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STUDENT SCHOLARSHIP DAY COMMITTEE

Jefferson Baum
Teresa Beck
Kathleen Blumreich
Phyllis Curtiss
Chris Haven
Donna Henderson-King
Eaaron Henderson-King
Edwin Joseph
Nancy Levenburg
Colleen Lindsay-Bailey
Susan Mendoza-Jones

Lisa Miller
Kathryn Remlinger
Ross Reynolds
Dawn Rodgers
Noreen Savage
Paul Stephenson
Dorothea Thomas
Yan Yu
Wendy Wippich
Renee Zettle-Sterling
Darlene Zwart

COVER ARTIST'S STATEMENT: IAN MACNIDER

My goal with the 2006 Student Scholarship Day cover design was to convey not only the values of a Liberal Education at Grand Valley State University, but the increased awareness of our place in the emerging global society. Through the cover, it was my goal to communicate the fundamental values of Student Scholarship Day along with the growing concern for sustainable efforts within the Grand Valley community. As well-educated individuals, we have a responsibility to lead the world towards progress. This year's booklet has been produced with environmentally friendly inks and papers in order to make genuine on this philosophy. Designers have a strong influence on how society values and consumes goods. I have become conscious of this influence and the important role I play as a designer in the initiation of sustainable efforts. I'm proud of GVSU's commitment to its Sustainability initiative, housed in the College of Interdisciplinary Studies, and hope that these efforts can continue to thrive.



WELCOME FROM THE PROVOST

April 12, 2006

It is with great pleasure that I welcome you to the eleventh annual Student Scholarship Day at Grand Valley State University. Throughout the day you will have the opportunity to share in some of the year's best faculty/student collaborative efforts. The results that are on display represent a wide variety of talent ranging from scientific research and scholarly papers to art exhibits and performances.

Our students and faculty are committed to the belief that scholarship efforts, from the creation of an idea through the development and presentation of the results, provide extraordinary learning opportunities. The high level of participation and the excitement you will observe today will confirm that this kind of learning is both beneficial and enjoyable.

An event of this magnitude requires organization as well as the cooperation and dedication of many people. The College of Interdisciplinary Studies is the sponsor of this event and, in the Student Scholarship Day tradition, students, faculty and staff from the College of Liberal Arts and Sciences and the professional colleges across the University have been involved in planning and preparing for this day.

As students, faculty, friends and family, you are encouraged to attend as many of the events as your schedule will allow. It is with a deep sense of appreciation to all who have contributed in such diverse ways, coupled with pride in the accomplishments of our students, that we welcome you. I hope you have an enjoyable and satisfying experience today.

Sincerely,



Gayle R. Davis

Provost and Vice President for Academic Affairs

Welcome to Student Scholarship Day 2006,

In its eleventh year, SSD has grown from a presentation venue for math and science students to a university-wide event sponsored by the College of Interdisciplinary Studies. This year's event includes posters, oral presentations, exhibits, and performances that represent the scholarship of students from our multiple campuses and across disciplines. The interdisciplinarity of SSD reflects the University's mission of providing students a liberal education, one that educates students to actively and consciously shape their lives, their professions, and communities. Local and global issues of sustainability are at the core of this mission. In keeping with this initiative, the SSD 2006 committee selected sustainability as this year's theme.

Sustainability is the ability to continue for the long term to meet the needs of the world today—economically, socially, and environmentally—and to ensure that future generations have the resources and abilities to meet their needs. Sustainability is reflected in the SSD 2006 logo created by graphic design student Ian Macnider. Printed with environmentally friendly soy-based inks on recycled paper, the logo physically represents our commitment to the environment and visually represents local and global perspectives. You too can support the sustainability theme by recycling paper, plastic, and glass products that you use today.

Sustainability is also an intellectual act, one that explores boundaries, encourages collaboration, and fosters knowledge and growth. Student Scholarship Day faculty sponsors and student presenters embody intellectual sustainability as they work together to conduct research, to share ideas, and to develop understanding. Our keynote speaker, Mary Beth Cabana, also embodies this kind of sustainability, as a mentor to SSD committee member and dance professor, Jefferson Baum, and through her work with GVSU dance students. Most importantly, SSD students address issues of sustainability in a variety of ways, from investigating the impact of government policies on farmland preservation in West Michigan, to examining race and gender bias in physical geology textbooks, and to exploring the relationship between US economics and Latin America. These topics are but a handful of those that you will hear and see today. We invite you to explore the numerous posters and to visit the art exhibits, the Spanish poetry performance, and the variety of presentations scheduled throughout the day.

Thank you for joining us in celebrating GVSU student scholarship and for participating in Student Scholarship Day 2006.

Sincerely,



Kathryn Remlinger
Director, Student Scholarship Day
Associate Professor of English: Linguistics



Susan Mendoza-Jones
Director, Integrative Learning
College of Interdisciplinary Studies

For more information on GVSU's commitment to sustainability, visit www.gvsu.edu/sustainability.

ACKNOWLEDGEMENTS FROM THE DEAN OF THE COLLEGE OF INTERDISCIPLINARY STUDIES

Welcome to the Eleventh Annual Celebration of Student Scholarship Day at Grand Valley. I invite you all to share again in this exciting day when the Grand Valley community pauses to honor and learn from the scholarly and creative work of our students over the past year.

The College of Interdisciplinary Studies and I want to thank all those who helped in planning this event and preparing the program for today. As many of you know, planning and putting on this event takes a tremendous amount of work by students and faculty from across the university. I would like to especially thank the faculty and student committee for their hard work and support: Jefferson Baum, Teresa Beck, Kathleen Blumreich, Phyllis Curtiss, Chris Haven, Donna Henderson-King, Earron Henderson-King, Edwin Joseph, Nancy Levenburg, Susan Mendoza-Jones, Colleen Lindsay-Bailey, Lisa Miller, Kathryn Remlinger, Ross Reynolds, Paul Stephenson, Yan Yu, Wendy Wippich, Renee Zettle-Sterling, and Darlene Zwart. Heartfelt thanks go to all of you for your good ideas and hard work.

This year the committee commissioned a student artist, Ian Macnider, to design the cover of the abstract book. We are delighted with his work and want to thank him for his thoughtful creation of this year's cover. I encourage you to read his artist's statement in this book.

Thanks to My Tran and Lindsay Porter who served as the University Promotion's designers for the event's publicity. Their keen eyes and attention to detail allowed the committee to utilize Ian's image for multiple purposes. They also spent countless hours laying out the content for the abstract book. Special thanks also go to professors Kathleen Blumreich and Chris Haven for proofreading the abstract book.

Special thank you's go to Wendy Wippich and Darlene Zwart, our wonderful CSAL graduate interns, who took charge of the major share of the logistical work for the program. Wendy and Darlene, in tandem, provided much of the substantive support for the event.

I would also like to express my appreciation to the staff and student assistants in College of Interdisciplinary Studies Dean's Office, Dorothea Thomas, Noreen Savage, Colleen Lindsay-Bailey, Taylor Shannon, Jessica Trierweiler, Sarah Grow, and Kylie Cherpes. A special thank you goes to our Provost, Gayle Davis, for her continued financial and academic support for the program and for student/faculty research across the university.

Lastly, a big thank you to all the student presenters whose work we are celebrating and to the faculty who supported and guided these students. It is your day and we look forward to learning from you.

I encourage all of you attending the conference to explore a variety of presentations and posters, ask questions, and learn. I am sure you will find the day challenging and rewarding.



Wendy J. Wenner
Dean, College of Interdisciplinary Studies

HISTORY OF STUDENT SCHOLARSHIP DAY

by Professor Neal Rogness

I am pleased and proud to help welcome you to the 11th Annual Student Scholarship Day (SSD). As the originator and one of the founding members of the event and the chair of the SSD planning committee for the first nine years, I have been asked to provide a brief history of SSD. It is my pleasure to do so.

In the summer of 1995 a small group of faculty members in the Science and Mathematics Division met to explore the feasibility of creating an event in which students could present their findings from faculty-mentored research to a university-wide audience. The committee submitted an event proposal to P. Douglas Kindschi, Dean of Science and Mathematics, which he enthusiastically supported...and Student Research Day (SRD) was born. It was decided to hold the event on April 12, 1996, in conjunction with the dedication and celebration of the new Seymour and Ester Padnos Hall of Science. The committee's early projection was that thirty student participants would be a good start for a first time event. Imagine the committee's surprise and pleasure when the registration period ended with over 150 presenters registered to present almost 100 presentations! The first event was a tremendous success. However, it was unknown whether SRD could be successful as a "stand alone" event. The second annual Student Research Day was held in April of 1997 and continued to be a great success with a similar level of participation. SRD 1997 established the tradition of hosting an appreciation luncheon for the student presenters and their faculty mentors, complete with a keynote speaker.

The SRD planning committee started to get requests from students outside of science and mathematics

majors wanting to present at the event, which the committee very much welcomed. In response to these growing requests, a proposal was prepared to make the event a truly university-wide event which then Provost Glenn Niemeyer whole-heartedly supported. Students from all majors were encouraged to present and exhibit their faculty-mentored scholarly work at the event. To help make the event more inclusive, its name was changed from Student Research Day to Student Scholarship Day. The first university-wide event doubled in size with nearly 300 students giving almost 200 presentations in 1998. The first SSD keynote speaker was Dr. Robert Powell, Professor of Biology at Avila College, who talked about "Student/Faculty Collaboration: Teaching and Scholarship".

Student Scholarship Day continued to experience growth over the years. What began as an event primarily composed of science and mathematics majors has flourished with student presenters with majors from across the entire university. The GVSU community has truly embraced this annual event as a day in which to take pause and proudly celebrate the scholarly achievements of students from the past year. Many fruits of labor from GVSU students are being presented at today's event. I encourage you to explore and sample as much as you can.

Please Enjoy!

KEYNOTE SPEAKER

Mary Beth Cabana

Artistic Director, Ballet Tucson



Mary Beth Cabana, Artistic Director, has been a Principal Dancer with Cleveland Ballet, Ballet Oklahoma, Arizona Dance Theatre, and San Diego Ballet. She began her professional career at the age of 14 with Pittsburgh Ballet Theatre and graduated from the National Academy of Dance where she was a full scholarship student and member of the National Academy Ballet. She has performed extensively in the United States and has toured Europe performing in a wide variety of roles by such noted choreographers as Balanchine, Tudor, DeMille, Joos, Forsythe, Fokine, Petipa, and Nahat to name just a few.

Ms. Cabana has been on the faculties of the School of Cleveland Ballet, Ballet Arts-Carnegie Hall, Dance Concepts-NYC and was the Principal Instructor and Administrator for Arizona Dance Theatre (Ballet Arizona). She has guest taught for Kiev Ukraine Ballet and Palace of Pioneers in the former Soviet Union, in France and Mexico and continues to guest teach throughout the United States. In the summer of 2005, she was invited by famed ballerina Amanda McKerrow to direct summer intensive programs for Ballet Pacifica in Irvine, California. As a choreographer, she has produced numerous original works for Ballet Tucson and has staged dances for Arizona Opera Company, Arizona Theatre Company, Yuma Ballet Theatre, Blue Lake Fine Arts Camp, Grand Valley State University and Ohio Ballet.

Since beginning in 1986, she has been responsible for the establishment of four professional training institutions in Southern Arizona including studios in Tucson and Nogales and branch programs in Patagonia and Sierra Vista. She has also established a professional company, two children's performing ensembles, the Annual Summer Dance Workshop in Tucson, a Northern Arizona Dance Camp in Prescott, and International Dance/Cultural exchanges. She brings her wealth of experience to dancers of all ages. Her commitment to the cultivation of young talent continues as her students dance professionally in major American ballet companies and schools.

SCHEDULE OF EVENTS

8:00 a.m. - 11:20 a.m.

Oral Presentations

Padnos Hall

9:00 a.m. - 11:20 a.m.

Poster Presentations

Henry Hall Atrium

Displayed All Day

Art Work

Calder Art Center - **Stuart and Barbara Padnos Art Gallery**

Kevin Mault - Painter, Thesis Exhibition

Hallway Gallery

Three Dimensional Design & Advanced Drawing, selected works

11:30 a.m. - 1:00 p.m.

Lunch with Keynote Speaker Mary Beth Cabana

Presenters and Faculty Sponsors

Grand River Room, Kirkhof Center

1:20 p.m. - 6:20 p.m.

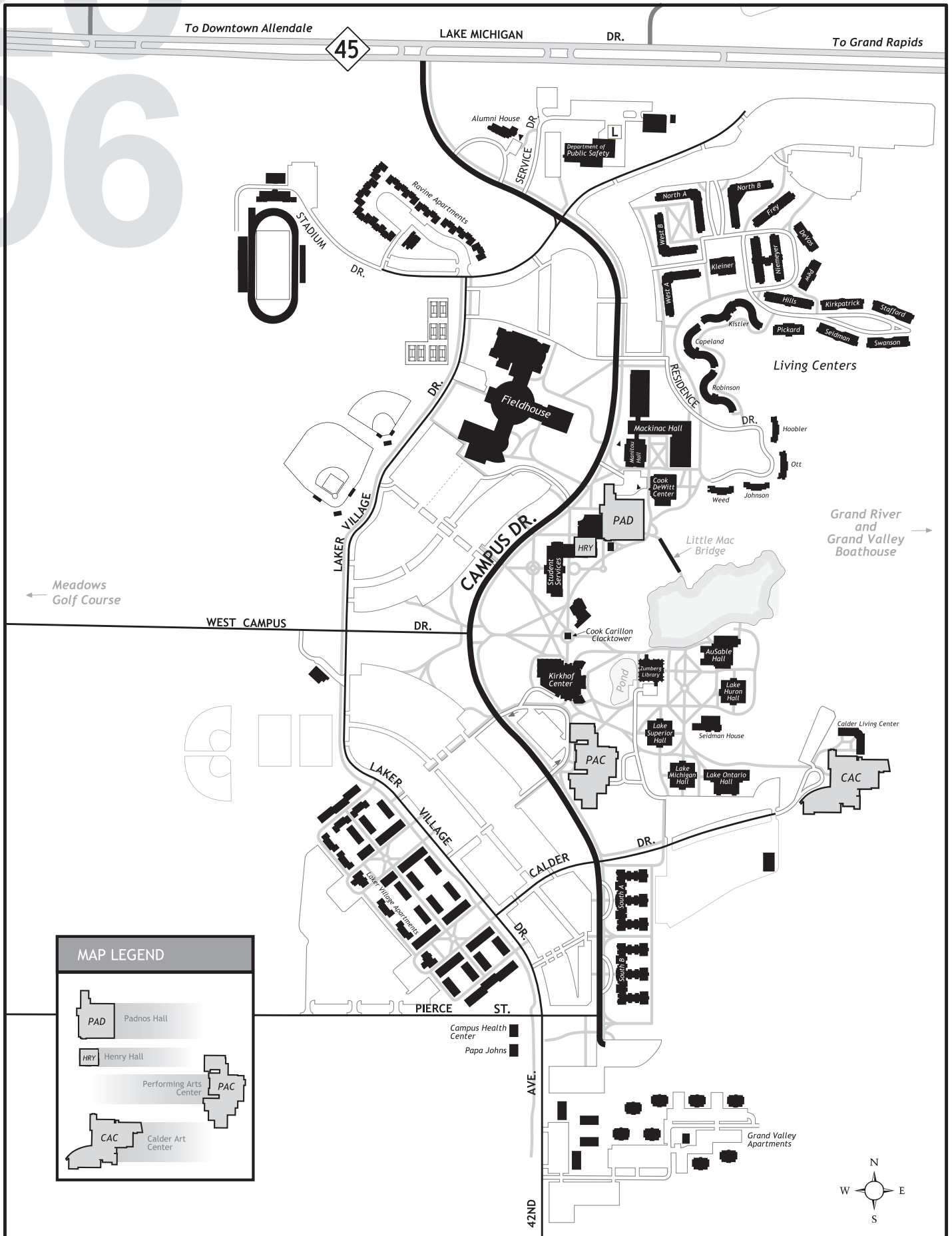
Oral Presentations

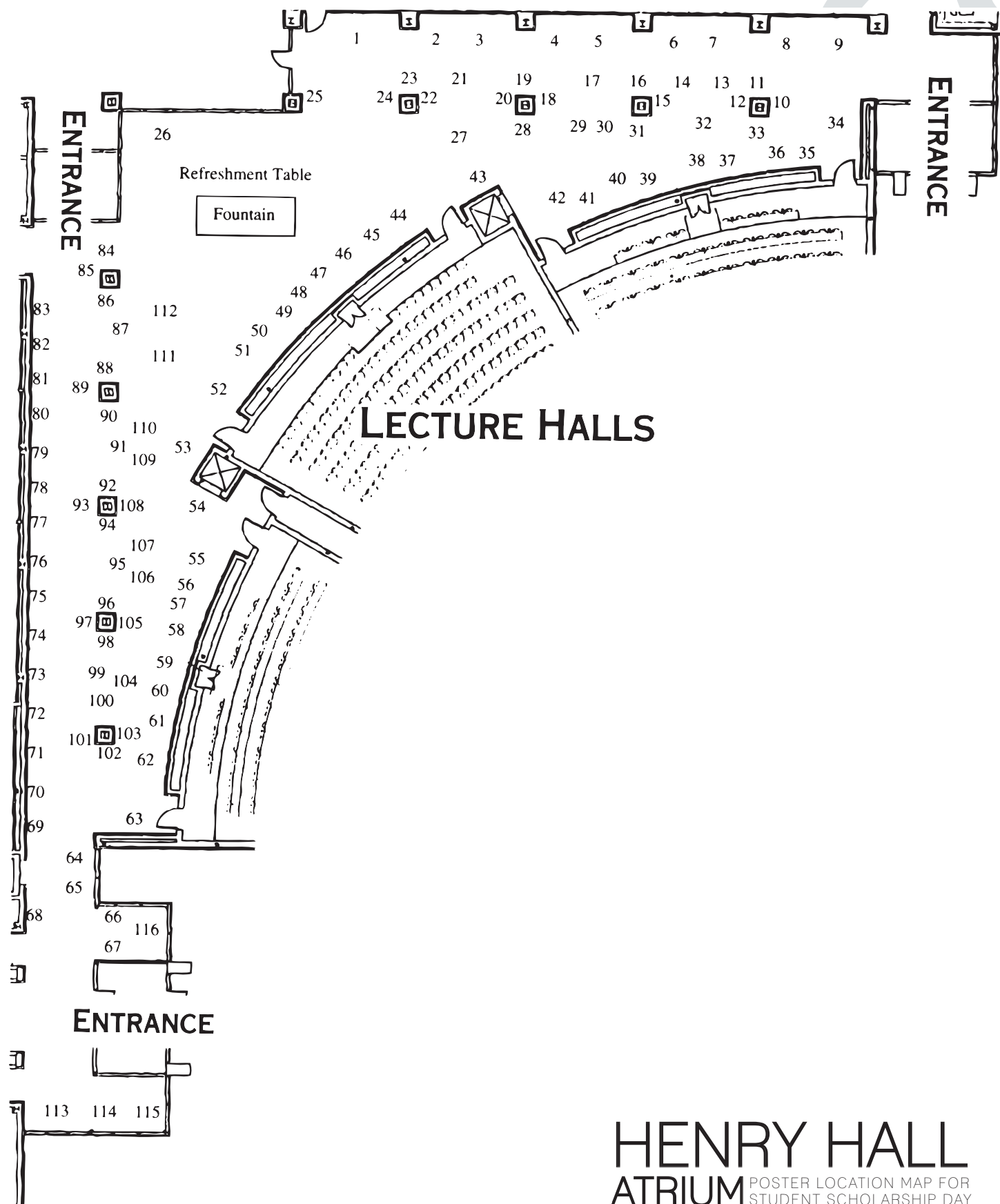
Padnos Hall

2:00 - 5:00 p.m.

Poster Presentations

Henry Hall Atrium





MORNING ORAL PRESENTATIONS

8:00 a.m.

- PAD 107 Nutritional Knowledge and Eating Behaviors of Female, Collegiate Swimmers: Jennifer Bathje, Katharine Schaefer, Chad Morris
- PAD 108 An Examination of Government Policies in Farmland Preservation of West Michigan Townships: William Poelma
- PAD 109 Understanding the Female World in Grand Rapids: Rebecca Richmond and her Friendships: Denise Ireton
- PAD 168 The Sex Trade Industry: A Growing Social Problem and Misconceptions for Entry: Annie Funke
- PAD 207 Migration, Diffusion, Emulation: A Petrographic Analysis of Transcaucasian Pottery from Malatya, Turkey: Katie Erdman
- PAD 209 Genetic Analysis of Isolated human populations from Eastern Europe: Catherine M. Willis
- PAD 210 The Objectification of Women in the Media: Is there a Difference in Views Based on Age?: Stephanie Cunningham
- PAD 211 Physical Therapy Interventions for Male Incontinence: David Kim

8:20 a.m.

- PAD 107 Evaluating functional performance and strength after a neuromuscular training program in high school basketball players: James Watson, Tiffany Duran, Kelli Kaska
- PAD 108 A Genetic Algorithm for the Minimum Tollbooth Problem: Matthew Stamps
- PAD 109 United States Democracy Promotion in the Middle East: Nicole Dissette
- PAD 168 Conservation of Amazonian fisheries: Local Efforts and challenges for sustainable use: Rob Recknagel
- PAD 207 Racism Across Countries: A Comparative Study of Representations of Race, Ethnicity, and Multiculturalism in Newspapers of Australia and the United States: Ehren Batjes
- PAD 209 The Dynamics of Modern Campaign Finance Reform: Jordan Jackson
- PAD 210 The Torque Angle Relationship of the Quadriceps Femoris in Patients with Cerebral Palsy Who Crouch Versus Able-Bodied Peers: Amy Eggleston, Brian Matz, Kurtis Smitko
- PAD 211 'An Inexpensive Raman Spectrometer for the Detection of Tyrosine Phosphorylation': Jerry Fluellen
- PAD 261 Comparison of Calculated versus Directly Measured LDL levels: Elizabeth Koerner, Angela Massaway, Tuy Su, Michael Thompson
- PAD 262 Youth Probation Recidivism: Steve Schmucker

8:40 a.m.

- PAD 107 The Apex of Anne Boleyn's Power: Michelle Horvath
- PAD 108 Brownfield Reconstruction: Past, Present and Future: Kelly Whalen
- PAD 109 Refugee Resettlement from a TRI perspective: Jenny Boor, Jamie Gearig, Nicole Olson, Tracy Gras
- PAD 168 Impact of Makoto training on reaction time, agility, vertical jump and balance in high school athletes: Amanda Whitlock, Jennifer Bloomfield, Amanda Dumont
- PAD 207 Geo-political Aspirations of the Soviet Union: Cuba and Latin America: Kevin D'Alessandre
- PAD 209 Redemption in the Wasteland: Martin Lockerd
- PAD 210 Marketing Plan: NABS: Jessica Peterson

9:00 a.m.

- PAD 107 The Fiscal Systems of Henry VII: Michelle Horvath
- PAD 108 Site Analysis and Management Recommendations for Native Grassland Prairie Restoration at the Franciscan Life Process Center: Benjamin Vinci
- PAD 109 Management of an Upland Site to Promote Wildlife Diversity: Heather Whitman
- PAD 168 The historical analysis of accountability in therapeutic recreation: Amanda Osborne, Jenny Boor, Heather Zorn, Sarah Hroncich, Laura Herberholtz
- PAD 207 Does round goby predation affect zebra mussel abundance?: Melissa Rafniski
- PAD 209 Circle Packing and Penrose Tiling: Matthew Stamps
- PAD 210 Probing the Important protein interactions involved in the regulation of cell movement: Brittany Stropich
- PAD 211 GV Fire Alarms??? Location and Causes: A Statistical Consulting Experience: Stephanie Oegema
- PAD 261 Going Back to Where You've Never Been: Exploring Outreach Opportunities and Challenges: Anne McKay, Julie Lenhart

9:20 a.m.

- PAD 107 Using Mathematics in Photography: An Exploration of Algorithms Used in Panoramic Stitching: Janelle Lautzenheiser
- PAD 108 Periodized Strength and Conditioning Program for the NFL Combine: Glen Britich, Matt Yoches, Justin Painoude CANCELLED
- PAD 109 Legality of Partner Benefits: Deborah Golefsky
- PAD 168 Analyzing differential expression of a protein kinase N allele affecting wing morphology and fertility in Drosophila: A study of the erosional effects of the Rogue River dam spillway by analysis of suspended sediment: Rockford, Michigan: Grant Koster
- PAD 207 Least Squares Properties of the Lanczos' Derivative: Nathaniel Burch
- PAD 210 The historical analysis of professional organizations in therapeutic recreation: Melissa Vander Laan, Nicole Olson, Kari Azkoul, Tess Ziegler, Jamie Gearig
- PAD 211 The Journey to Madness: Sarah Byrne
- PAD 261 Predictors of Academic Success: Rebecca Bolek

MORNING ORAL PRESENTATIONS

9:40 a.m.	PAD 107	Gravitational Assist: Two and Three Bodies: Angie Grumm
	PAD 108	Creating a Management Plan that Stimulates Forest Regeneration and Improves Profit Yields: Melissa Thornburg
	PAD 109	Varying the Number of Practice Trials for Acquisition of a Motor Skill in Children: Gwendolyn Halalay, Sarah Thoreson
	PAD 168	Discovering Market Potential for "Natural" Meats in the Greenville Area: Andrew Lieto, Sue Chen, Amy Manning, Brandon Gerard
	PAD 207	Planning and Forecasting with Parker Engineering: Armando Garcia, Brent Courson, Michael Breimayer, Geoff Kuyper
	PAD 209	The historical analysis of ethics in therapeutic recreation: Sarah Jones, Molly Zeh, Rachael Meadows, Colleen Gorton, Andrea Boyer
	PAD 210	Grain Size Analysis: Sand from a Lake Michigan Beach at Meinert Park, Muskegon County, Michigan: Andrea Magoon
	PAD 211	The Themes and Ideas of "Horizontal Accidents": Mike Salisbury
10:00 a.m.	PAD 261	National Service: Cultivating Lifelong Volunteers: Angela Sullivan
	PAD 107	Identification of a Gene Involved in Hormone-Induced Moss Development: Ilea Swinehart
	PAD 108	Perceived Barriers to Prenatal Care Among Hispanic Women: Gustavo Morelta
	PAD 109	Leaf breakdown by macroinvertebrates: does leaf size and nitrogen content affect consumption rates?: Matthew Breen
	PAD 168	The Heroes' Religion: Social Implications of Beowulf as Oral Literature: Scott Jaswicz
	PAD 207	The Effects of Blood Enhancement Chemicals on Latent Blood: Alicia Otto
	PAD 209	Distinguishing terraces along the Muskegon River by grain size and shape analyses: Newaygo County, Michigan: James Rinke
	PAD 210	Change in Body Mass Index in Obese and Non-Obese Patients Following Total Knee Arthroplasty: Taneisha Hayden, Victoria Brooks, Amanda Costen
10:20 a.m.	PAD 211	The historical analysis of the service models in therapeutic recreation: Tracy Gras, Susan Kurtz, Sarah McDonald
	PAD 261	Between Religion and Honor: Charles C. Jones and an Analysis of Antebellum Georgia: Jonathan Howard
	PAD 262	Folding Polygons into Polyhedra: Ngan Nguyen
	PAD 107	Opposition to U.S. Economic Hegemony in Latin America: Hugo Chavez and Venezuela: Rachel Jacques
	PAD 108	Examining the relationship between international organizations and national security: Holly Bennett
	PAD 109	Evaluating Wood Duck Habitat Suitability on Private Land in Southwest Allegan County: Aaron Giesler
	PAD 168	A Soybean Response to Atmospheric Methyl Jasmonate: Shannon Edwards
	PAD 207	Preventing Repeat Teen Pregnancies and Improving Child Health Outcomes: A Review of the Girls Like Me Program: Adriana Flores, Elizabeth Anderson, Roberto Miller, Lindsay Reuterdahl
10:40 a.m.	PAD 209	Sediment Variations in Vegetated versus Wind-Blown Beach Areas of Lake Michigan: Ottawa County, Michigan: Joel Kenyon
	PAD 210	Classical Chaos in Excited States of Sodium Atom: Bradley Karas
	PAD 211	A Statistical Study on Union Commitment, Involvement, and Satisfaction: Nick Somers
	PAD 261	RSA Encryption: Brian Hanson
	PAD 262	The historical analysis of philosophy in therapeutic recreation: Julie Jumisko, Joshua Dunnington
	PAD 107	What is the Price of Bottled Water?: Jacob Ross
	PAD 108	Sports Facilities: Friend or Foe?: Katie Gendemalik
	PAD 109	Trading Methods: Comparing Transect Counts and Distance Sampling for Population Estimates: Karl Rowland
11:00 a.m.	PAD 168	Advertising after 9/11: Consuming Patriotically: Sarah Tallon
	PAD 207	A Multibillion Dollar Industry Based on the Commodification of Women: Ashley Tray
	PAD 209	Correlation of Stratigraphic Sections Using Logs from Water Wells: Allendale Township, Michigan: Christie Kroskie
	PAD 210	Making the Ratio: A Case in Daycare Scheduling: Dainen Tolman, Jason Pawlos, Adam Hinman, Tanner Yager
	PAD 211	Statistical Consulting of QST Consultations: Chris Smith
	PAD 261	Stem Cell Research and Society: Patrick Hansmap
	PAD 262	The Effects of Cognition on Rehabilitation of a Client with a Traumatic Brain Injury: Kimberly Kasaju
	PAD 107	Analysis of Grand Valley State University's Physician Assistant Program Alumni Survey: Brandon Whitscell, Nathan Barden
11:00 a.m.	PAD 108	Electrochemical Manipulation of Silver Telluride: Justin Copenhaver
	PAD 109	Effects of Concentrated Animal Feeding Operations (CAFO) on Local Stream Health: Joseph Braspeninx
	PAD 168	Diel Summer Movements of Fish in Sickle Creek, Manistee County, Michigan: Andria Salas
	PAD 207	The historical analysis of research in therapeutic recreation: Kathryn Keefer, Monica Sytek, Mandy Scholten, Maureen Emaus
	PAD 209	Grain Size Analysis of an Embankment and an Actively Eroding, Longitudinal Sand Bar in Bear Creek: Muskegon County, Michigan Nathaniel Hansen
	PAD 210	Low Back Pain in Police Officers: Jennifer Arts
	PAD 211	Reagan and the Cold War: Kimberly Teichma CANCELLED

AFTERNOON & EVENING ORAL PRESENTATIONS

11:00 a.m.	PAD 261	A Comparative Analysis of Body Mass Index, Exercise Habits, Smoking and Alcohol use between Graduate Level Health and Non-health Students at Grand Valley State University: Emily Twichell, Jon Churchill, Sarah Walraven, Carey O'Donnell
	PAD 262	The Enron Collapse: What Went Wrong?: Mary Alice Homkes
1:20 p.m.	PAD 107	Constructing and Assessment of Materials to help Student Learn and Apply concepts of Energy Conservation and Entropy: Timothy Steenwyk
	PAD 108	Signs and Interpretive Materials for the Nature Trails of the Franciscan Life Process Center: Stephanie Baker
	PAD 109	Improving the Statistical Curriculum Sequence: Matt Race
	PAD 168	Physical therapy intervention targeting balance and gait in an individual following cerebellar hemorrhage: Cynthia Fiori
	PAD 207	Fast Times at Ridgemont High and Porky's: Gender perspective in the teen comedy.: Kerri VanderHoff
	PAD 209	Kinematics of the Thoracic Spine in Persons with Idiopathic Scoliosis: Meghann Phillips, Lori Swenson, Tara Tasma
	PAD 210	Improving business processes for a small business: David De Boer, Nick Armes, Jeremy Fisher, Randy Veldman
	PAD 261	Women, Realism and Hip-Hop: Cheral Ogletree
1:40 p.m.	PAD 262	An Investigation into Perceptions of Ideal for Self and Other: Regan Luepke
	PAD 107	Effects of the East Grand Rapids School System on Housing Prices: Kristen Noffke
	PAD 108	Estimation of daily milk production and dietary nutrient requirements in the Arabian mare.: Tina Stamper
	PAD 109	Statistical Consulting Experience: The Analysis of General Education Courses: Katelin Krummrey, Brittany Dallas
	PAD 168	Grain Size Analysis of Beach Sand from Eight Different Coastal Areas: Sydney Boos
	PAD 207	An Introduction to Mobius Transformations: Eric Simon
	PAD 209	Role Exercise vs. Occupation-Based Activity: Patient's Perceived Meaning: Andrea Merrill, Carrie Sage, Joe Rocznick
	PAD 210	Becoming Invisible: The New Homeless Illusion: Kevin Rupina
2:00 p.m.	PAD 211	Patterns of Charitable Giving Among Employees of Public Schools: Stephanie Tuttle
	PAD 261	"Nineteen Century Society of Spain": Tina Struyk
	PAD 262	Kirov's Murder: A Historical Debate: Brett Homkes
	PAD 107	Understanding the Informal Sector in Santiago, Chile: Catherine Sundt
	PAD 108	Invasive Species Management at Ridge Point Church: Cody Weener
	PAD 109	Howard Christensen Nature Center: A New Forest Management Plan: Joseph Westerhof
	PAD 168	Education for Democracy: Discovering Civic Engagement: Sally Sayles
	PAD 207	Exploring the GVSU Trail Systems: Ben Terpstra, Tim Kolmodin, Derek Whittington, Bob Morrison, Ryan Locke
2:20 p.m.	PAD 209	A Study of Glacial Sand Deposits on and near the Grand Valley State University Campus: Ottawa County, Michigan: Kirk Perschbacher
	PAD 210	George W. Bush and No Child Left Behind: Mandi Bird
	PAD 211	Correlations in Breastfeeding and Physical/Mental Development of Pre-term or Low Birth Weight Infants: Holly Lee, Cory Cameron, Marci Meister
	PAD 261	Identifying and Assessing Water Pollution in the Ravine System of the GVSU Allendale Campus: Lindsey Dewenter
	PAD 262	Training for Trust in the Performance of Golf Skills: Wedge Feel Shots: Michael Brossman, Mark Liley, Douglas Elliott
	PAD 107	Quantitative Topography Measurements of Periorbital Skin In Vivo: Method Development Using Digital Stripe Projection Techniques: Brittany Malover
	PAD 108	Delegation to Physical Therapy Aides in Michigan: Jamie Morton, Nichole Eickholt, Theresa Rheume
	PAD 109	Legislating Biodiversity: Proposed Changes to the Endangered Species Act of 1973: Marnie Suhr
2:20 p.m.	PAD 168	XANTHOS: A Powerful Ligand for C-N Coupling: Kyle DeKorver
	PAD 207	Attitudes Towards Disability in Students Pursuing a Profession in Rehabilitation: Adrienne Stephen, Anne Cooke, Jeff Rigley
	PAD 209	Grain Size and Petrographic Analysis of Ooids from Great Salt Lake and the Bahamas: Abbey Post
	PAD 210	Training for Trust in the Performance of Golf Skills: Driver Tee Shots: Mark Liley, Douglas Elliott, Michael Brossman
	PAD 211	The awakening: Amanda Kak
	PAD 261	Fantasies of the Ideal Body: Jesse Veenstra
	PAD 262	The Effects of Infant Age on Parental Vocalizations About Object Categories in a Play-type Setting: Katherine Schwartzkopf

AFTERNOON & EVENING ORAL PRESENTATIONS

2:40 p.m.	PAD 107	A Wide and Fruitful Land: Jefferson and the Seeds of American Empire: Brian Flanagan
	PAD 108	Vocational Satisfaction and Other Demographics of GVSU Physician Assistant Graduates: Chris LaFlure, Rebekah Lange, Paul Orquist, Christine Batcock
	PAD 109	When Psychopaths Go To College: Psychopathic Traits and College Maladjustment: Lyndsey Adams
	PAD 168	New Orleans in the Aftermath of Hurricane Katrina: Anne Miliken
	PAD 207	Measuring Trust in the Performance of Golf Skills: Comparison of the Use of Self-Report and Process Data: Michael Brossman, Mark Liley, Douglas Elliott
	PAD 209	Grain Size and Shape Analysis of Sand Collected Along a Lake Michigan Beach Profile: Kirk Park, Michigan: Jillian Kurek
3:00 p.m.	PAD 210	Catalog of SGR Events from Rosal X-ray Timing Explorer: Abram Bos
	PAD 211	Subpoena the Symposium: Classical Scholarship in the Courtroom: Kristen Heise
	PAD 262	Impacts of Restoration in the Manistee River Watershed, MI: Response of the Physical Habitat: April Wright
	PAD 107	MLL Spanish Panel - Memorias de la Isla Tina Struyk: "Reflejos de una sociedad: la sociedad española en Galdós y en Pardo Bazán", Sarah Stahl: "Gender and Archetypes in José Zorrilla's Don Juan Tenorio" Katie Eklund: "Un rechazo y un abrazo: La Virgen de Guadalupe en el arte chicano" Megan Koops: "Viva la Cultura: Mexican and Chicano Revolution" Elizabeth Barko: "Memorias de la Isla" Catherine Sundt: "La poesía de viaje" Tina Struyk, Sarah Stahl, Katie Eklund, Megan Koops, Elizabeth Barko, Catherine Sundt
	PAD 108	Using GIS Technology to Reestablish a Coherent System of Hiking, Fitness, and Nature Trails around Grand Valley State Universitys: Ryan Locke
	PAD 109	Lyndon Johnson and the Great Society: Melissa Ware
3:20 p.m.	PAD 168	EMG analysis of the middle and lower Trapezius during four prone exercises: Jodi Wusthoff, Elissa Kinney, Amy Zyck
	PAD 207	The Human Element of Lean Enterprise: Jeff Thomassen
	PAD 209	Heavy Mineral Analysis of Lake Michigan Beach Sediment from Kirk Park, Ottawa County, Michigan: Jason Stewart
	PAD 261	Surface and Fine Wire EMG of the Rectus Femoris in the Weight Acceptance Phase of Gait: Effect of Knee Flexion: Kristen Klompstra, Katie Holland, Liz Jenkins
	PAD 262	Patterns in Beliefs, Attitudes, and Knowledge of Grand Rapids Poverty: A Survey of GVSU students: Kevin B. Hoxie
	PAD 107	MLL Spanish Panel - Memorias de la Isla, Continued from 3 PM: Tina Struyk, Sarah Stahl, Katie Eklund, Megan Koops, Elizabeth Barko, Catherine Sundt
3:40 p.m.	PAD 108	Wind energy feasibility in West Michigan: Jordan Devries, David Dyer
	PAD 109	Dispersal Capabilities of the Karner Blue Butterfly: Yumiko Chattulani
	PAD 168	Energetics of a Super Abundant Brown Trout (salmo trutta) Population in Pine Creek, Michigan: Kevin Donner
	PAD 207	EGR Co-ops: Jeffry Roberts
	PAD 209	Grain Analysis of Sand from Nearshore Bar to Backshore Beach: Eastern Shore of Lake Michigan, Ottawa County Michigan: Carson Klemp
	PAD 210	Gender and Archetypes in Jose Zorrilla's Don Juan Tenorio: Sarah Stahl
3:40 p.m.	PAD 211	Identification of plant homologs to the p88 subunit of katanin: Rebecca Kalbasi
	PAD 261	Stream Bank Stabilization and Restoration Management Plan for Little Muskegon River: Christopher Tilton
	PAD 107	MLL Spanish Panel - Memorias de la Isla, Continued from 3 PM: Tina Struyk, Sarah Stahl, Katie Eklund, Megan Koops, Elizabeth Barko, Catherine Sundt
	PAD 108	Service Access and Availability Mapping for Chester Township: Matt VanPortfliet
	PAD 109	Small, Divided, and Ambivalent: World War I French Labor: Andrew Dascola
	PAD 168	Agricultural Land Use Study: Elizabeth Gorski
3:40 p.m.	PAD 207	Puerto Rican Spanish Pronunciation: A Statistical Consulting Story: Jeffrey Breault, Stephanie St. Jacques
	PAD 261	Controlling Erosion in the Ravine Streams of GVSU: A Management Plan: Luke Gilner
	PAD 262	Adaptation, Imitation, and the Comically Cliche in Matt & Ben: Adam Bowers

AFTERNOON & EVENING ORAL PRESENTATIONS

4:00 p.m.	PAD 107	MLL Spanish Panel - Memorias de la Isla, Continued from 3 PM: Tina Struyk, Sarah Stahl, Katie Eklund, Megan Koops, Elizabeth Barko, Catherine Sundt
	PAD 108	Comparing Spring Runoff Water Quality to Baseflow Water Quality in Crockery Creek: Michelle Lelli
	PAD 109	Exploring Young Adult Literature of the Middle East: Annie McKay
	PAD 168	Experimental Model Analysis of an Acoustic Guitar: Cristina Carabulea
	PAD 207	Comparison of Student Learning During Traditional and Interactive Engagement Lectures on Geometrical Optics: Brandon Branch
	PAD 209	Overview of the Bedrock Geology of Isle Royale: Samantha J. Hawkins
	PAD 210	The Puppet Show: Madalyn Koster
4:20 p.m.	PAD 211	Do Blogs Make Better Writers?: Megan Ward
	PAD 107	MLL Spanish Panel - Memorias de la Isla, Continued from 3 PM: Tina Struyk, Sarah Stahl, Katie Eklund, Megan Koops, Elizabeth Barko, Catherine Sundt
	PAD 108	The Effect of Makoto Training on Functional Balance in Persons with Traumatic Brain Injury: Jennifer Wrobel, Laura Yost
4:40 p.m.	PAD 109	Distinguishing Between Point Source and Non-point Source Pollution Based on Dissolved Oxygen Data for Sawyer Creek, Ottawa County, MI: Adam Doan
	PAD 107	Outer Billiards at Infinity: Samuel Otten
	PAD 108	The 21st Mexican and Chicano Revolution: ¡Viva la cultura!: Megan A. Koops
5:00 p.m.	PAD 168	A Statistical Consulting Experience: The Effects of Religion on Political Efficacy: April Schneider, Julia Kukulski
	PAD 107	Green Golf: Stepping up to the Tee for Environmental Quality: Zach H Vanderbush
	PAD 108	The New Guinea Campaign: A New Perspective Through the Use of Oral Histories: Kelli Brockschmidt
5:20 p.m.	PAD 168	Location, Location, Location: Environment and the Writing Center: Michael Cheyne
	PAD 107	Everyday Excel: Michael Corwin
	PAD 108	The Themes and Ideas of "Horizontal Accidents.": Mike Salisbury
5:40 p.m.	PAD 107	Meta-Research Perspectives on Mass Customization Based on Life Cycle Literature Survey (1987-2005): Melinda Mitchell
	PAD 108	Otherness: Dorothy Davey
	PAD 168	Cats & Dogs: An examination of feline/canine symbolism in James Joyce's Ulysses: Brooke Heintz
6:00 p.m.	PAD 107	Individual vs. Community in Plato's "Crito": Aaron Rozeboom
	PAD 108	Development of Environmental Issues lesson Plan for Children K-5: Rachel Boss
	PAD 109	Like Silent Raindrops Fell: Brooke Heintz
6:00 p.m.	PAD 168	Analyzing differential expression of a protein kinase N allele affecting wing morphology and fertility in Drosophila: Billie Hooker
	PAD 107	Reflection on Reminiscence with a Hospice Patient: Genevieve Barnett
6:00 p.m.	PAD 109	Because I Love You - Because She Loves Herself : Concerning Robert's role as a Mirror for Edna's Self-Reflection in "The Awakening": Brooke Heintz

POSTER PRESENTATIONS

9:00 a.m.
to
5:00 p.m.

Atrium Display 1	The Acute Responses of Coronary and Pulmonary Arteries to Natural Steroids: Timothy Trichler
Atrium Display 2	Asymmetric Substitution at Silicon: Emily Blamer
Atrium Display 3	Estimating Butterfly Populations Using Distance Sampling: Michael Calkins, Karl Rowland, Yumiko Chattalinni
Atrium Display 4	Analysis of Grand Valley State University's Physician Assistant Program Alumni Survey: Kristina Nitzsche, Kelly Teft, Jill Thorpe
Atrium Display 5	Molecular Mechanics of Carbonmonoxyhemoglobin: Akanda Stabbeboom
Atrium Display 6	Development of a Conditional CD82 Knockout Mouse: Katie Scan
Atrium Display 7	The Relationship between Streptococcus bovis and Colon Carcinogenesis: Lisa Nienhuis, James Hurst CANCELLED
Atrium Display 8	A Statistical Consulting Experience: Analysis of Values and Cheating: Jason Keintz
Atrium Display 9	Isolation of retroviral junction fragments: Katherine Strauss
Atrium Display 10	A Statistical Consulting Experience: Analyzing Weather Data for Evidence of Global Warming: Janelle Lautzenheiser
Atrium Display 11	Plasma Cell Leukemia: A Case Study: Megan O'Keefe, Joshua Kling, Mara Tornga
Atrium Display 12	Effect of Underfilling EDTA Tubes on CBCs: Laura Eckelkamp, James Hurst
Atrium Display 13	Current Trends in Diagnosing and Treating Strep Throat: An analysis: Heather Simon, Sarah Mahr
Atrium Display 14	Examining the communication processes and factors related to participation in primary prevention programs for dating relationships: Nicole Resseguie, Jennifer Milken
Atrium Display 15	Diode-laser-based method for measuring the $^{13}\text{C}/^{12}\text{C}$ ratio in carbon dioxide: Andrew Berke
Atrium Display 16	The Quick Ratio - How should it be calculated?: Beth Rye
Atrium Display 17	Analysis of a Drosophila Melanogaster stock containing two transposon insertions: Amanda Bliemeister
Atrium Display 18	Race and Gender Bias in Physical Geology Text Books: Michelle Bridenstine, Paul Meek, Amanda Wigent, Tamara Waters, Emmeline Davis, Lindsay Shepard, Alexander Koning, Matthew Ritchie, Bridget Burns, Angela Slater, Neil Schafer
Atrium Display 19	Periodized Strength and Conditioning Program for the Overhand Throwing Athlete: Marcie Stineman, Justin Patnoudé, Todd Terpstra
Atrium Display 20	Neuropathy in Diabetic Retinopathy: Jennifer Nyland
Atrium Display 21	Physical and Psychosocial Effects of Chronic Lung Disease: Lindsay Hourtienne
Atrium Display 22	Positive and Negative Perfectionism: Correlations with Obsessive: Melissa McDonald
Atrium Display 23	Descriptive Statistics of the Calcium Intake Inventory: Todd Beck
Atrium Display 24	Periodized Strength and Conditioning Program for the NFL Combine: Matt Yodanis
Atrium Display 25	Solid Phase Peptide Synthesis (SPPS): Analysis and Identification of Protein Kinase Substrates: Derrick Kroodsmo
Atrium Display 26	Sample Prep Techniques for Infrared Spectroscopy: Jessica Boucher
Atrium Display 27	German Immigrants in the Former Soviet Union from the Reign of Tsarina Catherine the Great to the Present: Robin Garlock
Atrium Display 28	Retrograde amnesic effects of microinjections of cGMP inhibitor: Jordan Bentley
Atrium Display 29	Determination of Phosphorus Species in West Michigan Watersheds by ^{31}P NMR: Maysee Salleva
Atrium Display 30	Peptide Synthesis for Protein Tyrosine Kinase Substrate Analysis: Anthony Pedley
Atrium Display 31	Fetal Fibronectin Testing in Twin Pregnancies: Nicole Powers, Theresa Vree
Atrium Display 32	Anterograde amnesic effects of microinjections cGMP inhibitor LY-83583 to the goldfish telencephalon: Todd Miller
Atrium Display 33	Teaching Social and Play Skills to Children with Autism: Erin Lee, Allison Graham, Nicole Henriksen, Angela Graham
Atrium Display 34	29 Year Old Female Patient with Acute Respiratory Distress Syndrome: Stephanie Wilkins
Atrium Display 35	Captivity affects sperm production in male House Sparrows (Passer domesticus): Erin McCombs
Atrium Display 36	The Effects of Perceiver Religious Fundamentalism and Target Motivation on Perceptions of Morality: Nicole Resseguie, Jane Ladeg, Kelly Ames, Nate Knapp
Atrium Display 37	Maori Art and the Visual Representations of Culture: Jamie Wasilchenko
Atrium Display 38	Do You Want to Know?? Investigate: CLS: Audrey Garner, Susan Judd
Atrium Display 39	Kinetic studies of CKA mutants: Doug Barth, Brian Smith
Atrium Display 40	Learning About Statistical Consulting: Analysis of Children's Perception of Physical Activity: Erik LaPointe
Atrium Display 41	Effects of Storm Water Runoff on the Campus of Grand Valley: Jo Hooker
Atrium Display 42	Standardizing the Protean IEF System for 2-D Gel Electrophoresis with Immobilized pH Gradients: Ryan Romans
Atrium Display 43	Support for Animal Welfare as a Function of Religious Fundamentalism and Belief in Evolution: Katherine Poiras, Torie Stanton, Cassandra Aebersold
Atrium Display 44	Studies into the Transfer Hydrogenation of Ketones using Transition Metal Catalysts: Katherine Cornish
Atrium Display 45	Differences in Acceptance of Cosmetic Surgery according to Gender and Peer Influence: Stephanie Gooden, Holly Tenbrink
Atrium Display 46	Periodized Strength and Conditioning Program For Elite Olympic Distance Triathletes: Andy Duenling, Kara Egan
Atrium Display 47	The Light Box: Jessica Wood
Atrium Display 48	The Relationship between Cosmetic Surgery Attitudes and Objectified Body Consciousness: Lauren Hodson
Atrium Display 49	Muscle Activation During Therapeutic Exercises of the Shoulder: Stacy Makino
Atrium Display 50	The D.C. Experience: Crystal Boyer

POSTER PRESENTATIONS

9:00 a.m.
to
5:00 p.m.

Atrium Display 51	ADHD and Ethnicity: Shanel Bryant
Atrium Display 52	The Effects of Infant Age on Parental Vocalizations About Object Categories in a Play-type Setting: Katherine Schwartzkopf
Atrium Display 53	A Statistical Consulting Experience: Analysis of the Death Penalty: Tyler Armstrong, Andrew Post
Atrium Display 54	A Statistical Consulting Experience: A Who's Who of General Education: Wende Stuck
Atrium Display 55	Attorney Perspectives on Juvenile Competency to Stand Trial: Erica Ackerman
Atrium Display 56	Periodized Strength And Conditioning Program For High School Sprint Swimmers: Brandon Adams, Ashley Anderson
Atrium Display 57	A Case Study on Hydrops Fetalis: Melissa Anes, Jessica Warner
Atrium Display 58	A Periodized Strength and Conditioning Program for a Marathon Runner: Jenna Anderson, Lainie Bisbee
Atrium Display 59	Aquarium Management: New Techniques and Approaches Using GIS Technology: Stephanie Baker, April Szatkowski, Jason Tutsch
Atrium Display 60	Molecular Cloning and Sequencing of Histidine Decarboxylase (Hdc) Alleles in <i>Drosophila melanogaster</i> : Montaigne Birdsey
Atrium Display 61	Periodized strength and conditioning program for a collegiate golf team: Erin Bremer, Lynn Johnson
Atrium Display 62	Periodized Program for the Industrial Employee: Brandi Bernard, Eric Snyder
Atrium Display 63	A Preliminary Analysis of Self-Efficacy and Fatigue in a Chronic Disease Self-Management Program: Anita J Buitenwerf
Atrium Display 64	Establishing the location and True Orientation of Grand Valley Campus Building Facilities Using CAD and GIS Technology: Ian Clowes, Matt LaShell, David Welch, Clinton Kerner
Atrium Display 65	The Ins and Outs of Grand Valley State University: Lesley DeGroot, Katy Schoelzow, Mac Brown
Atrium Display 66	New Product Development "The Top Shot": Adam DenHerder, Stephanie Tierney
Atrium Display 67	Alternatives to the War on Drugs and Drug Legalization: Jacklyn P. Everage
Atrium Display 68	How to Make Effective Use of Assessment Data for Remediation of Low Performing Students: Cynthia Groenink
Atrium Display 69	Differences in Acceptance of Cosmetic Surgery according to Gender and Peer Influence: Stephanie Gooden, Holly Tenbrink
Atrium Display 70	Effects of tree-of-heaven toxins on rodent herbivory: Joe Haydon
Atrium Display 71	Selective constraint in Vector-born versus Non-vector-born parasites: Benjamin Hake
Atrium Display 72	Do plants contain katanin p88 homologous genes?: Nathaniel Horwitz
Atrium Display 73	Pdn (n=1-6) cluster interaction with small organic molecules: A DFT study: Jesse J Lutz
Atrium Display 74	Periodization Strength and Conditioning Program for the Female Collegiate Soccer Athlete: Shae Robinson, Erica Demers
Atrium Display 75	Abiotic factors associated with the timing of peak color changes in deciduous trees: Carrie Roossinck, Heather Miller
Atrium Display 76	A study on student access to cocaine, heroin and marijuana: Candace P. Rosekopf
Atrium Display 77	Integrating GIS into Facilities Management at Grand Valley State University: Steve Strang, Dustin Hall, Melanie Johnson, Nathan Mort
Atrium Display 78	Individual-to-group generalization within the intergroup context: Katie Sherman, Jennifer Lovequist, Chelsea Talaski, Caitlin Ufer, Lauren Pieschala
Atrium Display 79	Telling stories about cosmetic surgery: Do values matter?: Neil Sauter
Atrium Display 80	Water Evaporation from Tropospheric Aerosols: Nathan Silackie
Atrium Display 81	Would you like fries with that? How to find a full time job in a depressed economy: Steve Schmucker
Atrium Display 82	Strength and Conditioning Program for Collegiate Baseball Pitchers: Dave Schmidt, Matt Pural
Atrium Display 83	Synthesis of Polyimides from Various Bisphenols: Anthony Schultz
Atrium Display 84	Strength and Conditioning Periodization Within The Martial Arts: Chad Smith
Atrium Display 85	Reading Rainbow: The Emergence of GLBT Themes in Young Adult Literature: Alexis Schlieve
Atrium Display 86	A Statistical Consulting Experience: Predicting Giving of GVSU Alumni: Amanda Vincent, Michael Baker
Atrium Display 87	Mapping the Location of Storm Drain Discharge Points on the Allendale Campus Using GIS Technology, and Evaluating the Impact on the Surrounding Landscape: Erin Wildt, Laura Whistler, Devon Lucas, Tania Howard
Atrium Display 88	Dressing Tweens: A Study of Adolescent Females: Sara Wiltbrodt
Atrium Display 89	Neurotoxic Effects of PCB Congeners 52 and 153 in Goldfish: Adam Werfs
Atrium Display 90	Distributing Jump Distances for a Synthetic Disk Array Workload: Jeremy Zito
Atrium Display 91	Competitive Bowling: Jeremy Pfaffenger
Atrium Display 92	Communicated Myths: Conscious or Unconscious Adherence: Henry Auchart

ORAL PRESENTATION ABSTRACTS

Beginning at 8:00 AM

PAD 107

Nutritional Knowledge and Eating Behaviors of Female, Collegiate Swimmers

Presenter(s): Jennifer Bathje, Chad Morris, Katharine Schaefer

Research has shown that many female athletes have inadequate diets due to lack of nutritional knowledge and nutritional misconceptions. Poor nutritional knowledge may lead to an increased chance of an athlete developing the Female Athlete Triad, a trio of amenorrhea, low bone density, and eating disorders. Physical therapists, as part of a multi-disciplinary team, must be knowledgeable about sports nutrition and dietary misconceptions to treat female athletes in a holistic manner. The purpose of this study was to determine the nutritional knowledge of female collegiate swimmers and how effectively they apply their nutritional knowledge to their everyday eating habits. Eighty-five female collegiate swimmers from six Michigan universities completed a nutritional questionnaire and 24-hour food recall. Demographic, nutritional, and statistical data were analyzed using NutritionistPro Software and SPSS. Results and clinical implications for health professionals will be discussed.

Sponsor(s): Barbara Hoogenboom

PAD 108

An Examination of Government Policies in Farmland Preservation of West Michigan Townships

Presenter(s): William Poelma

The developmental stress of a township affects its participation in farmland preservation. Two policies made to help preserve farmland are the Purchase of Developmental Rights (PDR) and The Farmland and Open Space Preservation Program (PA 116). The goals of these policies are to get landowners involved in preservation. In this study, township officials and farmers from Polkton, Wright, and Alpine townships will be interviewed in order to determine the amount of participation there is in these policies and how aware the landowners are of these policies. The result of this report will help ascertain the effectiveness of these policies.

Sponsor(s): Neil MacDonald

PAD 109

Understanding the Female World in Grand Rapids: Rebecca Richmond and her Friendships

Presenter(s): Denise Ireton

Rebecca Richmond grew up in Grand Rapids and was reaching young adulthood as the Civil War broke out in the United States. Attending Brooklyn Heights Seminary (NY) and graduating in 1859, Rebecca returned to Grand Rapids and continued to live with her family. She involved herself with many groups and organizations, including St. Mark's Church. William Richmond, her father, sacrificed time with his family in order to fulfill work obligations. Her mother, Lorraine Richmond, influenced Rebecca because they spent considerable time together. As the oldest child, Rebecca had a younger brother, Jonathan, who enlisted in the Navy, and a younger sister, Mary, who eventually married and moved to California. Socially, Rebecca built friendships at the Seminary which contributed to her networks in Grand Rapids. Her most influential friend was her cousin Elizabeth Bacon Custer. Like other American women during the nineteenth century, Rebecca formed friendships with other women to create a s

Sponsor(s): Kelly Lankford

PAD 168

The Sex Trade Industry: A Growing Social Problem and Misconceptions for Entry

Presenter(s): Annie Funke

Previous research on prostitution has indicated that the age of entrance in the sex trade industry has declined; the average age has now been established as eleven-fourteen years old, with some children as young as nine entering the sex trade industry. My research will explore the factors that contribute to this social problem, what motivates and enables sexually victimized adolescents to leave the sex trade industry and the common misconceptions of entry into prostitution. My preliminary research has indicated that past sexual abuse, running away and drug addiction contribute to entry into the sex trade industry. Currently, intervention from social service

ORAL PRESENTATION ABSTRACTS

workers or law enforcement, continued abuse from “pimps or johns” and poverty have been named as the factors that have facilitated exploited adolescents out of prostitution. Finally, my research explores Grand Valley State University’s student’s attitudes toward “prostitutes” or “pimps”; specifically, why people enter and leave the sex trade industry.

Sponsor(s): Don Williams

PAD 207

Migration, Diffusion, Emulation: A Petrographic Analysis of Transcaucasian Pottery from Malatya, Turkey

Presenter(s): Katie Erdman

During the fourth and third millennia B.C., evidence of Transcaucasian culture appears throughout much of Eastern Anatolia. Migration, diffusion, and emulation are the leading theories to explain the presence of Transcaucasian culture in this region, in particular, the distinct black burnished pottery type associated with this culture. This paper focuses on the preliminary results of a petrographic analysis of pottery from Malatya-Elazig region of Turkey. Our results demonstrate the utility of this method in analyzing this problem and provide suggestive results as to the nature of Transcaucasian material culture in Anatolia.

Sponsor(s): Mark Schwartz

PAD 209

Genetic Analysis of isolated human populations from Eastern Europe.

Presenter(s): Catherine M. Willis

The study of human evolution involves a multidisciplinary approach, including archeology, anthropology, and genetics. The ancestral origin of human beings can be traced according to a variation in nucleotide sequence patterns of mitochondrial DNA (mtDNA). In this study, we analyzed the mtDNA from an isolated human population consisting of two ethnographically distinct subpopulations from a mountainous region of Ukraine. The goal of this analysis is to examine the origins of this population and its relatedness to other European human populations. The amplification of the human mtDNA samples was done by a polymerase chain reaction (PCR) followed by restriction fragment length polymorphism (RFLP) analysis. We found that both subpopulations can be identified by a distinct pattern of mtDNA variation that is different from the variation found elsewhere in Europe.

Sponsor(s): Alexey G. Nikitin

PAD 210

The Objectification of Women in the Media: Is there a Difference in Views Based on Age?

Presenter(s): Stephanie Cunningham

The objectification of women by the media is an ongoing issue that affects both men and women. Some of the effects by the media are men’s view toward women, and women’s views of themselves. Two main forms of data collecting were undertaken to further understand media’s objectification of women. First, a focus group was held, comprised mainly of college aged men and women. They were subjected to pictures of advertisement and their thoughts and views recorded. Second, two surveys were conducted. One survey was given to college aged men and women, a second survey was given to high school aged males and females. The two different age groups were studied to observe the affects of the media on a younger and older audience.

Sponsor(s): Don Williams

PAD 211

Case Report: Physical Therapy Interventions for Male Incontinence

Presenter(s): David Kim

This case report describes the management of a 64 year-old status post male bulbourethral sling procedure secondary to post-radical prostatectomy urinary incontinence. The treatment of this patient involved generalized strength conditioning and pelvic floor exercises. This presentation will evaluate the efficacy of physical therapy interventions for male incontinence.

Sponsor(s): Barbara Baker

ORAL PRESENTATION ABSTRACTS

Beginning at 8:20 AM

PAD 107

Evaluating Functional Performance and Strength After a Neuromuscular Training Program in High School Basketball Players

Presenter(s): James Watson , Tiffany Duran , Kelli Kaska

Every year, many athletes suffer knee injuries. The PEP (Prevent Injury and Enhance Performance) training program has been proven to decrease the risk of sustaining a knee injury, but has not been measured for its strength or athletic enhancement. The purpose of this research was to determine if any changes occurred in high school basketball players following the PEP training program compared to players who did not participate in the program. Sixty-five Michigan and Ohio basketball players were included in this study. Pre and post measures of strength and athletic performance were completed to determine changes. In five out of six measures, the intervention groups had greater improvement than the control groups. When comparing genders, the girls intervention groups had greater improvements than the boys in all six measures. In general, this research showed that neuromuscular training can improve strength and athletic performance beyond traditional basketball practice alone.

Sponsor(s): Barbara Hoogenboom, John Gabrosek

PAD 108

A Genetic Algorithm for the Minimum Tollbooth Problem

Presenter(s): Matthew Stamps

This presentation considers the minimum tollbooth problem (MINTB) for determining a tolling strategy in a transportation network that requires the least number of toll locations, and simultaneously causes the most efficient use of the network. Since current nonlinear program solvers require unreasonable amounts of time, a more efficient heuristic method has been investigated. The talk offers a genetic algorithm to solve MINTB, and reports numerical results on small networks.

Sponsor(s): Lihui Bai, Valparaiso University

PAD 109

United States Democracy Promotion in the Middle East

Presenter(s): Nicole Dissette

Sponsor(s): Heather Tafel

PAD 168

Conservation of Amazonian Fisheries: Local Efforts and Challenges for Sustainable Use

Presenter(s): Rob Recknagel

Rural and cultural development has been greatly affected by the fisheries resources of Amazonia. The people of Amazonia have evolved and adapted to strategically capture enough protein for survival. Certain Amazonian fisheries and resources have been managed with systems that have endured for generations. The strength of traditional systems has been challenged by the economic and environmental pressures placed on the rural inhabitants of Amazonia by their harsh surroundings. This paper focuses on the viability of current and traditional fisheries management systems and their potential for effective implementation. It explores how local strategies have evolved to maximize protein harvests with concern for the fragility of species relative to environmental and seasonal factors. Depletions of traditionally important species and impact of the loss of harvestable biomass is of special interest. Increased competition for these resources, including commercial fishing, raises concerns about the sustainability of Amazonian fisheries.

Sponsor(s): Jim Penn

ORAL PRESENTATION ABSTRACTS

PAD 207

Racism Across Countries: A Comparative Study of Representations of Race, Ethnicity and Multiculturalism in Newspapers of Australia and the United States

Presenter(s): Ehren Battjes

Abstract: The media has a strong impact on personal ideas and beliefs. Unless a person experiences something first-hand, the only way they can define it is by what others tell them and the ideas they create from the information given to them. This project researches representations of race, ethnicity and multiculturalism in four newspapers from the United States and Australia. Keywords are identified and articles are examined for racist and anti-racist messages. The purpose is to gain insight into how media portrayals affect perceptions of race through a cross-cultural comparison of racist ideologies in newspapers.

Sponsor(s): Don Williams

PAD 209

The Dynamics of Modern Campaign Finance Reform

Presenter(s): Jordan Jackson

Report on the changing legal aspects of campaign finance reform with respect to current scandals. Two scandals in particular will be followed: The Tom DeLay scandal and the Abramoff scandal.

Sponsor(s): Star Swift

PAD 210

The Torque Angle Relationship of the Quadriceps Femoris in Patients with Cerebral Palsy Who Crouch Versus Able-Bodied Peers

Presenter(s): Amy Eggleston, Brian Matz, , Kurtis Smitko

The development of a crouch gait is extremely common in adolescents with cerebral palsy (CP), resulting in excessive demands on the quadriceps and significant stresses on the extensor mechanism. The purpose of this study was to determine whether the torque-angle relationship of the quadriceps femoris is significantly altered in individuals with CP who crouch as compared to their able-bodied peers. A computerized dynamometer was utilized to determine torque generation during maximum voluntary isometric contractions at six different angles of knee flexion. The highest torque value generated at each angle was utilized in the data analysis. Once data is analyzed we expect that: (a) peak knee extension torque will be significantly less for individuals with CP who crouch, (b) the angle at which they generate peak torque will be significantly more flexed than their able-bodied peers, and (c) the slope of the descending limb of the torque-angle curve (angles more extended than peak torque) will be significantly higher in those with CP, indicating a more rapid tapering of torque-generating capability than their able-bodied peers. Results will be discussed.

Sponsor(s): K. Mitchell Barr, Gordon Alderink, Barbara Hoogenboom

PAD 211

An Inexpensive Raman Spectrometer for the Detection of Tyrosine Phosphorylation

Presenter(s): Jerry Fluellen

The purpose of this Research is to build an inexpensive laser-base Raman spectrometer based on CCD detection for the purpose of detecting the phosphorylation of the peptide tyrosine. This kinase plays an important role in the regulation of various physiological processes (cell proliferation, migration, and differentiation). In Raman spectroscopy, structural information about molecules is obtained by examining the frequencies of light scattered from the molecules. The scattered frequencies correspond to the different vibrations of the molecule. Raman spectroscopy is already widely used to obtain information about the molecular structure. With our new instrument we hope to extend its applicability into the field of low cost diagnostics of protein structure.

Sponsor(s): Stephanie Schaertel, Doug Furton

ORAL PRESENTATION ABSTRACTS

PAD 261

Comparison of Calculated versus Directly Measured LDL levels.

Presenter(s): Elizabeth Koerner, Angela Massaway, Tuy Su, Michael Thompson

The main goal of this study is to discover if there is indeed a significant difference between calculated LDL and directly measured LDL levels. All specimens utilized were taken from the Spectrum Health Butterworth Campus laboratory and had a previous order for a lipid profile. A total of 100 samples already having lipid profiles performed were selected to be re-evaluated for direct LDL measurement.

The samples were selected without regard to age, gender, risk factors, or diagnosis and came from all areas of the hospital including inpatients and outpatients. Specimens that were hemolyzed, icteric or lipemic were not included in this study. The triglycerides, HDL, total cholesterol and calculated LDL were recorded from each sample. Before running the direct LDL, calibration procedures were followed and LDL values were measured and recorded. Results and conclusions are both pending at this time.

Sponsor(s): Theresa Bacon-Baguely

PAD 262

Youth Probation Recidivism

Presenter(s): Steve Schmucker

I want to study the forms of probation and what forms have a lower recidivism rate in youths. Rehabilitation for youths is essential for the breaking of the deviant cycle. I am going to talk with various probation offices in the juvenile courts through out Kent, Ottawa and Allegan Counties. The state spends millions of dollars each year on probation strategies. I want to compare intensive probations to normal reporting probation and see if there is a difference in recidivism rates among offenders under the age of 18. If there is no difference, then there should be some reforms to the juvenile probation system. The intensive probations cost more, but if they don't work, the state should do away with them. Also, if normal reporting probation has a higher rate of recidivism, the system should possibly sway more towards the intensive probations for the youths.

Sponsor(s): Donald Williams

Beginning at 8:40 AM

PAD 107

The Apex of Anne Boleyn's Power

Presenter(s): Michelle Horvath

Academically analyzing when Anne Boleyn was at the apex of her power and the implications of her actions.

Sponsor(s): Gretchen Galbraith

PAD 108

Brownfield Reconstruction: Past, Present and Future

Presenter(s): Kelly Whalen

As urban populations increase there will be a demand for Brownfield reconstruction. This project will research historical data, environmental impacts, environmental policy, and future land management plans of the Brownfield reconstruction site (Grand Landing) in Grand Haven, Mi. The methods involved include attending meetings with city officials and gathering data regarding Brownfield reconstruction. The goals for this research are to gain an understanding of the process, risks and environmental impacts involved in this type of innovative land use.

Sponsor(s): Sister Damien Marie Savino

PAD 109

Refugee Resettlement from a Therapeutic Recreation Perspective

Presenter(s): Jenny Boor , Jamie Gearig , Tracy Gras , Nicole Olson

Sponsor(s): Kari Kensinger

ORAL PRESENTATION ABSTRACTS

PAD 168

Impact of Makoto training on reaction time, agility, vertical jump and balance in high school athletes

Presenter(s): Amanda Whitlock , Jennifer Bloomfield , Amanda Dumont

There are many training programs and types of equipment, which are designed to enhance sport performance. The Makoto is a new, interactive exercise device that is able to integrate sensory stimuli to elicit a motor response. The purpose of this study was to determine the impact of a 6-week training protocol using the Makoto on reaction time, agility, vertical jump, and balance in high school athletes. Forty subjects were randomized into control or experimental groups and tested pre and post training sessions. The CG only participated in normal sport activities, while the EG also completed a training protocol on the Makoto. Data analysis using ANOVA ($p < 0.05$) showed statistically significant differences in average reaction time, accuracy, and the timed T-test. Vertical jump and balance scores did not show statistical significance. Improvement of sport performance for reaction time and agility in the EG may have been due to the Makoto training protocol, however further research is needed.

Sponsor(s): Barbara Hoogenboom , Cathy Harro , Paul Stephenson

PAD 207

Geo-political Aspirations of the Soviet Union: Cuba and Latin America

Presenter(s): Kevin D'Alessandro

This study attempts to answer the complex question on why the Soviet Union became interested in Latin America, and more specifically, with a microcosmic view of Cuba. The Soviet Union became interested in Latin America, and especially Cuba, because the USSR idealized subverting U.S. hegemony, both politically and economically in the Western Hemisphere. Despite the frequency of revolutionary movements in Latin America during the Cold War period, the Soviet Union found itself disillusioned with these opportunities to undermine U.S. power in the region.

Sponsor(s): Jim Penn

PAD 209

Redemption in the Wasteland

Presenter(s): Martin Lockerd

This paper will explore the relationship between T.S Eliot's "The Waste Land" and the book of Ezekiel, in the hopes of providing evidence to counter the generally held belief that the poem carries a bleak message.

Sponsor(s): David Ihrman

PAD 210

Marketing Plan: NABS

Presenter(s): Jessica Peterson

Sponsor(s): Ben Rudolph

Beginning at 9:00 AM

PAD 107

The Fiscal Systems of Henry VII

Presenter(s): Michelle Horvath

Academically investigating the fiscal techniques used by the first of the Tudor Monarchs, Henry VII, in order to secure his royal lineage.

Sponsor(s): Gretchen Galbraith

ORAL PRESENTATION ABSTRACTS

PAD 108

Site Analysis and Management Recommendations for Native Grassland Prairie Restoration at the Franciscan Life Process Center

Presenter(s): Benjamin Vinci

As development rapidly increases the loss of native communities, restoration efforts are becoming ever more important to preserve our natural landscapes, maintain biodiversity, and resist invasive species. The Franciscan Life Process Center in Lowell, MI has expressed interest in restoring a portion of their land to native prairie grassland, though the site has yet to be analyzed for suitability of restoration. Site research and sampling is to be conducted to determine if restoration is feasible. If so, a management plan is to be constructed. If site is unsuitable, then an alternative plan shall be proposed to maintain ecosystem health.

Sponsor(s): Sister Damien Marie Savino

PAD 109

Management of an Upland Site to Promote Wildlife Diversity

Presenter(s): Heather Whitman

Autumn olive (*Elaeagnus umbellata*) is an invasive plant species which establishes monocultures and effectively shades out other plants. Such simplification of the landscape reduces habitat and wildlife diversity. I will determine a safe solution for ridding this species from an upland site and will research native grasses, shrubs, and trees to plant on the sites particular soil. I will use MIWild (a computer-based wildlife habitat database) to determine likely wildlife species occurrences based on current and diversified land cover. I expect higher wildlife species diversity with improved habitat diversity. Increased habitat and wildlife diversity is important for system stability.

Sponsor(s): Shaily Menon

PAD 168

The historical analysis of accountability in therapeutic recreation

Presenter(s): Amanda Osborne, Jenny Boor, Sarah Hroncich, Heather Zorn, Laura Herberholtz

Sponsor(s): Kari Kensinger

PAD 207

Does round goby predation affect zebra mussel abundance?

Presenter(s): Melissa Reneski

We examined the role of round goby (*Neogobius melanostomus*) predation on zebra mussel (*Dreissena polymorpha*) densities in Muskegon Lake, a drowned river mouth system of Lake Michigan. Cement bricks (19.5×9.3×5.8 cm) were incubated for about 7 weeks prior to the start of the study. We conducted a density-gradient experiment using 12 cages (1×1×0.5 m; 6-mm mesh) stocked with 0, 5, 10, or 15 round gobies (3 replicate cages of each fish density) and three cement bricks. Zebra mussels were collected from bricks in each cage after 8 weeks. A bimodal distribution of zebra mussel sizes allowed us to group them into small (< 8 mm) and large (> 8 mm) individuals. Small zebra mussel numbers and biomass were significantly affected by round goby density ($P < 0.05$), whereas large zebra mussels were not significantly affected by round gobies ($P > 0.05$). Overall, our finding suggest that round goby predation can affect zebra mussel population dynamics in some systems.

Sponsor(s): Carl Ruetz , Don Uzarski

PAD 209

Circle Packing and Penrose Tiling

Presenter(s): Matthew Stamps

A circle packing is a configuration of circles with prescribed tangencies corresponding to a given triangulation. The Penrose tiles offer a unique and natural triangulation of the Euclidean plane. This presentation will describe the circle packings that arise from such triangulations from a geometric and combinatorial point of view and raise some open questions in the more recently studied topic of Circle Packing.

Sponsor(s): David Austin

ORAL PRESENTATION ABSTRACTS

PAD 210

Probing the Important Protein Interactions Involved in the Regulation of Cell Movement

Presenter(s): Brittany Stropich

Diaphanous related formins (DRF) are a conserved family of proteins that are involved in the coordination of the cytoskeleton, a structure that plays a role in cellular shape, movement, and division. The activation of DRFs are dependent on the mechanism of autoinhibition; the Dia-autoregulatory domain (DID), binds to the Diaphanous inhibitory domain (DAD), keeping the DRF inactive until Rho GTPase binds to the GTPase Binding Domain (GBD) and releases the DAD from DID, thereby activating the DRF protein. Since DID-DAD binding plays an important role in dictating the regulation of the full length DRF protein, and therefore has an impact on many cellular processes, our laboratory focuses on elucidating the DID-DAD interaction. Here, through a combination of fluorescence anisotropy and cellular biology, we have determined specific basic amino acid residues in a conserved region of DAD that are critical for mediating DID-DAD binding. In addition, we have also discovered a single serine residue in the DID that is involved in the binding to DAD, while also playing a role in the localization of the DRF protein.

Sponsor(s): Brad Wallar

PAD 211

GV Fire Alarms??? Location and Causes: A Statistical Consulting Experience

Presenter(s): Stephanie Oegema

Grand Valley resident students seem to have a problem with burnt popcorn and other kitchen appliances. This presentation focuses on my role as a consultant to Facilities Services, analyzing fire alarm data as to locations and causes. The primary aim of the study is to see which campus areas, especially residential, seem to have the most fire alarms and for what reasons. This study also tracks fire alarm patterns over time to explore fire safety trends at GVSU. The results from this study will be used to make a recommendation about future fire alarm procedures and response techniques. As a statistical consultant, my role was primarily data cleanup and analysis.

Sponsor(s): David Cox and Neal Rogness

PAD 261

Going Back to Where You've Never Been: Exploring Outreach Opportunities and Challenges

Presenter(s): Anne McKay, Julie Lenhart

Grand Valley State University's Meijer Center for Writing has recently established an outreach program with a local alternative high school. We will present the complexities of moving the work of the college writing center into another environment. Through discussion we hope to shed light on how tutoring methods transition into other environments. This presentation was also accepted to the 2006 East Central Writing Center's Association Conference.

Sponsor(s): Ellen Schendel

Beginning at 9:20 AM

PAD 107

Using Mathematics in Photography: An Exploration of Algorithms Used in Panoramic Stitching

Presenter(s): Janelle Lautzenheiser

The process of creating a panoramic picture from a series of side-by-side consecutive pictures is called panoramic stitching. Creating a smooth transition between the pictures involves using mathematical algorithms to correctly align the pictures. We studied the mathematical details used to combine a series of photos. Using Maple, we figured out how to combine two pictures by specifying two overlapping points in each.

Sponsor(s): Edward Aboufadel

ORAL PRESENTATION ABSTRACTS

PAD 109

Legality of Partner Benefits

Presenter(s): Deborah Gaiefsky

The legality concerning partner benefits of same-sex couples has recently become a major debate in Michigan. Due to the passing of Proposal 2, an amendment to the state's constitution which states "the union of one man and one woman in marriage shall be the only agreement recognized as a marriage or similar union for any purpose," significant lawsuits have been filed concerning the right of public employers to offer health care benefits to same-sex couples. The interpretation of Proposal 2 is still pending, however to understand the impact of a final decision I will review and discuss the events, organizations, and likely consequences involved in this debate.

Sponsor(s): Star Swift

PAD 168

Analyzing differential expression of a protein kinase N allele affecting wing morphology and fertility in *Drosophila*

Presenter(s): Billie Hooker

Many of the genetic pathways that guide basic developmental processes have gone unchanged throughout the course of evolution. Studying these pathways, regardless of the organism used for analysis, can help piece together bigger concepts regarding all of living processes. An adult-viable recessive mutation of the protein kinase N (PKN) allele was found in *Drosophila* (fruit flies) that causes wings to be held up from their thorax and curve ventrally. Males are sterile, while females are sub-fertile. This mutant called delorean, is caused by a P-element insertion. For this study, I hypothesized that the levels of gene expression in the delorean flies would be different from those of wild-type flies. Northern blots were made to detect the signal differences using PKN specific probes. Results will be discussed.

Sponsor(s): Bruce Ostrow

PAD 207

A study of the erosional effects of the Rogue River dam spillway by analysis of suspended sediment: Rockford, Michigan

Presenter(s): Grant Koster

Dams of all sizes have an effect on rivers. Dams containing small reservoirs are not as notorious as those with a large reservoir for downstream problems such as erosion, but effects are still evident. When a river encounters a dam, most of the sediments being transported are deposited. The lack of sediment load in the water that exits the spillway causes increased erosion rates on the downstream side of the dam, so the river widens and the bed is generally coarser grained. In this project, water samples were taken from two locations upstream of the dam in Rockford Michigan, one at the dam spillway, and one just downstream of the dam. The preliminary results suggest that there is a very large increase in suspended sediment directly below the dam compared to what is seen upstream. This is hypothesized to be due to the increase in the energy of the water coming off the dam spillway. The result is more bank erosion, and an increase in the amount of fine particles in suspension.

Sponsor(s): Patricia Videtich

PAD 209

Least Squares Properties of the Lanczos' Derivative

Presenter(s): Nathaniel Burch

The Lanczos' Derivative is a proper extension of the normal derivative seen in the first semester of calculus. We explore properties of the Lanczos' Derivative by connecting it to several ideas in statistics. Higher order Lanczos' Derivatives are constructed using a method of least squares regression. A formula for the n-th order Coefficient of Determination is also derived and explored.

Sponsor(s): Paul Fishback

PAD 210

The historical analysis of professional organizations in therapeutic recreation

Presenter(s): Melissa Vander Laan , Kari Azkoul , Tess Ziegler , Nicole Olson , Jamie Gearig

Sponsor(s): Kari Kensinger

ORAL PRESENTATION ABSTRACTS

PAD 211

The Journey to Madness

Presenter(s): Sarah Byrne

This is a paper exploring the step-by-step journey that the main character of "The Yellow Wallpaper," while also exploring the question of "what is sane, what is insane?"

Sponsor(s): David Ihrman

PAD 261

Predictors of Academic Success

Presenter(s): Rebecca Bolek

The academic records of graduates of the Master's Degree Physical Therapy program at Grand Valley State University were reviewed, and the following information was obtained: undergraduate grade point average (GPA), academic standing (whether the student had been placed on academic probation at any time during the program), final program GPA, and score on the national physical therapy licensing examination.

Sponsor(s): Mary Green

Beginning at 9:40 AM

PAD 107

Gravitational Assist: Two and Three Bodies

Presenter(s): Angie Grumm

Gravitational assist involves using the gravitational pull of one object to increase the speed of another. NASA engineers utilize this information to send space probes to the far reaches of the solar system. This project focused on the mathematics behind the two body gravitational assist problem as well as the logic and theory behind the unsolvable three body problem.

Sponsor(s): David Austin

PAD 108

Creating a Management Plan that Stimulates Forest Regeneration and Improves Profit Yields

Presenter(s): Melissa Thornburg

The purpose of this project is to create a management plan for a private landowner interested in stimulating forest regeneration and improving yield. First, the value of the forested lot will be determined by identifying the tree species within the stand. If sufficient value is discovered, a management plan will be prepared that will help to stimulate forest regeneration. This plan would focus on increasing valuable tree species in order to increase logging yield. If no significant value is found within the stand, then an alternative management plan will be prepared that would stimulate valuable tree growth within the lot.

Sponsor(s): Sister Damien Marie Savino

PAD 109

Varying the Number of Practice Trials for Acquisition of a Motor Skill in Children

Presenter(s): Gwendolyn Halalay , Sarah Thoreson

The purpose of this study was to determine the effects of zero, 12, or 24 practice trials on skill acquisition of a novel motor task in children. The novel task consisted of having the children throw a beanbag with the non-dominant hand while blindfolded. The motor performance was measured by a transfer task performed immediately after the practice session. A convenience sampling of 2nd grade students between the ages of 7 and 8 years of age without any motor or learning disabilities were used. The study demonstrated aspects of both a randomized design and a quasi-experimental design. The results are to be discussed.

Sponsor(s): Barbara Baker , Paul Stephenson , John Peck

ORAL PRESENTATION ABSTRACTS

PAD 168

Discovering Market Potential for “Natural” Meats in the Greenville Area

Presenter(s): Andrew Lieto , Sue Chen , Brandon Gerard , Amy Manning

Sponsor(s): Nancy Levenburg

PAD 207

Planning and Forecasting with Parker Engineering

Presenter(s): Geoff Kuyper , Brent Courson , Michael Breimayer , Armando Garcia

Sponsor(s): Nancy Levenburg

PAD 209

The historical analysis of ethics in therapeutic recreation

Presenter(s): Sarah Jones , Colleen Gorton , Molly Zeh , Rachael Meadows , Andrea Boyer

Sponsor(s): Kari Kensinger

PAD 210

Grain Size Analysis: Sand from a Lake Michigan Beach at Meinert Park, Muskegon County, Michigan

Presenter(s): Andrea Magoon

Lake Michigan has extensive beaches, many with associated dunes. The beach and dune studied are in Meinert Park, a small park located in Muskegon County. The main dune is a relict dune towering approximately 33 meters above Lake Michigan. Samples were collected from two traverses two meters apart. The traverses begin in the swash zone and end at the crest of the dune. I predict finer sand, being lighter, was moved more by wind and water so the sand will get finer away from Lake Michigan. Since the dune formed by wind deposition, and it is located furthest from Lake Michigan, I hypothesize that the dune sand will be the finest sand observed. I also predict that the sand collected in the two parallel traverses perpendicular to the shore will be similar as the samples were collected only two meters apart.

Sponsor(s): Patricia Videtich

PAD 211

The Themes and Ideas of “Horizontal Accidents”

Presenter(s): Mike Salisbury

“Horizontal Accidents” is the work of fiction by Mike Salisbury. The AWP nominated story explores the boundaries of friendship and death. This presentation will focus on the themes of the story and what the artist was attempting to communicate.

Sponsor(s): David Ihrman

PAD 261

National Service: Cultivating Lifelong Volunteers

Presenter(s): Angela Sullivan

National service and the notion of giving our time and talent to our communities is a critical part of our society. I will be analyzing the question of whether national service participants specifically AmeriCorps and AmeriCorps Volunteers in Service to America (VISTA) continue to be active in their communities after their contracted service has ended. The impact of these Corps members service to their communities far surpass their actual service, this being said it is my assertion that national service participants continue to be engaged in their communities long after their contracted service actually ends. In short, the AmeriCorps program cultivates life long volunteers and active citizens. This issue is of significant importance because the effects of national service on the communities has been studied and is said to be quite long lasting, it is equally imperative that we study the effects of the service on the national service participants, due to the fact that one objective of national service is participant development and awareness. To ensure that the programs are meeting the needs set forth we must study all aspects as oppose to only one facet.

Sponsor(s): Don Williams

ORAL PRESENTATION ABSTRACTS

Beginning at 10:00 AM

PAD 107

Identification of a Gene Involved in Hormone-Induced Moss Development

Presenter(s): Ilea Swinehart

Initially the moss *Physcomitrella patens* grows as a filament producing an initial cell on the third cell of the filament. Upon exposure to the hormone cytokinin, the developmental pathway of this initial cell changes from filamentous growth to the formation of a leafy plant. A mutant, created by randomly inserting a segment of foreign DNA, produces initial cells which are unresponsive to cytokinin. Using Thermal Asymmetric Interlaced (TAIL)-PCR, we will amplify the sequence flanking the insertion (presumably a disrupted gene) and separate the products using gel electrophoresis. Studies in progress focus on determining the best temperatures for primer binding and further optimization of TAIL-PCR. This study is designed to increase understanding of how hormones influence the development of multicellular organisms.

Sponsor(s): Margaret Dietrich

PAD 108

Perceived Barriers to Prenatal Care Among Hispanic Women

Presenter(s): Gustavo Moretta

Sponsor(s): Phyllis Gendler

PAD 109

Leaf breakdown by macroinvertebrates: does leaf size and nitrogen content affect consumption rates?

Presenter(s): Matthew Breen

Breakdown of riparian vegetation by benthic macroinvertebrates is essential to energy dynamics of lotic ecosystems. Decomposition of leaf material is of particular interest to stream ecologists; however, little is known about how leaf size affects breakdown rates by detritivores. We investigated consumption rates of red maple (*Acer rubrum*) leaves by two common shredders (*Gammarus pseudolimnaeus* and *Pycnopsyche* sp.) in a coldwater stream. Leaf discs (diameter= 2.5 cm) from leaves of three widths (<7 [small], 7-10 [medium], and >10 cm [large]) were placed in in-stream containers for 24- and 48-hr feeding trials. Insect type and leaf size significantly affected breakdown rates, whereas treatment duration was not an important factor. *Pycnopsyche* sp. preferentially consumed medium sized leaves but *G. pseudolimnaeus* did not show a preference. A further analysis of nitrogen content will determine whether medium sized leaves provide more nutritional value than small or large leaves.

Sponsor(s): Carl Ruetz

PAD 168

The Heroes' Religion: Social Implications of Beowulf as Oral Literature

Presenter(s): Scott Joswick

This paper will discuss the effects of Beowulf as oral literature. By looking specifically at Hrothgar's sermon, it will show how oral literature had not only an entertainment value, but was also a tool to reinforce existing social practices. More importantly, it created a vocabulary for understanding and accepting new cultural ideas like Christianity.

Sponsor(s): Rachel Anderson

PAD 207

The Effects of Blood Enhancement Chemicals on Latent Blood

Presenter(s): Alicia Otto

This presentation is on project which looked at how six different blood enhancing chemicals worked on latent blood. The chemicals were tested on wood and cloth fabric, both light and dark. The blood was placed on the substrate and it was allowed to dry. After the

ORAL PRESENTATION ABSTRACTS

blood was dry the blood was washed off to make it latent. The chemicals were tested on the wood after 1 day, 1 week and 1 month to see how well they performed. The chemicals were also tested on the light and dark fabric after 1 day.

Sponsor(s): Nancy Shontz

PAD 209

Distinguishing terraces along the Muskegon River by grain size and shape analyses: Newaygo County, Michigan

Presenter(s): James Rinke

The Muskegon River has cut several sets of terraces near Bridgeton in Newaygo County. The terraces are assumed to have formed by separate periods of downcutting as the river meandered. Four samples from two terraces of different elevation were collected by hand auguring to a depth of approximately 2 meters. The grain size, shape, and mineral content of sediments collected from the two terraces were determined. Grain size was determined by sieving, and mode, median, mean, sorting, skewness and kurtosis were calculated. Roundness and sphericity were determined using a binocular microscope and Power's roundness scale. The mineralogy was also determined visually using a binocular microscope. The different terrace samples are expected to show significantly different grain size and shape as they represent different stratigraphic levels. This, in turn, will help determine the depositional environment of each terrace and aid in piecing together a more accurate history of the Muskegon River.

Sponsor(s): Patricia Videtich

PAD 210

Change in Body Mass Index in Obese and Non-Obese Patients Following Total Knee Arthroplasty

Presenter(s): Taneisha Hayden , Victoria Brooks , Amanda Casten

Change in Body Mass Index in Obese and Non-Obese Patients Following Total Knee Arthroplasty. TaNeisha Hayden, Victoria Brooks, Amanda Casten (Grand Valley State University Physician Assistant Studies, Michigan, United States of America) Theresa Bacon-Baguley (Professor of Physician Assistant Studies) Research Question: Is there a change in body mass index in obese versus non-obese patients after one year or two years following Total Knee Arthroplasty? Significance: The incidence of obesity in US adults is reaching epidemic proportions. Osteoarthritis, mostly in the knee, is a common condition both overweight and obese adults suffer. Because of the limited and restricted mobility due to osteoarthritic knee pain, obese adults often attribute their inability to exercise and lose weight to this, thus increasing their Body Mass Index (BMI). This study will help providers advise patients on the predictors of a successful outcome determining whether or not there

Sponsor(s): Theresa Bacon-Baguley

PAD 211

The historical analysis of the service models in therapeutic recreation

Presenter(s): Tracy Gras , Sarah McDonald , Susan Kurtz

Sponsor(s): Kari Kensinger

PAD 261

Between Religion and Honor: Charles C. Jones and an Analysis of Antebellum Georgia

Presenter(s): Jonathan Howard

My paper examines the relationship between the religious experience and the secular ethic of honor as experienced by one man, Charles Colcock Jones, on the eve of and during the first years of the American Civil War. I hope to demonstrate that Jones, a Southern man of honorable standing and a member of the Presbyterian clergy had difficulty choosing between the conflicting loyalties of honor and evangelical religion. Ultimately, he came to a conclusion that his religious beliefs were more important to him than secular esteem.

Sponsor(s): Steve Tripp , Dolli Lutes

PAD 262

Folding Polygons into Polyhedra

Presenter(s): Ngan Nguyen

ORAL PRESENTATION ABSTRACTS

Beginning at 10:20 AM

PAD 107

Opposition to U.S. Economic Hegemony in Latin America: Hugo Chavez and Venezuela

Presenter(s): Rachel Jacques

Recent years have seen increasing opposition to U.S. political and economic influence in Latin America. Venezuela is a key player in the South American economy. This project researches the country's history from the 1950s to the present, and the role of the U.S. in its formation. Through political economy, this study asks if recent political changes are due to the effects of U.S. policies in Venezuela. The research examines the relationship between the two nations and the development models proposed by the Chavez government. The paper considers alternative models of economic development, independent from U.S. political hegemony.

Sponsor(s): Dolli Lutes

PAD 108

Examining the relationship between international organizations and national security

Presenter(s): Holly Bennett

Why do some countries contribute to UN peacekeeping missions while others do not? What accounts for the disparities in states level of involvement in peacekeeping missions? By performing an in-depth analysis of the security policies and military budgets of two countries, we can determine what they believe to be the most effective approach to maintaining their security. To explain such policies we can use social constructivism, a theory which claims that a relationship of reciprocity exists between international institutions and states: not only do states create institutional structures, but institutions can also shape states behavior.

Sponsor(s): Renato Corbetta

PAD 109

Evaluating Wood Duck Habitat Suitability on Private Land in Southwest Allegan County

Presenter(s): Aaron Giesler

Wetlands, which are crucial habitats for many wildlife species, are rapidly succumbing to urbanization. Wood ducks depend on wetland habitats for every facet of their survival, including nesting, brood rearing and migration. I will conduct literature reviews, field work, habitat suitability modeling and land cover mapping in order to evaluate the suitability of a private property for wood ducks in rural South Haven, Allegan Co., MI. Subsequent to evaluation, plans to act on habitat modification will be respected by me and neighboring land owners.

Sponsor(s): Shailly Menon

PAD 168

A Soybean Response to Atmospheric Methyl Jasmonate

Presenter(s): Shannon Edwards

Jasmonic acid and derivatives (e.g., methyl jasmonate, MeJA) have wide-ranging effects on plant processes such as membrane synthesis, carbohydrate metabolism, and stress responses including herbivore defense. A 1054 bp incomplete cDNA, derived from a gene that was expressed within shoot tips of nine-day-old soybean (*Glycine max*) seedlings that had been exposed to atmospheric MeJA for five days, was isolated and sequenced. The derived protein sequence has 51% similarity with a protein of unknown function in *Arabidopsis thaliana*. We have determined that the gene is not only ubiquitously expressed in all tissues of a soybean seedling, but that exposure to atmospheric MeJA appears to have varying effects on transcript levels. As membrane synthesis and carbohydrate metabolism are critical to the proper development of the plant, we plan to further investigate the role of this gene during soybean development.

Sponsor(s): Margaret Dietrich

ORAL PRESENTATION ABSTRACTS

PAD 207

Preventing Repeat Teen Pregnancies and Improving Child Health Outcomes: A Review of the Girls Like Me Program

Presenter(s): Adriana Flores , Elizabeth Anderson , Roberto Miller , Lindsay Reuterdaahl

Comprehensive programs for teenage mothers and their children have been a promising intervention to improve outcomes of teenage childbearing and parenting. However, much remains unknown about the efficacy of such programs. Through the analysis of data obtained from participants in Girls Like Me, a local comprehensive program, this study was completed in hopes to find a decrease in repeat pregnancies and an increase in child health outcomes. Results of this study are expected to show that comprehensive programs offer benefits to teen mothers, children, and providers alike. The researchers also hope to demonstrate that increased support, funding, and more complete evaluations are needed for such programs.

Sponsor(s): Diann Reischman , Theresa Bacon-Baguley

PAD 209

Sediment Variations in Vegetated versus Wind-Blown Beach Areas of Lake Michigan: Ottawa County, Michigan

Presenter(s): Joel Kenyon

Kirk Park is a small, Ottawa County park with several hundred meters of Lake Michigan shoreline. The beach is relatively natural and undisturbed, with relict dunes lying inland of active fore dunes. Much of these dunes, as well as the lower-lying beach, are covered in dune grass. This dune grass may be a significant factor affecting wind sorting of sand-sized beach sediment. A total of nine sand samples were taken from the flat-lying vegetated beach area and the adjacent wind-blown area. Using sieve analysis, the mean, mode, median, sorting, skewness and kurtosis of each sample will be calculated. These statistics, as well as grain roundness and mineralogy, will be analyzed to determine the effects of wind sorting on sediments from the vegetated and wind-blown beach areas.

Sponsor(s): Patricia Videtich

PAD 210

Classical Chaos in Excited States of Sodium Atom

Presenter(s): Bradley Karas

The dynamical problem of the electrons motion in the presence of the combined Coulomb and uniform electric field was solved for both the case of an excited Hydrogen atom and an excited Sodium atom. In both cases, canonical transformations were used as a means to solve the problems. For the case of the excited Hydrogen atom, it was shown that the dynamical system was separable and could be solved using quadratures. All bounded periodic trajectories were classified. For the case of the excited Sodium atom, it was shown that it was not separable and can only be solved numerically. In both cases, the trajectories were depicted in configuration space as well as by the method of Poincare surfaces of sections.

Sponsor(s): Milun Rakovic

PAD 211

A Statistical Study on Union Commitment, Involvement, and Satisfaction

Presenter(s): Nick Somers

Sample datum was collected via survey from 1003 board and non-board union workers of a local union in Grand Rapids, Michigan. The survey consisted of questions targeting areas such as demographics (i.e. gender, age, number of years at plant, marital status, and race), commitment to the union, union involvement, and overall satisfaction with union membership. The data was analyzed, with particular interest given to finding differences in commitment, involvement and satisfaction due to being on the union board or demographic factors. Findings from this study will be reported along with my perspective on managing and analyzing data.

Sponsor(s): Phyllis Curtiss , Brian Phillips

PAD 261

RSA Encryption

Presenter(s): Brian Hanson

Sponsor(s): Matthew Wyneken

ORAL PRESENTATION ABSTRACTS

PAD 262

The historical analysis of philosophy in therapeutic recreation

Presenter(s): Julie Jumisko , Joshua Dunnington

Sponsor(s): Kari Kensinger

Beginning at 10:40 AM

PAD 107

What is the Price of Bottled Water?

Presenter(s): Jacob Ross

I will research the impact of the Ice Mountain bottled water plant in Mecosta County, MI. My main objective is to assess the current policy and analyze how the water resource utilization of this plant affects the surrounding area. I will compile data from previous studies on this issue , along with data about the affects on the environment. I will be doing data analysis to better portray the matter to the public in terms that reflect the knowledge of people not skilled in this area. I expect this will clear up the issues regarding the implementation of the plant process.

Sponsor(s): Shaily Menon

PAD 108

Sports Facilities: Friend or Foe?

Presenter(s): Katie Gendernalik

During the years 1984-2000, voters in many US cities have had 40 opportunities to vote on professional sports stadium proposals. These proposals have been grouped together with economic development plans to make them more marketable to the public. Different cities and their political leaders have said that these facilities will bring new economic life to ailing downtown areas. Do sports facilities bring more people and jobs to the city? How do political leaders justify the million dollar proposals to their citizens? While looking at the city of Detroit, it is obvious to see the newly built Comerica Park and Ford Field have not improved its economic state.

Sponsor(s): Joel Stillerman

PAD 109

Trading Methods: Comparing Transect Counts and Distance Sampling for Population Estimates

Presenter(s): Karl Rowland

I will contrast the time, effort, cost, and accuracy associated with two kinds of population estimation methods (transect counts and distance sampling). This will allow me to determine which method is more efficient for estimating Karner Blue butterfly populations. This comparison will benefit researchers interested in future population estimates. By analyzing the differences between these two methods they can better determine which method to apply to their research.

Sponsor(s): Shaily Menon

PAD 168

Advertising after 9/11: Consuming Patriotically

Presenter(s): Sarah Tolton

Sponsor(s): Joel Stillerman

PAD 207

A Multibillion Dollar Industry Based on the Commodification of Women

Presenter(s): Ashley Troy

Sex trafficking of women and girls in America is a multibillion dollar business that capitalizes on the social, political, and economic oppression women face worldwide. The sex traffickers often present the "American Dream" to these women and to the families of the

ORAL PRESENTATION ABSTRACTS

young girls in an attempt to coerce them over to America. Once the women and girls make it to America their passports are taken away and they are forced into becoming sex slaves. In the brothels they perform multiple sex acts in a day with many different men. There is little hope of escaping because often the women and girls do not speak English, their families may be killed, and often the people they would seek for help are the people who are purchasing them for sex. But with an increased awareness of the numbers of women coerced into sex trafficking, there has also been an increase in laws and other means for fighting sex traffickers and protecting victims.
Sponsor(s): Kathleen Blumreich

PAD 209

Correlation of Stratigraphic Sections Using Logs from Water Wells: Allendale Township, Michigan

Presenter(s): Christie Kroskie

Allendale, Michigan, is situated on relict glacial moraines and a relict delta deposited during the Pleistocene epoch, which ended approximately 10,000 years ago. Generally sediments are gravel and sand in the proximal delta, silt and clay in the distal delta, sand and gravel in the proximal delta, and unconsolidated till composed of clay, silt, sand, and gravel in the moraines. The purpose of this study is to determine if these depositional environments can be distinguished and the sediments correlated using well logs from water wells. Using 171 drilling logs from water wells, I will make and correlate stratigraphic sections. In the deltaic region, I predict I will find proximal sand and gravel bars towards the east and distal deposits of silt and clay towards the west. In the moraines I predict there will be no individual layers of silt or clay in the sand and gravel because till is typically unsorted.

Sponsor(s): Patricia Videtich

PAD 210

Making the Ratio: A Case in Daycare Scheduling

Presenter(s): Dainen Tolman , Tanner Yager , Adam Hinman , Jason Pawlos

Sponsor(s): Nancy Levenburg

PAD 211

Statistical Consulting at QST Consultations

Presenter(s): Chris Smith

The journey of a drug from molecular conception to the doctors shelves has many phases and can take 15 to 20 years costing millions of dollars. In this talk, we discuss the process a drug must go through to get approved by the Food and Drug Administration. The focus will be on the role a biostatistics group such as QST has in this authorization.

Sponsor(s): John Gabrosek

PAD 261

Stem Cell Research and Society

Presenter(s): Patrick Hansmap

Collectively, society has generated a great deal of confusion about stem cells and stem cell research. This presentation is given with the purpose of resolving such confusion by defining the terms used in discussion of stem cell research, elaborating on conflicting ideas, and relating such topics to our local society. Michiganders can, thus, arrive at their own opinions and conclusions about this controversial topic and our society based on the facts here given.

Sponsor(s): Devereaux Kennedy

PAD 262

The Effects of Cognition on Rehabilitation of a Client with a Traumatic Brain Injury

Presenter(s): Kimberly Kasaju

Background and Purpose: Traumatic brain injuries affect roughly 1.4 million people in the US each year. Clients with TBI have multi-system impairments, including motor, sensory, perceptual and cognitive deficits. This case report will describe behavior modification

ORAL PRESENTATION ABSTRACTS

techniques used in rehabilitation of a client with cognitive deficits from a TBI. Case Description: The patient was a 69 year-old male who suffered a TBI and was treated in a transitional living center. PT intervention addressed multi-system impairments and integrated cognitive strategies and behavioral modification techniques to maximize participation and safe community reintegration. Outcome: This patient had a favorable outcome, achieving 75% of PT goals. He was discharged home with assistance from his wife to receive ongoing PT in an outpatient setting. Discussion: This case report highlights effective use of behavior modification techniques in rehabilitation of clients with cognitive deficits resulting from a TBI.

Sponsor(s): Cathy Harro

Beginning at 11:00 AM

PAD 107

Analysis of Grand Valley State University's Physician Assistant Program Alumni Survey

Presenter(s): Brandon Whitscell , Nathan Barden

Research Question: Based on alumni survey, how do Grand Valley State University's Physician Assistant alumni view their educational preparation in the following areas? Significance: To identify the weakness and strength of Grand Valley State University's Physician Assistant Studies Program which be subsequently used in the analysis of programmatic changes. Design: A secondary analysis of data previously collected by Grand Valley State University's Physician Assistant Studies program. Methods: In the fall of 2005, the alumni of the PAS program were electronically notified, via email that the GVSU's PA program was in the process of collecting information from alumni regarding their educational experience. The alumni were asked to complete a survey online at Zoomerang.com. Zoomerang.com then provided an Excel spread sheet of the results without any identifiers. Subjects: All GVSU PAS alumni graduates who have graduated between the years of 1998 to 2005.

Sponsor(s): Theresa Bacon-Baguley

PAD 108

Electrochemical Manipulation of Silver Telluride

Presenter(s): Justin Copenhaver

We are investigating the electromagnetic properties of silver telluride, Ag_2Te . These properties vary greatly with a change in charge carrier density, which are affected by a change in the silver content of the sample. We are attempting to pass silver ions into Ag_2Te by using a Coulometric titration. This process moves silver ions from a silver reservoir through a conductive electrolyte and into the silver telluride with a current, rather than adding bulk silver to a molten form of Ag_2Te . This process can be reversed and repeated in principle. We have observed the movement of silver ions into and out of Ag_2Te in a bulk pressed powder sample, but we have had difficulties repeating this result in a thin film of Ag_2Te .

Sponsor(s): Harold Schnyders

PAD 109

Effects of Concentrated Animal Feeding Operations (CAFO) on Local Stream Health

Presenter(s): Joseph Braspenninx

The effects of CAFOs on local stream health are a large concern for wildlife and human health. As farms become larger and the use of concentrated feeding operations increase in size, the risk of pollution to nearby streams rises. I will sample dissolved oxygen and conduct a macroinvertebrate study to determine stream health in Crockery Creek. I expect that the stream below a large dairy farm has lower DO levels and a deteriorated macroinvertebrate community. The final assessment of the stream will be helpful in the restocking plan of trout populations and also helpful for management recommendations.

Sponsor(s): Shaily Menon

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PAD 168

Diel Summer Movements of Fish in Sickie Creek, Manistee County, Michigan

Presenter(s): Andria Salas

This study investigated the location, habitat preferences, and diel movements of burbot (*Lota lota*) and salmonids in a small tributary stream in late spring, early summer. The research provides base-line information on fish distribution prior to the replacement of a culvert and reconnection of upstream reaches. The tributary was divided into six 100-meter reaches using blocker nets and data was collected using mark-recapture and electrofishing techniques. The community was dominated by coho (*Oncorhynchus kisutch*) and chinook salmon (*Oncorhynchus tshawytscha*), rainbow trout (*Salmo gairdneri*), northern mottled sculpin (*Cottus bairdii bairdii*), brook lamprey (*Ichthyomyzon fossor*), and the burbot. Salmonids favored undercut banks during the day ($p=0.014$) and woody debris at night ($p=0.017$, ANOVA). Substrate was dominated by sand thus the bulk of aquatic macroinvertebrate production was likely occurring on large woody debris—the area preferred by the fish at dusk and at night. In addition, water depth was positively correlated to fish density ($R^2 = 0.73$; $p=0.031$, step-wise MLR). Like the salmonids, burbot preferred undercut banks and abundance appeared to increase at night—a pattern observed in all major fish species with the exception of the chinook salmon, although trends were not significant for any species. The majority of captured fish were juvenile and we hypothesize that at these early life-history stages, the fish are moving into the tributary system at dusk to avoid predation pressure in the main channel. The coho population decreased through time ($p=0.034$) while rainbow trout YOY increased ($p=0.039$). There was no recapture of fin-clipped rainbow trout (year one plus) indicating a high degree of turnover with the main channel, likely as a result of the culvert.

Sponsor(s): Eric Snyder and Dolli Lutes

PAD 207

The historical analysis of research in therapeutic recreation

Presenter(s): Kathryn Keefer , Maureen Emaus , Mandy Scholten , Monica Sytek

Sponsor(s): Kari Kensinger

PAD 209

Grain Size Analysis of an Embankment and an Actively Eroding, Longitudinal Sand Bar in Bear Creek: Muskegon County, Michigan

Presenter(s): Nathaniel Hansen

Bear Creek, which empties into Bear Lake, is located in Muskegon County, Michigan, and has a drainage area of 16.7 square miles. The geographic area surrounding the creek is largely developed with traces of wetlands close to the sample area. I postulate that the grain size from an actively eroding, submerged, longitudinal sand bar to the embankment on the far side of the creek will decrease. This trend can be readily seen as silt is in higher concentrations closer to the embankment, but I am interested in seeing if the sand sized grains also decrease in size towards the embankment. Eight samples were taken, each 2.5 cm apart, from the embankment to the top of the sand bar. The samples were split into equal parts and sieved. The grain shape and mineral composition were also determined. The silt fractions were analyzed using a laser particle counter.

Sponsor(s): Patricia Videtich

PAD 210

Low Back Pain in Police Officers

Presenter(s): Jennifer Arts

Low Back Pain in Police Officers The purpose of this study was to compare the prevalence of low back pain among police officers in Kent County to the nationwide prevalence in the general population. In addition, the officers' opinions of factors that contribute to their low back pain were also explored. Data were collected through an anonymous, voluntary survey which was made available to all sworn officers in Kent County.

Sponsor(s): Dan Vaughn

ORAL PRESENTATION ABSTRACTS

PAD 261

A Comparative Analysis of Body Mass Index, Exercise Habits, Smoking and Alcohol use between Graduate Level Health and Non-health Students at Grand Valley State University

Presenter(s): Emily Twichell , Carey O'Donnell , Jon Churchill , Sarah Walraven

A Comparative Analysis of Body Mass Index, Exercise Habits, Smoking and Alcohol use between Graduate Level Health and Non-health Students at Grand Valley State University. By: Churchill, J., O'Donnell, C., Twichell, E., Walraven, S. Grand Valley State University, Masters of Physician Assistant Studies Objectives Many of the common diseases treated today stem from controllable personal habits, such as a sedentary lifestyle, smoking, and obesity. Smoking and obesity are the number one and two causes of preventable mortality and combined they result in a huge economic burden. The increasing cost of health care has led health care professions to look at preventative medicine and alternative ways to restore health, such as prescribing exercise programs, weight loss and smoking cessation. The ability of the health care provider to educate and adequately treat patients in healthier lifestyles may be hindered by their own lifestyle habits.

Sponsor(s): Linda Goossen

PAD 262

The Enron Collapse: What Went Wrong?

Presenter(s): Mary Alice Homkes

What were the factors that led to the biggest corporate downfall in U.S. history? The Enron collapse has provided material for several books, not to mention the numerous case studies available in college textbooks used by many professors in ethics classes to auditing classes. Was it greed, bravado or just plain stupidity on the parts of those involved? What could or should Arthur Andersen, the auditors in charge, have done to prevent Enron's —as well as their own, demise? Along with a discussion on these issues, a brief update on the trial of Ken Lay and Jeffrey Skilling, now going on in a Houston courtroom, will be included in the presentation.

Sponsor(s): Stan Lindquist

Beginning at 1:20 PM

PAD 107

Constructing and Assessment of Materials to help Student Learn and Apply concepts of Energy Conservation and Entropy

Presenter(s): Timothy Steenwyk

Energy is one of the most important concepts in physics, and it is frequently misunderstood. We will develop materials to build student understanding of energy conservation, and entropy. The need to develop these materials is great; society at large should be equipped with these concepts to shape future policy. To this date there has been little research and few materials developed by physics education researchers on this subject. We are developing interactive labs and inquiry based tutorials to enhance understanding of these important concepts. After creating our materials we will evaluate their effectiveness using methods of physics education research. This will lead to more improvements in the materials.

Sponsor(s): Keith Oliver

PAD 108

Signs and Interpretive Materials for the Nature Trails at the Franciscan Life Process Center

Presenter(s): Stephanie Baker

At the Franciscan Life Process Center in Lowell, MI there is a nature trail running throughout the property. This trail is mowed and runs through fields and a red pine forest. At this point there are no signs or interpretive materials for the trail. This project will research the planning and implications or other nature trails in the Grand Rapids area. Interpretive materials will be developed for this trail by

ORAL PRESENTATION ABSTRACTS

assessing the plant and animal species, and exploring habitats along the trail. A booklet and map will be produced for the public to use when walking the trail. Creating signs and interpretive materials will make it more accessible and educational for the public.

Sponsor(s): Sister Damien Marie Savino

PAD 109

Improving the Statistical Curriculum Sequence

Presenter(s): Matt Race

Most introductory statistics classes have been taught using a standard curriculum sequence. We developed a new statistical curriculum sequence with the goal of improving student acquisition and retention of statistical concepts. In this talk, we detail the changes in the standard statistics curriculum sequence. Our proposed curriculum sequence came about by essentially inverting the traditional sequence model. We will test our proposed curriculum sequence throughout the 2005-2006 school year in STA 215 (Introductory Applied Statistics) classes to determine if this improves acquisition of knowledge. We will be performing a follow-up study to determine if this improves retention of knowledge as well.

Sponsor(s): John Gabrosek

PAD 168

Physical therapy intervention targeting balance and gait in an individual following cerebellar hemorrhage

Presenter(s): Cynthia Fiori

This case report describes physical therapy intervention for a patient following cerebellar hemorrhage. The patient was a 78-year-old man who was admitted to an inpatient rehabilitation unit one week following a right cerebellar hemorrhage. The patient was treated with a 4-week course of physical therapy that emphasized balance and gait retraining. Outcome measures included the Berg Balance Scale and the Functional Independence Measure. The patient demonstrated improved postural stability in functional tasks including gait. This case report describes a comprehensive physical therapy intervention and documents functional improvements in a patient with balance and gait impairments. The outcomes suggest that physical therapy targeting balance and gait may be useful to improve functional mobility of an individual with impairments associated with cerebellar hemorrhage.

Sponsor(s): Mary Green

PAD 207

Fast Times at Ridgemont High and Porky's: Gender perspective in the teen comedy.

Presenter(s): Kerri VanderHoff

This study examines gender representation in teen comedy with an emphasis on two films from the genre. Fast Times at Ridgemont High (1982) was directed by a woman, Amy Heckerling. Porky's (1981) was directed by a man, Bob Clark. This research reveals the different ways male and female directors portray teenage girls and encourages a re-evaluation of the values conveyed to young viewers when the perspective represented in Hollywood entertainment films is predominantly male.

Sponsor(s): Dolli Lutes

PAD 209

Kinematics of the Thoracic Spine in Persons with Idiopathic Scoliosis

Presenter(s): Meghann Phillips, Tara Tasma, Lori Swenson

Scoliosis is present in 2-3% of adolescents in the general population. Little is known about the three-dimensional spinal movement patterns in persons with scoliosis. This study will specifically focus on coupled motion behavior, i.e., sidebending and axial rotation, in the thoracic spine. A video-based motion analysis system will be used to test the movement patterns of individuals who have scoliosis but who are asymptomatic. Angle-angle plots will be used to determine coupling behavior. Cross-correlation analysis will also be used to determine the relationship between primary and secondary motions. These descriptive data can be used to better understand the three-dimensional motion patterns in people with scoliosis, which may serve to assist in intervention and as a foundation for future research.

Sponsor(s): Gordon Alderink

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PAD 210

Improving business processes for a small business

Presenter(s): David De Boer , Jeremy Fisher , Nick Armes , Randy Veldman

Operations management procedures in the small business world provide the needed competitive advantage for survival. Our project is aimed at leveraging operations management procedures to improve the overall quality of our small business. Over the course of our project we have met with the small business client on several occasions, assessed their needs for improvement in their current operations, collected relevant data on their operations, and then came up with a viable solution based upon our research. The results of our research project should improve the operations strategy of the small business client.

Sponsor(s): Nancy Levenburg

PAD 261

Women, Realism and Hip-Hop

Presenter(s): Chenal Ogletree

"It's the worlds famous, Lil' Kim, Queen Bee/I am who I am, you just can't change me/No matter what you do, you can't take the hood out me/People been around me for years, don't know shit about me"(La Bella Mafia track 7) I searched for definitions of what a woman is and in my search I found interesting descriptions. One search stated that a woman is an adult female human. Another declared that a woman is a wife and my "favorite" is woman as a female servant or subordinate. For many years women have been looked down upon, mistreated and thought of as nothing more than wives and homemakers and it has nothing to do with race, class, or creed. After reading *The Awakening* by Kate Chopin and *The Yellow Wallpaper* by Charlotte Gilman I felt bad for the women in these stories. These women are inferior and they are bond to the "cult of true womanhood." The representations of these women's roles in society are very similar to women in the Hip Hop industry. This paper will explore the use of women's language and the stereotypical roles of women. Also how women are represented in society and the evident theme of being trapped that runs throughout the two text and the lyrics of hip hop figures such as Lil' Kim, Mary J Blige, and Karinne Steffans.

Sponsor(s): David Ihrman

PAD 262

An Investigation into Perceptions of Ideal for Self and Other

Presenter(s): Regan K. Luepke

This study will investigate the perceptions of ideals for self and others regarding body image, and also look at how, if at all, these perceptions vary based on geographic location. Beauty is said to be in the eye of the beholder, and it is my assumption that in different regions, perfection is viewed in different ways. This study consists of a survey of 24 questions; both multiple choice and short answer, inquiring about how these women categorize their bodies and the bodies of their friends. The survey also delves into what these women see as ideal for themselves. Data will be obtained from women belonging to the same national sorority at roughly 10 different chapters across the continental US. The reason for this is that by surveying women who all belong to the same organization, which upholds the same morals and values across the board for its members; one can hypothesize that the differences will be based more on geography and environment than random variables unaccounted for.

Sponsor(s): Megan Mullins, Don Williams

Beginning at 1:40 PM

PAD 107

Effects of the East Grand Rapids School System on Housing Prices

Presenter(s): Kristen Noffke

Housing prices are determined by multiple factors, including the value of public goods in the surrounding neighborhood. The East Grand Rapids public school system has long had a strong reputation in the western Michigan area and has been a known factor in the dramatic increase of housing prices in East Grand Rapids. This project places a dollar value on this education system by comparing

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neighboring cities. The "Golden Triangle" area of Grand Rapids Township gives its residents the opportunity to send their children to East Grand Rapids, while paying taxes to Grand Rapids Township. Because of this unique factor, this project was able to assess the individual value of a school system on housing prices, rather than public goods as a whole.

Sponsor(s): Aaron Lowen

PAD 108

Estimation of daily milk production and dietary nutrient requirements in the Arabian mare.

Presenter(s): Tina Stamper

Six Arabian mares with a body condition score ranging from 4-6 post-foaling were used for milk collection. Milk intake by foals was estimated on days 10, 20, and 30 of lactation by the weigh-suckle-weigh method as described by Gibbs et al. (1982). Milk was collected manually on days 11, 21, and 31 of lactation. Samples were collected over several nursing bouts until approximately 200 mL was obtained. Samples were analyzed for percentage of fat, protein, lactose, and solids using mid-infrared spectroscopy (Bentley 2000, Bentley Instruments, Inc., Chaska, MN). These analyses were performed by the National Dairy Herd Improvement Association (DHIA, East Lansing, MI). Data were analyzed using the MIXED procedure of SAS (Version 8.1, SAS Institute Inc., Cary, NC). Significant effects were considered at $P < 0.05$. Percentages and yields of milk, true protein, digestible protein, fat, and digestible energy did not change with day of lactation.

Sponsor(s): Terry Trier

PAD 109

Statistical Consulting Experience: The Analysis of General Education Courses

Presenter(s): Katelin Krummrey, Brittany Dallas

Professor Carol Griffin was interested in whether general education courses have changed over time in regards to class size and instructor level. As Professor Griffin's statistical consultants, we organized and condensed a sizable data set presented to us. We then looked into variables such as class location, class size, instructor level, and semester to analyze the data set and present to her an analysis that depicted the trend of instructors and class size for general education courses over the past 4 years.

Sponsor(s): Neal Rogness, Carol Griffin

PAD 168

Grain Size Analysis of Beach Sand from Eight Different Coastal Areas

Presenter(s): Sydney Boos

Grain size analyses were performed on eight samples collected from Peru, Florida, Australia, Costa Rica, the Dominican Republic, Hawaii, Japan, and Michigan. The samples were limited to coarse, clastic sands to better compare the different coastal areas. The samples were sieved using a ro-tap. Studies were also done using a binocular microscope to determine mineral composition, grain shape (sphericity and roundness) and surface texture. The mean, mode, median, sorting, skewness, and kurtosis were calculated. These data were compared to that in the literature for beaches, rivers, and dunes. The goal of this project is to determine if there are defining characteristics for beach sediments that differentiate them from other depositional environments such as rivers and dunes.

Sponsor(s): Patricia Videtich

PAD 207

Introduction to Mobius Transformations

Presenter(s): Eric Simon

A Mobius transformation is a class of functions of the complex numbers with applications in both non-Euclidean geometry and physics. This talk will look briefly at some of these applications as well as some basic properties of Mobius Transformations. If there is time the limit points of Mobius transformations will be introduced as well as the amazing pictures created by graphing them.

Sponsor(s): David Austin

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PAD 209

Role Exercise vs. Occupation-Based Activity: Patient's Perceived Meaning

Presenter(s): Andrea Merrill , Joe Rocznik , Carrie Sage

Sponsor(s): Cynthia Grapczynski

PAD 210

Becoming Invisible: The New Homeless Illusion

Presenter(s): Kevin Rypma

In "Becoming Invisible: The New Homeless Illusion" I argue that the current state of spatial concentration/discrimination of homeless people in general comes as a result of policies orchestrated by local officials in connection with the interests of local businesses. Having been intrigued myself by the odd concentrations of the homeless, I wondered why they seemed to be visible only in certain areas of cities instead of being dispersed throughout communities. Upon researching the issue it became obvious that the objective of local and city governments was to impinge on the rights of homeless people to exist in public arenas in order to cater to the wants of business leaders who shaped public policy. The state of "becoming invisible" then is an effort of city policymakers to eliminate symbols of poverty in their cities by simply making it illegal for them to exist in areas of value to them rather than tackling the underlying problem of why it is happening.

Sponsor(s): Joel Stillerman

PAD 211

Patterns of Charitable Giving Among Employees of Public Schools

Presenter(s): Stephanie Tuttle

A recently reported trend in charitable giving has been the reduction in private donations to Nonprofit Organizations concerned with issues of poverty, hunger, and/or homelessness. Employees of a Public School system are surveyed to determine what motivates them to give to specific charitable organizations. Factors examined include variables of age, annual income, level of education, political activism, and tax incentives. Current events such as Hurricane Katrina and the Tsunami are also explored as factors in the changing giving patterns. A literature review concerning general motivations for giving is included and implications for the Nonprofit sector are discussed.

Sponsor(s): Don Williams

PAD 261

Nineteenth Century Society of Spain

Presenter(s): Tina Struyk

As a result of being a Spanish major I have had to read my fair array of literature. The two literary movements that interest me the most are realism and naturalism. Benito Galdos and Emilia Bazán represent these movements in Spain. By reading their works the nineteenth century of Spain comes to life. The nineteenth century of Spain is known for political instability, and major social transformation. The bourgeois class was born and as a result of this birth many profound changes occurred in the social structure. Through the elements of realism in the short novel *Torquemada en la Hoguera* (1889) by Benito Galdos and the elements of naturalism in the story "En Tranvía" (1890) by Emilia Bazán we can read about the styles, customs, activities, and sicknesses of the various social classes of the nineteenth century. I would like to present the nineteenth century Spanish society by reading an essay I have written in Spanish.

Sponsor(s): Zulema Morel

PAD 262

Kirov's Murder a Historical Debate

Presenter(s): Brett Homkes

Public opinion of homelessness and poverty, from the stereotypical to the realistic, have profound effects on ameliorating social welfare programs. College students, in particular, are a section of the population instrumental in public policy in the present time, but more importantly, are useful in predicting policy of the future. Through a systematic survey, this study examines the beliefs of Grand

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Valley State University students on poverty in nearby Grand Rapids, Michigan with emphasis on its causes and possible solutions, prevalence, variation and other nuances. The study also takes into account the participants' demographics and amount of experiential knowledge of local-area poverty in order to identify patterns in opinion. Finally, the findings will be juxtaposed with U.S. Census Bureau statistics in addition to literature on West Michigan's poverty, suggesting the depth of disparity between public opinion and reality.

Sponsor(s): Professor Kellarah and Dolli Lutes

Beginning at 2:00 PM

PAD 107

Understanding the Informal Sector in Santiago, Chile

Presenter(s): Catherine Sundt

Recent sociological research has painted an alarmist picture of consumer trends in developing countries. With the development and increasing popularity of malls, supermarkets, and big-box retailers in Latin American countries, some sociologists fear that the informal, traditional venues of retail such as farmers markets and flea markets will be threatened, and possibly even obliterated. Professor Joel Stillerman's on-site research in Santiago produced field notes, taped interviews, and a body of knowledge surrounding these markets, which I helped him to analyze and code, after which we developed an argument. Our argument is that, although the new consumption spaces are affecting consumer patterns and forcing vendors to adapt, the traditional retail venues are an integral part of the daily life of the residents of Santiago, Chile. Much of the support and conflict is within the markets themselves, and the vendors use strategies and interpersonal relationships to maintain the

Sponsor(s): Joel Stillerman

PAD 108

Invasive Species Management at Ridge Point Church

Presenter(s): Cody Weener

Invasive species are an increasing problem and controlling them requires a management plan. Ridge Point Church of Holland has invasive species growing on their land and this project will aim to identify the exotic plants and propose ways to stop the spread and decrease their overall abundance. The proposed management will be consistent with other environmental concerns of the parcel, such as protection of the riparian habitat and water quality of the Black River that runs through the property. The final plan will be given to Ridge Point Church for implementation at will.

Sponsor(s): Sister Damien Marie Savino

PAD 109

Howard Christensen Nature Center: A new forest management plan.

Presenter(s): Joe Westerhof

The land managers of the Howard Christensen Nature Center want to generate a new forest management plan for the educational compound. In order to produce such a plan a complete forest inventory is needed. I will conduct a detailed forest inventory by dividing the 130 acres into stands of similar composition and providing basal area averages for each stand. By comparing my findings to stocking charts and the management plans of other land areas I will write a suggested management plan for the current land managers.

Sponsor(s): Shaily Menon

PAD 168

Education for Democracy: Discovering Civic Engagement

Presenter(s): Sally Sayles

Exploring the concepts of an experiential education promotes transformative connections between the academic classroom and other domains of student life. Therefore, this research aims to discover the capacity that education has to change the world. It explores Jane

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Addams' work, her efforts to encourage democracy, and her educational philosophy that emphasizes learning from life experiences. Additionally, her philosophy of social ethics is intertwined with the writings of John Dewey, Charlene Haddock Siegfried, Ira Shor, and various other theorists. My analysis uses feminist and critical theory to formulate a learning foundation that fosters civic engagement for students and educators.

Sponsor(s): Dolli Lutes

PAD 207

Exploring the GVSU Trail System

Presenter(s): Ben Terpsma , Tim Kolmodin , Ryan Locke , Bob Morrison , Derek Whittington

Mapping and Classifying the Ravines Trail System at the Grand Valley State University, Allendale Campus using GIS/ GPS technology
By Tim Kolmodin, Ryan Locke, Bob Morrison, Ben Terpsma and Derek Whittington Natural recreation areas are valuable assets in any community. The purpose of this project is to map, evaluate and classify the current trail system at Grand Valley State University. GIS and GPS technology will help to reestablish the trail system and identify slope and area characteristics. We will identify at risk points or segments, and provide alternative route segments that promote sustainability. We will also compute a trail difficulty index based on slope characteristics. The resulting map will provide new information about the trails, and help students and other members of the campus community take advantage of the facilities.

Sponsor(s): Edwin Joseph

PAD 209

A Study of Glacial Sand Deposits on and near the Grand Valley State University Campus: Ottawa County, Michigan

Presenter(s): Kirk Perschbacher

In Michigan during the Pleistocene Epoch (1.6 million years to 10,000 years ago) glaciers advanced and retreated many times. Glacial sediments, which were deposited as the glaciers receded, now cover lower Michigan. The goal of this project is to compare sediment from two different sections that might be from the same deposit. Sediment samples were taken from the ravines on the Grand Valley State University campus and a site about three miles to the southwest. Sand samples from the ravines were collected from a 0.5m thick outcrop of sand exposed in the ravine wall. Samples from the second location were taken from sand collected during drilling of a water well. These samples will be tested for grain size, grain shape, and mineral composition. If the samples are similar in grain size, shape, and mineral composition, then they may have been deposited in the same depositional environment. This data will also help determine a likely depositional environment.

Sponsor(s): Patricia Videtich, Patrick Colgan

PAD 210

George W. Bush and No Child Left Behind

Presenter(s): Mandi Bird

This will be an objective presentation about the leadership qualities (using David Gergen's Eyewitness to Power as model) George W. Bush utilized in getting No Child Left Behind passed.

Sponsor(s): Gleaves Whitney

PAD 211

Correlations in Breastfeeding and Physical/Mental Development of Pre-term or Low Birth Weight Infants

Presenter(s): Holly Lee , Marci Meister , Cory Cameron

Title: Correlations in Breastfeeding and Physical/Mental Development of Pre-term or Low Birth Weight Infants Research Question: Is there a significant correlation between the physical and mental development in infants who are breast fed for at least the first four months of life versus bottle fed in infants who are defined as Pre-term or Low birth weight. Significance: The purpose of this study is to assist health care professionals in the United States to further advance their knowledge of the best possible way to provide nourishment to infants in their first year of life. The greater amount of wisdom that health care providers have, better education can be given to parents

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of these children, which in turn may aid in the effectiveness of nutrition for superior growth and development. Design: In this study, the researchers will be performing a retrospective quantitative chart review study of children born at a low birth weight, or infants born pre-term. Sponsor(s): Theresa Bacon-Baguley

PAD 261

Identifying and Assessing Water Pollution in the Ravine System at the GVSU Allendale Campus

Presenter(s): Lindsey Dewenter

This project involves testing the quality of water that runs through the Ravines system on the GVSU Allendale campus. I will use GPS technology to locate pollutants in the water and test the levels. The distribution of pollutants will be displayed spatially and analyzed for trends and patterns in relation to surface features. I will also sample pH, conductivity, and temperature to determine general water quality at specific locations such as areas close to walkways, discharge areas from parking lots, and points away from the campus. I will compare the samples taken further away from campus with those nearer to campus discharges to examine mercury concentrations. Sponsor(s): Edwin Joseph

PAD 262

Training for Trust in the Performance of Golf Skills: Wedge Feel Shots

Presenter(s): Douglas Elliott , Michael Brossman , Mark Liley

Trust is the psychological skill whereby the performer releases conscious control over the execution of a motor performance, thus optimizing skill execution and maximizing skill outcome. The sport of golf offers many opportunities for the golfer to trust what has been trained in the execution of any particular shot under varying circumstances. This study examined the effects of a training program specifically designed to enhance trust for skilled performers during the execution of a 30-yd feel shot to the pin. Subjects were 33 skilled college-age golfers (USGA handicap < 8.0) who performed 6 baseline shots prior to receiving a trust training program designed to improve their short game skills. Each subject then hit 10 shots to a target hole on a green at 1- and 2-weeks post training. Dependent measures included x- and y-displacement of the ball from the hole, self-report of process, and temporal measurement of pre-shot routine execution for each trial. Results to be discussed.

Sponsor(s): John Stevenson, Paul Stephenson

Beginning at 2:20 PM

PAD 107

Quantitative Topography Measurements of Periorbital Skin In Vivo: Method Development Using Digital Stripe Projection Techniques

Presenter(s): Brittany Malover

The objective of this study was to design and optimize a method for evaluating periorbital wrinkle treatments using the three dimensional imaging system PRIMOS. Through the implementation of digital stripe projection techniques, PRIMOS 3D gives one the capability to quickly and non-invasively measure the topography and microstructure of skin. Appropriate protocol details for future ingredient screening and production technology studies were addressed by analyzing the capabilities and sensitivity levels of the instrumentation, as well as a variety of the software tools from both an image capture and a data analysis standpoint. An in-house clinical study was conducted to test various aspects of the developed method.

Sponsor(s): Ronald Paguio

PAD 108

Delegation to Physical Therapy Aides in Michigan

Presenter(s): Jamie Morton , Nichole Eickholt , Theresa Rheame

The health care profession has been utilizing support personnel for decades due to increased productivity and demand for reduced costs of healthcare. Physical therapy aides are commonly used in conjunction with physical therapists care. However, controversy exists regarding what tasks an aide should perform as well as the amount of supervision required. Past literature only investigated

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these items by requesting information from physical therapists and physical therapy assistants. The current research project uses a questionnaire distributed to physical therapy aides in Michigan to examine the relationship of delegation to aides, supervision of aides and their demographics. The researchers will compare frequencies of responses to various questions using a Chi-squared statistical analysis. Results will be interpreted and compared to past research outcomes.

Sponsor(s): Paul Stephenson, John Peck

PAD 109

Legislating Biodiversity: Proposed Changes to the Endangered Species Act of 1973

Presenter(s): Marnie Suhr

The Endangered Species Act (ESA) of 1973 was put into place to slow the loss of species due to human interference in ecosystems. The effectiveness of this law has been debated by both policymakers and resource managers, as well as by private property owners. A new proposal titled the Threatened and Endangered Species Recovery Act (TESRA) aims to modernize the ESA in order to make it more effective. I will review both government documents and public comments to compare and contrast the two laws, and determine if it is advisable to replace the ESA with the TESRA.

Sponsor(s): Shailly Menon

PAD 168

XANTPHOS: A Powerful Ligand for C-N Coupling

Presenter(s): Kyle DeKorver

A palladium-catalyzed coupling of protected 2-deoxyadenosine has been developed using simple and extended bromo-aromatic substrates, which include bromobenzene, o-bromoanisole, 1-bromo-2-nitrobenzene, 1-bromonaphthalene, 2-bromonaphthalene, 1-bromo-2-methoxynaphthalene, and 2,4,6-tri-*t*-butyl-bromobenzene. Optimum conditions were obtained using Pd2(dba)3, Xantphos, and Cs2CO3 as the palladium species, ligand, and base, respectively.

Sponsor(s): Felix Ngassa

PAD 207

Attitudes Towards Disability in Students Pursuing a Profession in Rehabilitation

Presenter(s): Adrienne Stephen, Anne Cooke, Jeff Rigley

The purpose of this study is to determine the attitudes towards disability among students in three rehabilitation disciplines at Grand Valley State University (GVSU). This study will include perceptions from Physical Therapy (PT), Occupational Therapy (OT), and Therapeutic Recreation (TR) at Grand Valley State University (GVSU). These students will be surveyed using the Attitudes Towards Disabled Persons (ATDP) Scale. A comparison group will also be used for this study comprised of 40 graduate and undergraduate students attending GVSU in the 2005-2006 school year. The data will be analyzed using Statistical Package for Social Sciences (SPSS). The data will be analyzed using a 3x3 (discipline x educational year) 2-way ANOVA to assess the effects of rehab discipline and year of study on the ATDP scores. A comparison group will be assessed separately with the ANOVA. The results and curricular implications will be discussed.

Sponsor(s): Barbara Baker, John Gabrosek

PAD 209

Grain Size and Petrographic Analysis of Ooids from Great Salt Lake and the Bahamas

Presenter(s): Abbey Post

Antelope Island is located in Great Salt Lake, Utah. Schooner and Norman Cays are islands on the Great Bahama Bank. The sediments at all three locations are composed of ooids, grains composed of layers of CaCO3 that precipitated around a nucleus. Samples of ooids were collected at two locations on Antelope Island and one sample each from Schooner and Norman Cays. These samples were analyzed for grain size in the lab using sieves. These samples were also made into thin sections and analyzed using a petrographic microscope. In addition to the grain size, the shape, sphericity, roundness, surface texture, and composition of the nuclei

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were determined. Mean, median, mode, sorting, skewness and kurtosis were calculated. All these data for the different environments of formation were then compared. The purpose of this study is to determine if the ooids that formed in these very different environments (a highly saline lake versus normal marine) are significantly different.

Sponsor(s): Patricia Videtich

PAD 210

Training for Trust in the Performance of Golf Skills: Driver Tee Shots

Presenter(s): Mark Liley , Michael Brossman , Douglas Elliott

Trust is the psychological skill whereby the performer releases conscious control over the execution of a motor performance, thus optimizing skill execution and maximizing skill outcome. The sport of golf offers many opportunities for trusting what has been trained in the execution of shots under varying circumstances. This study examined the effects of a training program specifically designed to enhance trust for skilled performers during the execution of a tee shot. Subjects were 37 skilled college-age golfers (USGA handicap < 8.0) who received a trust training program designed to improve their full swing shot-making skills. Each subject then hit 10 drives to a target flag on the range at 1- and 2-weeks post training. Dependent measures included driving distance, linear displacement to the target line, self-report of process, and kinematic data of shoulder, hip, and spine posture. Statistical analyses included t-tests and regression analyses to assess changes in performance.

Sponsor(s): John Stevenson, Paul Stephenson

PAD 211

The Awakening

Presenter(s): Amanda Kok

Sponsor(s): David Ihrman

PAD 261

Fantasies of the Ideal Body

Presenter(s): Jesse Veenstra

This presentation stems off previous research done concerning surgical cosmetic procedures in consumer culture. I think most of us can agree that society plays an integral role in shaping standards that are portrayed as the universal norm. The questions of importance concern how the individual takes these idealized standards and applies them to herself/himself. In this sense, an individual will create a fantasy version of themselves (it may or may not resemble the societal creation, but it will most definitely have been influenced by it). In order for the individual to begin achieving their fantasy they must gain some tangible progress. This presentation will primarily discuss how surgical cosmetic procedures offer this tangible progress along with a further explanation of the theory behind the process. In addition, this presentation will also explain why the pressures on a woman's appearance are far greater than that of a man.

Sponsor(s): Joel Stillerman

PAD 262

The Effects of Infant Age on Parental Vocalizations About Object Categories in a Play-type Setting

Presenter(s): Katherine Schwartzkopf

Previous studies have examined the role of various perceptual features of objects on an infant's ability to effectively categorize the object. Few, if any studies have examined the role of parents in the formation of categories early in infancy and the effect of the infant's age on the type of categorical information provided by the parents. In two studies, parental vocalizations directed to their infants (3- to 12-months of age) about objects were videotaped and analyzed. In Study 1 the proportion of superordinate labels used by parents increase as a function of the infant's age while the proportion of basic level labels decreased with age. In Study 2, parental attempts at label elicitation increased as a function of the infant's age. The results show definite age related patterns in parental vocalizations about objects and their categories. The results indicate that parents are a source of categorical information early in infancy.

Sponsor(s): Gwenden Dueker, Dolli Lutes

ORAL PRESENTATION ABSTRACTS

Beginning at 2:40 PM

PAD 107

A Wide and Fruitful Land: Jefferson and the Seeds of American Empire

Presenter(s): Brian Flanagan

"A Wide and Fruitful Land" will explore one of the most consequential moments in American history: the Louisiana Purchase. In 1803, President Thomas Jefferson's administration acquired what today amounts to the middle-third of our nation. The Purchase unlocked the American Western Frontier, bringing the nation a fountain of youth that lasted through the 19th Century, and making possible the prosperity and relative peace our nation has enjoyed at home. It also brought about the extension of our peculiar institution -- American slavery -- and virtually ensured the Civil War we endured 60 years later. The grief of the American Indian, too, would be compounded as white America immigrated across the Mississippi River. What were the unlikely circumstances through which this transaction occurred, and what -- ultimately -- is its legacy?

Sponsor(s): Whitney Gleaves

PAD 108

Vocational Satisfaction and Other Demographics of GVSU Physician Assistant Graduates

Presenter(s): Chris LaFlure , Rebekah Lange , Paul Ortquist , Christine Babcock

Grand Valley State University's Physician Assistant program is still a relatively new program, graduating its first class in 1998. In order to evaluate the program, it is important to have some sort of standard by which to measure. Measurement of vocational satisfaction by graduates of the program is one way that can be used as a marker of progress. There is currently limited data on the vocational satisfaction of graduates of the Grand Valley State University physician assistant program. The research we have undertaken has meant to address the lack of data on this subject. The research we have done analyzes demographics, work settings, and vocational/professional satisfaction. Using a published research tool, we have compiled data that is meant to assess vocational satisfaction of GVSU PA graduates and provide other useful demographics that may provide insight into the status of the program.

Sponsor(s): Theresa Bacon-Baguley

PAD 109

When Psychopaths Go To College: Psychopathic Traits and College Maladjustment

Presenter(s): Lyndsey Adams

Estimated less than 1% of the general population, psychopaths create significant amounts of crime and violence. Few studies have explored psychopathic personality characteristics in non-incarcerated populations or "hidden" psychopaths. Using the Psychopathic Personality Inventory (PPI), a self-report measure of psychopathy, this study evaluated the correlations between psychopathic traits and indicators of college maladjustment. We hypothesize that "hidden" college psychopaths will be more interpersonally maladjusted than peers, equally successful intellectually, and less impulsive than their incarcerated counterparts. Understanding the differences and similarities between incarcerated and hidden psychopaths may lead to improved recognition and possibly early intervention with these social predators.

Sponsor(s): Dolli Lutes

PAD 168

New Orleans in the Aftermath of Hurricane Katrina

Presenter(s): Anne Milliken

My research explored the economic and social divisions revealed in the metropolitan area of New Orleans following the catastrophic natural disaster of Hurricane Katrina, as well as the role government policies played in the development of those divisions.

Sponsor(s): Joel Stillerman

ORAL PRESENTATION ABSTRACTS

PAD 207

Measuring Trust in the Performance of Golf Skills: Comparison of the Use of Self-Report and Process Data

Presenter(s): Michael Brossman , Douglas Elliott , Mark Liley

Trust is the psychological skill whereby the performer releases conscious control over the execution of a motor performance, thus optimizing skill execution and maximizing skill outcome. This study examined the use of self-report measures of performance outcome in putting, a 30-yard feel shot, and a tee shot with process measures using biomechanical instrumentation following a training program designed to enhance trust for performers during the execution of varied shots. Subjects were 37 college-age golfers who underwent a trust training program designed to improve putting, short game, and full swing skills. Dependent variables included self-report ratings, shot outcome, kinematic data regarding ball parameters, pre-shot routine execution and body position pending skill. ANOVA and regression analyses were used to assess whether self-report data vs. process data accounted for more variance in predicting trust and whether the presence or absence of trust predicted shot outcome.

Sponsor(s): John Stevenson, Paul Stephenson

PAD 209

Grain Size and Shape Analysis of Sand Collected Along a Lake Michigan Beach Profile: Kirk Park, Michigan

Presenter(s): Jillian Kurek

In Kirk Park, an Ottawa County park located along Lake Michigan, sand samples were collected at six locations along a beach profile, from the swash zone to the active fore dune. The goal of this project is twofold: (1) to determine if the sand is coarser in the swash zone and gradually fines toward the dune area; and (2) to determine if the sand in the dunes has a greater roundness than that closer to the water. The six samples were analyzed for grain size using sieves. One sample was duplicated, taken approximately one meter from another sample in the traverse, and analyzed for comparison. Grain shape was estimated using a binocular microscope along with a sphericity and roundness scale. Also using a binocular microscope, an estimate of the mineralogy of the sand was made to note any significant differences in composition along the profile. After extensive graphing and analysis of the size and shape of the sand grains, differences between the beach and dune sand should be evident.

Sponsor(s): Patricia Videtich

PAD 210

Catalog of SGR Events from Rossi X-ray Timing Explorer

Presenter(s): Abram Bos

Soft Gamma Repeaters (SGR's) and Anomalous X-ray Pulsars (AXP's) are objects that give off short, infrequent bursts of soft gamma-hard x-ray photons. SGR's and AXP's are believed to be the same objects in the night sky named magnetars, neutron stars with extremely strong magnetic fields. Data from these sources has been collected by the Rossi X-ray Timing Explorer (RXTE) satellite over the past 5 years, however only a small fraction of the data has been analyzed. Existing code written in IDL will be used to analyze a large subset of the data. The analysis will focus primarily on the spectral and temporal properties of these objects in order for ongoing research to gain insights into their physical parameters and behaviors. In order to facilitate this research a searchable database of the properties will be disseminated as a tool for the community.

Sponsor(s): Geoff Lenters

PAD 211

Subpoena the Symposium: Classical Scholarship in the Courtroom

Presenter(s): Kristen Heise

Who would have thought that Plato's theories of love could affect how Americans express themselves? In 1993, Colorado's anti-sodomy law, Amendment 2, was brought to question in what later became the Supreme Court case *Romer v. Evans*. The plaintiff argued that Amendment 2 was rooted in Judeo-Christian beliefs, and therefore violated the First Amendment. On behalf of the state, John Finnis, a moral philosopher from Oxford, provided an affidavit stating that the Greco-Roman world also abhorred sodomy. In response, the plaintiff introduced Martha Nussbaum, a professor of philosophy and classics at Brown University. Instead of a scholarly debate, the

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experts engaged in a cat-fight. What could have been an opportunity for higher learning in law and public policy turned into ad hominem attacks and dictionary scandals. I would like to examine both affidavits, the accuracy of their statements and effectiveness of their arguments in order to figure out what went wrong in Colorado.

Sponsor(s): James Wells

PAD 262

Impacts of Restoration in the Manistee River Watershed, MI: Response of the Physical Habitat

Presenter(s): April Wright

Structure and function of stream ecosystems is largely determined by the physical habitat of the stream. Anthropogenic addition of fine sediment from eroding stream banks and improper road stream crossings can have many negative consequences, including reduction in substrate heterogeneity, masking of fish spawning gravels and reduction of habitat. Our objective was to examine consequences of stream restoration efforts on the sediment composition of three streams. Specifically this included an assessment of substrate before and after, and above and below restoration sites as well as changes in substrate composition from headwaters to mouth. Results from a subset of 10 restoration sites suggest that fine sediments are more ubiquitous downstream of erosion sources ($p < 0.05$ for 16 mm, 500, 250 and 125 μm for weight and/or volume; ANOVA). In addition, there was a trend for restoration efforts in the form of road stream crossing improvement, to increase sand substrate.

Sponsor(s): Eric Snyder

Beginning at 3:00 PM

PAD 107

MLL Spanish Panel - Memorias de la Isla

Presenter(s): Tina Struyk, Sarah Stahl, Katie Eklund, Megan Koops, Elizabeth Barko, Catherine Sundt

Sponsor(s): Zulema Moret

"Un rechazo y un abrazo: La Imagen de la Virgen de Guadalupe en el arte chicano" by Katie Eklund

The Virgen of Guadalupe is a common religious icon found in the Mexican culture. It represents the syncretism that has taken place between the religions of the Catholic conquistadors and the indigenous populations. This essay looks at the reconstruction of this powerful cultural symbol as it appears in the Chicano art of Yolanda M. López and Alma López. The importance of the Virgin of Guadalupe can be seen as all aspects of popular Mexican and Chicano culture. She is mentioned in the essential poem "I am Joaquín" by Rodolfo Gonzales along with other literature and popular culture like movies and music. She is often portrayed as the ideal women, a role model for Chicanas. This unrealistic role model creates an unattainable goal for women. That is why the new images of the Virgin of Guadalupe created by these Chicana artists are such an important social commentary. They pair this cultural symbol with the issues of women's struggle for power and lesbianism. (968 characters)

"Viva la cultura: The 21st Mexican and Chicano Revolution" by Megan Koops

The Mexican and Chicano Culture is especially rich and diverse, however plagued by their struggle to overcome the prejudice and stereotypes in the United States. If we are going to better understand this we need to improve our comprehension of their struggle. An excellent way to examine the struggle many Mexicans and Chicanos face is through the literature and how they express themselves in their work. I will be examining the different struggles that many Mexicans face and how it affects them personally as well as their culture. Their struggles and accomplishments are reflected in their work including Rodolfo "Gorky" González's poem "I am Joaquín" and Sandra Cisneros's *The House of Mango Street* which are examples I will be using in my essay. (751 characters)

"Reflects of a Society: Perez Galdós and Emilia Pardo Bazán's visions of Spanish Society" by Tina Struyk

As a result of being a Spanish major I have had to read my fair array of literature. The two literary movements that interest me the most are realism and naturalism. Benito Galdos and Emilia Bazán represent these movements in Spain. By reading their works the

ORAL PRESENTATION ABSTRACTS

nineteenth century of Spain comes to life. The nineteenth century of Spain is known for political instability, and major social transformation. The bourgeois class was born and as a result of this birth many profound changes occurred in the social structure. Through the elements of realism in the short novel *Torquemada en la Hoguera* (1889) by Benito Galdos and the elements of naturalism in the story "En Tranvía" (1890) by Emilia Bazán we can read about the styles, customs, activities, and sicknesses of the various social classes of the nineteenth century. I would like to present the nineteenth century Spanish society by presenting these literary works and through the use of some media such as pictures. I would like to discuss what changes occurred in the social structure and what affects these changes had on the society. (Characters: 910)

"Gender and Archetypes in José Zorrilla's *Don Juan Tenorio*" by Sarah Stahl.

There are three gender archetypes presented in José Zorrilla's *Don Juan Tenorio*: the Don Juan, the obedient, angelic virgin and the Celestina or matchmaking hag. The archetype of the Don Juan is that of a man who reject the values of his patriarchal society by seducing and conquering as many females as possible. The archetypes of the two female characters in *Don Juan Tenorio*, Doña Inés and Brígida represent the dual nature of femininity as presented by western literature and society. Doña Inés is a personification of the ideal woman and the presence of her character perpetuates the beauty myth, which is the idea that women should only be valued for their beauty and their purity. The figure of Brígida, the ugly and conniving hag is the antithesis of that of Doña Inés, which send the message that woman who are smart and wily are to be fear and mistrusted. These three archetypes presented in this work reflect the ideas of masculinity and femininity of 19th Century Spanish Society. (Characters: 988).

"Memorias de la isla"/ "Memories of an Island" by Betsy Barko

'Nostalgia' is one of the most important feelings that shines through in the cultural works of the Cubans who moved to United States in the last few decades. I analyze the diverse perspectives of this 'topic' in some poems, "testimonios" and movies related with the Cuban-Americans. Carolina Hospital expresses this feeling in her poem "Dear Tía" (1990), Manuel Fernández expresses this tension between the past and the present in her testimonio "El Tapiz" and we can also recognize it in different scenes of the movie "La Familia Perez" (1995). Nostalgia is a universal feeling, but the way in which Cubans Americans express it portrays their diversity as a group and culture. (Characters: 676)

Travel Poetry/ La poesía de viaje

Presenter(s): Catherine Sundt:

Reading of poems: "Gernika", "Neska", "Paseo", "Abanderada"

Sponsor(s): Zulema Moret

PAD 108

Using GIS Technology to Reestablish a Coherent System of Hiking, Fitness, and Nature Trails around Grand Valley State University

Presenter(s): Ryan Locke

Grand Valley State University (GVSU) sits atop a unique landscape. Directly behind the trees that boarder the entire east side of campus is an expansive and intricate natural area made up of ravines, wetlands, woods, lowlands, and streams. Within this area there is also an incoherent trail system that is unknown to many students pursuing outdoor recreation. Sections of these trails are used frequently by GVSU athletes, students pursuing research, recreational runners, walkers, and hikers. Currently the trails are not marked or mapped, and there are no clear points of entry or exits. The goal of this project is to map and assess the potential for creating a sustainable and effective multiuse trail system for the GVSU community.

Sponsor(s): Edwin Joseph

PAD 109

Lyndon Johnson and the Great Society

Presenter(s): Melissa Ware

Sponsor(s): Gleaves Whitney

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PAD 168

EMG analysis of the middle and lower Trapezius during four prone exercises

Presenter(s): Jodi Wusthoff , Amy Zyck , Elissa Kinney

EMG Analysis of Middle and Lower trapezius Muscles During Four Different Therapeutic Exercises Abstract The trapezius muscle plays a crucial role in proper shoulder mechanics and is often a source of weakness and dysfunction in patients. The purpose of this study was to investigate the motor unit recruitment patterns of the middle and lower trapezius during four prone exercises, two positions as described by Florence Kendall, and two variations on those positions. The motor unit recruitment patterns of 32 volunteers (19 female, 13 male) were measured using surface EMG. Each subject performed 10 repetitions and an average was found using the last five concentric contractions of each exercise position.

Sponsor(s): Dan Vaughn

PAD 207

The Human Element of Lean Enterprise

Presenter(s): Jeff Thomssen

Competition amongst manufacturers leads to exploitation of every strategic advantage in order to remain competitive. Lean production techniques, originated by the Japanese, focusing on value and eliminating waste, are prominent in strategies. Human behavior is a critical component in making lean efficient. This literature review examines the human element in lean production.

Sponsor(s): William Mothersell

PAD 209

Heavy Mineral Analysis of Lake Michigan Beach Sediment from Kirk Park: Ottawa County, Michigan

Presenter(s): Jason Stewart

Heavy minerals were examined in samples of sand from the beach face at Kirk Park in Ottawa County, Michigan. These samples were split and sieved into medium and fine sands. Due to time constraints, heavy minerals were extracted from only two of the samples. Two selected samples were separated using a heavy liquid called tetrabromoethane that has a density of 2.87g/mL. When sand is added to the liquid in a funnel, the less dense quartz and feldspars float to the surface leaving the concentrated heavy minerals at the bottom of the funnel for extraction. The first separation yielded 0.6g of concentrated heavies and 23.6g of quartz and feldspars. The heavy minerals were prepared as loose grain mounts for analysis. Using a petrographic microscope, a preliminary analysis of the concentrated heavies indicates the dominant minerals in the coarser sand fraction are garnet, and magnetite. The data collected may help determine the parent bedrock for the Lake Michigan sand.

Sponsor(s): Patricia Videtich, William Neal

PAD 261

Surface and Fine Wire Electromyography of The Rectus Femoris in the Weight Acceptance Phase of Gait: Effect of Knee Flexion

Presenter(s): Kristen Klompstra, Katie Holland, Liz Jenkins

Our purpose is to use EMG to determine the rectus femoris activation pattern during weight acceptance in normal and crouch gait, and to determine if it is necessary for gait labs to use fine wire procedures to obtain the accurate activation pattern of the rectus femoris. Surface and fine wire electrodes will be used to determine rectus femoris activity during four different conditions of knee flexion: normal, 20 degrees, 30 degrees, and 40 degrees. We hypothesize that the RF for normal gait is not recruited in weight acceptance but will be recruited with increasing degree of knee flexion.

Sponsor(s): Krisanne Chapin, Gordon Alderink, Mitch Barr

PAD 262

Patterns in Beliefs, Attitudes, and Knowledge of Grand Rapids Poverty: A Survey of GVSU Students

Presenter(s): Kevin B. Hoxie

Public opinion of homelessness and poverty, from the stereotypical to the realistic, have profound effects on ameliorating social welfare

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Beginning at 3:20 PM

programs. College students, in particular, are a section of the population instrumental in public policy in the present time, but more importantly, are useful in predicting policy of the future. Through a systematic survey, this study examines the beliefs of Grand Valley State University students on p Struyk overtly in nearby Grand Rapids, Michigan with emphasis on its causes and possible solutions, prevalence, variation and other nuances. The study also takes into account the participants' demographics and amount of experiential knowledge of local-area poverty in order to identify patterns in opinion. Finally, the findings will be juxtaposed with U.S. Census Bureau statistics in addition to literature on West Michigan's poverty, suggesting the depth of disparity between public opinion and reality.

Sponsor(s): Don Williams

PAD 107 (continued from 3 p.m.)

MLL Spanish Panel - Memorias de la Isla

Presenter(s): Tina Struyk, Sarah Stahl, Katie Eklund, Megan Koops, Elizabeth Barko, Catherine Sundt

Sponsor(s): Zulema Morel

PAD 108

Wind energy Feasibility in West Michigan

Presenter(s): Jordan Devries , David Dyer

Sponsor(s): Judi Corr

PAD 109

Dispersal Capabilities of the Karner Blue Butterfly

Presenter(s): Yumiko Chattulani

The Karner blue butterfly was listed as an endangered species in 1992. It lives in oak savannahs, which are some of the rarest ecosystems in Michigan. This study examines their dispersal capabilities with regards to distance, sex, and the type of matrix they migrate through. Dispersal data were collected in the Muskegon Recovery Unit using mark-release-recapture methods in 2005 by Professor Jim Dunn and assisting students. I will analyze the data using distance calculations and statistical analysis. Results will help us to better understand butterfly migration between patches and improve management plans for the butterflies and their habitat.

Sponsor(s): Shaily Menon

PAD 168

Energetics of a Super Abundant Brown Trout (*salmo trutta*) Population in Pine Creek, Michigan

Presenter(s): Kevin Donner

During the summer of 2004 an electro-fishing survey discovered a super-abundant population of brown trout in Pine Creek, Manistee County. Densities averaged one fish per 2 square meters. In addition, previous work on the stream indicated low productivity throughout the reach. Low productivity in a stream would generally yield assumptions of low fish populations; however, Pine Creek seemed to be thriving. In order to discover what was supporting the population, benthic invertebrate densities, stomach contents, and invertebrate drift densities were quantified. Results indicated that the trout were increasingly supplementing their diets with fish as they grew larger in order to make up for caloric deficits resulting from low stream productivity. Also, low summer water temperatures due to ground water inflow and low flow microhabitats may be reducing metabolic requirements and allowing greater abundances of brown trout.

Sponsor(s): Eric Snyder

PAD 207

EGR Co-op

Presenter(s): Jeffry Roberts

Sponsor(s): Hugh Jack

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PAD 209

Grain Analysis of Sand from Nearshore Bar to Backshore Beach: Eastern Shore of Lake Michigan, Ottawa County Michigan

Presenter(s): Carson Klemp

In January of 2006 samples were collected from Kirk Park in Ottawa County, Michigan, located about seven miles south of Grand Haven. Samples are from the backshore (dry and wet beach), beach cusp, swash zone, and inner sand bar. The goal of this project is to detect any differences in grain size and mineral composition at these locations. Mineralogy will be determined using a binocular microscope and grain size by sieving. My hypothesis is that coarse sand will be located on the beach cusp just landward of the swash zone because water washing over the cusp likely drops the heaviest and largest particles at that point, which would also help explain why the cusp forms. Using similar logic, heavy minerals will likely be in abundance there also. The sand bar is hypothesized to also contain coarse sand deposits because high wave energy likely transports finer sand away from the crest of the sand bar.

Sponsor(s): Patricia Videtich

PAD 210

Gender and Archetypes in Jose Zorrilla's Don Juan Tenorio

Presenter(s): Sarah Stahl

There are three male/female stereotypes presented in José Zorrilla's Don Juan Tenorio: the Don Juan, the obedient, angelic virgin and the Celestina or matchmaking hag. The archetype of the Don Juan is that of a man who rejects the values of his patriarchal society by seducing and conquering as many females as possible. The archetypes of the two female characters in Don Juan Tenorio, Doña Ines and Brigidia represent the dual nature of femininity as presented by western literature and society. Doña Ines is a personification of the ideal woman and the presence of her character perpetuates the beauty myth, which is the idea that women should only be valued for their beauty and their purity. The figure of Brigidia, the ugly and conniving hag is the antithesis of that of Doña Ines, which sends the message that women who are smart and wily are to be feared and mistrusted. In conclusion, the three gender archetypes presented in Don Juan Tenorio reflect the ideas of masculinity and femininity.

Sponsor(s): Zulema Moret

PAD 211

Identification of plant homologs to the p60 subunit of katanin

Presenter(s): Rebecca L Kelbel

Unlike animal cells, plant cells display a variety of microtubule arrays throughout the cell cycle, yet characterization of the plant microtubule organizing center remains elusive. Katanin is a microtubule severing ATPase, which is known to localize at the centrosome in animal cells. Katanin has two subunits, one of which, p60, has catalytic activity. An Arabidopsis thaliana homolog of katanin p60 has been identified and sequenced, and named AtKSS (McClinton et al., 2001). Current research aims to analyze the conservation of the katanin p60 throughout the plant kingdom by means of degenerate PCR probing of seedling tissue cDNA. From the AtKSS amino acid sequence, preliminary blasts of 19 angiosperm databases and 2 gymnosperm databases all show identities of ~73%. Alignment of these full and partial sequences has allowed us to design degenerate primers which we are using to obtain full-length cDNA sequences of katanin p60 homologs. Current analysis of sequences shows a high degree of conservation in important regions, mainly the CAD region, which identifies p60 as an AAA protein, and the microtubule binding region. That katanin p60 homologues are present in two plant phyla, in addition to several animal phyla is a strong indication that this protein is conserved throughout the plant kingdom, and perhaps among eukaryotes.

Sponsor(s): Regina McClinton

PAD 261

Stream Bank Stabilization and Restoration Management Plan for Little Muskegon River

Presenter(s): Christopher Tilton

I am proposing a management plan for stream bank stabilization and restoration on the Little Muskegon River. The river is stable at base flow but flooding events result in massive soil loss. I will investigate different methods of stabilizing the banks in order to withstand

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these flooding events and select the appropriate method. The methods will have more of an emphasis on the aesthetic value, due to the high levels of eco-tourism and local land owners that value natural settings. This management plan will be beneficial to not only the land owners but to the local economy as well.

Beginning at 3:40 PM

PAD 107 (continued from 3 p.m.)

MLL Spanish Panel - Memorias de la Isla

Presenter(s): Tina Struyk, Sarah Stahl, Katie Eklund, Megan Koops, Elizabeth Barko, Catherine Sundt

Sponsor(s): Zulema Morel

PAD 108

Service Access and Availability Mapping for Chester Township

Presenter(s): Matt VanPortfliet

The Conklin Fire Department services residents throughout Chester Township, which is located in the northeast corner of Ottawa County. The Fire Department has expressed an interest in a map book consisting of aerial photographs overlain with a variety of information to assist them during emergency situations. In particular, they are interested in: locations of dry hydrants, road names, and driveway lengths. This project will incorporate aerial photography interpretation, field surveying, and geographic information system (GIS) development. A hard copy of the map book will be presented to the Conklin Fire Department upon completion of the project.

Sponsor(s): Sister Damien Marie Savino

PAD 109

Small, Divided, and Ambivalent: World War I French Labor

Presenter(s): Andrew Dascola

Compared with prior French Labor Historians, the exposition on this topic seeks to bridge the long term failures of pre-war labor during and after the First World War. Scholarship on World War I French labor ignores any correlation between late 19th century labor and its war counterparts. They view both as separate entities of which neither has an effect on the other. Historians such as Hartmut Kaelble and Lenard R. Berlanstein go into great detail of the problems faced by French labor during the First World War. Others such as Jean Jacques Becker and John Horne expand on World War I French labor without little or no reference to the inherent problems that existed earlier at the end of the 19th century. By giving evidence from these and additional historians, the presentation will provide an argument that the partitions, dimensions, and hesitations of French labor at the end of the 19th century had long term effects on its future counterparts during and after World War I.

Sponsor(s): Jason Crouthamel

PAD 168

Agricultural Land Use Study

Presenter(s): Elizabeth Gorski

This is a case study linking agricultural landscape changes to historical periods in Michigan. The specific area is a square mile between Fruit Ridge Avenue and Peach Ridge Avenue between 12 and 13 mile roads West of Sparta, Michigan. An agricultural landscape such as this location has had many changes throughout the past century due to the events in Michigan's history. Landownership over the past century has greatly influenced agricultural landscape through policy, technology, and personal techniques of land use both physically and environmentally. This research connects the similarities between landscape change and Michigan history over the past century.

Sponsor(s): Elena Lioubimtseva

ORAL PRESENTATION ABSTRACTS

PAD 207

Puerto Rican Spanish Pronunciation: A Statistical Consulting Story

Presenter(s): Jeffrey Breault, Stephanie St. Jacques

Research was performed by Wilfredo Valentin-Márquez of the Modern Languages & Literature Department at Grand Valley State University to investigate differences in the pronunciation of three ideal Spanish sounds by the social factors of age, sex, and a social networking index. This research was performed to identify differences in the pronunciation of certain syllables in the communities of Cabo Rojo, Puerto Rico and Grand Rapids, Michigan. Our role as statistical consultants was to select the appropriate statistical analyses to determine differences among the pronunciation of Spanish sounds and the social factors in the Grand Rapids community and between the two communities.

Sponsor(s): Neal Rogness

PAD 261

Controlling Erosion in the Ravine Streams at GVSU: A Management Plan

Presenter(s): Luke Gilner

Development of buildings and parking lots on Grand Valley State University's Allendale campus essentially waterproofed the landscape and confined water drainage of large areas to single locations. This unnatural water discharge substantially increased erosion rates, causing gully formation, slope failures, sedimentation, and poor water quality. I will investigate the extent of erosion, locate susceptible areas, review previous erosion control actions, and study the water discharge and drainage of campus. I will then propose a management plan, including the design and locations of water control structures, with the goal to slow or control erosion rates and potentially increase water quality.

Sponsor(s): Shailly Menon

PAD 262

Adaptation, Imitation, and the Comically Cliché in *Matt & Ben*

Presenter(s): Adam Bowers

My presentation will explore the ideas and themes brought up in my paper, which is the title of this presentation. Here is the first paragraph of the paper, a good introduction to what my presentation will cover.

"Nowhere are we more aware of the art of imitation and adaptation than in the world of dramatic production. On the stage, anyone may portray a character, which in turn may portray a character of someone else. The implications for utilizing any type or form of a persona for creative ends are always speculative, but may lend the creative endeavor as a whole a comedic presentation. Plays that highlight their fictional or dramatic elements invite the viewer and reader to enter a world that is highly and visibly constructed. This dramatic realm is often used to make suggestions about larger thematic issues the play represents. *Matt & Ben* by Mindy Kaling and Brenda Withers explores the issues of the ethics surrounding imitation in art through dialogue and meta-dramatic moments in the play. Kaling and Withers suggest that art is a medium that has become comically cliché and is inevitably wrought with imitation."

Sponsor(s): Kathleen Blumreich

Beginning at 4:00 PM

PAD 107 (continued from 3 p.m.)

MLL Spanish Panel - *Memorias de la Isla*

Presenter(s): Tina Struyk, Sarah Stahl, Katie Eklund, Megan Koops, Elizabeth Barko, Catherine Sundt

Sponsor(s): Zulema Morel

PAD 108

Comparing Spring Runoff Water Quality to Baseflow Water Quality in Crockery Creek

Presenter(s): Michelle Lelli

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Crockery Creek is a stream that runs through Newaygo, Muskegon, and Ottawa counties and empties into the Grand River. The land use surrounding the lower reaches of Crockery Creek is heavily agricultural. Water quality of winter baseflow will be compared to water quality in spring after snowmelt and spring rain have entered the stream. An overall decrease in water quality in the spring due to runoff from agricultural fields is predicted. By assessing data and using information about what factors may be contributing to water quality, suggestions will be made on how water quality in Crockery Creek may be improved.

Sponsor(s): Sister Damien Marie Savino

PAD 109

Exploring Young Adult Literature of the Middle East

Presenter(s): Anne McKay

The literature for young adults and children published in this country rarely explores one of the most fascinating regions of the world: This presentation will focus on the literature of the conflict between the Jews and Arabs in the West Bank and Gaza strip. Participants will try to understand the complexities of the ongoing struggle in the region as portrayed by several authors (of American, Palestinian, and Israeli descent).

Sponsor(s): Patricia Bloem

PAD 168

Experimental Analysis of an Acoustic Guitar

Presenter(s): Cristiana Carabulea

The sound produced by a guitar is based upon the way in which its body parts vibrate. Thus, the purpose of this experiment will be to analyze an acoustic guitar by determining the modes of vibrations for the top and bottom plate of the guitar through a wide range of frequencies. An experimental visualization technique (such as a time-averaged holographic interferometry process) will be used to view the patterns of various modes. The results will then be compared to previous research done on the subject and an equivalent electrical system of a three oscillator model will be discussed.

Sponsor(s): Karen Gipson

PAD 207

Comparison of Student Learning During Traditional and Interactive Engagement Lectures on Geometrical Optics.

Presenter(s): Brandon Branch

Physics education research has become a frequent topic of study. In most every physics education research project, student learning in traditional lecture taught classes is compared to student learning in an interactive engagement (IE) class. Comparisons such as this have been done in the field mechanics, and have shown that students in the IE classes have increased problem solving ability when compared to those students in the traditional taught classes. The goal of this study is to see if these results can be generalized to other regions of physics mainly the field of geometric optics. Thus we will compare the student learning that occurs during a lesson taught on geometrical optics with IE methods, versus a lesson taught with traditional methods.

Sponsor(s): Keith Oliver

PAD 209

Overview of the Bedrock Geology of Isle Royale

Presenter(s): Samantha J. Hawkins

Lake Superior overlies a structural basin which is filled with Precambrian sediments and mafic igneous rocks known as the Keweenawan sequence. Part of this sequence is exposed at Isle Royale, in Lake Superior, just north of the Keweenawan Peninsula. I will compare Isle Royale to Keweenawan Peninsula to determine if there is a relationship between the geology of these two areas. I will describe the two bedrock sequences on Isle Royale, the Portage Lake Volcanics and the Copper Harbor Conglomerate using geochemistry, stratigraphy and mapping, structure, and U-Pb dating. I will use data to describe the geologic history of the bedrock of Isle Royale and to obtain an understanding of the Portage Lake Volcanics and the Keweenawan basalts. I will also relate this information to mantle

ORAL PRESENTATION ABSTRACTS

plumes. Overall, the data that is provided shows that the land forms on Isle Royale are the result of geologic process and are dependent upon the type of underlying rocks, the structures of the rocks, and their erosional history.

Sponsor(s): Stephen Mattox

PAD 210

The Puppet Show

Presenter(s): Madalyn Koster

In Kate Chopin's *The Awakening*, Edna Pontellier's life is restricted by her roles as wife and mother, and by traditional conventions of society. She is simply "driven along by habit (Chopin 375)." Chopin depicts social roles and the effects they have on Edna to demonstrate that in *The Awakening*, Edna is a puppet, subject to forces beyond her control.

Sponsor(s): David Ihrman

PAD 211

Do Blogs Make Better Writers?

Presenter(s): Megan Ward

Weblogging is a recent form of writing that, according to Carolyn Miller, stands on its own as a new genre. This presentation will investigate the effect of weblogging on academic writing. We will, as a group, try to better understand how this new technology shapes the students we help.

Sponsor(s): Ellen Schendel

Beginning at 4:20 PM

PAD 107 (continued from 3 p.m.)

MLL Spanish Panel - *Memorias de la Isla*

Presenter(s): Tina Struyk, Sarah Stahl, Katie Eklund, Megan Koops, Elizabeth Barko, Catherine Sundt

Sponsor(s): Zulema Moret

PAD 108

The Effect of Makoto Training on Functional Balance in Persons with Traumatic Brain Injury

Presenter(s): Jennifer Wrobel, Laura Yost

The purpose of this study is to examine the efficacy of training with the Makoto System on the functional balance of individuals with traumatic brain injury. The Makoto System is a challenging multisensory environment to retrain balance and increase speed of motor responses requiring dynamic movement and postural control. The study design is a repeated measures design, with subjects serving as their own control. Initial assessment will be followed by a control period of no training. Subjects will be re-assessed before starting training on the Makoto System 3 times per week for 4 weeks, followed by a final assessment after training has ended. Assessment consists of a series of six functional performance measures. The researchers will be looking for an improvement in functional balance abilities after training, which may help the subject perform daily activities safely and with more efficiency.

Sponsor(s): Cathy Harro

PAD 109

Distinguishing Between Point Source and Non-point Source Pollution Based on Dissolved Oxygen Data for Sawyer Creek, Ottawa County, MI.

Presenter(s): Adam Doan

Pollution in streams can be from both point and non-point sources. Both types are responsible for decreased water quality and require different solutions. Thus, it is important to determine the primary source of pollution in particular systems. I will use a dissolved oxygen meter and titration to sample dissolved oxygen at strategic locations in Sawyer Creek to determine the type of pollution. I will then use this information to propose steps for improving water quality that will result in improvement to overall ecosystem health and function.

Sponsor(s): Shaily Menon

ORAL PRESENTATION ABSTRACTS

Beginning at 4:40 PM

PAD 107

Outer Billiards at Infinity

Presenter(s): Samuel Otten

As a result of the Student Summer Scholar research program, two new theorems have been discovered in outer billiard theory. This presentation will give a brief overview of the results, along with a general introduction to the beautiful outer billiard maps.

Sponsor(s): Filiz Dogru

PAD 108

"The 21st Mexican and Chicano Revolution: ¡Viva la cultura!"

Presenter(s): Megan A. Koops

The Mexican and Chicano cultural is especially rich and diverse however plagued by their struggle to overcome the prejudice and stereotypes in the United States. If we are going to better understand this we need to improve our comprehension of their struggle. An excellent way to examine the struggle many Mexicans and Chicanos face is through the literature and how they express themselves in their work. I will be examining the different struggles that many Mexicans face and how it affects them personally as well as their cultural. Their struggles and accomplishments are reflected in their work including Rodolfo "Corky" Gonzales's poem "I am Joaquin," Sandra Cisneros's The House on Mango Street, and Lorraine López's Soy la Avon Lady and Other Stories which are examples I will be using in my study.

Sponsor(s): Zulema Moret

PAD 109

A Statistical Consulting Experience: The Effects of Religion on Political Efficacy.

Presenter(s): April Schneider, Julie Kukulski

Political scientists have been studying political efficacy for over fifty years. More recently, the concept of both internal and external efficacy has emerged. Internal efficacy is the perception that individual citizens have of their ability to influence the government. External efficacy is how citizens believe the government will react to their participation in the democratic process. Dr. Kevin den Dulk wished to determine whether religious tradition fosters external and internal efficacy. This presentation focuses on our roles and experiences as statistical consultants helping to answer this research question.

Sponsor(s): Kevin denDulk, Neal Rogness

PAD 168

Green Golf: Stepping up to the Tee for Environmental Quality

Presenter(s): Zach H Vanderbush

Green Golf is a relatively new concept that has begun to gain a plethora of supporters that range from natural resource managers, wildlife managers, course owners and designers, to even golfers themselves. This new practice is meant to help golf courses become compatible with their surrounding environments. My research project will center on governmental legislation that has been enacted to protect natural habitats, as well as visiting individual courses. I will demonstrate how newly constructed courses are working to create habitat for new species while allowing the original habitat to flourish.

Sponsor(s): Shaily Menon

Beginning at 5:00 PM

PAD 107

The New Guinea Campaign: A New Perspective Through the Use of Oral Histories

Presenter(s): Kelli Brockschmidt

Over the past two decades, historians have begun using oral histories to reinterpret the history of World War II. Earlier historians have

ORAL PRESENTATION ABSTRACTS

relied heavily on official documents, journalists' accounts and the letters, diaries, and memoirs of commanders and staff officers, leaving out the experiences of the common soldier. Oral histories have provided more detailed, personal, and emotional accounts of WWII than the written records. My research combines the oral histories of the 32nd Infantry Division, the Red Arrow Division, with written sources in order to gain new perspectives and insight into the soldiers' experiences in WWII during the New Guinea campaign.

Sponsor(s): James Smither

PAD 108

Location, Location, Location: Environment and the Writing Center

Presenter(s): Michael Cheyne

This session examines the architectural principle that the location and physical environment of a building affect the work done inside it. How should a writing center be best designed to appeal to students, directors, and tutors alike? Through my presentation, I will attempt to explore the idea of creating an "ideal" working environment for all groups.

Sponsor(s): Ellen Schendel

PAD 109

Everyday Excel

Presenter(s): Michael Corwin

Microsoft's Excel software is a very powerful, very user-friendly tool that has many business applications. Businesses of all sorts rely on the collection and storage of data for a wide variety of uses. This data can be critical to operating a business in a productive, effective manner. Excel has many tools available to help managers analyze the data that has been collected and use it to make the best decisions for the business. As a Production Supervisor at Howard Miller Clock Company, I use Excel in my everyday work. I use Excel in the areas of quality, scheduling, personnel issues and safety, to name a few. In my presentation, I hope to show a few of the tools that are available to Excel users and how I use them. I will also explore some of the other uses that business may utilize Excel.

Sponsor(s): Richard Hall

Beginning at 5:20 PM

PAD 107

Meta-Research Perspectives on Mass Customization Based on Life Cycle Literature Survey (1987-2005)

Presenter(s): Melinda Mitchell

Sponsor(s): Ashok Kumar

PAD 108

Otherness

Presenter(s): Dorothy Davey

Sponsor(s): David Ihrman

PAD 109

Cats & Dogs: An examination of feline/canine symbolism in James Joyce's Ulysses

Presenter(s): Brooke Heintz

Sponsor(s): David Ihrman

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Beginning at 5:40 PM

PAD 107

Individual vs. Community in Plato's "Crito".

Presenter(s): Aaron Rozeboom

Conflict between the individual and the community is a central theme in Plato's "Crito". On the surface, lies the conflict between Crito, whose arguments for exile favor public opinion as a source of truth, and Socrates himself, whose decision as an individual is to stay and accept the sentence. More abstractly, the response Socrates offers to Crito's arguments portrays Crito as the individual coming against the community. Through his dialogue with the laws, Socrates demonstrates a potential conflict that would arise from the application of Crito's arguments. Ultimately, Plato uses this potential for conflict in the case of Socrates to point out that conflict broadly is either realized or circumvented depending upon individual choices. In presenting the matter this way, Plato is cleverly able to prescribe principles regarding the individual/community relationship that extend well beyond the particulars of the "Crito".

Sponsor(s): Peter Anderson, Charles Pazdernik

PAD 108

Development of Environmental Issues lesson Plan for Children K-5

Presenter(s): Rachel Boss

In the face of increasing environmental challenges, it is crucial to encourage the younger generations to recognize the importance of a healthy environment and the consequences of an unhealthy one. Using web-based guides, the goal of this project is to develop a lesson plan for the use of K-5 students in order to promote knowledge and excitement about nature. After researching written lesson plans, this project will develop visual aides to assist the learning process. This lesson plan hopes to focus on issues specific to Michigan such as, endangered/threatened species. The completed project could be of use to local schools.

Sponsor(s): Sister Damien Marie Savino

PAD 109

Like Silent Raindrops Fell

Presenter(s): Brooke Heintz

Sponsor(s): David Ihrman

Beginning at 6:00 PM

PAD 107

Reflection on Reminiscence with a Hospice Patient

Presenter(s): Genevieve Barrett

Reminiscence is a vague and misunderstood practice. In this presentation, the presenter will explain the goals of reminiscence and describe the personal struggles and triumphs she encountered while conducting a project in reminiscence with hospice patients.

Sponsor(s): Cynthia Beel-Bates

PAD 109

Because I Love You - Because She Loves Herself: Concerning Robert's role as a Mirror for Edna's Self-Reflection in "The Awakening"

Presenter(s): Brooke Heintz

Sponsor(s): David Ihrman

POSTER PRESENTATION ABSTRACTS

Atrium Display 1

The Acute Responses of Coronary and Pulmonary Arteries to Natural Steroids

Presenter(s): Timothy Trichler

The purpose of this study was to characterize the specific responses of coronary and pulmonary arteries to natural steroids. It is hypothesized that the responses will vary depending on the androgen and anatomical location of the artery. Porcine coronary and pulmonary arteries were isolated and subjected to increasing concentrations of dihydrotestosterone (DHT), testosterone (TES), androstenedione (ANDRO) and dehydroepiandrosterone (DHEA). High concentrations of TES and DHT caused a significant dilation in coronary and pulmonary arteries. The specific responses to TES and DHT were significantly different than the specific responses to ANDRO and DHEA in coronary arteries. There was no significant difference in the pulmonary arteries to the androgens. Coronary arteries exhibited greater relaxations to TES, DHT and ANDRO than pulmonary arteries. Pulmonary arteries exhibited greater relaxations to DHEA than coronary arteries. The results of these studies indicate that the androgens elicit an effect on arterial diameter, depending on the androgen and anatomical location of the artery.

Sponsor(s): Francis Sylvester

Atrium Display 2

Asymmetric Substitution at Silicon

Presenter(s): Emily Blamer

It is common to generate a carbon stereocenter by addition reactions to sp^2 hybridized carbon, such as alkenes or carbonyl groups. For silicon, because the routes to silenes or disilenes are fewer, this has proven to be a less attractive route to chiral at silicon silanes. The reaction of a nucleophile with a prochiral silane of the type $R_1R_2SiL_2$ generates a chiral at silicon silane. We are investigating the influence of R_1 , R_2 , and L on the enantioselective substitution reaction at silicon with organolithium nucleophiles and the chelating diamine Sparteine. We will present the results of our studies comparing methoxy vs hydride as a leaving group and showing that use of methoxy as a leaving group led to higher enantioselectivity. We have also observed that increasing the difference in bulkiness of R_1 and R_2 leads to an increase in the enantioselectivity of the reaction. We will also be presenting our efforts at analyzing these reactions using chiral HPLC.

Sponsor(s): Randy Winchester

Atrium Display 3

Estimating Butterfly Populations Using Distance Sampling.

Presenter(s): Yumiko Chattalinni , Karl Rowland , Michael Calkins

Wildlife managers need to accurately assess densities and distribution of animal populations with reliable and accurate methods. Currently, the monitoring of the Karner blue butterfly (KBB) is not occurring on most sites in Michigan, or if done, methods rely on biased walking transect methods that concentrate sampling efforts in areas of highest site quality. An accurate method of estimating total number of KBB's would allow managers to make better decisions. Distance sampling was conducted at eleven sites during second brood flight in July 2005. Transects were systematically placed throughout each site every twenty-five meters with the first transect randomly selected. We measured perpendicular distance to all butterflies detected within five meters of transect line. Data was analyzed using Distance Program software. Model selection based on minimal AIC. Results indicate that populations vary considerably between sites, ranging from 315 to 1881 individuals.

Sponsor(s): James Dunn

Atrium Display 4

Analysis of Grand Valley State University's Physician Assistant Program Alumni Survey

Presenter(s): Kristina Nitzsche , Jill Thorpe , Kelly Teft

Objective/Purpose The purpose of this study is to determine the effectiveness of Grand Valley State University's Physician Assistant Program in preparing students for clinical practice as assessed by an alumni survey. The specific areas of assessment will be: 1. Preparation in the didactic phase (classroom instruction) 2. Preparation in the clerkship experiences (clinical experiences)

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3. Preparation in the administrative role of the PA 4. Preparation in job placement 5. Commitment to the profession through mentorship and leadership. Significance The significance of this study is to identify the weaknesses and strengths of Grand Valley State University's Physician Assistant Studies Program which will be subsequently used in the analysis of programmatic changes. Research Questions Based on an alumni survey, how do Grand Valley State University's Physician Assistant alumni view their educational preparation in the above mentioned areas?

Sponsor(s): Theresa Bacon-Baguley

Atrium Display 5

Molecular Mechanics of Carbonmonoxymyoglobin

Presenter(s): Aranda Slabbekoorn

The dynamics of molecular motion in systems such as proteins can be measured using infrared spectroscopy. However, molecular motion cannot be interpreted directly from experimental results. A combination of molecular dynamics (MD) simulations and quantum mechanics (QM) could assist in this interpretation. The QM calculations of frequency require a lot of computational time, and therefore some way to relate the frequency to information contained in the MD simulation is desired to speed these calculations. Examples of this correlating factor could include such factors as the electric field. Our initial attempts to relate frequency with a correlating factor have yielded poor results. We are currently trying to employ a semi-empirical approach, in which the parameters would be modified to fit our ab initio frequencies. Once we have a feasible computational method, we will then be able to accurately model the experiments and the corresponding molecular motions.

Sponsor(s): Christopher Lawrence

Atrium Display 6

Development of a Conditional CD82 Knockout Mouse

Presenter(s): Katie Sian

KAI1/CD82 is a transmembrane protein of the tetraspanin family with nearly ubiquitous distribution in mammalian cells. Importantly, it has been identified as a tumor metastasis suppressor (its expression is reduced or lost in metastatic cells) in prostate, lung, pancreatic, breast, bladder, colon, esophageal, cervical, and endometrial cancers. The objective of this project is to create a conditional murine knockout using the Cre/loxP homologous recombination method, in which CD82 expression is selectively deleted in prostate tissue while remaining functional in all other tissues. Once developed, the mouse will be used for countless assays designed to investigate the mechanisms by which CD82 interacts with various proteins and other molecules to suppress the metastasis of prostate cancer.

Sponsor(s): Terry Trier

Atrium Display 7

The Relationship between *Streptococcus bovis* and Colon Carcinogenesis

Presenter(s): Lisa Nienhuis , James Hurst

Scientists have discovered that there may be a relationship between certain species of microorganisms and the proliferation of specific types of cancer. This correlation has been well documented in the case of *Helicobacter pylori* as it relates to stomach cancer and lymphoma. Physicians are now beginning to recognize a similar relationship between *Streptococcus bovis* and colon cancer. Research suggests that the proliferation of intestinal carcinogenesis is elevated in subjects with exposure to *S. bovis*. What is it about *S. bovis* that produces a progression effect on pre-neoplastic lesions in the intestinal tract? It is the intention of this review of current studies to provide an insight as to if and how *S. bovis* is related to these carcinogenic effects. A better understanding and awareness of the possible relationship between *S. bovis* and intestinal carcinogenesis may facilitate more effective diagnosis and treatment of colon cancer in the future.

Sponsor(s): Linda Goossen

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Atrium Display 8

A Statistical Consulting Experience: Analysis of Values and Cheating

Presenter(s): Jason Keintz

Sponsor(s): Helen Klein, Neal Rogness

Atrium Display 9

Isolation of retroviral junction fragments

Presenter(s): Katherine Strauss

A two-step PCR reaction has been fashioned that will produce a DNA fragment that contains part retrovirus and part host genome. This is useful for locating and mapping endogenous retroviruses to the genome. A PCR reaction is run using two different primers. A non-specific primer will randomly anneal to the host genome and a specific primer that is biotinylated is used to anneal to the integrated virus. The biotinylated fragments from the PCR reaction are isolated by magnetic Streptavidin beads and used in the second PCR reaction along with two new primers. The two primers are nested and designed to bind internally with one primer to the virus end and the other to an internal sequence on the first nonspecific primer. The fragments from this reaction are cloned and sequenced.

Sponsor(s): Steven Hecht

Atrium Display 10

A Statistical Consulting Experience: Analyzing Weather Data for Evidence of Global Warming

Presenter(s): Janelle Lautzenheiser

Dr. Mel Northup wanted to explore over fifty years of weather data from Grand Rapids for evidence that suggests global warming is occurring. As a statistical consultant, my job was to determine whether a shift was occurring in the precipitation pattern to a drier spring/summer and a wetter fall and to see if there was a greater variation in temperatures with more extreme temperatures for given seasons.

Sponsor(s): Mel Northup, Neal Rogness

Atrium Display 11

Plasma Cell Leukemia: A Case Study

Presenter(s): Megan O'Keefe , Joshua Kling , Mara Tornga

Plasma Cell Leukemia (PCL) is a rare leukemia that is characterized by a monoclonal population of terminally differentiated B cells. The condition arises from a significant somatic hypermutation and intraclonal nucleic acid sequence variation of the immunoglobulin heavy chain. The common clinical appearances include the following: extramedullary involvement, lymphadenopathy, hepatomegaly and occasionally splenomegaly. This is a case study of primary plasma cell leukemia that was presented by a 69 year old male. The Wright stained peripheral blood smear displayed mild red blood cell anisocytosis, poikilocytosis and rouleaux formation. A decreased platelet count and leukocytosis with 64% plasma cells was noted. The flow cytometric immunophenotyping study demonstrated populations of cells with a plasma cell phenotype positive for the following: CD38(bright), CD138(bright), CD56 and cytoplasmic lambda. This case explores the distinguishing characteristics of Plasma Cell Leukemia.

Sponsor(s): Linda Goossen

Atrium Display 12

Effect of Underfilling EDTA Tubes on CBCs

Presenter(s): Laura Eckelkamp

The complete blood count (CBC) is a frequently performed test in the clinical laboratory. Among other things, it determines hematocrit and the mean cell volume (MCV) and the mean cell hemoglobin concentration (MCHC) for red blood cells. The specimen type for CBCs is EDTA-anticoagulated whole blood. Routinely, 4 mL of blood is collected in vacutainer tubes containing 7.2 mg of spray-dried K2EDTA. Under some circumstances, less than intended 4 mL is collected, resulting in an improper blood to anticoagulant ratio. It has been documented that excessive amounts of liquid K3EDTA can cause shrinkage of the red cells, leading to decreased MCV and

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hematocrit and increased MCHC. However, there are a lack of studies on the effects of spray-dried K2EDTA on red cells. This study attempts to determine if CBC results are significantly effected by filling 4 mL k2EDTA tubes with only 1 mL of blood. Results pending.
Sponsor(s): Linda Goossen

Atrium Display 13

Current Trends in Diagnosing and Treating Strep Throat: An analysis

Presenter(s): Heather Simon , Sarah Mahr

Streptococcus pyogenes throat infections (strep throat) are difficult to definitively detect, yet proper identification is important. When a sore throat caused by *Streptococcus pyogenes* is misdiagnosed as being caused by a different etiological agent serious post streptococcal sequela could result. On the other hand, if the infection is determined to be caused by *Streptococcus pyogenes* and it is not truly the etiological agent, overuse of antibiotics could contribute to antibiotic resistance. This study is an analysis of whether proper diagnostic techniques are being applied in West Michigan to prevent serious streptococcal sequela, as well as the emergence of resistant strains. Through meta-analysis of various reports and interviews/surveys with the medical professionals regarding their policies on the diagnosis and treatment of strep throat we will explore the current practices and general knowledge present in the community in regard to streptococcal infection and antibiotic use.

Sponsor(s): Linda Goossen

Atrium Display 14

Examining the communication processes and factors related to participation in primary prevention programs for dating relationships

Presenter(s): Jennifer Milliken , Nicole Resseguie

This study examined the self-reported attitudinal and behavioral correlates as well as communication tactics that manifest in aggressive dating relationships among undergraduate students at GVSU. Perpetration and victimization of physical, sexual, and psychological aggression were explored. Additionally, this study investigated factors related to self-reported likelihood of participating in dating violence prevention programs for both victims and perpetrators. Preliminary analyses suggest that rates of dating violence on this campus are similar to the national statistics and that, as expected, communication behaviors and relationship satisfaction were lower in those reporting violence than non-violent individuals. Interpretations and clinical implications of these data are also explored.

Sponsor(s): Tara Cornelius

Atrium Display 15

Diode-laser-based method for measuring the $^{13}\text{C}/^{12}\text{C}$ ratio in carbon dioxide

Presenter(s): Andrew Berke

Sponsor(s): Stephanie Schaertel , George McBane

Atrium Display 16

The Quick Ratio - How should it be calculated?

Presenter(s): Beth Rye

Sponsor(s): Rita Grant

Atrium Display 17

Analysis of a *Drosophila Melanogaster* stock containing two transposon insertions

Presenter(s): Amanda Bliemeister

The *Drosophila melanogaster* mutation *delorean* causes an abnormal wing and fertility phenotype. The mutation is due to a transposon insertion in the protein kinase N gene. Protein kinase N is regulated by the Rho small GTPase pathway but the downstream targets of protein kinase N are not known. In an effort to identify genes that interact with the *delorean* mutation, several fly stocks were obtained from the Bloomington, Indiana stock center. Crosses between Rho1 flies and *delorean* flies did not reveal any genetic interaction in transheterozygous Rho1/*delorean* flies. Stock k2107 contains a transposon insertion within the Rho1 gene at position 52E and a

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second insertion at 44E. The k2107 stock was outcrossed and seven sub-stocks were developed, effectively recombining the transposons away from each other. In order to determine which transposon is in each sub-stock, in situ hybridization was performed to polytene chromosomes from the sub-stocks. Results will be discussed.

Sponsor(s): Bruce Ostrow

Atrium Display 18

Race and Gender Bias in Physical Geology Text Books

Presenter(s): Michelle Bridenstine, Bridget Burns, Emmeline Davis, Angela Slater, Lindsay Shepard, Tamara Waters, Alexander Koning, Amanda Wigent, Matthew Ritchie, Paul Meek

Society views scientists as Caucasian and male. We examined this potential bias in geology textbooks. Figures in 15 texts were surveyed for geologists and categorized based on gender, race, and activity level. In the books, 258 figures (3%) with geologists were shown out of 8,573 figures. Some figures include more than one geologist. Of the 296 geologists in the figures 204 are male (68.9%), 60 are female (20.3%), and 32 are of undeterminable gender (10.8%). Out of 204 males, 156 are Caucasian (76.4%), 10 are racially diverse (4.9%), and 38 are unknown (18.6%). Out of 60 females, 51 are Caucasian (85%), 4 are racially diverse (6.7%), and 5 are unknown (8.3%). Our study demonstrates gender and racial bias in the text books. Males are presented more than 3 times more frequently than females. Caucasians outnumber racially diverse geologists 15:1. Geologists are overwhelmingly shown as passive. We will present possible solutions to these biases.

Sponsor(s): Steve Mattox

Atrium Display 19

Periodized Strength and Conditioning Program for the Overhand Throwing Athlete

Presenter(s): Marcie Stineman , Justin Patnoudé , Todd Terpstra

Sponsor(s): Shari Bartz

Atrium Display 20

Neuropathy in Diabetic Retinopathy

Presenter(s): Jennifer Nyland

Neuropathy is a common complication associated with diabetes. Traditional research has focused on vascular leakage and tight junction proteins; however, recent research indicates the significance of exploring the neurological degradation of the retina during diabetes. Previous research has determined a decrease in thickness in the inner plexiform layer (IPL) and inner nuclear layer (INL) of the retina during diabetic retinopathy. In order to study specific degradation in these layers of cells, techniques had to be developed to isolate extremely small samples of particular cells. The purpose of this project was to develop a method to accurately and efficiently isolate samples of IPL and INL in order to obtain large enough quantities for RNA analysis. Using laser microscopy, techniques were developed that enable RNA isolation from minute sections of IPL and INL. This allows for further investigation of neurodegradation as a mechanism of vision loss during diabetic retinopathy.

Sponsor(s): Dolli Lutes

Atrium Display 21

Physical and Psychosocial Effects of Chronic Lung Disease

Presenter(s): Lindsay Hourtienne

Chronic lung illness has become a priority health concern worldwide due to the cost, morbidity, mortality, and lifestyle alteration. Individuals must cope with both the physical and psychosocial aspects of chronic illness. The continual rise of populations with lung disease requires investigation of ways to improve quality of life and provide individualized health care delivery. Partners on the PATH (Personal Action Toward Health) is one such study investigating the impact of chronic illness on self-care management, self-efficacy,

POSTER PRESENTATION ABSTRACTS

health status, education, and health care utilization and how a 6 week education program may influence these areas. I will investigate correlations between multiple variables of symptoms, coping, and daily activities of study participants with chronic lung illness.

Sponsor(s): Cynthia Coviak

Atrium Display 22

Positive and Negative Perfectionism: Correlations with Obsessive Compulsive Personality Disorder

Presenter(s): Melissa McDonald

This research project plans to examine the possibility that the diagnosis of obsessive compulsive personality disorder isn't necessarily fully negative. Correlations between positive perfectionism, negative perfectionism, obsessive compulsive personality disorder, athletics, and depression clarify the relationship between these various interrelated constructs.

Sponsor(s): Lawrence Burns

Atrium Display 23

Descriptive Statistics of the Calcium Intake Inventory

Presenter(s): Todd Beck

Abstract for Research Project Osteoporosis is a major public health threat for an estimated 44 million Americans. In the United States, 10 million individuals are estimated to already have the disease and almost 34 million more are estimated to have low bone mass, placing them at increased risk for osteoporosis (National Osteoporosis Foundation [NOF], 2006). Calcium is critical to building bone mass to support physical activity throughout life and to reduce the risk of bone fractures, especially those due to osteoporosis. The onset of osteoporosis later in life is influenced by peak bone mass attained in the first two decades of life (National Institute of Child Health and Development [NICHD], 2005). The purpose of this study is to evaluate the revised Calcium Intake Inventory. The Calcium Intake Inventory was developed in 1999 (Coviak, Gendler, Martin, Mellen, Kim, Rodrigues-Fisher) to assess the dietary calcium intake of adolescents.

Sponsor(s): Jean Martin

Atrium Display 25

Solid Phase Peptide Synthesis (SPPS): Analysis and Identification of Protein Kinase Substrates

Presenter(s): Derrick Kroodsmma

This research study examines the synthesis of tyrosine containing peptides based on the protein paxillin. Paxillin is a proposed substrate of the FAK (Focal Adhesion Kinase) protein tyrosine kinase. FAK is overexpressed in tumor cells; therefore its abnormal function is associated with several cancer types. The peptides designed here are based on the substrate sequence FAK preferably binds to and phosphorylates. Solid Phase Peptide Synthesis provided substrate compounds which were then tested via biological assays with FAK. The synthesis of large peptides provides an accurate method to determine kinase amino acid phosphorylation preference to confirm paxillin as a FAK substrate.

Sponsor(s): Laurie Witucki

Atrium Display 26

Sample Prep Techniques for Infrared Spectroscopy

Presenter(s): Jessica Boucher

Crime labs require different confirmatory and identification tests for drug analyses. One important identification test is the Infrared (IR) Spectroscopy. There are two different techniques for preparing the sample for the IR, ATR and salt pellet. Each technique has its advantages, but the preferred method is ATR because it is simple and efficient.

Sponsor(s): Nancy Shontz

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Atrium Display 27

German Immigrants in the Former Soviet Union from the Reign of Tsarina Catherine the Great to the Present

Presenter(s): Robin Garlock

German immigrants first arrived in great numbers in Russia at the request of Tsarina Catherine the Great. A wave of immigration from Germany to Russia continued until the outbreaks of World War I and II. Due to the mistrust of all Germans at that time, the ethnic Germans were forcibly relocated to Siberia and the Central Asian republics, and some emigrated back to Germany or to the United States. Today, they are still spread across the globe. Some wish to return to Germany, some want to remain where they are, and others desire an autonomous region within Russia. No matter where in the world they are, or what their hope for the future is, the ethnic Germans continue to struggle for a place they can truly call home.

Sponsor(s): Laurie Gasahl , Ben Rapin

Atrium Display 28

Retrograde amnesic effects of microinjections of cGMP inhibitor

Presenter(s): Jordan Bentley

The retrograde amnesic effects of LY-83583 were examined by injecting 0.5 micro liters of differing concentrations of this cGMP inhibitor into each telencephalon immediately after the fish received training in a shuttle box. In the shuttle box, the fish were trained to avoid receiving a shock by swimming from the side of the box with the light on to the dark side of the box through a small central opening. The data showed that the performance of the goldfish in the shuttle box did not improve overtime, thus suggesting that the injections of LY-83583 immediately following training produced retrograde amnesia. To further demonstrate this idea, a control group of fish that did not receive injections but did learn and remember to avoid the shock during training sessions was used in a comparison.

Sponsor(s): Xiaojuan Xu

Atrium Display 29

Determination of Phosphorus Species in West Michigan Watersheds by ^{31}P NMR

Presenter(s): Maysee Salleva

$^{31}\text{-Phosphorus}$ Nuclear Magnetic Resonance Spectroscopy (^{31}P NMR) was used to analyze biochemical and environmental samples. The pH dependency of the ^{31}P NMR chemical shifts indicated that all phosphate compounds displayed downfield chemical shifts in basic solutions. Lipophosphate was found to be soluble only at low pH levels. It was confirmed that acidic solutions encouraged decomposition of polyphosphates via hydrolysis, whereas basic solutions did not. Experiments on mixed orthophosphate standards revealed that the number of known species in a mixture is not an indication of chemical shift, as there may be equilibration between the compounds. Environmental phosphorus samples provided by the AWRI were found to contain orthophosphate and pyrophosphate. Other assignments are indeterminate.

Sponsor(s): John Bender

Atrium Display 30

Peptide Synthesis for Protein Tyrosine Kinase Substrate Analysis

Presenter(s): Anthony Pedley

Protein tyrosine kinases are enzymes that have been widely associated with cellular signaling processes that control cell growth, migration, and survival. Focal adhesion kinase (FAK) is a tyrosine kinase that has been considered by many as a prospective target for anticancer drug development studies. Peptides were synthesized as small molecule substrates for focal adhesion kinase. Once tested, these peptides may provide some insight into the protein substrates of FAK and other kinases in vivo. With the development of small molecule peptide substrates of kinases, inhibition screening will become possible for these enzymes, which will aid in the development of an inhibitory cancer therapeutic.

Sponsor(s): Laurie Witucki

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Atrium Display 31

Fetal Fibronectin Testing in Twin Pregnancies

Presenter(s): Nicole Powers , Theresa Vree

Sponsor(s): Linda Goossen

Atrium Display 32

Anterograde amnesic effects of microinjections cGMP inhibitor LY-83583 to the goldfish telencephalon

Presenter(s): Todd Miller

This study examines the effects of microinjections of LY-83583 to the telencephalon 20 minutes prior to training the goldfish on a learning task. Fish were trained in shuttleboxes connected to a Smart Control which monitored their movements. A light was placed at each end of the shuttlebox which was divided into two equal sides by an opaque barrier. After the light turned on, a trial began and fish were given 20 seconds to cross before the administration of mild electrical shocks. Crossing the barrier turned off the light and ended the trial. Naive fish crossed the barrier after receiving the shocks. Following training, fish crossed the barrier before the shocks and displayed a learned avoidance response. The data showed that the administration of LY-83583 prior to training impaired the learning in goldfish.

Sponsor(s): Xiaojuan Xu

Atrium Display 33

Teaching Social and Play Skills to Children with Autism

Presenter(s): Erin Lee , Nicole Henriksen , Allison Graham , Angela Graham

Autism is a neurodevelopmental disability characterized by impairments in social interaction, communication, and restricted and repetitive behaviors. Inappropriate play is also evident in children with autism as demonstrated by repetitive play behaviors and poor functional play. Play and social engagement are critical target areas as they have been linked with the development of more appropriate social relationships. Two studies were designed to evaluate procedures to teach social and play skills to young children with autism. Study 1 will assess the effects of reciprocal imitation and free play on social and play behaviors. The study will evaluate the level of social engagement and observational modeling of preschoolers with autism when the model is an adult compared to a peer. Study 2 will compare the effectiveness of discrete trial training and video modeling in teaching social and play skills.

Sponsor(s): Jamie Owen-DeSchryver , Amy Matthews

Atrium Display 34

29 Year Old Female Patient with Acute Respiratory Distress Syndrome

Presenter(s): Stephanie Wilkins

Context: Acute Respiratory Distress Syndrome (ARDS) is a fulminant lung condition in which injury to the lungs leads to inflammation of the lungs, accumulation of fluid in the alveolar air sacs, low blood oxygenation and respiratory distress. Objective: To examine the resulting condition from interaction of Adult Respiratory Distress Syndrome and comorbidity factors using clinical diagnostics, radiological imaging and autopsy. Design: Patient case study. Patient and setting: 29 year old female presented to Emergency Department with chief complaint of sudden onset of difficulty breathing and chest pain. Patient was admitted to the Intensive Care Unit and later expired. Results: Physical and radiological examination. Analysis of arterial blood gas (ABG) and venous blood. Autopsy procedure. Conclusion: Adult Respiratory Distress Syndrome comorbid to sepsis, Systemic Inflammatory Response Syndrome (SIRS) and Multiple Organ Dysfunction Syndrome (MODS) resulted in acute cardiac arrest.

Sponsor(s): Brian Kipp

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Atrium Display 35

Captivity affects sperm production in male House Sparrows (*Passer domesticus*)

Presenter(s): Erin McCombs

Seventeen male House Sparrows were held in captivity as part of a larger study in the spring of 2005. After capture, sparrows were housed for one month to adjust to captivity then sperm samples were collected from them every three days for another month. As the sampling progressed, most males stopped producing sperm. In addition to the drop in sperm production, most showed a change in beak color from black to yellow, a sign of decreased testosterone levels. In order to rule out the possibility that the drop in sperm production and beak color change was due to seasonal effects, nine House Sparrows were collected from a nearby dairy farm. A histological comparison of the testes showed that the first set of house sparrows had significantly smaller, regressed testes, while the birds caught at the dairy farm had much larger testes, which were still producing sperm. In addition, all of the dairy farm birds had black beaks.

Sponsor(s): Michael Lombardo

Atrium Display 36

The Effects of Perceiver Religious Fundamentalism and Target Motivation on Perceptions of Morality

Presenter(s): Kelly Ames , Jane Ladley , Nate Knapp , Nicole Resseguie

This study investigated interpersonal impressions as a function of observer and target religiosity. The sample included 200 GVSU students who scored either in the top or bottom quartile on a religious fundamentalism (RF) questionnaire. The participants watched three clips of actors posing as GVSU students who were being interviewed about their extra-curricular activities. In the Overt conditions, the actor stated either a religious or non-religious motivation for his volunteer work (Religious Altruist [RA] vs. Non Religious Altruist [NRA]). In the Covert conditions, no motivation was presented, but the actor was wearing either a Jesus Fish (JF) or a Darwin Fish (DF) t-shirt. The results show that Low RF students perceived the target as being equally moral across the conditions. High RF students perceived the actor in the RA and JF conditions to be more moral than in the NRA and DF conditions. Implications for biases in impression formation are discussed.

Sponsor(s): Christine Smith, Luke Galen

Atrium Display 37

Maori Art and the Visual Representations of Culture

Presenter(s): Jamie Wasilchenko

This presentation showcases anthropological research done on the indigenous Maori of New Zealand. One of the most important aspects of Maori culture is artistic expression. Almost every area of every-day or ritual life has an art form involved in it somehow. These forms include material culture such as wood, bone and stone carvings, jewelry and clothing, but also body decoration and the performing arts. Completed while interning at a museum in Te Awamutu, NZ, this research examines the significance of art in past and present Maori culture, including the reasons behind why artwork is created and what it represents. It attempts to understand how Maori art plays a role in modern-day New Zealand society through the reactions of both Maori and non-Maori to traditional Maori artifacts as well as contemporary art.

Sponsor(s): Russell Rhoads

Atrium Display 38

Do You Want to Know?? Investigate: CLS

Presenter(s): Audrey Garner , Susan Judd

The general public is aware that there is a nationwide nursing shortage, however most people do not realize that there is a faster growing shortage of clinical laboratory scientists. These professionals are essential to our healthcare system, and few people are aware of clinical laboratory science or medical technology as a profession. The intentions of this poster are to introduce this field of study to students interested in health science careers and to present information on this shortage.

Sponsor(s): Linda Goossen

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Atrium Display 39

Kinetic studies of OXA mutants

Presenter(s): Doug Barth, Brian Smith

Sponsor(s): Dave Leonard

Atrium Display 40

Learning about Statistical Consulting: Analysis of Children's Perception of Physical Activity

Presenter(s): Erik LaPointe

This presentation will use a project conducted by Professor Dana Munk about overweight children, their physical activity levels and their ideas about physical activity. This project, which is focused on the national obesity problem, will be the backdrop to a presentation on my first experience as a statistical consultant. Working with a client, analyzing data, communication skills and relating statistical analysis about these children to a non-statistical audience are topics important to, but not limited areas of, statistical consulting. These aspects of consulting and others in addition to the final project findings will be discussed.

Sponsor(s): Dana Munk, Neal Rogness

Atrium Display 41

Effects of Storm Water Runoff on the Campus of Grand Valley

Presenter(s): Jo Hooker

As the number of students attending Grand Valley State University increases, a need arises for permanent structures. After precipitation events, water drains from impermeable surfaces such as buildings, parking lots, and several other locations around campus. In this study, runoff erosion patterns will be analyzed to determine their effects on local streams, vegetation, and wildlife. It is hypothesized that runoff water will impact wildlife water supplies, increase erosion, and depending on the contaminants, slow or increase plant growth. Finally, a management plan will be proposed for decreasing the negative effects of the runoff.

Sponsor(s): Sister Damien Marie Savino

Atrium Display 42

Standardizing the Protean IEF System for 2-D Gel Electrophoresis with Immobilized pH Gradients

Presenter(s): Ryan Romans

Our research focuses on analysis of brain proteins involved in learning and memory by 2-dimensional gel electrophoresis. Older methods have been plagued with technical difficulties impairing isoelectric focusing of proteins. We are utilizing the new Bio-Rad Protean IEF System for 2-D Gel Electrophoresis with Immobilized pH Gradients, which is designed to eliminate the aforementioned technical problems associated with isoelectric focusing of proteins in the first dimension. Our goal is to eventually obtain an internal ratio between phosphorylated and less phosphorylated forms of the growth associated protein, GAP-43.

Sponsor(s): John Capodilupo

Atrium Display 43

Support for Animal Welfare as a Function of Religious Fundamentalism and Belief in Evolution

Presenter(s): Katherine Poiras, Cassandra Aebersold, Torie Stanton

This study investigated the relationship between attitudes toward animal welfare/ rights as a function of individual's belief in creationism/ evolution and type of religiosity. Approximately 100 GVSU students were asked to complete the Animal Rights Questionnaire, a measure of the participants' position on animal rights issues (e.g., use of animal experimentation). The participants were asked to identify their position on human origins regarding creation (i.e., God created humans) or evolution (humans and animals all evolved from earlier forms). The participants also indicated their overall religious views on the Intrinsic Religiosity Scale and a Religious Fundamentalism measure. Implications will be discussed regarding the mechanism by which religious beliefs affect views of animal rights vis a vis the perception of the status of animals compared with humans.

Sponsor(s): Luke Galen

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Atrium Display 44

Studies into the Transfer Hydrogenation of Ketones using Transition Metal Catalysts

Presenter(s): Katherine Cornish

Transfer hydrogenation is often used on a large scale in the making of commodity chemicals or pharmaceutical compounds. Hydrogenating a compound involves these reactants: a hydrogen source (a hydrogen donor, often an alcohol or molecular hydrogen) and an unsaturated compound (a hydrogen acceptor, often a ketone or alkene). Helping these reactants is usually a conventional base like lithium aluminum hydride or a transition metal catalyst, like ruthenium or palladium on carbon. The hydrogen usually moves off of the hydrogen donor and onto the catalyst (forming a double bond on the donor), where it is then picked up by the hydrogen acceptor, reducing a double bond on the acceptor. Green chemistry is a new field of study that is quickly becoming prominent on the chemistry radar.

Sponsor(s): Dalila Kovacs

Atrium Display 45

Differences in Acceptance of Cosmetic Surgery according to Gender and Peer Influence

Presenter(s): Stephanie Gooden, Holly Tenbrink

The present study investigated undergraduate students' views on cosmetic surgery using the Acceptance of Cosmetic Surgery Scale (ACSS). The ACSS measures acceptance of cosmetic surgery for intrapersonal and for social reasons, and also the degree to which someone would consider having cosmetic surgery themselves. Participants also completed a 9- item measure of their friends' concern with physical appearance. We examined sex- related differences for both of these variables and expected women to be more accepting of cosmetic surgery and to report higher levels of appearance concern among their friends. We also examined the relationship between ACSS scores and friends' concern with appearance separately for women and men.

Sponsor(s): Donna Henderson-King

Atrium Display 46

Periodized Strength and Conditioning Program for Elite Olympic Distance Triathlete

Presenter(s): Andy Duemling , Kara Egan

The multi-event aspects of a triathlon places special demands on an athlete's body which requires specific, scientifically based training. This comprehensive strength and conditioning program aims to develop and prepare the elite olympic distance triathlete for high level competition, particularly the Olympic Trials. The periodized plan covers an entire year long macrocycle including successive meso and micro cycles. The basis of the program revolves around proven physiological and biomechanical principles, as well as real world application. Training variables examined include: stretching and warm up, technique drills, resistance training, plyometrics, aerobic endurance development, nutrition, injury prevention and psychological race preparation. This program will fully prepare the experienced triathlete to peak for the desired event.

Sponsor(s): Shari Bartz

Atrium Display 47

The Light Box

Presenter(s): Jessica Wood

My presentation is titled "The Light Box," and when simply put, is a basic camera. Although, technically, there is no light inside the camera, as a photographer I feel that with each shutter click I become the keeper of the light and my camera is the trap. I greedily preserve the light until one day I release it in the form of a captured memory, or in other words, a photograph. Every photograph is a memory. Someone, whether it be the photographer or not, will be able to revisit that location either mentally or physically and recall details that are not evident within the photograph. I want to be able to show the audience what else exists beyond the photograph's borders. The information within each photograph is very important; however, maybe what is not in the photograph is equally important, if not more so. An example might be a square image featuring one subject, a person screaming, and that is all the information given.

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That image will be presented so that it may stand alone if necessary. But now a second image is present, widening the view of the first. Now you receive the information on why the person is screaming. It may be a monster or some other horrifying reason to make someone scream, revealing all. "The Light Box" will be presented as chromogenic and/or gelatin silver prints. The size of each image is not determined at this time, but 8x10 inches may become the appropriate size. Each image will be matted on white mat board, with its corresponding image matted to the back. I want my images to tell a greater story that will become evident as the audience views the first photograph then turning the board over to expose the second.

Sponsor(s): David Rathbun

Atrium Display 48

The Relationship between Cosmetic Surgery Attitudes and Objectified Body Consciousness

Presenter(s): Lauren Hodson

The present study examines the relationship between acceptance of cosmetic surgery and objectified body consciousness. Participants were given the Acceptance of Cosmetic Surgery Scale (ACSS) and also the Objectified Body Consciousness Scale (OBC). The ACSS measures the degree to which respondents accept cosmetic surgery for social reasons, accept cosmetic surgery for intrapersonal reasons, and would consider having cosmetic surgery. The OBC measures body surveillance, body shame, and control beliefs. We expected both body shame and body surveillance to be positively related to the ACSS, but expected control beliefs to be negatively related to the ACSS. Findings will be discussed in terms of the social pressures to conform to cultural ideals of physical appearance.

Sponsor(s): Donna Henderson-King

Atrium Display 49

Muscle Activation During Therapeutic Exercises Of The Shoulder

Presenter(s): Stacy Makino

Objective: To identify muscle-firing characteristics during 8 common therapeutic exercises utilized in shoulder strengthening protocols. Design and Setting: Subjects were asked to complete 8 exercises: External Rotation (ER) and Internal Rotation (IR) with 90° of humeral abduction (90) , ER and IR with the humerus adducted and adjacent to the torso (NEUTRAL), ER and IR in the scapular plane (SCAP), Lat pull down (LAT), and Horizontal Abduction (HOR ABD). Range of motion, velocity and resistance during each exercise were controlled for by the utilization of custom-built manipulandum devices and a metronome set at 35 bpm. Fine wire electrode placement into the Subscapularis (SUB), Supraspinatus (SUP), Infraspinatus (INF) and Teres Major (MAJ) then followed. Muscle recruitment (Integrated EMG) was examined descriptively. Patients or Other Participants: Fifteen subjects (1 Male, 14 Female, Age = 21 ± 0.88 yrs., Height = 169.17 ± 6 cm, Weight = 163 ± 28 lbs.) with no previous history.

Sponsor(s): Brian Hatzel

Atrium Display 50

The D.C. Experience

Presenter(s): Crystal Boyer

Sponsor(s): John Gabrosek

Atrium Display 51

ADHD and Ethnicity

Presenter(s): Shanel Bryant

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most expensive mental disorders, costing U. S. citizens \$77 billion every year. Although ADHD affects between 3%-7% of U. S. children, there are many misconceptions about the disorder and concerns have been raised regarding appropriate diagnosis and treatment in children, adolescents, and adults. In addition to these concerns, several authors have noted that there is a lack of research regarding ethnicity and ADHD. The limited research that has been done is confusing with some studies indicating that there is no real difference in rates of ADHD diagnoses yet other studies indicating that African American children are placed in behaviorally disordered classrooms at higher rates. Reid found that teachers were more likely to

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exhibit a bias in their rating scales if their students were African American. The purpose of this study is to review the literature on ADHD, with a particular focus on research of ethnicity and ADHD.

Sponsor(s): Dolli Lutes

Atrium Display 52

The Effects of Infant Age on Parental Vocalizations About Object Categories in a Play-type Setting

Presenter(s): Katherine Schwartzkopf

Previous studies have examined the role of various perceptual features of objects on an infant's ability to effectively categorize the object. Few, if any studies have examined the role of parents in the formation of categories early in infancy and the effect of the infants age on the type of categorical information provided by the parents. In two studies, parental vocalizations directed to their infants (3- to 12-months of age) about objects were videotaped and analyzed. In Study 1 the proportion of super ordinate labels used by parents increase as a function of the infants age while the proportion of basic level labels decreased with age. In Study 2, parental attempts at label elicitation increased as a function of the infant's age. The results show definite age related patterns in parental vocalizations about objects and their categories. The results indicate that parents are a source of categorical information early in infancy.

Sponsor(s): Gwenden Dueker, Dolli Lutes

Atrium Display 53

A Statistical Consulting Experience: Analysis of the Death Penalty

Presenter(s): Tyler Armstrong and Andy Post

Professor Gabriele Gottlieb of the History Department has a research that is focused on the characteristics of the prosecuted. She was interested in comparing the cities of Charleston, Boston, and Philadelphia. Also, patterns of prosecution and punishment were added aspects of her field of interest. We were involved in the data collection from ten various databases, and assisted in the analysis of finding the stereotypical person facing capital punishment.

Sponsor(s): Neal Rogness, Gabriele Gottlieb

Atrium Display 54

A Statistical Consulting Experience: A Who's Who of General Education

Presenter(s): Wende Stuck

A Statistical Consulting Experience: Performance of majors and non-majors in General Education Theme Course Performance of majors and non-majors in General Education Theme Course. The GE program consists, in part, of 21 upper division Themes. Students can choose Themes according to their interest. There is a combination of majors and non-majors enrolled in each course. This study was designed to determine if the average GPA of the non-majors is statistically different from the average GPA of majors in each class.

Sponsor(s): C. "Griff" Griffin, Neal Rogness

Atrium Display 55

Attorney Perspectives on Juvenile Competency to Stand Trial

Presenter(s): Erica Ackerman

The Supreme Court established that juvenile criminal defendants have 14th amendment constitutional rights that should be protected. While not specifically mentioning competency to stand trial, the Court's decision regarding juvenile due process rights overlaps significantly with this legal concept. However, contact with the Michigan justice system suggests juvenile competency evaluations are rare.

Michigan criminal defense attorneys from the Grand Rapids area were surveyed regarding conditions leading to a request for juvenile competency evaluations, factors relevant to evaluations, perceptions of the quality of available professional services, and perceived obstacles to proper case disposition involving juvenile competency. Results suggested that many attorneys are unfamiliar with the current state of the law even though they are the primary source for these referrals, they may not recognize cognitive disability as a form of incompetency, and do not often consider issues of age-related incompetency.

Sponsor(s): Anton Tolman

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Atrium Display 56

Periodized Strength and Conditioning Program for High School Sprint Swimmers

Presenter(s): Brandon Adams, Ashley Anderson

All swimmers competing in the 50m and 100m freestyle want to be the best in their respective events. The top sprint swimmers in the Grand Rapids area have recorded times of 20.39(50m) and 43.38(100m). For athletes to decrease their event times and occurrence of overuse injuries, the implementation of a periodized strength and conditioning program will be key to success. This presentation will provide athletes with proper training and stretching techniques relative to the specific movements of the sport to improve motor skill performance for maximum output. The goal of this presentation will focus on creating a year round training program that incorporates physiological and biomechanical principles designed to increase force production and efficiency of a sprint swimmers' stroke technique. By utilizing this training program, sprint swimmers will be able to decrease their times, and minimize overuse injuries due to the extreme forces that are placed on the shoulder.

Sponsor(s): Shari Bartz

Atrium Display 57

A Case Study on Hydrops Fetalis

Presenter(s): Melissa Anes, Jessica Warner

Hemolytic Disease of the Newborn (HDN) is a condition in which the mother's antibody crosses the placenta, attaches to antigens on the fetal red blood cells, causing hemolysis of the fetal red cells. Additional symptoms can occur, including hydrops fetalis or fetal hydrops. Hydrops fetalis is described as "the presence of fetal subcutaneous tissue edema accompanied by serous effusions in one or more body cavities" (1). Hemolytic disease of the newborn can be caused by several different maternal antibodies, the most common being antibodies in the Rh group known as Anti-D. This case study describes a situation of hydrops fetalis involving a maternal antibody that belongs to the Kell group, Anti-K, which occurs at a much smaller incidence than HDN due to Anti-D. It is estimated that approximately 1 in 600 to 1 in 4000 pregnancies has the Anti-K antibody (2). To detect and identify these maternal antibodies a type and screen on mother's blood is performed during prenatal care. A type and screen will identify the mother's blood type as well any additional antibodies that are present. If the mother has a high risk antibody that could cause HDN or hydrops fetalis, frequent monitoring of mother and fetus is done. Amniocentesis and/or intrauterine blood transfusion may also be performed as deemed necessary by the mother's physician. This poster depicts a case study of hydrops fetalis involving anti-K, the rarest antibody incompatibility associated in HDN.

Sponsor(s): Suzanne Tomlinson, Lisa Sellgren, Linda Goossen

Atrium Display 58

A Periodized Strength and Conditioning Program for a Marathon Runner.

Presenter(s): Jenna Anderson, Lainie Bisbee

Marathon running requires an extreme amount of cardiovascular and muscular endurance. Therefore, it is important for a marathon runner to make sure they are at a level of fitness to successfully complete a marathon. The purpose of this presentation is to develop a periodized strength and conditioning program for a marathon runner. In this presentation, we will be focusing on movements made in the sagittal plane and muscles activated during running. The goal of this presentation is to develop a training program that can benefit an individual training for a marathon.

Sponsor(s): Shari Bartz

Atrium Display 59

Arboretum Management: New Techniques and Approaches Using GIS Technology

Presenter(s): Stephanie Baker, April Szatkowski, and Jason Tutsch

This project demonstrates how to map, archive, catalog, manage, and monitor information within an arboretum using GPS technology. Knowing where to place features for maximum impact is important for long-term sustainability. And the ideal concept of arboretum management helps correlate present layout, use, and cataloging techniques through monitoring soil composition, erosion control, and

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tree characteristics. The utilization of GIS and GPS technology demonstrates clear advantages over conventional methods of arboretum management. While GIS is complex, it simplifies routines and enables efficient data collection, which allows real-time analysis. This project demonstrates how GIS be utilized to plan, manage and implement the continued growth of the arboretum for years to come.

Sponsor(s): Edwin Joseph

Atrium Display 60

Molecular Cloning and Sequencing of Histidine Decarboxylase (HDC) Alleles in *Drosophila melanogaster*

Presenter(s): Montaigne Birdsey

Histidine decarboxylase (HDC) is an enzyme required for the synthesis of histamine, the neurotransmitter responsible for visual synaptic transmission in insects. Immunocytochemistry studies have identified HDC mutants with reduced histamine levels, as well as those lacking histamine. These mutants are functionally blind and those lacking histamine display abnormal mechanosensory functioning. To explain the cause of phenotypic variation, genetic analysis and comparison of wild-type (normal) and mutants Hdc alleles has been done. We have utilized laboratory techniques such as the polymerase chain reaction, molecular cloning, and DNA sequencing and present information on structural similarities and differences between Hdc alleles.

Sponsor(s): Martin Burg

Atrium Display 61

Periodized Strength and Conditioning Program for a Collegiate Golf Team

Presenter(s): Erin Bremer, Lynn Johnson

Studies indicate enhanced golf swing performance through an increase in muscular strength and flexibility based on the principle of specificity. The purpose of this presentation is to convey the importance of specificity of training to a collegiate golf team through a periodized program. To maximize performance elite golfers need to be strong, flexible, and aerobically trained. The program is based on swing analysis, injury prevention and motor transfer and is noted in sound physiological and biomechanical principles.

Sponsor(s): Shari Bartz

Atrium Display 62

Periodized Program for the Industrial Employee

Presenter(s): Brandi Bernard, Eric Snyder

The purpose of this presentation is to introduce a periodized strength and conditioning program for Industrial Factory workers. Work Hardening will be able to demonstrate a need for the use of an aerobic Work Conditioning programs in the labor intensive worker. Typical work injuries will be identified as well as prevention programs and ongoing wellness activities to promote healthy workers, prevent lost work days and improve efficiency of the common worker. The Ergo science program will be used for identifying a workers functional capacity through well researched tests and measures with high reliability and reproducibility

Sponsor(s): Shari Bartz

Atrium Display 63

Preliminary Analysis of Self-Efficacy and Fatigue in a Chronic Disease Self-Management Program

Presenter(s): Anita J Buitenwerf

The Chronic Disease Self-Management Program (CDSMP) seeks to partner with communities to teach people the skills necessary to control their chronic illness symptoms thereby improving their health behaviors, self-efficacy, health status, and health care utilization. The purpose of the present analysis is to evaluate the effectiveness of the CDSMP in three outcomes. The first question is, "does a difference exist in the mean fatigue scores before and after the classes?" Next, "does a difference exist in the mean self-efficacy scores before and after the classes?" Finally, "is there a relationship between mean fatigue and self-efficacy scores before and after the classes?" Data from participants who completed the initial questionnaire and participants who attended the classes and completed a questionnaire at the end of the class sequence and 6 months later will be analyzed.

Sponsor(s): Cynthia Coviak

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Atrium Display 64

Establishing the location and True Orientation of Grand Valley Campus Building Facilities Using CAD and GIS Technology

Presenter(s): Ian Clowes, Matt LaShell, David Welch, Clinton Klamer

The purpose of this project is to provide an interactive map of the academic and service buildings on the Allendale campus, and design an interactive database to identify rooms, and compute floor space. We will focus on a methodology for integrating CAD data into GIS, and measure the accuracy post transformation. CAD and GIS databases are sometimes disparate and fragmented, but there are many ways to make this a smooth process. A variety of database management skills and databases will be used to process the data.

Sponsor(s): Edwin Joseph

Atrium Display 65

The INs and OUTs of Grand Valley State University Virtual Mapping: Combining Internet Technology and GIS to Develop an Interactive and Searchable Map at Grand Valley State University

Presenter(s): Lesley DeGroot, Katy Schoetzow, and Mac Brown

The objective of this project is to help identify locations on campus using a combination of modern technology, including a GPS camera, and disseminate the information via the Internet. GIS is an emerging technology and developing a system that would allow students, faculty, staff and visitors to learn about the campus environment – especially the locations of buildings and associated entrances and exits is a welcome initiative. We will be effectively linking GPS information to imagery create parallel, panoramic, and 360° scenes of the campus. People unfamiliar with campus can access and use our website to conduct interactive queries.

Sponsor(s): Edwin Joseph

Atrium Display 66

New Product Development "The Top Shot"

Presenter(s): Adam DenHerder and Stephanie Tierney

Sponsor(s): John Rumery

Atrium Display 67

Alternatives to the War on Drugs and Drug Legalization

Presenter(s): Jacklyn P. Everage

Will explain that the U.S. needs to take a comprehensive approach to deal with the problems of the selling of narcotics, drug use, and abuse. This model recognizes that there are many factors that work together resulting in the "Drug Crisis" experienced in the United States.

Sponsor(s): Brian Phillips

Atrium Display 68

How to Make Effective Use of Assessment Data for Remediation of Low Performing Students.

Presenter(s): Cynthia Groenink

Results and practical materials from a research project on how to work with the students who score the lowest on standardized tests.

Sponsor(s): John Golden

Atrium Display 69

Differences in Acceptance of Cosmetic Surgery according to Gender and Peer Influence

Presenter(s): Stephanie Gooden and Holly Tenbrink

The present study investigated undergraduate students' views on cosmetic surgery using the Acceptance of Cosmetic Surgery Scale (ACSS). The ACSS measures acceptance of cosmetic surgery for intrapersonal and for social reasons, and also the degree to which someone would consider having cosmetic surgery themselves. Participants also completed a 9- item measure of their friends' concern with physical appearance. We examined sex- related differences for both of these variables and expected women to be more accepting

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of cosmetic surgery and to report higher levels of appearance concern among their friends. We also examined the relationship between ACSS scores and friends' concern with appearance separately for women and men.

Sponsor(s): Donna Henderson-King

Atrium Display 70

Effects of tree-of-heaven toxins on rodent herbivory

Presenter(s): Joe Haydon

Sponsor(s): Joe Jacquot

Atrium Display 71

Selective constraint in Vector-born versus Non-vector-born parasites

Presenter(s): Benjamin Hake

In theory, parasites whose life cycles involve two or more hosts are under greater selective constraints than those infecting a single host species. Mutations that confer an advantage in the definitive host may be deleterious in the intermediate host, or vice versa. For parasite genes that play an important role in host invasion and colonization, theory predicts that, on average, the likelihood, and extent, of positive Darwinian selection will be greater in single-host parasites, than in parasites constrained by the need to adapt to several hosts, especially taxonomically divergent hosts. We test this prediction by examining the ratio of synonymous to non-synonymous mutations in the cysteine proteinase gene in vector-borne parasites versus non-vector-borne parasites.

Sponsor(s): Douglas Graham

Atrium Display 72

Do plants contain katanin p80 homologous genes?

Presenter(s): Nathaniel Horwitz

Katanin is a microtubule severing ATPase. It is also a heterodimer, whose catalytic subunit, p60, has orthologs in both animals and plants. However the larger subunit, p80, has not been as well analyzed. The p80 subunit directs katanin to the centrosome in animal cells, the site of microtubule organization. While some green algae still have centrosomes, most plants do not. Should a p80 homolog be present in plants it might be involved in microtubule organization, and help to define the microtubule organizing center in plants. As an initial step we are analyzing angiosperms for the presence of p80 homologous genes, using degenerate PCR primers to probe seedling tissue cDNA. Already a p80 homolog has been identified in Arabidopsis, and shown to interact with the p60 homolog, AtKSS (Bourquin et al, 2003). We will report on the presence of p80 homologs in angiosperms, and consider how well it is conserved between dicots and monocots.

Sponsor(s): Regina McClinton

Atrium Display 73

PDN (n=1-6) cluster interaction with small organic molecules: A DFT study

Presenter(s): Jesse J Lutz

Organic molecules' adsorption, chemisorption, and decomposition on transition metals has grown increasingly important with the rising interest in heterogeneous catalysis and the need of fine-tuning in biomass and fuel cell technologies. As detailed experimental data regarding the interaction of organic compounds with metal clusters are difficult to obtain and encumbered by the use of metal supports and solvents, the use of computational modeling as a supporting tool is continuing to gain momentum. The relation between Pd_n (n=1-8) cluster size and relative reactivity is investigated in this study, focusing on understanding the electronic and dynamic properties of the metal. Relevant atoms and small molecules such as H₂, H₂O, and CH₃OH were introduced to the series of Palladium clusters using density functional theory methods in an attempt to compare relative affinities and reactivities present during the adsorption mechanism. These calculations have also been able to shed light on the process of catalyst deactivation with results showing energetically favorable conformations with carbon atoms breaching the cluster lattice, physically hindering the accessibility of active sites.

Sponsor(s): Dalila Kovacs

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Atrium Display 74

Periodization Strength and Conditioning Program for the Female Collegiate Soccer Athlete

Presenter(s): Shae Robinson, Erica Demers

The sport of soccer is a popular team game that utilizes the aerobic and anaerobic energy systems of the body. Strength, speed, stamina, technical ability, tactical knowledge, quick reaction, and overall game sense are keys to the success of a high-level soccer player. The purpose of our project is to present a periodized strength and conditioning program for collegiate female soccer players. Research in this area has shown that through a periodized program including stretching, warm-up, weight lifting, conditioning, sport specific activities, and active rest, collegiate soccer players can reach peak physical condition at the appropriate time. The focal points of this presentation will be dynamic stretching, plyometrics, agility, fitness testing, conditioning, weight training, and nutrition. The goal of this program is to develop a complete year round training program that will focus directly on improving the female collegiate soccer athlete.

Sponsor(s): Shari Bartz

Atrium Display 75

Abiotic factors associated with the timing of peak color changes in deciduous trees.

Presenter(s): Carrie Roossinck, Heather Miller

Temperate deciduous forests are known for their brilliant colors in the fall as the trees transition to losing their leaves. Most kids understand that leaves change color in the fall, but are unaware of the abiotic factors that might be influencing the onset of leaf color change (e.g., temperature, sunlight, etc.). In order to develop an inquiry activity to help students develop an understanding of how the environment might influence organisms, we worked on a project to elucidate the connection between the leaf color change and abiotic factors. We selected cities in North America that fall into the temperature deciduous biome. For each city, we collected and organized data on abiotic factors using reliable web resources. These abiotic factors were examined to determine if they correlated with leaf color change. Our presentation will describe some of the preliminary results obtained for developing inquiry-oriented lessons.

Sponsor(s): Stephen Burton

Atrium Display 76

A study on student access to cocaine, heroin and marijuana

Presenter(s): Candace P. Rosekopf

Drug use is prevalent among students in West Michigan, but the issue has received limited research in the area. The problem has risen of where students are accessing these drugs from in many high schools. This is due to some young West Michigan students recently overdosing and dying from heroin and cocaine. In the current research that is available, there is not a significant amount of information on where students are accessing these drugs from. In my research, I plan to study the problem of where 9th through 12th grade students are accessing drugs like cocaine, marijuana and heroin from. I plan to go to a high school and give the students a survey. This survey will help me better understand where these students are accessing these main three drugs from.

Sponsor(s): Don Williams

Atrium Display 77

Integrating GIS into Facilities Management at Grand Valley State University

Presenter(s): Steve Strang, Dustin Hall, Melanie Johnson, Nathan Mort

The ability to effectively manage large infrastructure network facilities depends heavily on tools designed to support regular service and maintenance. Identifying such existing facilities at Grand Valley State University Allendale Campus is part of an overall campus planning initiative. Existing facilities such fire hydrants, lighting fixtures, emergency phones, water lines, manhole covers etc., are not well documented on campus. We will be identifying and geocoding the locations of facilities using Geographic Information Systems (GIS) technology. The spatial data collected will be integrated into a database and GIS basemap to improve facilities management in relation to the buildings on campus to help with maintenance, safety as well as documentation of the facilities.

Sponsor(s): Edwin Joesph

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Atrium Display 78

Individual-to-group generalization within the intergroup context

Presenter(s): Katie Sherman, Jennifer Lovequist, Chelsea Talaski, Caitlin Ufer, Lauren Pieszchala

The current study examined individual-to-group generalization within the intergroup context. A number of studies have shown that people have a tendency to base their behavior toward, and beliefs about, an outgroup on a relatively small number of past experiences with members of the outgroup. The current was an attempt to replicate and extend these findings. We had undergraduate participants listen to a tape in which a couple was in therapy. Participants read that the couple was either black or white. In addition, the couple either got into a violent argument or they did not argue with one another. After listening to the tape, participants were asked to rate the effectiveness of the clinician. They were then told that they would complete a second study examining the impression formation process. In this second study, participants read two transcripts of interviews with undergraduate students. One of the stories involved a white undergraduate female who avoided a black male by crossing the street on her way home from a night class. After reading the story, participants rated the acceptability of the student's behavior. It was expected that the behavior would be seen as more acceptable in the black/violent argument condition than in any other condition.

Sponsor(s): Eaaron Henderson-King

Atrium Display 79

Telling stories about cosmetic surgery: Do values matter?

Presenter(s): Neil Sauter

In order to measure intrinsic and extrinsic values, we had participants in this study complete the Aspirations Index Scale (Kasser & Ryan, 2001). Participants were also asked to write a story about someone who was considering cosmetic surgery. A coding scheme was developed to ascertain the story characters' decision about whether or not to undergo cosmetic surgery and also how favorable the outcome of the surgery was. It was predicted that while both intrinsics and extrinsics would produce stories with happy endings, for extrinsics this would be due to having cosmetic surgery and for intrinsics due to a decision to not have surgery. Factors relevant to the decision concerning cosmetic surgery will also be discussed.

Sponsor(s): Donna Henderson-King

Atrium Display 80

Water Evaporation from Tropospheric Aerosols

Presenter(s): Nathan Siladke

With the recent discovery of the ubiquity of organic material in tropospheric aerosols, it has been postulated that the rates of water evaporation and condensation into the aerosols could be affected by thin surfactant films, which could ultimately affect cloud formation. Nathanson et al. have begun to study the effect of water evaporation from sulfuric acid solutions through the short-chain surfactant, butanol. They have found that a nearly full monolayer of butanol fails to reduce water evaporation from the acid. This unexpected result raises many questions about the mechanism of water evaporation. We propose the use of molecular modeling to help answer some of these questions as it allows us to examine the trajectory by which a molecule leaves the liquid at the molecular level. We also are able to study this problem under conditions closer to that of the troposphere because we are free of certain experimental limitations.

Sponsor(s): Christopher Lawrence

Atrium Display 81

Would you like fries with that? How to find a full time job in a depressed economy

Presenter(s): Steve Schmucker

College is an important tool in obtaining a good job, it gives you many of the skills students need in order to excel in the workforce. Times have changed and the market has become flooded, especially in West Michigan with displaced workers. College students will be forced to compete with many of these workers when they begin seeking employment upon graduation. Job placement services have answered the call and are trying encouraging students to consider temp to hire work. Many businesses are beginning to hire

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more full time employees, and the people who work for them on a temp to hire basis are the first in line for full time positions. Two things can be said about college students, they don't see private job placement services as a way of obtaining employment and many are not aware of the potential of full time employment that is made available through job placement services. The goal of this research is to see student awareness of job placement services.

Atrium Display 82

Strength and Conditioning Program for Collegiate Baseball Pitchers

Presenter(s): Dave Schmidt, Matt Puro

The focus of this presentation is to develop a year round strength and conditioning program for collegiate baseball pitchers. The program will develop specialized workouts for both pre- and post-season, as well as a workout plan while in season. This program will assist the individual in maximizing their potential and making gains during year round. Pitchers develop a number of injuries, many of which are the result of inadequate strength or improper biomechanics. This program would concentrate on developing their bodies in order to fulfill their greatest capacity and avoid these injuries. The goals of this presentation are to create a program that collegiate pitching coaches can use to help develop their pitchers and provide them with a better understanding of how they can gain strength and improve individual performance.

Sponsor(s): Shari Bartz

Atrium Display 83

Synthesis of Polyimides from Various Bisphenols

Presenter(s): Anthony Schultz

Various bisphenols were used to synthesize poly(o-hydroxyimides). Bisphenol A, bisphenol F, bisphenol S, and biphenol were used as starting materials. The two step synthesis was completed via a nitration in acetic acid and water followed by a reduction using sodium hydrosulfite in sodium hydroxide. These syntheses produced high yields(75-98%). Also, complete conversion from a dinitro compound to a diamine was observed for all of the bisphenols used. The monomers produced from the synthesis were polymerized with either 3,3',4,4'-oxydiphthalic anhydride or 3,3',4,4'-benzophenonetetracarboxylic anhydride in a 1:1 stoichiometric amount. The subsequent polymer was then ground into flakes ranging from 75-180 microns in diameter. These flakes were dried and then popped into friable balloons which ranged from 125-300 microns in diameter. The drying process for this step was extensively studied, and optimal drying conditions were determined. The friable balloons have many outlets of which one was studied. The research, funded by an STTR grant through the Missile Defense Agency, focused on the dehydration of the friable balloons to create a polyimide balloon. The polyimides were then analyzed with thermogravimetric analysis. These systems demonstrated thermal stability as high as 600 °C, and also have demonstrated stability at cryogenic temperatures. Applications for such technology range from low-orbit satellites to aircraft carriers to photoresists.

Sponsor(s): Robert Smart

Atrium Display 84

Strength and Conditioning Periodization within The Martial Arts

Presenter(s): Chad D. Smith

The purpose of this presentation is to develop a three year periodization strength and conditioning program for individuals who seek to gain a rank of black belt in karate or similar martial art. Karate is a multiplanar activity that takes intense dedication, focus, flexibility, endurance, and strength to master. This presentation will focus on current knowledge of injury prevention, flexibility, balance, endurance, strength and power. A time period of three years will be divided into periodization cycles in order to organize such a program as it varies in its intensity and volume.

Sponsor(s): Shari Bartz

POSTER PRESENTATION ABSTRACTS

Atrium Display 85

Reading Rainbow: The Emergence of GLBT Themes in Young Adult Literature

Presenter(s): Alexis Schlieve

Recently in America, there has been a trend toward more acceptance of homosexuality. As a result, the theme of gay rights has begun to emerge in many forms of art aimed at many different audiences. This thesis will investigate the trend of incorporating GLBT (gay-lesbian-bisexual-transgender) themes into books aimed at high-school aged readers. Face-to-face and phone interviews with librarians in five counties across Michigan will determine how librarians incorporate these books into their collections, what challenges (if any) they face when doing so, and how much of a demand by patrons they perceive for these books. The study will determine how social movements can impact libraries and young readers, and what factors contribute to breadth and diversity of issues within library collections.

Sponsor(s): Don Williams

Atrium Display 86

A Statistical Consulting Experience: Predicting Giving of GVSU Alumni

Presenter(s): Amanda Vincent and Michael Baker

Grand Valley currently has a large number of alumni who donate to the university. We worked with University Development as statistical consultants to analyze data on 55,000 alumni to achieve three main goals. The first was to find a formula to predict the giving capacity of alumni who have never donated to the university before. The second was to determine what key information about alumni correlates to their giving behavior. Our final goal was to develop a formula to predict the likelihood of an alum donating three years in a row.

Sponsor(s): Neal Rogness, Bob Papp

Atrium Display 87

Mapping the Location of Storm Drain Discharge Points on the Allendale Campus Using GIS Technology, and Evaluating the Impact on the Surrounding Landscape

Presenter(s): Amanda Vincent, Erin Wildt, Laura Whistler, Devon Lucas, Tania Howard

Many communities are concerned about storm water management. We will show how raster and vector GIS can be used to manage storm water infrastructure, and conduct basin master planning in the future. Our project outlines significant factors affecting the preparation and maintenance of a two dimensional map using CAD and GIS technology. We will be mapping the distribution of storm drain discharge points around the Allendale campus and compare the impact of storm water discharge on the biological community structure, sedimentary properties, and stability. We will evaluate conditions at specific distances from storm drains to identify spatial trends. We will also identify poorly drained areas and evaluate potential solutions.

Sponsor(s): Edwin Joseph

Atrium Display 88

Dressing Tweens: A Study of Adolescent Females

Presenter(s): Sara Wittbrodt

Pre- adolescent females (approx. ages 10-13), also referred to as "Tweens," are to be observed at school and at times after school (at the mall and a school sporting event) to discover their clothing preference. It is predicted that the dress of those during school will be different than the dress found at places and events taking place after school. At those times, the dress is believed to include clothing that would otherwise be inappropriate if worn at school. A survey will also be given to girls that age to determine who is buying their clothes, where they are buying them from, and other questions that will be used to analyze why they choose the clothes they do. Another survey will be given to parents to find out their opinion on the dress of Tweens and to discover exactly who is buying clothing that is too mature for that age.

Sponsor(s): Don Williams

POSTER PRESENTATION ABSTRACTS

Atrium Display 89

Neurotoxic Effects of PCB Congeners 52 and 153 in Goldfish

Presenter(s): Adam Werts

Polychlorinated Biphenyls (PCBs) consist of a mixture of 209 different chlorinated biphenyl congeners, 36 of which are relevant environmental contaminants. These environmental contaminants have been shown to cause adverse neurobehavioral effects in both humans and nonhuman vertebrates. Because these chemicals tend to accumulate in aquatic ecosystems, many fish come in direct contact with PCBs. However, there is no congener specific data currently available for fish. In this study we investigated the neurobehavioral effects and gross PCB accumulation in goldfish that were intracranially injected with PCB congeners 52 and 153.

Sponsor(s): Xiaojuan Xu, Min Qi

Atrium Display 90

Distributing Jump Distances for a Synthetic Disk Array Workload

Presenter(s): Jeremy Zito

To produce a synthetic workload for a disk array many factors must be considered. One of these factors is the distribution of accessed sectors and the "jump distances" between them. When given a list of actual accessed sectors and their associated jump distances; producing a workload that maintains the distribution of jump distances and sectors in that list perfectly is an NP-complete problem. In other words, quite difficult. This presentation describes the problem at hand, the brute-force, depth-first search algorithm used to find a partial solution, and the approximation techniques we are researching, which will hopefully allow for a more complete answer.

Sponsor(s): Zachary Kurmas

Atrium Display 91

Competitive Bowling

Presenter(s): Jeremy Pettenger

Has competitive bowling lost its integrity as a sport? Despite the fact that some 55.5 million Americans went bowling last year, competitive bowling has seen its participation rates plummet compared to recent years. From 1958-1997 ABC broadcast the Professional Bowlers Association (PBA) Tour to television audiences of over 8 million viewers. Today, the Professional Bowlers Association is broadcast to an average viewing audience of less than 1 million viewers. The advancement of technology in recent years has developed astronomical higher scores with specially designed bowling balls and easier lane dressings that make a perfect 300 game not so uncommon to the once a week league bowler. A decade ago, 4 million people participated in league bowling, today that number is about 2 million bowlers. Has the game of bowling become too easy for competitive bowlers?

Atrium Display 92

Communication Myths: Conscious or Unconscious Adherence

Presenter(s): Henry Averhart

Myths are significant in explaining the existential questions of life, but when they are adopted uncritically, they may generate more harm than good. Admittedly, there is no way out of myth; we are the mythical creature. We need, therefore, to become more aware of myth and more critical of the myths we already, if only unknowingly, have adopted. This research addresses common misconceptions of the definitions of myths, attempts to identify the conscious and unconscious use of myths in our daily lives, and ultimately introduces the concept of modified myth adoption. This is done by analyzing and synthesizing selected scholarly works and psychological studies on the subject with the objective of promoting understanding of one's own and other peoples' worldviews and belief systems.

Sponsor(s): Dolli Lutes, Corey Anton

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26.18 lbs.

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