PROGRAM & ABSTRACTS

13th Annual Symposium on
Graduate Research and Scholarly Projects

April 28, 2017
Rhatigan Student Center

Barbara Chaparro & Heidi Bell: GRASP Co-Chairs
2017 GRASP SYMPOSIUM

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Graduate School
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Regional Institute on Aging
## Graduate Research and Scholarly Projects
### 13th Annual Symposium

**Agenda**

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<td>8:30 – 9:00</td>
<td>Registration and poster set-up (RSC, 3rd Floor)</td>
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<tr>
<td>9:00 – 9:45</td>
<td>Opening Session</td>
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<td></td>
<td>- Opening remarks – Dr. Dennis Livesay, Dr. Kerry Wilks</td>
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<td></td>
<td>- Keynote speech – Dr. Karen Countryman-Roswurm</td>
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<td>- Shocker Innovation Corps announcement</td>
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<td>9:45 – 10:00</td>
<td>Break</td>
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<tr>
<td>10:00 – 12:00</td>
<td>Poster Session 1 (Beggs Ballroom 1 &amp; 2) and Oral Presentation Sessions 1 &amp; 2 (Olive – RSC 261)</td>
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<td>12:00 noon – 12:30</td>
<td>Break</td>
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<tr>
<td>12:30 – 2:30</td>
<td>Poster Session 2 (Beggs Ballroom 1 &amp; 2) and Oral Presentation Sessions 3 &amp; 4 (Olive – RSC 261)</td>
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<td>2:30 – 3:30</td>
<td>Judging Tabulation</td>
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<td>3:30 – 4:00</td>
<td>Closing Session</td>
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<td>- Final remarks – Dean of the Graduate School, Dr. Dennis Livesay</td>
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<td>- Presentation of Graduate School Awards – Associate Dean of the Graduate School, Dr. Kerry Wilks</td>
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<td>- Presentation of GRASP Awards – GRASP Co-Chairs Dr. Barbara Chaparro, Dr. Heidi Bell</td>
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**Poster Presentations (RSC, Beggs Ballroom 1 & 2)**

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<td>12:00 noon – 12:30</td>
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**Oral Presentations (RSC, Olive – Room 261)**

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<td>10:50 – 11:05</td>
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<td>11:05 – 11:55</td>
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<tr>
<td>12:55 – 1:35</td>
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<tr>
<td>1:35 – 1:50</td>
<td>Break</td>
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<td>1:50 – 2:30</td>
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Karen Countryman-Roswurm, LMSW, Ph.D.
Executive Director, WSU Center for Combating Human Trafficking (CCHT)
Assistant Professor, WSU School of Social Work

Karen Countryman-Roswurm, LMSW, Ph.D., has more than two decades of personal, professional practice, and community-based research expertise in the Anti-Trafficking Movement. With various first-hand vantage points, and operating from a strengths-based and social justice perspective, she has served locally, regionally, nationally, and internationally as a street outreach worker, project coordinator for gender-specific programming, therapist, community response organizer, human rights advocate, and public policy developer. Dr. Countryman-Roswurm has acted as a forerunner in the Movement by advancing 1) education methods for increasing broad-based community awareness 2) prevention of human trafficking through her *Lotus Prevention for Prosperity™* curriculum 3) methods of victim-centered/survivor-led practices for multidisciplinary professionals who serve those at-risk of, subjugated to, and/or who have survived sex trafficking through her *Lotus Anti-Trafficking Model™* 4) effective identification and intervention strategies through use of tools such as her *Lotus Victim-Centered Survivor-Led Life Planning Tool™* (VCSL-LPT) and 5) promoting systemic and holistic prosperity among survivors of human trafficking through her *Pathway to Prosperity™* program. Dr. Countryman-Roswurm has received many honors and awards for her efforts. Dearest to her heart are recognitions that reflect her direct-service and advocacy work with victims and survivors including the *Martin Luther King Jr. Education Award* and the *Inaugural Pat Ayars Mentoring Award*. Additionally, in efforts to assist all 50 states with developing their capacity to prevent and respond to child trafficking under new mandates set forth in the *Preventing Sex Trafficking and Strengthening Families Act of 2014*, Dr. Countryman-Roswurm was invited to share her *Lotus Anti-Trafficking Response Model™* at The National Convening on Trafficking and Child Welfare in the White House in June 2015. Dr. Countryman-Roswurm serves as the Founder and Executive Director of the Center for Combating Human Trafficking and is an Assistant Professor in the School of Social Work at Wichita State University. To learn more about Dr. Karen Countryman-Roswurm visit [http://combatinghumantrafficking.org](http://combatinghumantrafficking.org).
2017 GRASP Symposium Judges

Orals
Tony Dilollo                      Susan Matveyeva
Aleks Sternfeld-Dunn             Rosemary Wright

Posters
Abigail Arthur                   Meghann Kuhlman
Davood Askari                    B.J. Lehecka
Whitney Bailey                   Bin Li
Deborah Ballard-Reisch           Fuchang Liu
Moriah Beck                      Dennis Livesay
Brien Bolin                      Brittany Lockard
Gina Brown                       Penny Mann
Sara Butts                       Anthony May
Amy Chesser                      Liz McLain
C. Brendan Clark                 Jessica Morton
Kathy Delker                     Claudia Pederson
Atri Dutta                       Carolyn Shaw
Lisa Garcia                      Barbara Smith
Sherry Gegen                     Kathy Stratman
Jodie Hertzog                    Xiao-Ming Sun
Alicia Huckstadt                 Joel Suss
Becky Hundley                    Anh Tran
Gisuk Hwang                      Michelle Wallace
Cynorra Jackson                  Camilla Wilson
Eveline Kalomo
## GRASP 2017 Oral Presentations

### Oral Presentations: Session One

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<th>Time</th>
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<tr>
<td>10:00</td>
<td>Ciera Dockter</td>
<td>Grandmothers, Mothers, and Daughters: Examining Feminism and Intersectionality in <em>Jane the Virgin</em></td>
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<tr>
<td>10:10</td>
<td>Seyed Ali Cheraghi</td>
<td>GuideBeacon Beacon-Based Indoor Wayfinding for the Blind, Visually Impaired, and Disoriented</td>
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<tr>
<td>10:20</td>
<td>Kelsey Darnell, Justin Harland, Aaron Casner, Trevor Kimball, David Tuong</td>
<td>A Comparison Between Hip Internal Rotation Mobilization to Posterior Glide and Their Effects on Hip Internal Rotation</td>
</tr>
<tr>
<td>10:30</td>
<td>Paul Misasi, Logan Gisick, Tiffany Leverenz</td>
<td>Evaluating and Optimizing the Design of Clinical Decision Support for Paramedics in the Field</td>
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<tr>
<td>10:40</td>
<td>Hannah Lindsey-Schuman</td>
<td>Speech-Related Breathing in Infants Under Ten Months</td>
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### Oral Presentations: Session Two

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<tr>
<td>11:05</td>
<td>Melvin Rafi</td>
<td>Real-Time Predictive Estimation of Loss-of-Control Events on Transport Aircraft</td>
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<td>11:15</td>
<td>Farshad Mashhadi</td>
<td>An Adaptive Resource Scheduling Approach to Improve the Throughput and Reliability of Shuffle-Exchange Networks</td>
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<td>11:25</td>
<td>Charles Osueke</td>
<td>The Influence of Monetary Policy Shock on Large-cap and Small-cap Indexes and Index Funds: An Incorporation of the Taylor Rule</td>
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<td>11:35</td>
<td>Lei Wang</td>
<td>Prediction of Land Market Value Based on the Real Estate Market in USA</td>
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<td>11:45</td>
<td>Hooman Shahverdi Mogaddam, A. Kothare</td>
<td>Numerical Approach to Predict the Thermal Expansion Coefficients of Honeycomb Core Validated by Experimental Test Results</td>
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<td>Jordan Ollenberger, Chandler Kelley, Elvia Barraza, Ryan Faflick, Senda Vu</td>
<td>Comparing Upper Limb and Bilateral Coordination of Age and Sex Matched Adolescents with Intellectual Disabilities</td>
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<td>1:05</td>
<td>Chance Swaim</td>
<td>Big Data, Short Works: Establishing a Stylometric Baseline for Micro-attributions of Shakespeare’s Apocrypha with ‘On a day, alack the day’</td>
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<td>1:15</td>
<td>Erin Gannon, Dustin Smith</td>
<td>Prolonged use of Dynamic Text Presentations for Reading with Low Vision</td>
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<td>1:25</td>
<td>Lipilekha Mukherjee, I.R. Hendry</td>
<td>Differential Regulatory Gene Expression at the Proteomic Level in Subtypes of Human Ovarian Cancer Cell-Lines</td>
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<td>Maggie Leighton</td>
<td>Pediatric Asthma: An Emergency Department Assessment Tool</td>
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<td>2:00</td>
<td>Derek Wilson</td>
<td>Gaming as a Path to Sexual Assault: A Content Analysis of Fan Comments in Response to a Virtual Reality Sexual Assault</td>
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<td>2:10</td>
<td>Eyyub Kibis</td>
<td>Data Analytics Approaches for Breast Cancer Survivability: Comparison of Data Mining Methods</td>
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<td>2:20</td>
<td>Kate Wildeman, Mikaylea Bunyan, Trista Cline, Colin Donner, Kristina Underhill</td>
<td>Effects of Strength Circuit Training and Boxing Circuit Training in Individuals with Parkinson’s Disease</td>
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<td>Cheyenne Alvarado, Unnati Basnyat, Jon Schwermer, Stephanie Stevens, Angela Sucha  Physician Assistant Approach to Infertility in Primary Care</td>
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<td>3</td>
<td>Lucy Aragon  Identification of Preliminary Context-Based Policies for Short-Term Inpatient Care Work Planning</td>
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<td>Lamin Barrow, Jennifer Mattar  Assessment of Student Perceptions and Opinions of Information About Older Adults and Zika from the Media</td>
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<td>Anne Briggs  Neo-fado: Identity Creation Among Portuguese-Americans</td>
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<td>Dominic Canare  New Input Schemes for New Devices</td>
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<td>Kishore Konda Chidella  Impact of Distributed Directories on Performance of Wireless Network-on-Chip Architectures</td>
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<td>2</td>
<td>Tracy Collins  Measuring Creativity: Evaluating Middle School Students Using a Divergent Thinking Task in the Visual Art Classroom</td>
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<td>10</td>
<td>Crystal Dalmasso, Micah Fry, Lyndsey Edwards  Hunger Solutions: Recognizing Barriers and Mobilizing Resources to Create a Food Secure Campus</td>
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<td>Mozhgan (Nora) Entekhabi  Unexpected Radial Limit</td>
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<td>Shea Fairchild  Education as an Intervention for Prevention of Non-Urgent ED Visits</td>
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<td>Kelly Guzman  Assessment and Interpreting Services in Discharge of Latino Patients in Kansas</td>
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<td>15</td>
<td>Alice Hartman, Dave Martin, Jeremy Milford, Jacob Simmons, Chris Truong</td>
<td>Young Adults’ Performance of Unipedal Dynamic Balance with Various Footwear Conditions</td>
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<td>Sandi Keith, Jourdan King</td>
<td>Effective Reading Interventions for Students with Dyslexia</td>
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<td>17</td>
<td>Tiffany Leverenz</td>
<td>Better Together? Examining the Usability of the EMR Using the Desktop and Native Mobile Application</td>
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<td>Amir Hossein Majidirad</td>
<td>Investigation on Welding Residual Stress Effects on Modal Parameters on AA5056 Samples; Experimental and Numerical Study</td>
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<td>Marci Malashchuk</td>
<td>Giftedness, Anxiety and Perfectionism: Family Structure, Dabrowski’s Overexcitabilities and Real-life Strategies</td>
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<td>Rakib Mustafa</td>
<td>Nanoemulsion of Natural Oils for Skin Protection Using Encapsulation Technique</td>
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<td>Barbara Myers</td>
<td>The Life and Times of Highland Cemetery</td>
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<td>Carrie Parmley</td>
<td>Evaluating a New Diabetic Education Program in a Family Practice Clinic</td>
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<td>Ashton Pfannenstiel</td>
<td>Predictors of Patient Inclusion in Treatment Decisions: Evidence from the 2013 Medical Expenditure Panel Survey</td>
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<td>Kiran Rajaram, Melvin Rafi</td>
<td>Laplace-Based Predictive Estimation of Loss-of-Control Boundaries on a Transport Aircraft</td>
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<td>Linda Robinette</td>
<td>Suicidality through a Rural Lens</td>
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<td>Erin Sawyers, Jordan Heins, Megan Spradlin</td>
<td>Nutrition Guidelines in Kansas Elementary Schools</td>
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<td>Courtney Simon, Mathew Broeckelman, Cheri Flanagan, Kendra Hallacy, Sonia Sanchez-Paredes</td>
<td>The Effects of Pulsed Electromagnetic Field Therapy, Postural Training, and Therapeutic Massage on Cervical Range of Motion and Pain</td>
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<td>29</td>
<td>What’s There to Say About Those Little Libraries?</td>
<td>Julia Siwierka</td>
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<td>Assessing Population Demographics of Sericea (<em>Lespedeza cuneata</em>) in Response to Environmental Variation and Land Management in the Great Plains</td>
<td>Jennifer Smith</td>
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<td>Improving Transit in Wichita: Marrying the Old and the New</td>
<td>Mercy Umeri</td>
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<td>Pavan Vellore Kumaraswamy</td>
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<td>Logan Vincent, Jared Reyes</td>
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<td>Marathon Runners' Motivations &amp; Use of Social Media for Social Support</td>
<td>Brittany Waldman</td>
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<td>Education Techniques for Effective Counseling Regarding Prevention of Unintended Pregnancies</td>
<td>Megan Walker, Monica Buelt, Katherine Muff</td>
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<td>Rajesh Kumar Ananda-Kumar</td>
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<td>Firearms Safety</td>
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<td>Femtosecond Laser Nanotexturing of Drug-Eluting Stents</td>
<td>Mahmood Al Bashir</td>
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<td>Preserving “Daddy’s little girl”: Exploring Daughter’s Impression Management Strategies</td>
<td>Shelby Bowman</td>
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<td>Survey of Parental Vaccine Hesitancy in Kansas</td>
<td>Bailey Buer, Amanda Casey, Lauren Graber, Alison Starr, Nicole Walden</td>
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<td>An Adaptive Flight Controller for a Bird-Like Flapping Wing Aircraft</td>
<td>Balaji Kartikeyan Chandrasekaran</td>
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<td>Amanda Conner</td>
<td>Don’t Wake the Baby! Safe Sleeping Techniques for Infants, and Importance of Instructing Grandparents on new Research Findings</td>
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<td>Andrew Conrady, Kelsey Bond</td>
<td>Integration of Simulation in the Didactic Year of a Physician Assistant Program</td>
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<td>Dorothy Drew Garza</td>
<td>White Women for Trump: An Analysis of Political Commentaries</td>
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<td>Stephanie Ewertt, Luke Mierau</td>
<td>The Role of Federally Qualified Health Centers in Preventing Nontraumatic Oral Health Emergency Department Visits</td>
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<td>The Massacre Vs. The Peacekeepers: An Analysis of News Coverage Surrounding the 2016 Hesston, Kansas Shooting and Subsequent Community Response</td>
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<td>Audrey Flack’s Hyperreal Paintings: A Juxtaposing Simulation of Feminism and Femininity in the 1970s</td>
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<td>Nicole Goetz, Melissa Daughty, Emily Meyer, Kara Omo, Dustyna Roman</td>
<td>Prevalence of Thoracic Back Pain and Disability Scores in Pregnant Women</td>
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<td>Ashwini Kanade</td>
<td>The Challenge of Coding Utterances from Children with Autism Spectrum Disorder</td>
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<td>Nathan Kasting, Caitlin Tenbarge, Sofia Harlow</td>
<td>Methemoglobinemia in a 14 Year Old Female with New Onset of Dyspnea: A Case Report</td>
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<td>Bryan Lickteig, David Murphy</td>
<td>Dopaminergic Cell Toxicity of N-Substituted Derivatives of Parkinsonian Toxin 1-Methyl-4-phenylpyridinium (MPP+)</td>
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<td>Heather Merchant, Noel Staats</td>
<td>Fracture Orientations in Kansas and Relations to Mountain Building</td>
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<td>Morgan Miles, Taylor Winter</td>
<td>Guiding the Diagnosis of Autism in Family Practice</td>
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<td>Arvind Natarajan</td>
<td>Study of Friction and Temperatures During Modulation Assisted Machining</td>
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<td>Dung (Cindy) Nguyen</td>
<td>The Effectiveness of Physical Exercise on Cancer Related Fatigue in Cancer Patients Undergoing Radiation Therapy</td>
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<td>Karson Quinn</td>
<td>Title IX Policy: A Reflection on the Framing of Sexual Misconduct on College Campuses</td>
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<td>Carmen Ramirez, Marcus Ekart, Kassidy Simmons, Adam Veenis</td>
<td>The Effects of a Standing Intervention on Low Back Pain, Flexibility, Gluteal Strength, and Abdominal Strength in DPT Students</td>
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<td>Alexis Raushel, Adam Armijo</td>
<td>Optimal Placement of Police Body-Worn Cameras</td>
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Abstracts: Oral and Poster Presentations

13th Annual Symposium on Graduate Research and Scholarly Projects
Comparing Contract-Relax Stretching Versus Dynamic Stretching on Latissimus Dorsi Extensibility and Throwing Velocity in High School Baseball Players

Kara Aaby, Ashton Reichmann*, Miles Christensen, Neha Joshi, Corey Ratzlaff
Faculty: Robert Manske
Department of Physical Therapy, College of Health Professions

This study explores the effects of stretching latissimus dorsi flexibility on shoulder range of motion (ROM) and their effects on throwing velocity.

Methods: Baseline measurements for ROM and throwing velocity were gathered in session one. During the second and third sessions, subjects performed general stretches followed by a series of dynamic (DYN) or contract-relax stretching (CRS) respectively. Post-intervention ROM and velocity measurements were taken. Our hypothesis was there would be no difference in ROM or throwing velocity based on stretching technique.

Statistical Analysis: A repeated measures ANOVA was used for stretch comparison. Alpha level set at $p < 0.05$.

Results: Following stretching, no differences were seen for shoulder internal rotation ROM ($p = 0.49$); however, CRS showed difference for external rotation ($p = 0.005$) and flexion shoulder ROM ($p = 0.001$). CRS and DYN improved throwing velocity ($p = 0.049$).

Conclusions: CRS improved ROM. CRS and DYN improved throwing velocity.
Physician Assistant Approach to Infertility in Primary Care

Cheyanne Alvarado, Unnati Basnyat, Jon Schwermer, Stephanie Stevens, Angela Sucha
Faculty: Gina Brown
Department of Physician Assistant, College of Health Professions

The evaluation of a patient presenting with infertility can be complex and overwhelming for a physician assistant working in primary care. There are many factors to consider – from cervical, uterine, ovarian issues, lifestyle choices, and male factors – and it may seem easier to simply refer to an infertility specialist. The purpose of this project was to create a resource for primary care PAs to utilize a step-wise approach to providing care for patients with infertility. A literature review was performed to develop a guideline based on current infertility clinical practices. Our findings showed that there are many appropriate options for treatment of infertility within primary care, but there are certain circumstances that require immediate referral to an infertility specialist. Primary care physician assistants have an important role in addressing infertility complaints in a thorough and concise manner which can avoid unnecessary specialty referrals.
Experimental Validation of Machining Models

Rajesh Kumar Ananda-Kumar*
Faculty: Wilfredo Moscoso-Kingsley, Viswanathan Madhavan
Department of Industrial and Manufacturing Engineering, College of Engineering

Validation of machining models is usually done using experimental conditions that are far from the assumptions of the models. One of the most difficult experimental conditions to replicate is the friction at the chip-tool interface. To solve this issue, orthogonal cutting of 99.94 percent pure lead has been carried out under near perfect sticking friction conditions. This was achieved by cutting with microtome tools, whose rake faces were coated with a well-adherent layer of lead over which the chip slid by internal shear along the chip-tool interface. After cutting at the target depth of cut, it was observed that most of the transferred lead remained on the rake face. It was found that when sticking friction prevailed, as opposed to the typical sliding on a clean tool, the cutting force went up, the thrust force reversed direction, the chip flow was straighter, and the chip thickness increased.
Identification of Preliminary Context-Based Policies for Short-Term Inpatient Care Work Planning

Lucy Aragon*
Faculty: Laila Cure

Department of Industrial, Systems, and Manufacturing Engineering, College of Engineering

The short-term inpatient care work planning problem consists of assigning daily tasks to hourly rounds. This problem is solved by healthcare workers at the start and throughout their workday. Due to the fast pace of healthcare work systems and the cognitive limitations of humans, work planning strategies are often static, and thus may prove inadequate on particular workdays. Inadequate work plans may not only compromise healthcare quality but also cause burnout among healthcare providers. The objective of this study is to develop high-quality and practical work planning policies that can be applied by healthcare workers using limited computational resources. The problem was formulated as a variation of the 0-1 generalized assignment problem with nonlinear capacity constraints. Metrics for timeliness and physical dispersion were used as objective criteria. Optimal solutions, obtained using state-of-the-art complex solution algorithms, were analyzed to gain insights into the characteristics of high-quality, but practical work planning strategies.
Firearms Safety

Adam J. Armijo*, Alexis Raushel*
Faculty: Joel Suss

Department of Psychology, Fairmount College of Liberal Arts and Sciences

Despite the fact that many people are unintentionally killed or injured in firearms-related incidents each year in the USA, there has been little research conducted on firearms safety. The current study addresses this issue with one possible explanation: some people may think that they are more competent with firearms than they are. Overconfidence may lead to unsafe behaviors and accidental firearm discharge. Therefore, one approach to addressing this problem is to examine the relationship between perceived and actual firearm competence. The hypothesis was examined by using a video-based test in which people viewed a person manipulating a firearm, then answered safety-related questions. Overconfidence was observed in the lowest quartile of performance for questions concerning the outcome of pulling the trigger. Once validated, the firearm functioning test could be made publicly available, allowing a wide audience to easily obtain an objective assessment of their firearm-safety competence.
Assessment of Student Perceptions and Opinions of Information About Older Adults and Zika from the Media

Lamin I. Barrow*, Jennifer Mattar
Faculty: Amy Chesser, Nikki Keene Woods
Department of Public Health Sciences, College of Health Professions

Introduction: As the Zika virus spreads through parts of South America, and onto American soil, Zika has become a major focus of interest for public health authorities and the media. Zika is a virus that has been linked to microcephaly and Guillain-Barre Syndrome. The purpose of this study is to assess the knowledge/perceptions of public health and communication science students at Wichita State University about public health concerns including Zika.

Methods: The participants of this pilot study included students from the public health and communication science department. Participants received a Qualtrics survey link, containing a consent form for students’ approval of participation.

Results and Conclusion: The results of this pilot study demonstrated major advancements in understanding students’ knowledge and information sources used concerning Zika. Implications of these results are the need to improve health communication training and further evaluate the quality of health information dissemination via all communication sources.
Femtosecond Laser Nanotexturing of Drug-Eluting Stents

Mahmood Al Bashir*
Faculty: Rajeev Nair
Department of Mechanical Engineering, College of Engineering

Stents have been used for over a decade to treat coronary arteries affected by stenosis, a state where the arteries are narrowed by the deposition of plaque. But studies have found restenosis can hinder its purpose. Drug-eluting stents (DES) have a significant impact in treating restenosis. DES are embedded with drugs that are released over time after stent is placed within the artery, reducing the chance of plaque deposition around the stent. But DES risks the chance of increased thrombosis, which is a state when blood clots form around the stent because of a change in the blood flow profile. In our research we used femtosecond pulsed lasers to create Nano-textured patterns on a biomaterial, Tantalum and studied the structure. The ‘peaks and valley’ structure found under the microscope shows potentials to be used as a drug reservoir for the stents. Further studies are being conducted to test the fluid retention characteristics of the material, which can be a cost-effective solution to reduce or completely eliminate in-stent restenosis and thrombosis without the need of post-finishing operations. The interaction of bio-elements with the metallic stents are also being tested to ensure the efficiency of the DES.
Father-daughter communication is an understudied area of interpersonal communication that deserves more attention. The nuclear family is no longer the norm, and fathers are now expected to take on a more active role in raising children. However, mothers are still viewed as the primary communicator within parent-daughter dyads with fathers taking the secondary or lesser parental role. Research has found that while father-daughter communication is less frequent than mother-daughter communication, positive father-daughter relationships are beneficial to the daughter’s well-being and emotional health. Many barriers exist to father-daughter communication such as the “daddy’s little girl” image and gendered experiences. Based on an interview study, this study uses Impression Management Theory to analyze how daughters adapt their behavior and communication strategies to influence how their fathers see them. Daughters interviewed in this study desire to make their father proud. They engage in ingratiation, self-promotion, exemplification, supplication and intimidation to achieve this image.
Neo-fado: Identity Creation Among Portuguese-Americans

Anne Elizabeth Briggs*
Faculty: Kelly St. Pierre
School of Music, College of Fine Arts

Traditional Portuguese fado typically consists of two guitarists—often both a Portuguese and acoustic—along with a vocalist. However, a new instrumentation of the genre has yielded a modern style—neo-fado—popular throughout Portuguese communities. More than the music, this modernization of a traditional cultural artifact reveals the globalization and pluralism of diapsoric Portuguese communities. Scholars have already recognized this pluralism. Scholar Michael Arnold’s research highlights the hybridity neo-fado represents in mainland communities, especially Lisbon. Still others, including Estellie Smith and Don Warrin, examine the use of traditional fado in immigrant communities in the US. João Leal explores the pluralism of Azorean-Americans and expressions of transnationalism and identity through Holy Ghost festivals. This research explores neo-fado as a lens onto pluralism in Azorean- and Portuguese-American communities. Ultimately such an exploration will reveal how younger generations in immigrant communities reject the Portugal of their parents to construct one of their own.
Survey of Parental Vaccine Hesitancy in Kansas

Bailey Buer*, Amanda Casey*, Lauren Graber*, Alison Starr*, Nicole Walden*
Faculty: Michelle Wallace¹, Nikki Keene Woods²

¹Department of Physician Assistant, College of Health Professions
²Department of Public Health Sciences, College of Health Professions

Rates of recommended childhood vaccinations in the United States are declining. In Kansas, the percentage of children entering kindergarten on the recommended schedule was 66% in 2014. To understand this trend, a survey was created and administered to parents in a local community. Parents (N=362) were surveyed on sources of vaccine information and vaccination beliefs. Most participants reported the internet and their primary care provider as the most frequent sources of information (Internet=42%; Primary Care Provider=33%; Friends/Family=9%). Parents of children with private insurance and Medicaid were more likely to follow the recommended vaccine schedule (80% and 84%). 97% of parents not following the recommended schedule have concerns with safety. In order to increase the number of children receiving the recommended vaccine schedule, future efforts should focus on educating healthcare providers on strategies to target vaccine hesitant parents and increasing scientifically based vaccine information online.
New Input Schemes for New Devices

Dominic Canare*
Faculty: Barbara Chaparro
Department of Psychology, Fairmount College of Liberal Arts and Sciences

Novel input devices can potentially increase the bandwidth between users and their devices. Traditional desktop computing uses windows, icons, menus, and pointers – an interface scheme built for the computer mouse and very effective for pointing-and-clicking. Alternative devices provide a variety of interactions including touch-free, gesture-based input and gaze-tracking to sense the location of the user’s on-screen gaze location. A previous study demonstrates that such input channels are not well-suited to a point-and-click interface alone. This study evaluates new schemes designed for these devices, including multi-modal input schemes.

These experimental schemes perform worse than mouse-based input for a picture sorting task, and motion-based gesture control creates more errors. Only gaze-based input without gestures did not create more workload across all workload factors when compared to traditional mouse-based input.
An Adaptive Flight Controller for a Bird-Like Flapping Wing Aircraft

Balaji Kartikeyan Chandrasekaran*
Faculty: James E. Steck
Department of Aerospace Engineering, College of Engineering

In the present age of increased demand for unmanned aerial vehicles, flapping wing unmanned aerial vehicle applications have become of interest. While a lot of research has been focused on conventional UAV configurations, less attention has been given to flapping wing aircraft. This work explores new territory through the development of an adaptive flight controller for a bird-like flapping wing aircraft, using modified strip theory to model the aircraft’s aerodynamics and Newtonian equations of motion for the flight dynamics. The model was validated using existing data from the Slow Hawk Ornithopter, and an Adaptive Neural Network based Inverse Control, was utilized to govern the longitudinal flight characteristics of the aircraft. Initial results have shown that the flight model can be well controlled in pitch, and further research will be carried out to expand the controller’s capabilities for the lateral control, take-off, hover, and perching maneuvers.
GuideBeacon Beacon-Based Indoor Wayfinding for the Blind, Visually Impaired, and Disoriented

Seyed Ali Cheraghi*
Faculty: Vinod Namboodiri, Laura Walker

1Department of Electrical Engineering and Computer Science, Wichita State University
2Envision Research Institute

There are currently few options for navigational aids for the blind and visually impaired (BVI) in large indoor spaces. Such indoor spaces can be difficult to navigate even for the general sighted population if they are disoriented due to unfamiliarity or other reasons. This research study presents an indoor wayfinding system called GuideBeacon for the blind, visually impaired, and disoriented (BVID) that assists people in navigating between any two points within indoor environments. It describes the technical challenges faced in designing such a system, the design decisions made in building the current version of the GuideBeacon system, the solutions developed to meet the technical challenges, and results from the evaluation of the system. Results presented in this research study obtained from field testing GuideBeacon with BVI and sighted participants suggests that it can be used by the BVID for navigation in large indoor spaces independently and effectively.
Impact of Distributed Directories on Performance of Wireless Network-on-Chip Architectures

Kishore Konda Chidella
Faculty: Abu Asaduzzaman

Department of Electrical Engineering & Computer Science

Multicore architectures are expected to integrate hundreds of processing cores in the near future. Dynamic cache behavior is a major drawback in improving scalability and performance of multicore network-on-chip (NoC) architectures. Wireless NoC (WNoC) has been proposed as a promising solution to enhance multicore performance. We previously introduced a centralized directory (CD) in WNoC to reduce the communication latency. In this work, we proposed distributed directories (DDs) in WNoC along with an adaptive minimal routing algorithm that allowed the architecture to perform faster. The proposed WNoC architecture with 36 nodes and four DDs is modeled and simulated using VisualSim tool and synthetic workload. The simulation results showed that the communication latency due to the proposed WNoC-DDs is reduced up to 15.60% and 5.40% when compared with those due to WNoC and WNoC-CD, respectively. On average, the proposed WNoC-DDs helped save more power consumption when compared with WNoC and WNoC-CD.
Measuring Creativity: Evaluating Middle School Students Using a Divergent Thinking Task in the Visual Art Classroom

Tracy L. Collins
Faculty: Mara Alagic
Department of Education, College of Curriculum and Instruction

This research study evaluated the divergent thinking process, creative fluency and elaboration differences in middle school students who have never taken a visual art class compared to students who have. A modernized, digital version of the Guilford Alternative Uses Task test was used for this study. Collected data was interpreted by determining whether: student’s creative fluency and elaboration of solutions are developing at the same rate; fluency and elaboration results are impacted by the thinking time of the activity; gender differences play a role in fluency and elaboration of ideas. This study determined if students who have taken a visual art class before can develop more solutions than students who have not.
Don’t Wake the Baby! Safe Sleeping Techniques for Infants, and Importance of Instructing Grandparents on New Research Findings

Amanda B. Conner*
Faculty: Amy K. Chesser

Department of Public Health Sciences, College of Health Professions

Introduction: Grandparents have significant influence on new parents, and can help reduce the number of mortalities by SIDS if they are properly informed.

Methods: Internet searches between December 2016 – February 2017 using search terms SIDS, elderly, caretakers, infants, grandparents, safe sleeping, newborns, sitters. Sixteen articles met inclusion criteria; studies were conducted in urban settings in the US. Electronic databases searched were Google Scholar, PsychINFO, Social Sciences Full Text, Social Services Abstracts, Sociological Abstracts and PubMed. Citation manager used was EndNote.

Summary: Research shows new parents are aware of safe sleeping practices for their newborns, but they do not adhere to recommendations because of a grandparents influence. Grandparents are often not well informed, or have old information that could be up to twenty years old on safe sleeping practices. While many researchers agree that more outreach and training programs that are focused towards training grandparents is needed, it is not a practice that is widely accepted.
Supplementing didactic education with simulation improves students’ understanding and application of clinical skills. This literature review covered 26 articles which examine physician assistant, medicine, and nursing schools’ use of simulation. Simulation includes the use of high fidelity manikins, standardized patients, or low-fidelity case studies. Medical and nursing schools currently use simulation as a teaching tool for evaluating and training students. The use of simulation in physician assistant (PA) education has increased recently due to the successful integration of simulation in the training of medical students. The scope of PA training’s utilization of simulation should be in line for what a PA will eventually be expected to master once in practice. The outcomes in the literature shows that when simulation is applied in the training of physicians, nurses, and most recently PA’s, students are better prepared for clinical practice. The literature recommendations aim to achieve optimizing simulation use in PA education.
Hunger Solutions: Recognizing Barriers and Mobilizing Resources to Create a Food Secure Campus

Crystal Dalmasso*, Micah Fry*, Lyndsey Edwards*,
Faculty: Dr. Deborah Ballard-Reisch

*Elliott School of Communication, Fairmount College of Liberal Arts and Sciences

The word hunger brings an image to mind, likely of a starving child living abroad. This image is contrasting to the realities facing students on the Wichita State University campus daily. This disconnect prompted graduate students from the qualitative research methods class in the Elliott School of Communication to conduct focus groups on October 22, 2016. The purpose was to learn about students’ experiences and knowledge with hunger. The data collected was then thematically analyzed. Four overarching themes emerged: students’ perspectives on hunger, the effects of hunger on students, barriers to food security on campus, and available campus resources to combat hunger. Results of the data suggests the need for more diversity of food options, 24/7 availability of nutritious foods, and more effective communication of available student resources to combat hunger. Researchers applied these results to start a new open-share kitchen within the Elliott School of Communication.
A Comparison Between Hip Internal Rotation Mobilization to Posterior Glide and Their Effects on Hip Internal Rotation

Kelsey Darnell*, Justin Harland, Aaron Casner, Trevor Kimball, David Tuong
Faculty: Michael Rogers
Department of Physical Therapy, College of Health Professions

Our purpose for this research is to compare the current manual therapy standard to a new technique to increase internal rotation of the hip. The current manual therapy standard is used to facilitate the hip joint into a healthy joint position to enable normal joint movement.

Methods:
Our study consisted of a three week program containing three groups: A – hip internal rotation mobilization (HIRM) with strengthening program, B – posterior glide with strengthening program, C – control group. Each participant returned weekly for right hip mobilizations, if applicable, and bilateral hip pre/post measurements.

Results:
The study found no significant differences between the experimental and control conditions. There was an insignificant trend towards an increase in hip internal rotation when mobilizations were used with strengthening when compared to strengthening alone and the control group. These findings show that the HIRM is an equal alternative treatment option for clinical use.
Grandmothers, Mothers, and Daughters: 
Examining Feminism and Intersectionality in *Jane the Virgin*

Ciera Dockter*
Faculty: Deborah Ballard-Reisch

*Department of Communication, Fairmount College of Liberal Arts and Sciences*

*Jane the Virgin*, a television show airing on The CW, tells the story of a devout, Catholic virgin who finds out she is pregnant after being accidentally artificially inseminated during a routine gynecologist checkup. While the plot may be absurd, it has caught the attention of many female viewers while tackling important issues of feminism, intersectionality, and generational differences. This textual analysis of season one gives insight into the multigenerational dynamics between Jane, her mother, and her grandmother — three Latina Americans all living under one roof. Feminism and intersectionality have changed with the times, and the experiences of Jane, her mother, and her *abuelita* are proof of this.

*Keywords: Jane the Virgin, feminism, intersectionality, intersectional feminism, generational differences, textual analysis*
Unexpected Radial Limit

Mozhgan (Nora) Entekhabi
Kirk E. Lancaster
Department of Mathematics, Statistics & Physics

Abstract

Consider a bounded solution $f$ of the prescribed mean curvature equation over a bounded domain $\Omega \subset \mathbb{R}^2$ which has a corner at which has a corner at $(0,0)$ of size $2\alpha$ and assume the mean curvature of the graph of $f$ is bounded. If the corner is non-convex/reentrant (i.e. $\alpha \in (\pi/2, \pi)$), then the radial limits

$$Rf(\theta) \lim_{r \to 0} f(r \cos \theta, r \sin \theta)$$

exist for all interior directions (e.g. $\theta \in (-\alpha, \alpha)$ if $\theta = \pm \alpha$ are tangent rays to $\partial \Omega$ at $(0,0)$), no matter how wild is the trace of $f$ on $\partial \Omega$. If the corner is convex (i.e. $\alpha \in (0, \pi)$) and some extra conditions are satisfied then the radial limits at $(0,0)$ from interior directions continue to exist. This generalizes, for example, known results about radial limits of capillary surfaces.
Visits to the Emergency Department (ED) for non-traumatic dental problems have increased in recent years, contributing to significant costs to the US healthcare system. Lack of access, dental insurance, and dental care funding have led patients to rely on the ED for oral healthcare. Federally qualified health centers (FQHC) have been shown to decrease barriers in access to oral care, providing quality oral care outside the ED. This study is a literature review that provides education to medical practitioners about oral health services available in EDs and FQHCs, to identify barriers to care, and to recommend interventions that can decrease non-traumatic ED dental visits. Keywords frequently used were “dental care”, “emergency department”, and “federally qualified health centers”. Recommendations from this study include increasing dental coverage for Medicaid/Medicare patients, utilizing a variety of oral healthcare professionals to integrate oral health into overall health care, and promoting FQHC awareness.
Education as an Intervention for Prevention of Non-Urgent ED Visits

Shea Fairchild
Faculty: Alicia Huckstadt, Mary Faragher
School of Nursing, College of Health Professions

United States Emergency Departments (ED) collectively experience 130 million visits each year. Healthcare spending has reached an all-time high. Overutilization of the ED for non-urgent medical concerns has been targeted as a potential area of study and intervention for potential healthcare savings. Poor health literacy has been identified as one of the leading causes of non-urgent ED visits. This quality improvement project was conducted in a 14-bed ED in a small, urban hospital. Study participants were identified and systematically placed into two groups. The intervention group received an educational intervention that targeted low-cost clinics within the area and general information about primary care providers. The intervention was evaluated through structured patient survey. The typical patient who presented to the ED for a non-urgent medical concern was non-Hispanic, black female who was employed and had completed some college. Patients who received the educational intervention had an increased awareness of low-cost clinics.
Prolonged Use of Dynamic Text Presentations for Reading with Low Vision

Erin Gannon*, 1 Dustin Smith 1
Faculty: Barbara Chaparro, 1 Alex Chaparro 1, Laura Walker 2
1 Department of Psychology, Fairmount College of Liberal Arts and Sciences
2 Envision Research Institute

Reading is a primary difficulty for people with visual impairments, and many patients express significant reductions in quality of life as a result. Current solutions to this problem often involve expensive, cumbersome magnification equipment. Reading with a magnifier still typically results in a slow and strenuous reading process that reduces readers’ independence and flexibility. This study explores the potential of two dynamic text presentations as alternative reading methods for the visually impaired. Dynamic text displays are easily accessible on affordable, portable devices like tablets and laptops. To assess whether dynamic presentations are feasible for this population, our study employs a within-subjects diary design in which participants with macular degeneration use a tablet to read using each of these methods over three weeks. Subjective data are obtained over the course of the study to assess reader satisfaction using dynamic vs. static text.
The Massacre vs. The Peacekeepers: An Analysis of News Coverage Surrounding the 2016 Hesston, Kansas Shooting and Subsequent Community Response

Kelsay E. Gardiepy*
Faculty: Deborah Ballard-Reisch
Elliott School of Communication, Fairmount College of Liberal Arts and Sciences

Intro: The sleepy Mennonite town of Hesston, Kansas was suddenly disrupted on February 25th, 2016 when an employee of Excel Industries entered the company plant with an AK-47 and a Glock 22 semi-automatic pistol and opened fire. Three employees were killed and fourteen injured before the assailant was killed by local law enforcement. The tragedy made local and national news by the early evening and coverage continued for weeks. Method: This two-part research 1) uses Bormann’s fantasy-theme rhetorical analysis to examine media messages, extracting the dramatic elements that operate within the narratives, and 2) conducts semi-structured qualitative interviews with Hesston community professionals involved post-tragedy. Results: Hesston community professionals chose to address the event by creating and sustaining the campaign “We are Hesston Strong” with a heightened focus toward forgiving the perpetrator, providing for the victims, and promoting the town’s unity. Best practices for community response to local tragedies are discussed.
Donald Trump’s Presidential Candidacy produced widespread controversy, particularly concerning discussions of race and gender relations. Despite these controversies, 53% of white women voters voted for Trump. White women were the only racial demographic of women voters that gave Trump a majority vote. Among the white women who supported Trump, was Tomi Lahren, a conservative political commentator and vocal Trump enthusiast. This qualitative pilot study used thematic analysis to explore the rhetorical patterns of emergent race and gender discourses found in Lahren’s pre-election, “Final Thoughts with Tomi” videos that have generated the most “likes” on Facebook. The goal of this investigation is to examine the most frequently occurring themes that Tomi addresses, including Christianity, liberal criticism, and criticisms of Hillary Clinton and President Obama. In addition, this presentation will explore greater implications surrounding the saliency of race and gender in the subsequent electing of Trump.
Audrey Flack’s Hyperreal Paintings: A Juxtaposing Simulation of Feminism and Femininity in the 1970s

Marcela Gimenez Clough*
Faculty: Deborah Ballard-Reisch, Patricia Dooley
Elliott School of Communication, Fairmount College of Liberal Arts and Sciences

The 1970s was a prominent decade for feminism. The second-wave feminist activism had seeped into everyday life, making Americans re-evaluate their definition of femininity, what it meant to be a woman, and the rights women deserved. During this period, Jean Baudrillard also published his essay “The Hyper-Realism of Simulation”, which asserted that the post-modern world had become inseparable from the media and its signs and symbols, therefore simulating a hyperreality. Photorealism also emerged as an art movement. Audrey Flack was a pioneer photorealist artist known for her vanitas paintings of cosmetics, jewelry and personal objects. Through Baudrillard’s theory of hyperreal simulacra and simulation, Flack’s paintings are analyzed as rhetorical artifacts that simulate a juxtaposing reality of femininity and the feminism of the time: on one hand, the objects symbolize Flack’s gender identity, while on the other, they signify the intense era of feminism in which the paintings were created.
Prevalence of Thoracic Back Pain and Disability Scores in Pregnant Women

Melissa Daughty, Nicole Goetz, Emily Meyer, Kara Omo, Dustyna Roman*
Faculty: Jennifer Celso
Department of Physical Therapy, College of Health Professions

Currently, minimal research identifies the prevalence of thoracic back pain (TBP) during pregnancy. This study aims to identify prevalence of TBP during pregnancy and to determine if there is a significant difference in disability scores between pregnant women with TBP and those with (LBP). A survey was distributed to patients by their Obstetricians during regular check-ups. This survey consists of questions pertaining to thoracic and LBP and disability measures related to back pain. 38% of the 34 respondents (mean age 29.5 years and 24.9 weeks-pregnant) reported TBP; however, 29% of those also reported LBP. Results of an independent t-test done between isolated TBP (n=3) and LBP (n = 7) groups reveal no significant difference in Modified Oswestry 23% and 19% and Neck Disability Index 25% and 21% scores respectively. In conclusion, TBP and disability are prevalent in pregnant women and appropriate interventions to address TBP should be researched and utilized.
Assessment and Interpreting Services in Discharge of Latino Patients in Kansas

Kelly Guzman\textsuperscript{1}
Faculty: Rachel Showstack\textsuperscript{2}
\textsuperscript{1}Department of Social Work, Fairmount College of Liberal Arts and Sciences
\textsuperscript{2}Department of Modern and Classical Languages and Literatures, Fairmount College of Liberal Arts and Sciences

Case managers consist of social workers and nurses who plan dismissals. No known social workers or nurse case managers speak Spanish at Via Christi St. Francis and St. Joseph in Wichita, KS, which can contribute to the inefficient and unsafe discharge of Latino patients. Kadushin and Kuly (1993) report that 80 social workers in 36 not-for-profit acute care hospitals spent more time assessing patients than providing them with out-of-hospital services. The purpose of this pilot study is to identify assessment methods used with Latino patients, and case manager attitudes toward the current interpreter service system at Via Christi St. Francis and St. Joseph. Thirty-five case managers will be recruited to complete an electronic survey about their attitudes toward these issues, and preliminary data will be presented. There are implications for financial efficiency of the hospitals, educating case managers about interpreter usage, and informing policies on interpreter usage.
Young Adults’ Performance of Unipedal Dynamic Balance with Various Footwear Conditions

Alice Hartman, Dave Martin, Jeremy Milford, Jacob Simmonds, Chris Truong*
Faculty: Barbara Smith
Department of Physical Therapy, College of Health Professions

The study investigated how going barefoot, wearing Vibram Five Finger™ shoes (VFF), and wearing athletic shoes affect dynamic balance. A modified Star Excursion Balance Test (SEBT) was used to measure distance reached in three directions rather than all eight of the SEBT. A timed test measured time to complete the test while tracking errors. A convenience sample participated (n=30; aged 18-30 years) who all met inclusion criteria. The order of footwear conditions was randomly selected for each subject. Protocol and order of tests were kept constant. The left leg was used as the stance leg; the right leg was the reach leg. The right leg length was measured to standardize the measurement of reach distance across participants (reach/leg length). Subjects reached significantly farther in athletic shoes only for anterior reach versus barefoot and VFFs. Wearing VFFs closely mimics going barefoot for single leg stance dynamic balance activities.
Building a Better Gluteal Bridge: Electromyographic Analysis of Hip Muscle Activity During Modified Single-Leg Bridges

Michael Edwards,¹ Ryan Haverkamp*,¹ Lani Martin,¹ Kambry Porter,¹ Kailey Thach¹
Faculty: BJ Lehecka,¹ Nils Hakansson²

¹Department of Physical Therapy, College of Health Professions
²Department of Biomedical Engineering, College of Engineering

The purpose of this study was to determine a position for the single-leg bridge that maximizes activation of the gluteus maximus and gluteus medius while simultaneously limiting activation of surrounding muscles. An electromyographic (EMG) machine indicated subjects’ muscle activity during five bridging positions. Subjects performed maximal voluntary isometric contractions (MVIC) for each muscle tested. Each subject underwent EMG analysis of five muscle groups during five different, randomized single-leg bridge positions on the dominant leg. The degree of hip, knee, and ankle flexion were modified in each position. The modified bridge with the knee flexed to 135° demonstrated preferential activation of gluteal muscles compared to the traditional single-leg bridge. Hamstring activation was significantly decreased with increased degrees of dominant leg knee flexion. This position of increased knee flexion during the single-leg bridge may be used by clinicians, patients, and athletes to strengthen the gluteal muscles with more specificity.
The Challenge of Coding Utterances from Children with Autism Spectrum Disorder

Ashwini Kanade*
Faculty: Douglas F. Parham, Trisha L. Self
Department of Communication Sciences and Disorders, College of Health Professions

The purpose of this study was to assess the inherent difficulties of recording and coding utterances of children with Autism Spectrum Disorder (ASD). Each child with ASD presents with individual characteristics that make the child unique. Some of these children are non-verbal (that is, not producing recognizable speech), and little is known about how they use sounds to express their wants and needs. Coding these utterances as they occur is not practical due to their complexity, but using audio to record and then code them may assist in overcoming this problem. Reliability between coders is essential to ensure that data are consistent and accurate. This study presents the methods, problems, and limitations of a multi-coder comparison of non-verbal sounds from children assessed by WSU’s Autism Interdisciplinary Diagnostic Team (AIDT). This study’s findings are important because accurate utterance coding will improve the diagnosis and treatment of children with ASD.
Methemoglobinemia in a 14 Year Old Female with New Onset of Dyspnea: A Case Report

Caitlin Tenbarge*, Sofia Harlow*, Nathan Kasting*
Faculty: Michelle Wallace
Department of Physician Assistant, Wichita State University College of Health Professions

**Introduction:** Methemoglobinemia is a rare and potentially life-threatening medical emergency. It can be acquired from a variety of chemicals, medications and drugs and can be overlooked when evaluating someone in respiratory distress. Without early recognition respiratory failure and death may result.

**Case:** A 14-year-old female presented to the emergency department by EMS for dyspnea and lightheadedness. Her mother reported a blue color to her lips and fingers and stated she collapsed twice that day. While several common etiologies were being considered, blood drawn for labs was found to be dark brown in color. Subsequent laboratory results confirmed an elevated methemoglobin. Methylene blue was administered with resolution of the patients’ symptoms and she was stabilized for admission.

**Discussion:** Diagnosis requires a thorough history, physical exam and appropriate diagnostic testing. Methemoglobinemia must be included in the differential for this presentation as rapid clinical recognition and treatment are vital to patient outcomes.
Effective Reading Interventions for Students with Dyslexia

Sandi Keith*, Jourdan King*
Faculty: Donna Sayman
Department of Curriculum and Instruction, College of Education

Dyslexia is a well-recognized and prevalent learning disability. This neurodevelopmental disorder affects the ability to learn to read, write, and spell through traditional methods, as well as the ability to communicate. Despite being a recognized disability, individuals with dyslexia continue to struggle in a variety of academic areas due to the lack of specific interventions and strategies for those learners in schools. The purpose of this study is to provide educators and parents with numerous effective strategies for students with dyslexia. These strategies will focus on how to help those students with reading comprehension and fluency. Results showed that computerized accelerated reading comprehension training increased participants’ rate of letter processing which correlated to increased fluency. Results also showed that there was an improvement in fluency and reading comprehension with phonics and sight word training.
Solar Energy Harvesting Using Ionic Polymer-Metal Enhanced Water Electrolysis

Alicia Keow*
Faculty: Zheng Chen

Department of Electrical Engineering and Computer Science, College of Engineering

The energy supplied by solar often does not coincide with the demand of consumer. An energy storage system is required to store the extra energy in the form of other deliverable and storable energy sources for later use. Hydrogen has high energy density and burns with zero greenhouse emission, making it an ideal to be stored and consumed. Our goal is to develop a high energy-efficient water electrolysis generator, which converts the electricity from solar to hydrogen fuel. Existing research found that application of electricity to Ionic polymer-Metal Composite (IPMC) can efficiently split water molecule. We explored a new IPMC fabrication method, which can further improve the efficiency. Our data shows that roughening the surface of IPMC through sanding or plasma etching with extra coating of gold can improve the efficiency. The data also validates a dynamic model that is developed to capture the dynamics of IPMC enhanced water electrolysis.
Data Analytics Approaches for Breast Cancer Survivability: Comparison of Data Mining Methods

Eyyub Y. Kibis*1

Faculty: İ. Esra Büyüktahtakın, PhD1, Ali Dag, PhD2

1 Wichita State University, Department of Industrial, Systems & Manufacturing Engineering
2 University of South Dakota, Beacom School of Business

In the early stages of breast cancer, inefficient treatment methods, as well as the patient’s health condition may impact the patient’s lifetime expectancy. In this study, given a set of explanatory variables that include the patient’s demographics, health condition, and cancer treatment regimen, our objective is to investigate the performance of four different machine learning methods including an artificial neural network, classification and regression tree, logistic regression, and Bayesian belief network. We utilize these four methods with a ten-fold cross validation to predict the ten-year survivability of a breast cancer patient after initial diagnosis. The results of each method are compared with respect to accuracy, sensitivity, specificity, and area-under-the-curve (AUC) metrics. We observe that the logistic regression method shows better performance compared to the others with respect to the AUC metric. In all prediction models, the stage of the cancer is the most important predictor of breast cancer survivability.
Psychological Benefits of a Professional Sport Franchise to the Community

Chris Mason, Insub Kim*, Toryn Jones
Faculty: WonYoung Kim
Department of Sport Management, College of Education

The defining quality of typical communities is the central focal point that unites individuals within that group. In North American society, professional sports are a prime example of centralized interests that unite and provide services to local, regional, and national communities. The purpose of this study is to investigate the relationships among perceived psychological benefits, behavioral attributes, and socio-demographic variables. To determine how a professional sports team psychologically benefits its local community, data will be collected from community residents at various places, such as professional sporting events and public areas. In order to measure the psychic income of a professional sports team on the community, a modified psychic income scale (Kim & Walker, 2012) was adopted. Findings will provide critical information to practitioners for developing public relations and community engagement strategies based on understanding perceived psychological impacts of the professional sports organization.
Pediatric Asthma: An Emergency Department Assessment Tool

Maggie Leighton*
Faculty: Debra Pile
School of Nursing, College of Health Professions

Background: Asthma is the most common chronic pediatric illness. Thirty percent of asthma patients seek asthma care in the ED instead of their primary care provider (PCP).

Methods: This was a quality improvement project for ED providers. The Pediatric Asthma Control and Communication Instrument for the Emergency Department (PACCI-ED) is a patient/caretaker survey the ED provider utilized during the assessment of the pediatric asthma patient with a known diagnosis of asthma presenting with respiratory complaints. Patients assessed with the PACCI-ED were eligible for rapid medical evaluation (RME). It has been proven that the PACCI-ED allowed providers to more accurately identify children with poorly controlled and worsening asthma.

Conclusion: Implementation of a clear and concise assessment tool for pediatric asthma patients can assist in accurate evaluation of asthma control and assist the ED provider in providing thorough care.
Better Together? Examining the Usability of the EMR Using the Desktop and Native Mobile Application

Tiffany Leverenz*, 1 Sarah Fouquet, 2 Y. Raymond Chan, 2
Brandan Kennedy, 2 & Laura Fitzmaurice 2
Faculty: Barbara Chaparro 1

1 Department of Psychology, Fairmount College of Liberal Arts and Sciences
2 Children’s Mercy Kansas City

The purpose of this study was to compare hospitalists’ performance, workload, and satisfaction on a commercial EMR via desktop and a native mobile application. Twelve attending pediatric hospitalists were recruited at Children’s Mercy Kansas City using an online survey. Participants were successful in completing tasks on both devices, except for ordering an X-ray and locating a specific document, where participants were more successful on the desktop. Difficulty was rated statistically higher on mobile for three of six comparable tasks. Workload was rated statistically higher on mobile for the dimensions of effort and frustration. The difference between overall preference ratings between the desktop and mobile was not statistically significant. Overall, participants liked that the mobile EMR provides access where the desktop cannot, namely in hallways, on rounds, or at the bedside. Due to limited functionality, the mobile EMR is currently a complement to the desktop, rather than a replacement.
Dopaminergic Cell Toxicity of N-Substituted Derivatives of Parkinsonian Toxin 1-Methyl-4-phenylpyridinium (MPP+)

Bryan Lickteig*, David Murphy*
Faculty: Kandatege Wimalasena

Department of Chemistry, Fairmount College of Liberal Arts and Sciences

Parkinson’s disease (PD) is a neurodegenerative disease whose etiology is unknown but genetics, environmental factors, and mitochondrial mutations may play a role. 1-Methyl-4-phenylpyridinium (MPP+) is a model for PD since it causes PD-like-symptoms in mammals. MPP+ inhibits mitochondrial complex I and increases oxidative stress in dopaminergic neurons. Synaptic accumulation of cytosolic MPP+ through vesicular monoamine transporter-2 (VMAT2) has been proposed as an *in vivo* detoxification mechanism. Our previous studies have shown that N-substituted MPP+ derivatives, [N-(2-phenypropene)-4-phenylpyridinium (MPP-APP)] were potent inhibitors of VMAT, suggesting these should increase MPP+ toxicity. The present studies show that MPP-APP derivatives themselves are more toxic to dopaminergic cells than MPP+. MPP-APP accumulates in cells through diffusion and increases ROS production in dopaminergic cells. The cell death is due to the ROS induced apoptosis similar to MPP+. The implications of these findings to the mechanism of MPP+ toxicity could lead to future treatments for PD.
Speech-Related Breathing in Infants Under Ten Months

Hannah Lindsey-Schuman*
Faculty: Douglas F. Parham

Department of Communication Sciences and Disorders, College of Health Professions

Breath support is foundational to speech production, but little is known in terms of speech breathing development in infants, especially those in the first year of life. This study explored speech-related breathing in infants in the middle of the first year of life. Speech output and breathing behaviors were collected on a small cohort of typically developing infants under ten months. Independent coders used the audio and breathing signals to (a) identify utterances and the breath cycles associated with them and (b) describe the relationships between the two sets of signals. The findings will be related to physiological development and typical speech-language milestones. A better understanding of speech-related breathing might lead to identification of infants at risk for communicative impairments. Two limitations also will be discussed: the negative influence of (a) body movement on breathing signals and (b) small samples on the interpretation of speech output.
Investigation on Welding Residual Stress Effects on Modal Parameters on AA5056 Samples; An Experimental and Numerical Study

AmirHossein MajidiRad*
Faculty: Yimesker Yihun
Department of Mechanical Engineering, College of Engineering

Most manufacturing processes introduce some type of residual stress. Unlike some types of residual stress measurement tests that are mostly time-consuming and expensive, modal analysis is a suitable substitute that can investigate this procedure efficiently. In this project, experimental modal analysis was conducted along with a semi-destructive residual stress measurement technique (Center Hole Drilling) to demonstrate the relation between vibrational parameters and welding residual stresses. A comparison was made between natural frequencies and damping factors before and after the welding, and the experiment was validated by Euler-Bernoulli relations too. Finite element analysis of the welding, cutting and stress/modal analysis procedures was performed and the results reveal that welding residual stresses made the specimen harder, leading to a 2% increase in natural frequencies and variations in damping factors. Cutting process also reduced the residual stress level by up to 34%. This case study could be beneficial to applications where residual stress measurement is not convenient.
Giftedness, Anxiety and Perfectionism: Family Structure, Dabrowski’s Overexcitabilities and Real-life Strategies

Marci Malashchuk
Faculty: Donna Sayman
Department of Special Education: Gifted

Children who are often identified as gifted are frequently thought to be blessed to have the label, however perfectionistic tendencies and anxieties habitually occur. This project examines literature focusing on the frequency and commonality of these propensities and the importance of teachers and parents dealing with this population and their unconventional, and sometimes damaging behavior. While mental illness is explored in the articles and discussed in this paper, it is not the main focus of the study. The articles support the higher tendency of gifted children and adolescents to suffer from anxiety and perfectionism. These results are substantiated by Dimensions of Perfectionism and Dabrowski’s overexcitabilities’ presence in gifted students.

Keywords: gifted children, giftedness, adolescence, anxiety, perfectionism, overexcitabilities
An Adaptive Resource Scheduling Approach to Improve the Throughput and Reliability of Shuffle-Exchange Networks

Farshad Mashhadi*
Faculty: Abu Asaduzzaman

Department of Electrical Engineering and Computer Science

Various approaches are introduced to increase the throughput and reliability of multi-stage interconnection networks (MINs). When multiple sources in such a network try to send data, collisions of packets and blockings are inevitable. Time division multiple access (TDMA) protocol are used to address these problems. However, TDMA based on fixed slot allocation has low throughput and high delay in computer networks. In this work, we propose an adaptive slot allocation strategy for TDMA using Monte Carlo random sampling method in shuffle-exchange network (SEN), a well-known MIN, to improve performance. We simulate the proposed approach for 4000 times using Network Simulator version 2. Experimental results show that the proposed adaptive TDMA solves packet collision and blocking problems to some extent. It is also observed that the SEN and its variants (SEN+ and SEN+2) perform better in terms of throughput and reliability, while the new SEN+2 outperforms the other networks.
Fracture Orientations in Kansas and Relations[?] to Mountain Building

Heather M. Merchant*, Noel A. Staats
Faculty: Keith D. Gray
Department of Geology, Fairmount College of Liberal Arts & Sciences

In efforts to discern the space-time relationships between fracture formation [low-strain brittle deformation in the Earth’s upper crust] and other geologic structures [folds and faults] in the mid-Continent region, field studies were carried out in upper Paleozoic to late Mesozoic deep-marine sedimentary rocks exposed across portions of western, south-central, and northeastern Kansas. Fracture orientations were measured, plotted stereographically, and analyzed for 30 different locations. Two subvertical, systematic fracture sets emerged from our data: NE and NW striking joints or extensional fractures. Fracture orientations are oblique to major subsurface deformation belts such as the Central Kansas uplift, Nemaha uplift, Humboldt Fault system, as well as the Augusta North anticline. If tectonic in origin, then fracture sets across much of Kansas may relate to formation of the Rocky Mountains [Laramide orogeny].
Guiding the Diagnosis of Autism in Family Practice

Morgan Miles*, 1 Taylor Winter*1
Faculty: Douglas Parham, 2 Patricia Self2

1 Department of Physician Assistant, Wichita State University College of Health Professions
2 Department of Communication Sciences and Disorders, Wichita State University College of Health Professions

The prevalence of Autism Spectrum Disorder has continually increased with the exact cause of ASD still unknown. Prognosis is heavily determined by initiating treatment early, making early diagnosis crucial, leading to the development of screening tools starting as young as 16 months. However, there is lack of understanding among family practice providers regarding appropriate use of available resources and lack of knowledge on the signs of ASD in toddlers that trigger providers to screen. Therefore, the goal of this paper is to discuss the red flags, screening tools, and referral guidelines for more timely diagnosis. Supplementing the paper is a clear, concise handout that directs family practice providers towards better identifying the population that needs to be screened, using the correct screening tools based on age, and guiding families towards the appropriate specialists and resources to diagnose children at an earlier age to improve long-term outcomes.
Ovarian carcinoma is the most lethal neoplasm and the fifth leading cause of mortality in women. Among the different subtypes, widely heterogeneous high-grade serous ovarian cancer (HGSOC) poses a great challenge to modern chemotherapy due to its high recurrence rate and resistance to standard treatments. Recent studies suggest that survival time-line and disease recurrence are linked to the variable expression of biomarkers in cancer cells. Therefore, using Western blot analyses, we assessed the expression of a host of regulatory gene protein products at the whole-cell level in extracts from both three HGSOC and five non-HGSOC cell lines. Some of our most distinctive findings from those analyses were that: 1) Nrf2, a key factor in the anti-oxidant response element system, is expressed as a series of protein bands of variable molecular weight in all but the Kuramochi (HGSOC) cell line; 2) Estrogen receptor alpha is expressed in all but the OVSAHO (HGSOC) cell line; and 3) the AUF-1, p120-catenin, and NFKB-p50 proteins are expressed in both HGSOC and non-HGSOC cell types. We will next follow up those findings conducted at the whole-cell level with assessments at the individual cell and subcellular level using immunohistochemical analyses.
The objective of my investigation was to design a stable and non-toxic emulsion that could be used for skin protection. Commercially used sunscreens are highly effective to protect skin surface. Some of the elements in sunscreens like Benzophenones, Avabenzyme, Para-aminobenzoic acid (PABA) can cause skin allergy, hormone disruption, other skin diseases. My target of this investigation was to replace those harmful ingredients by using natural ingredients. Some natural oils e.g. olive oil, almond oil have UV protective property. Olive oils and almond oils are widely used in skin care. UV light protective emulsion of oils can be produced using nanoencapsulation technique. In this technique, natural oils were assimilated with distilled (DI) water and surfactant. High frequency homogenizer was used to create the emulsions. Concentration and sonication time of oils, DI water and surfactant were varied to analyze different conditions. In this study, olive and almond oil were used to find out the best emulsion in terms of skin protection. DLS (Dynamic Light Scattering), UV-Vis spectroscopy, pH meter were used for the characterization of the produced nano-emulsions. Slow releasing and better protection are expected from these encapsulations of oils. These characterizations such as skin protection factor (SPF), particle size, pH levels have been compared with commercial sunscreens.

**Keywords:** Natural oils, Nanoemulsion, Encapsulation, skin protection.
A reconstruction of the history of Highland Cemetery, the city’s first cemetery, which was first used in 1868. The City of Wichita assumed responsibility for the cemetery in 1982. Indications are that the cemetery is segregated, and this project will either prove or disprove that hypothesis. **Method:** Research is being completed using cemetery records, mortuary records, newspaper articles and obituaries, census records, personal interviews with family members and printed literature based on the time period. **Result:** The data found in this research will aid in the preservation of the largely forgotten, historical cemetery. Additionally, it will help with an understanding of racial, economic and gender barriers in burial practices in Wichita, as well as a historical understanding of cause of death in various time frames.
Study of Friction and Temperatures During Modulation Assisted Machining

Arvind Natarajan*
Faculty: Wilfredo Moscoso-Kingsley
Department of Industrial, Systems, and Manufacturing Engineering, College of Engineering

Friction causes tool wear and increases redundant work during the deformation processing of metals and alloys. A technique involving the application of a controlled vibration on the tool or the work material has been found successful in machining operations. A setup for utilizing modulation to evaluate the frictional phenomena in a turning process has been designed and is being developed. The setup will be used to apply a controlled vibration (modulation) of low frequency on the tool during turning. The effects of this modulation on friction will be observed indirectly through force measurements, characterization of microstructural flow patterns and temperature measurements. The aim of the experiment is to show that modulation enhances lubricant penetration into the tool-work material interface, thereby reducing the severity of the friction arising during the turning operation and reducing temperature.
Cancer Related Fatigue (CRF) is the most debilitating side effect from cancer and its treatment. The purpose of this project was to evaluate the effectiveness of physical exercise on CRF in cancer patients undergoing radiotherapy with or without chemotherapy. Forty participants were given an option to participate in an exercise regimen (N = 20) or no exercise (N=20) during their radiotherapy. Outcome measures were mean fatigue scores using the Brief Fatigue Inventory survey. There were significance differences (p = .033) found between the exercise and no exercise groups in post-treatment fatigue scores. Within the exercise group, no significant differences (p = .705) were found in fatigue scores from pre-test to post-test. The findings suggest that physical exercise is more effective than no exercise at all during radiotherapy. Health care professionals should integrate exercise interventions into patients’ cancer care plan to reduce the impact of CRF on quality of life.
Comparing Upper Limb and Bilateral Coordination of Age and Sex Matched Adolescents with Intellectual Disabilities

Chandler Kelley, Elvia Barraza, Jordan Ollenberger*, Ryan Faflick, Senda Vu
Faculty: Ken Pitetti
Department of Physical Therapy, College of Health Professions

The purpose of this study was to determine whether sex differences exist in upper limb coordination (ULC) and bilateral coordination (BLC) in adolescents with intellectual Disability (ID). A total of 149 male and 96 female adolescents (12-17 yrs) with ID, matched in age, participated in this study. Six ULC items (dropping and catching ball—one/two hands; catching tossed ball—one/two hands; and dribbling ball—one/two hands) and six BLC items (touching nose with finger; jumping jacks; jumping in place same/opposite sides synchronized; and tapping feet and fingers, same/opposite side synchronized) from the The Bruininks-Oseretsky Test of Motor Proficiency (BOT-2) were used to evaluate coordination. A minimum of 10 assessments in each age group were required for data analysis. For all test items in all age groups, no significant (p<.05) differences were found between genders. Results indicate no sex differences for ULC and BLC exists for adolescents with ID.
The Influence of Monetary Policy Shock on Large-cap and Small-cap Indexes and Index Funds: An Incorporation of the Taylor Rule

Ihechiluru Charles Osueke*
Faculty: Jen-Chi Cheng
Department of Economics, W. Frank Barton School of Business

Empirical theory suggests that interest rates often have a negative correlation with investments, and in some cases the price variability of securities. This study incorporates an adjusted Taylor rule interest rate as the monetary policy shock proxy to determine if, and to what degree, it influences large-cap, and small-cap indexes and index funds. Using the Ordinary Least Squares method of estimation, and an Autoregressive Integrated Moving Average model in the multiple regression analysis, the results suggest that for the sample period (January, 1980 to January, 2016), the large-cap index, and index fund both show positive correlation with the market, and negative correlation with monetary policy shock. However, the results of the small-cap index and index fund were inconsistent. This may be because the small-cap is not significantly influenced by a monetary policy shock.
Evaluating a New Diabetic Education Program in a Family Practice Clinic

Carrie Parmley  
Faculty: Betty Smith Campbell  
School of Nursing, College of Health Professions

**Background:** Twenty-one million people in the US have been diagnosed with diabetes. **Methods:** A pilot study was implemented to evaluate a new group diabetes type II education program to improve diabetic patient’s knowledge in a primary care setting. The effectiveness of each class was measured in a pre and post test, using the Diabetes Knowledge Questionnaire developed by Eigenmam, et al., (2011). **Results:** Overall diabetic knowledge scores statistically improved following the education course as well as sub scores on Knowledge of Blood Glucose Levels and Safety scores and Knowledge of Lifestyle Changes scores. Health providers surveyed at the clinic thought the class material was informative and helpful for newly diagnosed diabetic patients. **Conclusion:** The new diabetic education program was found to have a statistically significant impact on diabetic knowledge. Providers would like to implement this type of program permanently in the future.
Predictors of Patient Inclusion in Treatment Decisions: Evidence from the 2013 Medical Expenditure Panel Survey

Ashton Pfannenstiel
Faculty: Lisa Thrane
Department of Sociology, Fairmount College of Liberal Arts and Sciences

This study explores the relationship between patient race/ethnicity and inclusion in treatment decisions using the 2013 Medical Expenditure Panel Survey data (N = 21690). A binary logistic regression was conducted to examine the relationship, as well as the mediating effects of education, number of medical visits, insurance coverage, and chronic condition diagnoses after controlling for gender and age. Hispanic, black, and Asian patients were all less likely than white patients to always be included in treatment decisions. Differences in education, number of medical visits, and insurance coverage partially explained the difference in inclusion in treatment decisions for Latinx and black patients, with insurance coverage having the largest influence on inclusion in treatment decisions. Chronic condition diagnoses only had a minor effect on Asian patients’ inclusion in treatment decisions.
An Exploration of Health Impacts of Hydraulic Fracturing: A Scoping Review

Jordan Biel*, 1 Jacquelynn Nguyen*, 1 Myra Wilson*, 1 Megan Plouzek*1
Faculty: Richard D. Muma, 2 Rosemary Wright3

1 Department of Physician Assistant, College of Health Professions
2 Division of Academic Affairs, Wichita State University
3 Regional Institute on Aging, Wichita State University

Hydraulic fracturing is a controversial oil and gas extraction method used in the US. Many believe hydraulic fracturing has negative environmental and human health impacts. A scoping study was performed to identify peer-reviewed studies exploring human health impacts related to hydraulic fracturing. Only 13 studies were identified that met these requirements. All of these studies were published within the last four years. Three studies found no human health impacts. Most of the remaining studies found respiratory and dermatologic manifestations. As the distance increased between where the subjects lived and fracturing activity, manifestations generally decreased. Although few studies have identified actual health impacts, it seems possible long-term health impacts may emerge in the future. In light of these findings, primary care providers should have an increased index of suspicion of serious systemic medical conditions when caring for patients who have lived in areas in which oil and gas exploration is common.
Title IX Policy: A Reflection on the Framing of Sexual Misconduct on College Campuses

Karson Quinn*
Faculty: Jodie Hertzog
Department of Sociology, Fairmount College of Liberal Arts and Sciences

This pilot research project utilizes a mixed methods approach to compare the Title IX policies and procedures related to sexual misconduct amongst a purposive sample of 12 public, 4-year colleges & universities that had 10,000 to 13,000 undergraduate students. Three universities were chosen from each of the four regions of the United States. Adherence to policy guidelines was assessed using the federal “Not Alone” report, developed by the 2014 White House task force on campus sexual assault to outline the various policy components recommended for meeting minimum standards under Title IX. Policies were also compared in terms of language and content to assess potential similarities and differences related to campus definitions of key issues such as sexual misconduct, dating violence, stalking, and sexual consent across different regions of the U.S. Layout of policies and definitions used vary among each policy with little similarities.
Real-Time Predictive Estimation of Loss-of-Control Events on Transport Aircraft

Melvin Rafi
Faculty: James Steck, Animesh Chakravarthy
Department of Aerospace Engineering, College of Engineering

Loss-of-Control events are the most significant contributing factor to accidents amongst commercial aircraft, and systems capable of warning pilots of impending entry into a control-loss event are crucial. To this extent, three look-ahead prediction architectures are designed to predict, in real-time, an aircraft's tendency to cross its control-loss boundaries. The algorithms continuously calculate the amount of control authority required to reach and exceed these boundaries over the course of a predefined future time period. These calculated control authority limits are visually presented to the pilot on an accompanying display, providing rapid alerts when impending entry into a control-loss event is predicted to occur in the upcoming several seconds. Validation of the algorithm's effectiveness is performed on the NASA Generic Transport Model, and the algorithm is successfully able to predict, at any given time, if the pilot’s current input causes control-loss at 2 and 5 seconds in the future.
Laplace-Based Predictive Estimation of Loss-of-Control Boundaries on a Transport Aircraft

Kiran Rajaram*, Melvin Rafi,
Faculty: James E. Steck, Animesh Chakravarthy

Department of Aerospace Engineering, College of Engineering

Loss-of-control events are the greatest contributing factor to accidents amongst commercial aircraft. In this research, an approach to predicting the onset of loss-of-control events is developed using a Laplace-based method, where a state space model is used to simulate the dynamics of the aircraft. Laplace transformations are then used to calculate the control authority required to reach a predefined limit on the aircraft’s angle-of-attack, where the limit represents the control loss boundary. This method is applied to the short period dynamics of the NASA Generic Transport Model, and the remaining amount of allowable control authority the pilot has before reaching a loss-of-control situation is then determined. This boundary is graphically presented through a three-dimensional display. Simulations are run within MATLAB/Simulink®, and results demonstrate that the system is able to successfully predict the aircraft’s proximity to a control loss situation.
The Effects of a Standing Intervention on Low Back Pain, Flexibility, Gluteal Strength, and Abdominal Strength in DPT Students

Marcas Ekart, Carmen Ramirez, Kassidy Simmons, Adam Veenis*
Faculty: Bryan Lehecka, Camilla Wilson
Department of Physical Therapy, College of Health Professions

Introduction: This study is designed to determine if a relationship exists between increased standing during class lecture time and gluteus medius strength, abdominal strength, hip flexor flexibility, hamstring flexibility, gastrocnemius flexibility, back pain, or physical activity level in healthy students aged 18-35 years.

Methods: Twenty participants were recruited from the WSU Doctor of Physical Therapy program. Ten subjects used standing desks for 75% of class lecture time for 12 weeks. They were matched to 10 control subjects who sat throughout class lectures. Dynamometry, goniometry, inclinometry, and questionnaires were used for objective measurements assessed at weeks 0, 6, and 12.

Results/Conclusion: Standing during 75% of class lecture time induced statistically significant increases in hip abductor strength, decreases in back pain, and a clinically significant increase in hamstring flexibility over 12 weeks compared to controls. No detrimental changes were found in the seven studied variables with a 3:1 standing-to-sitting ratio.
Optimal Placement of Police Body-Worn Cameras

Alexis Raushel*, Adam Armijo*
Faculty: Joel Suss
Department of Psychology, Fairmount College of Liberal Arts and Sciences

As a growing technology, body-worn cameras are gaining considerable popularity with police departments and increased attention from the media. These cameras allow transparency between officers and civilians, as well as provide valuable evidence in court. However, little to no research has evaluated police body-worn cameras from a usability perspective, and to date there is no standard protocol or recommendation on where an officer should mount the camera on their uniform. Therefore, in collaboration with the Wichita Police Department, researchers have placed body-worn cameras in all possible mounting positions on an officer and run them through a variety of shooting drills and role-play scenarios. A frame-by-frame analysis of the videos has revealed distinct differences in viewing quality between mounting positions, i.e. some cameras are obscured by the officer’s body. These data will be used to create guidelines for officers on where to mount body-worn cameras on their uniforms.
Suicidality Through a Rural Lens

Linda Robinette*
Faculty: Victoria Mosack, Peggy Hernandez
Graduate School of Nursing, College of Health Professions

The project purpose was to assess risk factors for evaluating suicidality in the rural population. There was an increase in completed suicides from 2011 to 2014 compared to 2015 and 2016 in one rural county. Associated risk factors combined with suicidal behaviors were identified as significant mental health concerns among providers and law enforcement. The root cause analysis framework was used to guide the review of the two completed suicides and interviews with providers and law enforcement personnel to examine risk factors. The interview questions and rural suicide assessment risk tool (RSART) were developed from several sources identified in the paper. The RSART was introduced to assist healthcare providers and law enforcement personnel to screen and evaluate individuals for suicidal risk. The findings support incorporation of the RSART for screening and evaluating individuals for risk factors to improve detection and intervention.

Keywords: rural mental health, suicide risk formulation, adults
Nutrition Guidelines in Kansas Elementary Schools

Jordan Heins*, Erin Sawyers*, Megan Spradlin*
Faculty: Michelle Wallace
Department of Physician Assistant, Wichita State University

Childhood obesity is a nation-wide epidemic and is strongly linked to nutrition. Although the National School Lunch Program (NSLP) guidelines are designed to regulate students’ caloric intake and nutritional needs, ambiguous snack guidelines may be counteracting NSLP efforts. Our study assessed components of school lunches and snack guidelines in public elementary schools across Kansas. A data collection tool was developed to evaluate these items. Data was collected from public information on school websites. Schools were qualitatively evaluated and compared based on size and socioeconomic status as defined in the study. Results show that Kansas public elementary schools are following the NSLP guidelines, however snack guidelines vary greatly. There is no identifiable pattern in snack guidelines among the researched schools. A set of new national or state snack guidelines could help establish basic nutrition knowledge and encourage healthy eating in schools to combat the complex epidemic of childhood obesity.
September 2, 2016 was a busy day for the Wichita Ice Center; the afternoon open-skate was filled with children and adults of varying ages. As both children and adults attempted to skate around the oval ice rink, many either fell or lost their balance. This paper reported on the nonverbal reactions of people to others falling or losing their balance while skating on the ice. To address this issue, unobtrusive fieldwork observation was conducted and field notes thematically analyzed. Three themes emerged from analysis: support is not limited to physical help, females receive more help than males, and children receive more help than adults. These themes echoed research that emphasizes the impact of sociocultural tradition, the significance of non-verbal communication, and the impact of social interaction in shaping perceptions.
Numerical Approach to Predict the Thermal Expansion Coefficients of Honeycomb Core Validated by Experimental Test Results

Hooman Shahverdi Mogaddam, A. Kothare
Faculty: S.R. Keshavanarayana

Department of Aerospace Engineering, College of Engineering

Honeycomb cores are typically produced in the form of flat sheets and are heat formed to the desired shapes for use in sandwich structures with curvatures. Understanding of the high temperature behavior of honeycomb core is fundamental to the process of forming honeycomb core. A 3D non-linear finite element model (FEM) of the repetitive unit cell of hexagonal honeycomb core is employed to predict the CTE of Fiberglass/Phenolic honeycomb core. It is shown that the CTE of the honeycomb core is highly dependent on node bond adhesive layer and its fillet region. Inclusion of the node bond adhesive layer and its fillet region in FEM leads to orthotropic thermal expansions. The wedge action created by the adhesive fillet contributes to the higher magnitudes of CTE’s as well as a negative CTE along the ribbon direction. Good agreement is observed between numerical model predictions and test results.
Bilateral Upper Extremity Full Thickness Burns Acquired During an MRI Procedure – A Case Study

Jared Burns*1, Gina Everett*1, Matthew Sherman*1
Faculty: Sue Nyberg1, William Waswick, MD2
1Department of Physician Assistant, College of Health Professions
2Kansas Surgical Consultants, LLC

Magnetic resonance imaging (MRI) scans are generally considered to be safe procedures with few potential complications. Skin and soft tissue burns are uncommon complications of MRI scans. The exact mechanism of this type of injury is unknown but attributed to either excessive heating of the skin with prolonged direct contact with the MRI machine or closed loop electrical currents. The necessity of sedatives for claustrophobic patients, use of critical care monitoring equipment, increased body mass index, and implanted surgical devices can increase the risk of adverse events. This case study describes an adult male patient who acquired bilateral upper extremity, full thickness burns during a sedated MRI examination. Increasing provider awareness of the risk factors and adverse events associated with MRI exams, particularly those attributing to an increased potential for thermal and electrical injuries, will contribute to safer imaging techniques and improved clinician discretion in patient management.
Improving Decomposition Process of Recycled Plastics for Sustainable Fuel Productions

Muhummad Shoaib*
Faculty: Eylem Asmatulu
Department of Mechanical Engineering, College of Engineering

In the U.S.A., plastic waste is about 12.7% of the total municipal waste which is approximately 32 million tons annually. Recovery of plastics is usually done through waste-to-energy or recycling options. Plastic-to-fuel (PTF) presents a unique opportunity to not only address environmental issues but also energy crisis. Also, PTF can address a critical problem for low recyclability rate of plastics. The development of PTF infrastructure can help prevent landfilling of plastics, extending the lifespan of landfills, reducing plastic loitering, producing synthetic crude oil, reducing pollutions associated with high sulfur contents in fossil fuels because plastic oil has ultra-low sulfur contact, and creating green jobs. In this paper, we will review existing methods of converting plastics into fuel. Additionally, we will evaluate various factors, such as operating temperature and pressure, types of reactor and catalyst, and residence time which affect the conversation efficiency and product quality of plastic feedstock.

Keywords: Recycled Plastics, High Temperature and Pressure, Catalyst, Sustainable Fuel Productions
BITES Trial: A Randomized Controlled Pilot Trial to Determine the Effectiveness of Bite Technique to Decrease the Development of Postoperative Complications

Megan Holick*, 1 Lauren Simmons*, 1 Calder Young*1
Faculty: Sue Nyberg, 1 Gina M. Berg, PhD, MBA, 2,3 Clint Gates, MD4

1 Department of Physician Assistant, College of Health Professions
2 Trauma Services, Wesley Medical Center
3 Department of Family and Community Medicine, University of Kansas School of Medicine
4 Department of Surgery, University of Kansas School of Medicine-Wichita

The incidence of incisional hernia following median laparotomies ranges from 11-20%. Risk factors include surgical technique. A Netherlands study found decreased wound complications with smaller stitch width and inter-suture spacing. Our study was a preliminary analysis of a pilot study to evaluate the 6-week rate of wound complications and feasibility of a larger trial. Inclusion criteria: adults aged 18-75 scheduled for a midline abdominal operation. Patients were randomized between closure techniques: large (1.0cm) versus small (0.5cm) tissue bite. Data collected included: demographics, surgery details, complications, and outcomes. Nine patients were included (4 small bite, 5 large bite). Postoperative complications included one blood transfusion, one superficial skin dehiscence, and one ileus from the large bite group; and two ileuses from the small bite group. Comparison analysis was unable to be performed due to sample size. Issues with enrollment, data collection, and participant loss were identified. A study coordinator is recommended.
The Effects of Pulsed Electromagnetic Field Therapy, Postural Training, and Therapeutic Massage on Cervical Range of Motion and Pain

Matthew Broeckelman, Cheri Flanagan, Kendra Hallacy, Sonia Sanchez-Paredes, Courtney Simon
Faculty: Lisa Garcia
Department of Physical Therapy, Wichita State University

The study looked at the effects of postural education, cervicothoracic therapeutic massage and pulsed electromagnetic field therapy on long term cervical pain reduction and increased ROM in college aged students -18 to 30 years old.

The study recruited 30 subjects randomly assigned to groups, researchers providing the interventions were blinded to the ROM and MMT results throughout the study. The VAS measured pain intensity, and the NDI measured effects of cervical pain on activities of daily living.

The hypothesis stated there will be a significant difference in long term cervical pain reduction and increased ROM with postural education and training when compared to cervicothoracic therapeutic massage, PEMF and control.

Unexpectedly, no statistical difference was shown to exist between groups, however, improvements presented within all groups, including control, regarding ROM, VAS, and NDI; indicating interventions are not better than control in our sample size.
What’s There to Say About Those Little Libraries?

Julia Siwierka*
Faculty: Dr. Jodie Hertzog
Departments of Psychology and Sociology, Fairmount College of Liberal Arts and Sciences

This project explores the phenomenon of mobilizing communities to read through pop-up libraries, specifically Little Free Libraries. These birdhouse-like "take a book, leave a book" systems have the capability of eradicating book deserts (which lack reading resources). However, there may be disparities where these libraries are built.

This project analyzes the written messages concerning Little Free Libraries to better understand how the movement is described to the public and how its importance, benefits, and challenges are discussed. A case study approach investigating three Midwestern locations uses thematic analysis to discern codes from unobtrusive data. Additionally, interviews with key informants with various connections to the movement provide insight into how pop-up libraries are advertised near them. Themes, including sense of community and literacy development, indicate that many positives are relayed to the public. Unfortunately, these benefits are not necessarily tied to the actual installment of libraries in book deserts.
Assessing Population Demographics of Sericea (*Lespedeza cuneata*) in Response to Environmental Variation and Land Management in the Great Plains

Jennifer N. Smith*
Faculty: Gregory R. Houseman

*Department of Biology, Fairmount College of Liberal Arts and Sciences*

Sericea (*Lespedeza cuneata*) is an invasive, perennial legume threatening native grasslands in the Great Plains. Although much is known about Sericea, population demographics (survival, growth, reproduction, and recruitment) have never been assessed over realistic temporal and spatial scales. We quantified Sericea vital rates across eight, large-scale ranching operations representing four cattle management regimes and three soil fertility types. Sericea density was highest among mature individuals relative to juveniles, and in low to medium fertility soils with year-round cow-calf grazing. Survivorship through the growing season was lowest (~ 60%) among seedlings in low to medium fertility soils with cow-calf grazing. Mature plant survivorship was nearly 100 percent across all treatment combinations. Given low juvenile survivorship, preliminary results suggest control efforts focus on mature plants in low to medium fertility soils. However, these responses need to be verified over additional years to better predict bioeconomic impacts and guide weed management decisions.
Effects of a Visuo-Motor Training Task on Visual Functioning in Older Adults

Inga Sogaard*, Kelly Ha
Faculty: Rui Ni
Department of Psychology, Fairmount College of Liberal Arts and Sciences

The normal aging process is associated with variable degrees of decline in perceptual, cognitive, and motor control abilities that are important for the successful execution of everyday tasks, such as driving and walking. The purpose of this study is to explore a visuo-motor training paradigm for improving visual functioning and cognition in older adults that draws on the combined principles of perceptual learning and enhanced physical functioning. Thirty older adults completed six training sessions, in which they were either trained on a sport playing task or a video game task. The training difficulty levels are adapted to visual and physical capabilities. Participants completed a series of pre and post-tests consisting of visual and cognitive tasks. The entirety of the data has not yet been collected, although preliminary analyses have shown improvements in the targeted areas of visual functioning. These improvements may beneficially transfer to improved performance of everyday tasks.
Evaluating and Optimizing the Design of Clinical Decision Support for Paramedics in the Field

Paul Misasi*,1,2 Logan Gisick*,1 Tiffany Leverenz1
Faculty: Barbara Chaparro1
1Department of Psychology, Fairmount College of Liberal Arts and Sciences
2Sedgwick County Emergency Medical Service

Millions of people call upon emergency medical services each year to access the healthcare system by ambulance. Nearly every moment of every day, paramedics across the globe respond to provide medical care in austere environments with limited access to the tools, diagnostics, and technologies available to clinicians in the hospital setting. As such, these clinicians rely heavily upon their clinical skills and predetermined decision support, or protocols, which are prescribed by a medical directorate. These protocols usually take a paper form and can be extensive. To date, there has not been any kind of empirical review of these clinical decision tools and whether their design supports or impairs their utility and usability. Our novel investigation seeks to answer these questions and evaluate the effectiveness of redesigned protocol displays informed by research in other domains as well as user profile analyses of providers in two different Kansas EMS Systems.
Big Data, Short Works: Establishing a Stylometric Baseline for Micro-attributions of Shakespeare’s Apocrypha with ‘On a day, alack the day’

Chance Swaim*
Faculty: Francis X. Connor
Department of English, Fairmount College of Liberal Arts and Sciences

With the digitization of the Early Modern dramatic canon nearly complete, the contemporary understanding of authorship is rapidly changing. Utilizing digital databases such as LION (Literature Online), which makes primary-source texts searchable, authorship can be determined more assertively by studying stylometric variations and matches by comparing large texts by authors with comparable corpus sizes. Big data allowed the editors of The New Oxford Shakespeare (2016) to attribute sections of plays traditionally thought to be authored by Shakespeare to other playwrights of the period, like Christopher Marlowe. But shorter, more unstable texts—such as Early Modern poetry, which is often relatively short, formal and circulated in manuscript form—present a more complex problem. My research looked at rare and unique phrases within the poem “On a day—alack the day!” (Love’s Labour’s Lost and The Passionate Pilgrim 1598) to establish a baseline statistical model for Shakespeare’s authorship of poems of comparable length.
Improving Transit in Wichita: Marrying the Old and the New

Mercy Umeri*
Faculty: Dr. Kriz Ken
Hugo Wall School of Public and Urban Affairs, Fairmount College of Liberal Arts and Sciences

PURPOSE
The transportation system in Wichita has served a diverse customer base over the years with its traditional system of large buses on fixed routes and smaller buses for specialized transportation (such as for the physically challenged, or elderly). Shrinking state revenues, increases in population and a more diverse set of needs necessitated a push to find creative solutions to transit service delivery. Advances in technology have brought about variety and technology-enabled services which has increased choice in urban transit. Ride-sharing firms like Uber and Lyft employ a business model that combines personal services with technology. This business model fits the competitive opportunities of today’s market place and dovetails seamlessly with the larger dynamics shaping tomorrow’s market place. In my research, I examine the informal transportation system with its rich mix of services, the use of technology based transportation in the United States and the transportation sector in Wichita, Kansas.

METHODS
In my research, a combination of the case study method, participant observation and empirical data is used.

RESULTS AND CONCLUSION
Findings from my studies show that people want more options in the transit system; more frequent service, longer hours of operations, fewer transfers, shorter travel time, comfort and affordability. These results will inform decision makers as they seek solutions to improve transit in the Wichita Area.
In the setting of trauma, timely identification and early intervention in shock is critical for achieving quality patient outcomes. In older adult trauma patients (age > 65 years old) detection of a deteriorating condition can be delayed due to several factors that obscure the clinical picture. The purpose of this study is to educate providers on evidence-based concepts that will enable them to more effectively identify a deteriorating condition, leading to better patient outcomes. This study uses a systematic literature review employing a manual selection of quality assessed articles. The review identifies the most pertinent physiologic changes of aging that affect the initial assessment and treatment in trauma, focusing on the cardiovascular, respiratory, renal, and hematologic systems. It also illustrates the importance of a specialized secondary survey in these patients, including laboratory values, home medication lists, trends in vital signs, urine output, and changes in mental status.
Effect of Aspect Ratio and Bifurcation Angle on Single Phase Flow in Branched Structure MCHE

Pavan Vellore Kumaraswamy*
Faculty: Dr. T.S. Ravigururajan
Department of Mechanical Engineering, College of Engineering

The introduction of microchannel heat exchangers (MCHE) has revolutionized the cooling technology which has led to miniaturization of devices. MCHEs are highly preferred in many applications because of their characteristic large heat transfer area to unit volume leading to higher efficiency compared to conventional heat exchangers. Due to their compactness, they are mainly used in electronic cooling; in recent times their application is extended to the medical field for cooling scanning equipment. However, the small channel size increases pressure drop. Present study focuses on optimizing the performance of the MCHEs by carrying out single phase flow analysis in ANSYS (Fluent) with different aspect ratios (AR) between 0.25 – 10, and at different bifurcation angles 30, 45 and 60, 70 degrees. Results so far show that pressure drop decreases and heat transfer increases with increase in AR.
Low health literacy skills continue to be reported within the published literature. Health literacy levels for older adults are reported to predict health outcomes. This study investigated health literacy rates and fall data using 2012 and 2014 state data. A Retrospective Data Analysis was conducted with data collected by the State of Kansas Health Department using the state-led supplemental question option for the Centers of Disease Control (CDC) Behavioral Risk Factor Surveillance System (BRFSS) survey. Specifically, trend data for respondents were examined by gender, geographic location and health literacy rate. Results indicate females have a higher estimated mean number of falls and injuries than males. The findings support the importance of addressing fall prevention for older adults. Long term implications for improving fall prevention and health literacy include potential positive impact on individual outcomes. There is a need for continued education about fall prevention for all older adults.
Purpose: This project explores color development in unglazed, wood-fired ceramic wares, specifically the phenomenon called “flashing,” by testing six materials with differing proportions of silica and alumina. Background: Flashing is a gradient of glazing created in atmospheric kilns, and occurs around a ratio of 3.2:1 SiO2 to AL2O3. Other variables that contribute to flashing on ceramic surfaces include the composition of the clay bodies used, the presence of trace amounts of iron, and the type and composition of the clay’s glass-forming components. Methods: Sixty-one step tests made from combinations of six raw materials demonstrate the quality of color development near and at the ideal SiO2: AL2O3 ratio for flashing. I will fire and cool these tiles in an anagama-style, wood-fired kiln, using both carbon and hydrogen as an oxygen reducing agent during the cooling process. The results of this study will provide both quantitative and qualitative data to supplement experiential knowledge.
Marathon Runners' Motivations and Use of Social Media for Social Support

Brittany A. Waldman*
Faculty: Jodie Hertzog
Department of Sociology, College of Liberal Arts and Sciences

We live in a world that promotes regular physical activity. One physical activity that is swooping the nation is marathon running. Research has found that since 1990 participation in long distance running in the United States has increased more than 270%, with an increase of women runners by 577% (Running USA, 2011). The purpose of this participant observation study was to explore the different types of motivations runners have, how members of one running group use Facebook to seek motivation & support, and whether there are variations based on gender. Data consisted of 109 Facebook posts by 50 individuals participating in a Facebook group for marathon runners. Through first cycle and second cycle coding, the data was analyzed for prominent themes. Ten overall themes were produced from the data and the top three themes that emerged from the data were positive emotion, providing reinforcement, and The Prairie Fire Marathon.
Education Techniques for Effective Counseling Regarding Prevention of Unintended Pregnancies

Monica Buelt, Katherine Muff, Megan Walker
Faculty: Gina Brown
Department of Physician Assistant, College of Health Professions

While ample resources exist detailing the variety of available contraceptive options for patients who desire to prevent an unintended pregnancy, there are limited resources concerning how a provider might approach this topic with a patient. With this gap in mind, the primary focus of this research is to equip healthcare providers with education techniques in order to facilitate a more effective discussion with their patients. By providing a resource on timing of contraceptive education, appropriate patient interview techniques, and common patient misconceptions, this research aims to open the discussion between provider and patient regarding pregnancy prevention.
Prediction of Land Market Value
Based on the Real Estate Market in USA

Lei Wang*
Faculty: Dharam Chopra

Department of Mathematics, Statistics and Physics,
Fairmount College of Liberal Arts and Sciences

The Land Market Value, defined as the total value of land and quantity data are derived from data on housing values, is an important factor in the estimation of structure costs using price indexes for housing and construction costs. In this paper, we gathered and analyzed 34 years’ national data on past and present real estate transaction. According to the characteristics of raw data, we tried to develop the potential Decomposition, Smoothing, ARIMA and other advanced forecasting models with appropriate transformations. Specifically, we employed an innovation space state underlying certain forecasting model. For regression analysis, we involved GDP, CPI, Construction Cost Index, population, unemployment rate, inflation rate and Purchasing Manage Index in multivariate statistical model. Most importantly, we obtained how to add value to business and apply skills set to real estate in a real world environment. The goal in providing crucial statistical method is to enable government and investors to make informed decisions regarding real estate.
Aggression and Matrix Reasoning

Jeffrey A. Warren*
Faculty: C. Brendan Clark

Department of Psychology, Fairmount College of Liberal Arts and Sciences

Abstract thought is a domain of cognition concerned with organizing discrete concrete ideas into broader concepts through identifying similarities and underlying patterns. Greater ability in abstract thinking has been associated with more flexible social cognition improved perspective taking. This study demonstrates that it may also be associated with lower levels of aggression and externalizing behavior. We examined a neuropsychological testing sample (n = 344) and found that abstract thought (as measured by the Matrix Reasoning subtest of the Wechsler Adult Intelligence Scale) was negatively associated with a variety of indices of aggression measured by the Minnesota Multiphasic Personality Inventory (e.g., the Aggression Scale, the Activation Scale). These associations held even when established predictors of aggression (i.e., gender, age, education) and broader measures of intellectual functioning (i.e., verbal IQ) were statistically controlled for. Therapeutic interventions for aggression which may increase abstract thought will also be discussed.
Effects of Strength Circuit Training and Boxing Circuit Training in Individuals with Parkinson’s Disease

Mikalea Bunyan, Trista Cline, Colin Donner, Kristina Underhill, Kate Wildeman*
Faculty: Camilla Wilson

Department of Physical Therapy, College of Health Professions

The purpose of this study was to determine the effects of a strength and boxing circuit training program on strength, balance, and quality of life in individuals with Parkinson’s disease. These measures were assessed using the following: dynamometer, Multidimensional Fatigue Inventory (MFI), 10 meter walk test, and the Sway Balance phone application. The SF-36 quality of life survey included physical function, bodily pain, general health, vitality, social functioning, and mental health. The participants were placed into two groups and completed eight weeks of a strengthening or boxing circuit program. Both groups received balance training in addition to upper and lower extremity and core strengthening. There was no significant difference in any of the outcome measures taken, however there were improvements in both groups in regards to muscle strength, 10-M walk, MFI, and SF-36 scores.
Gaming as a Path to Sexual Assault:
A Content Analysis of Fan Comments in Response to a Virtual Reality Sexual Assault Discussion

Derek Wilson*
Faculty: Jodie Hertzog
Department of Sociology, Fairmount College of Liberal Arts and Sciences

Trends in technology include the use of virtual reality (VR) and providing side gaming options. Scholars of popular culture have drawn attention to gender troupes and the sexualized nature of video game content. The current study extends that research by analyzing a random sample of 50 viewer responses to a gaming commentary group known as Funhaus’ podcast discussing opposing perspectives on a 2016 video game that involves heavy sexualization of anime women and allows for a VR “sub-game” where players are given the option to sexually assault said anime girls. The content analysis explores where podcast viewers fell on the debate of whether the game option was viewed as good because sexual predators can turn to VR to meet their desires or if the game contributes to a larger rape culture. Results indicated that many viewers responded positively to the discussion while negative responses included attacking or defensive behavior.