader.

GRADUATE DEAN'S CITATION FOR EXCELLENCE IN LEADERSHIP & SERVICE TO GVSU
Fall 2014

College of Community & Public Service

- **Amy J. Sells, Master of Health Administration**

  The MHA Committee in the School of Public, Nonprofit & Health Administration nominated Amy for this award based on her participation in the founding of the Health Professionals Graduate Student Alliance (HPGSA). This past year, Amy also served on the executive committee of HPGSA. Her outstanding success in a challenging readings course on health administration drove her decision to take, and pass, the State of Michigan's Nursing Home Administrator's exam – thus inspiring her fellow students to do the same. Her passion for providing quality care in a health setting is contagious, and she applies her skills to protect one of the more vulnerable populations – specifically, elderly individuals in assistive care.

College of Health Professions

- **Courtney R. McCotter, Master of Physician Assistant Studies**

  Courtney has demonstrated a passion for physician assistant studies and strong leadership skills in her time at the GVSU. She was elected President of the Richard P. Clodfelter Physician Assistant Student Society in her first semester in the program. Immediately, she demonstrated leadership quality by initiating class participation and organizing events. Courtney's leadership skills were recognized at a national level as she was elected by her peers to a position of leadership in the Student Academy of the American Academy of Physician Assistants (SAAAPA), the only national PA student organization. She serves as a regional director, traveling and communicating as a liaison between PA students in the central region to the national office.

GRADUATE DEAN'S CITATION FOR PROMOTING DIVERSITY AND INCLUSION AT GVSU
Fall 2014

College of Community & Public Service

- **Claudia Vargas Meza, Master of Public Administration**

  Claudia is a very bright student and works very hard to integrate her unique international perspective in each class she has taken in the MPA program. A native of Nicaragua, she works in the International Admissions office at Aquinas College while pursuing her graduate degree at GVSU. She helps students just like her to gain entry to the right college programs while simultaneously helping to diversify the student body. She also advises students from Grand Rapids Public Schools and Detroit Public Schools about college and career options.

  As a graduate student, Claudia completed a Graduate Assistantship for the Padnos College of Engineering and Computing's Outreach Program. She worked with Grand Rapids Public Schools and the larger Hispanic communities to recruit K-12 students into the STEPS (Science Technology Engineering Preview Summer) camp program. She is also active in the International Graduate Student Organization, acting as the Communications Officer, as well as the Cook Leadership Academy. She organized the "International Women's Day" along with the Hauenstein Center for Presidential Studies and SowHope.

  The faculty of the School of Public, Nonprofit, and Health Administration nominate her without reservation. Her work at GVSU and the broader Grand Rapids community make her most deserving of this recognition.

MAGS DISTINGUISHED THESIS NOMINEES
OUTSTANDING THESIS 2014

The Midwestern Association of Graduate Schools (MAGS) calls for nominations for the annual Distinguished Thesis Award. Each school is allowed to nominate one student thesis for the award competition in each discipline category. This year's categories are Physical Sciences/Engineering and Social Sciences. The theses representing GVSU are selected by a committee of faculty members from multiple disciplines and approved by the Dean of Graduate Studies.

College of Community & Public Service

- **Elle Gray Teshima, Master of Science in Criminal Justice (graduated April 2014)**
  - **Thesis Title:** The Impact of Race and Offender Status on Small Business Hiring Decisions
  - **Thesis Committee:** Dr. Patrick Gerkin (Chair) - School of Criminal Justice, Dr. Jennifer Stewart - Department of Sociology, Dr. John Walsh - School of Criminal Justice, and Dr. Christopher Kierkus - School of Criminal Justice

  Elle successfully defended her thesis on March 25, 2014 and graduated at the conclusion of the Winter 2014 semester. Her thesis was selected to represent GVSU in the Social Sciences category as the nominee for the MAGS Distinguish Thesis Award.

  Her ambition for this project was apparent from the outset. Not only was she willing, but she was capable of taking on the many challenges presented by her research. Her dedication and intellectual curiosity provided the groundwork for a well written literature review and her grasp of research methodology is beyond what one would expect of a student taking on her first substantial piece of original research.

  Elle developed a solid research methodology and worked diligently to execute her strategy for the collection of original data. Her work makes a substantial contribution to the field of criminological research examining the impact of these factors on obtaining employment. Elle's work explores institutional racism and offender reintegration, which are salient issues in contemporary

American society. The final product is an incredibly well written thesis, which is a credit to Elle's academic capabilities.

Elle is currently enrolled in the doctoral program in Criminology and Criminal Justice at Southern Illinois University.

ABSTRACT

This research explores the impact of race and offender status on the hiring decisions of small business hiring managers. Cover letters, resumes, and surveys were distributed by mail to small business hiring managers in the Grand Rapids area to assess their reactions to and opinions of prospective applicants with varying racial and criminal backgrounds. The null hypothesis was supported. Respondents did not demonstrate a strong overall preference for candidates of a particular race group or offender status. The largest concern with this study is a limited sample size despite a fairly strong response rate. Social desirability bias may also limit the findings.

Padnos College of Engineering & Computing

- **Byron DeVries, Master of Science in Computer Information Systems (graduated August 2013)**
  - **Thesis Title:** Mapping of UML Diagrams to Extended Petri Nets for Formal Verification
  - **Thesis Committee:** Dr. Paul Jorgensen (Chair) - School of Computing and Information Services, Dr. Christian Trefftz - School of Computing and Information Services, Dr. Jagadeesh Nandigam - School of Computing and Information Services

Byron successfully completed his thesis and graduated at the conclusion of the Spring/Summer 2013 semester. His thesis was selected to represent GVSU in the Physical Sciences/Engineering category as the nominee for the MAGS Distinguish Thesis Award.

Byron's faculty advisor stated that "mathematicians generally prefer constructive proofs over existence proofs; they are usually more difficult, and at the same time, are more intellectually satisfying." In his thesis, Byron gave a

constructive proof that a construct he called "Swim Lane Petri Nets" are indeed logically equivalent to all three levels of UML Statecharts. His thesis is a *tour de force* of mathematics and computer science to an extremely sophisticated modeling technique. The overall impact of Byron's thesis is that the expressive capability of (several classes of) UML Statecharts is now shown to be equivalent to a form that is much more easily used and understood.

Byron has an enviable work ethic, a healthy desire to learn, and the type of creativity necessary for quality research. His efforts have benefitted the university by visibly representing GVSU via dissemination of his high-quality, graduate-level research.

Byron is currently pursuing a Ph.D. program at Michigan State University.

ABSTRACT

PURPOSE: UML Statechart Diagrams are the industry standard for modeling dynamic aspects of system behavior. However, other behavioral models, such as extended Petri Nets, are significantly easier to analyze formally. This research project creates methods of converting previously unconvertible features of UML Statechart Diagrams to extended Petri Nets to allow for additional analysis of UML Statechart Diagrams. PROCEDURES: Algorithms are introduced that convert specific UML Statechart Diagrams to a novel behavioral construct, Swim Lane Petri Nets, and subsequently to extended Petri Nets as well as direct conversions to extended Petri Nets. Algorithms are also introduced to convert both Swim Lane Petri Nets and extended Petri Nets to the PROcess MEta LAnguage (PROMELA) to allow for detailed formal verification using the SPIN model checker. OUTCOME: Formal definitions of the behavior models, XML representations of these models, and algorithms for conversions between the models are presented with a focus on traceability between translated models to allow for backtracking the results of formal analysis in the SPIN model checker to the original behavioral construct. IMPACT: While UML Statechart Diagrams are the industry standard and provide an intuitive representation of behavior models, formal analysis is limited and difficult. Providing a method of translation to extended Petri Nets, which are more analyzable but less intuitive, adds significant practical value the use of UML Statechart Diagrams in model based development.

GRADUATE STUDENT ASSOCIATION
OUTSTANDING FACULTY MENTOR AWARDS
Fall 2014

- **Dr. Denise Ludwig, Associate Professor of Communication Sciences and Disorders**
  Nominated by: Justine Koglin, Speech Language Pathology

  Justine writes: "Dr. Denise Ludwig has been an extraordinary mentor to work with. She has gone beyond her duties as a professor by acting as a clinical director and student advocate. Dr. Ludwig has been available for me to consult and learn from during every step of my accelerated program which has been instrumental in my success. She has consistently encouraged me to have confidence in my abilities.

  Dr. Ludwig has gone out of her way to include me in the Kent County Head Start program by creating a special position so that I could participate despite my limited availability. She made sure I was included and did not miss an opportunity to learn. Dr. Ludwig is an advocate for PIPES (Promoting Interprofessional Education for Students) meetings and encourages students to attend. She has also invited students to attend numerous conferences. She has even worked to bring in other resources (people) such as a mother, baby, and an author to help students learn about working with families and childhood developmental disabilities.

  As you can see, Dr. Ludwig has put forth great effort to help her students grow and learn."

- **Dr. Martina Reinhold, Assistant Professor of Physician Assistant Studies**
  Nominated by: Leah Lyons, Physician Assistant Studies

  Leah writes: "Dr. Martina Reinhold served as my research advisor over the past two and a half years as I completed my master's thesis for the Physician Assistant Studies program. Over the past two years, Dr. Reinhold has completely gone above and beyond her duties as an advisor and through this I have developed a high level of both admiration and respect for her. She dedicated countless hours to helping me critique and develop my research work, pouring over data and methods to improve the quality and advance my

knowledge in the field. She encouraged me to present my work and multiple conferences and attended each with me, even to out-of-state venues.

Her office door was always open for a conversation and she replied to all of my many emails within hours. As I neared the end of my program and began searching for jobs, she served as a reference and spoke with the neurosurgical group from which I later received a job offer. I'm grateful for all the extra time and energy that she's put into promoting and advancing my education through this program, and I know that my experience at GVSU was better for having her as a mentor."

GRADUATE STUDENT ASSOCIATION OFFICERS
Fall 2014

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Vice President: Samantha Lynn, Criminal Justice

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Graduate Council Student Elected Representatives:
Lyza Ingraham, Social Work
Samantha Lynn, Criminal Justice

Advisors:
Mr. Steven Lipnicki, Assistant Dean of Students
Dr. John Stevenson, Associate Dean of Graduate Studies

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Fall 2014

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GRAND VALLEY STATE UNIVERSITY
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