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## SCHEDULE OVERVIEW

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<tr>
<td>3:00 PM</td>
<td>BSC 171-173</td>
<td>Earth and Atmospheric Science - Meteorology</td>
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<td>3:20 PM</td>
<td>BSC 251 A</td>
<td>Theological Studies</td>
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<td>Physical Therapy and Athletic Training</td>
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<td>3:40 PM</td>
<td>BSC 253 A</td>
<td>History</td>
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<td>BSC 253 D</td>
<td>Sociology and Criminal Justice</td>
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<td>BSC 256</td>
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<td>American Studies</td>
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<td>Medical Humanities</td>
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<td>Service Leadership Certificate Program</td>
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<td>5:00 p.m.</td>
<td>BSC 170</td>
<td>Senior Legacy Reception</td>
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### 5:00 p.m. Senior Legacy Reception
The University community is invited to attend this reception celebrating the Senior Legacy Symposium participants.
POSTER PRESENTATIONS

3:00 – 5:00 p.m.  Busch Student Center 171 – 173

Conceptual Design of a Large Cabin Business Jet
Andrew Glock, Peter Hasser, Tim Janczewski, and Miranda Turlin
Aerospace Engineering

Panda Subsonic Regional Jet
Chenkai Huang, Andrew Meyers, Luciano Formilan, and Nathalie Lopez
Aerospace Engineering

Rocket-Deployed, Flexible-Wing UAV: Proof of Concept
Manuel Posso, Ignacio Soriano, Jessica Rozycki, and Pablo Villarcorta
Aerospace Engineering

Establishing Whether Vertebrate Nectins 1 and 4 are Functional Homologs of Drosophila
Echinoid
David Massop
Biology

Morphological Variation in the Yaqui Sucker, Catostomus Bernardini (Family Catostomidae)
Heather Neun
Biology

ATM Enhances DHA Transport in Mouse Soleus Muscle Via Promotion of GLUT 1 Cell Surface Appearance
Gaytri Patel, Andrea Webber, and Joseph Chen
Biology

Medical Alert System Technology for Emergency Medical Services (MASTERS)
Eric Marin, James Brabbins, Nicholas Heugal, and Abdulrahman Alsheraimi
Biomedical Engineering

Microdosimeter for Quantification of Instantaneous and Cumulative Radiation Dose
Michael McRae, Brandon Shelby, and Nidaa Bugis
Biomedical Engineering

Microdevice for the Examination of Cells at Varying Oxygen Tensions
Leah Vandiver and Jessica Stukel
Biomedical Engineering

Crystal Structure of Thrombin Bound to the Activation Peptide of Protein C
Umberto Paolo Villa
Chemistry

Antiproliferative Effect of Curcumin and Silymarin on Colon Cancer Cells
Suomia Abuirqeba
Clinical Laboratory Science

Laboratory Support for Sickle Cell Diagnosis and Monitoring in Underdeveloped Countries
Tyler Gouge, Lila Wahidi, and Anthony Knese
Clinical Laboratory Science
POSTER PRESENTATIONS

3:00 – 5:00 p.m.  Busch Student Center 171 – 173

Developing Methods for Isolating, Quantifying, and Identifying Enteric Pathogens from Compost Samples including the Determination of an Effective “Killing” Temperature
Michelle Robben, Christina Yakopovic, Matthew Welz, and Kelci Cortrecht
Clinical Laboratory Science

EVT-2 Error Analysis: Low-Income Children With and Without Language Impairment
Megan Diestelmeier
Communication Sciences and Disorders

The Effects of Tablet Computing on Literacy Development
Marilynn Pathiyil
Communication Sciences and Disorders

The Relationship Between Hearing Impairment, Cognition, and Mood in the Elderly
Lauren Schuster
Communication Sciences and Disorders

Movement Assistance Technology and Engineering: Parkinson's Fine Motor Skills Assistance Device
Brandon Coventry, Elizabeth Honigfort, and Caroline Seroka
Electrical and Computer Engineering

Pressure and Weight Distribution System
Matt DiLalla, Griffin Jones, and Nick Phillips
Electrical and Computer Engineering

Evaluation of Off-The-Shelf Hardware for Musculoskeletal Ergonomic Assessment
Alison Orr, Xinnian Zheng, and Hao Zhao
Electrical and Computer Engineering

Imprint
Donghyun Kang
Fine and Performing Arts

City Streets, Big Truths, and God
Sean Powers, SJ
Fine and Performing Arts

¡Panamania!: A Guide to Doing Business in Panama
Christopher Fidler, Meghan Powers, and Evy Lang
International Business

The Grand Center: Social Media Campaign
Cassandra Curran and Rynn Zhou
Marketing

Integrated Marketing Strategy for Grand Center
Erika Klotz
Marketing

Grand Arts Center Marketing Plan
Taylor McNamara and Maria Muldoon
Marketing
POSTER PRESENTATIONS

3:00 – 5:00 p.m. Busch Student Center 171 – 173

Improving Math on the Web
Matt Kelly
Mathematics and Computer Science

Added Benefits of SPECT/CT in Non-Malignant Nuclear Medicine Studies
Robert Krawiecki
Nuclear Medicine Technology

Added Value of SPECT/CT in Cancer Imaging
Nick Simpson
Nuclear Medicine Technology

Comparing Vendor Reported CTDI to Actual CTDI in SPECT/CT
Eric Watson
Nuclear Medicine Technology

Nursing Care of a Patient Undergoing Induced Hypothermia
Lauren Butler, Lilian Hartzell, and Kelly Weeden
Nursing

Our Experience at the AACN Student Policy Summit
Michael Indergaard and Zachary Fox
Nursing

Tutoring and Health Education with Christian Friends of New Americans
Amy Wilson, Lucy Vandermolen, Kayla Reinhard, Zachary Fox, Jennifer McGregor, Gayla Flure, Kris Conaway, and Clifford Bellone
Nursing

The Role of Fenugreek in Culinary Arts
Ryne Macht
Nutrition and Dietetics

Community Nutrition Media Project: Increasing Fruit and Vegetables Consumption in Preschoolers
Meng Meng, Ting Mao, and Scott Kidd
Nutrition and Dietetics

Physical Therapy as a Ministry
Lindsay Noesen
Physical Therapy

Factors Underlying the Different Levels of Environmental Policy in the U.S. and EU
Christina Ann Simpson
Political Science

Transitions from Communism in the Yugoslav States
Jasmina Vajzovic
Political Science

Goal Specificity and Creativity
Melissa Keith, Jessica Bertrand, and Mia Baeza
Psychology
Improving Quality of Life in Skilled Nursing Facilities using Occupational Health Perspectives
Sara Tepe
Psychology

Electrophysiological Correlates of Visual Implicit Sequence Learning and Natural Language Processing
Ryan Town and Elizabeth Hilvert
Psychology

Assessing Physician Knowledge of Molecular Diagnostics and Implications for Physician Education: The Example of Hepatitis C
Monica Kao
Public Health

Neighbors in Need: Measuring the Quality of Life in North St. Louis
Meghan Jendusa
Public Policy

SIR-Spheres® Microspheres
Ryan Mueller
Radiation Therapy Program

Visicoil™ Linear Fiducial Marker, What You See is What You Treat
Jessica Noble
Radiation Therapy Program

Proton Therapy
Tracey Skala
Radiation Therapy Program

Keys to Success
Alexandra Brownfield
Social Work

Domestic Violence Awareness Through Education
Mercy Kamau
Social Work

Advocacy on Behalf of Latinos in St. Louis
Rosemary Laughlin
Social Work
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<th>Presenter(s)</th>
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<td>3:00</td>
<td>BSC 251A</td>
<td>Quantifying the Significance of the 26-27 April 2011 Severe Weather Outbreak</td>
<td>Matthew Stailey, Earth and Atmospheric Sciences</td>
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<td>3:00</td>
<td>BSC 251B</td>
<td>Medical Decision Making at the End of Life</td>
<td>Ryan Town, Medical Humanities</td>
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<td>3:00</td>
<td>BSC 253A</td>
<td>The Theology of Cain’s Mark: Sr. Helen Prejean and Christian Theology on the Death Penalty</td>
<td>Jennifer Kathleen Adkins, Theological Studies</td>
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<td>BSC 253B</td>
<td>Saint Louis University Dance Marathon</td>
<td>Kristen Bartheld and Rachel Grimmer, Physical Therapy</td>
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<td>3:00</td>
<td>BSC 253D</td>
<td>Cultural Response to the 1849 Cholera Outbreak in St. Louis</td>
<td>Elizabeth Burns, History</td>
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<td>3:00</td>
<td>BSC 256</td>
<td>Mock Trial of the case of State of Midlands v. Danny Dawson</td>
<td>Katherine Anderson, Kathleen Cadigan, Jasna Dubo, and Liz Washam, Pre-Law</td>
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<td>3:20</td>
<td>BSC 251A</td>
<td>Saint Louis Zoo Socio-Sexual Behavioral Analysis</td>
<td>Hannah Donahue, Earth and Atmospheric Sciences</td>
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<td>3:20</td>
<td>BSC 251B</td>
<td>Moral, Social, Cultural, and Economic Changes As a Result of the Black Death in Europe</td>
<td>Jillian Kelly, Medical Humanities</td>
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<td>3:20</td>
<td>BSC 253A</td>
<td>Beauty and the Ideal in Cavaliere d’Arpino’s Perseus Rescuing Andromeda</td>
<td>Abigail Unverferth, Fine and Performing Arts</td>
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<td>3:20</td>
<td>BSC 253B</td>
<td>Decadent Chocolate Raspberry Tower</td>
<td>Amelia Karges, Nutrition and Dietetics</td>
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<td>3:20</td>
<td>BSC 253D</td>
<td>Latinos and Citizenship: Spaces of Immigration, Politics and Media Representation</td>
<td>Joseph Wotawa, SJ and Timothy Janczewski, Sociology and Criminal Justice</td>
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<td>BSC 254</td>
<td>Fundamentals of Bohmian Mechanics As Governing Dynamics</td>
<td>Nicholas Weingartner, Physics</td>
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<td>BSC 256</td>
<td>Learning through Serving: Reflections on Legal Internships</td>
<td>Alisha Caldwell, Kathryn Newcomb, Alexis Vanstone, Nino Przulj, Blake Kocian, and Will Clark</td>
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<td>BSC 251B</td>
<td>Numbness Through The Ages</td>
<td>Konstantin German</td>
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<td>BSC 253A</td>
<td>Unique Femininity in Louise Nevelson's New Continent</td>
<td>Amy Wall</td>
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<td>BSC 253B</td>
<td>US Soccer Federation Summer Camp Proposal</td>
<td>Rebecca Austin, Andrew Moses, Donald Green, and Patrick Ettorre</td>
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<td>BSC 253D</td>
<td>An Evaluation of the Reality of the American Dream and the Analysis of the Myth of Meritocracy</td>
<td>Anelga Doumanian</td>
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<td>BSC 254</td>
<td>A Renewed Look at the Mind-Body Dilemma</td>
<td>Swathi Chidambaram</td>
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<td>BSC 251A</td>
<td>The Organic Boom and the Effects on Saint Louis 2000-2010</td>
<td>Shara Dawn Rowe</td>
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<td>BSC 251B</td>
<td>Pregnancy: An Analysis of Women’s Experiences and Bodily Perceptions</td>
<td>Ashley Klein</td>
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<td>Decadence A Cappella: Behind the Scenes of SLU's Newest Performance Group</td>
<td>Kristine Gage</td>
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<td>BSC 253B</td>
<td>Reflections on Service Leadership and Susan G. Komen</td>
<td>Hannah Beaty</td>
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<td>Service Leadership Certificate Program (JCSB)</td>
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<td>BSC 253D</td>
<td>Johann Wolfgang von Goethe: The Man, his Works, and his Cultural Influence</td>
<td>Matt Barton</td>
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<td>BSC 254</td>
<td>Second First Language: Acquisition as a Practice &amp; What Learning Nepali from Urban Refugees Has to do with MacIntyrian Political Prescriptions</td>
<td>Linsey Dieckmeyer</td>
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<td>BSC 251A</td>
<td>Identity, Popular Culture, and Public Memory in Ada, Oklahoma</td>
<td>Laura Frye</td>
<td>American Studies</td>
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<tr>
<td>BSC 251B</td>
<td>Medicine Beyond Science: Solutions for Issues with Health Equity</td>
<td>Samyuktha Balabhadra</td>
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<td>BSC 253B</td>
<td>International Trade from Behind a Rawlsian Veil</td>
<td>Nino Przulj</td>
<td>Economics</td>
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<td>Being as Being-with: A Relational Interpretation of David Bohm's Worldview</td>
<td>Thomas Piolata</td>
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<td>The Body: Far From Obsolete</td>
<td>Kathryn Newcomb</td>
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<td>Local Control of the St. Louis Police Department: A Geographical Issue?</td>
<td>Liz Ramsey</td>
<td>Political Science</td>
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ABSTRACTS

Andrew Glock, Peter Hasser, Tim Janczewski, and Miranda Turlin
Aerospace and Mechanical Engineering
Faculty Sponsor: Dr. John George

Conceptual Design of a Large Cabin Business Jet
The Conceptual Design of a Large Cabin Business Jet is an aerospace engineering senior design project with the goal of producing the basic design, sizing, and performance of a jet powered aircraft as a demonstration of the skills, knowledge, and techniques acquired and practiced during aerospace engineering coursework. The LCBJ team utilized a multitude of aerospace concepts and principles to devise an aircraft capable of transporting ten passengers over 7,000 nautical miles. Particular attention was paid to producing a design that is comfortable, practical, and economical while incorporating state-of-the-art technology, such as geared turbofan propulsion and composite intensive construction.

3:00-5:00 PM  BSC 171-173  Table 59

Chenkai Huang, Andrew Meyers, Luciano Formilan, and Nathalie Lopez
Aerospace and Mechanical Engineering
Faculty Sponsor: Larry Boyer

Panda Subsonic Regional Jet
The objective is to design a new twin-engine, subsonic regional transport aircraft. The regional jet will have a passenger capacity of 110, an approximate weight of 110,000 lbs and a maximum cruise of 1400 nm. The cruise altitude will be 36000 ft, with a cruising speed of Mach 0.75. The fuel efficiency must be competitive with the Boeing 737 after a time/cost factor is added. This will be the main selling point. The aircraft will be able to take off and land at the smallest airports in China and must be competitively priced as well as economically feasible.

3:00-5:00 PM  BSC 171-173  Table 58

Manuel Posso, Ignacio Soriano, Jessica Rozycki, and Pablo Villarcorta
Aerospace and Mechanical Engineering
Faculty Sponsor: Larry Boyer

Rocket-Deployed, Flexible-Wing UAV: Proof of Concept
This is SLU’s entry for competition in the 2011-2012 NASA University Student Launch Initiative. The Unmanned Aerial Vehicle (UAV) is the main rocket payload, and its mission is to provide a live video feed of a designated area while maximizing endurance. It is launched inside the rocket and deployed shortly after apogee. The rocket’s mission is to quickly and safely transport the UAV to an altitude of one mile. In addition to these vehicles, an atmospheric module also flies inside the rocket to gather humidity, temperature, pressure, UV radiation, and solar irradiance data during descent.

3:00-5:00 PM  BSC 171-173  Table 57

Laura Frye
American Studies
Faculty Sponsor: Dr. Matthew Mancini

Identity, Popular Culture, and Public Memory in Ada, Oklahoma
In the early 1980s, two violent murders shook the small town of Ada, Oklahoma. Over the next thirty years the cases were featured in everything from Entertainment Weekly to a best-selling non-fiction book by John Grisham. Through personal interviews, website submissions, a public forum, and research of the primary sources, this paper explores the impact international attention had on the self-perception and memories of the residents of Ada.

4:20 PM  BSC 251A

Molly Gould
American Studies
Faculty Sponsor: Dr. Matthew Mancini

The Face of Girlhood: American Girl Dolls and the Perception of American Girlhood
This project studies the Pleasant Company and their American Girl Collection as a key to understanding the current tensions that exist within the construction of American girlhood. Today, organizations with traditional values have a concept of girlhood that conflicts with how more progressive organizations view girlhood. This specific conflict is displayed perfectly in the Pleasant Company’s American Girl Collection and the conflicting messages that they send to their consumers through their products and their collaborations with different organizations. This case study will help to unravel the struggle in American society for the authority of defining girlhood.

3:40 PM  BSC 251A

Shara Dawn Rowe
American Studies
Faculty Sponsor: Dr. Matthew Mancini

The Organic Boom and the Effects on Saint Louis 2000-2010
Monsanto has earned the scorn of environmentalists, farmers, and food activists because of their worldwide mission to shut down farms for patent infringement. This project demonstrates an opposition to Monsanto through local farmers, marketing efforts, and educational initiatives. St. Louis is the epicenter for this global David and Goliath struggle, and this paper seeks to explore the implications of local and organic versus biotechnology and industrial farming through interviews, a review of pertinent literature, and a survey of the various agricultural, marketing, and educational efforts being undertaken in the St. Louis metro area.

4:00 PM  BSC 251A
David Massop  
Biology  
Faculty Sponsor: Dr. Susan Spencer  

Establishing Whether Vertebrate Nectins 1 and 4 are Functional Homologs of Drosophila Echinoid  
It has been suggested that the vertebrate cell adhesion protein Nectin is a functional homolog of the fruit fly Drosophila melanogaster cell adhesion protein Echinoid. To test this, we studied Nectin 1 and Nectin 4 genes both in vitro in cultured Drosophila cells and in vivo in transgenic fly lines. Our in vitro study found that both Nectin 1 and Nectin 4 were able to mediate cellular adhesion, similar to Echinoid. Our in vivo study found that both Nectin 1 and Nectin 4 partially rescued Echinoid mutant phenotypes. We conclude that Nectin and Echinoid can preform similar functions in living organisms.

3:00-5:00 PM  BSC 171-173  Table 23

Heather Neun  
Biology  
Faculty Sponsor: Dr. Rick Mayden  

Morphological Variation in the Yaqui Sucker, Catostomus bernardini (Family Catostomidae)  
The Yaqui Sucker, Catostomus bernardini, occurs naturally in remote rivers and streams of the Sierra Madre Occidental. In this investigation, geographic variation was examined across river drainages within northwestern Mexico for C. bernardini using a morphometric approach. Scale counts, fin ray counts, and a series of truss landmark measurements were taken. Individuals were sexed to account for potential sexual dimorphism, which detracts from true shape variation. Variation was examined using sheared Principle Components Analysis. sPCA eliminates size from axes beyond the first to estimate shape variation in and across populations. Geographical isolation and subsequent morphological variation will be discussed.

3:00-5:00 PM  BSC 171-173  Table 24

Gaytri Patel, Andrea Webber, and Joseph Chen  
Biology  
Faculty Sponsor: Dr. Jonathan Fisher  

ATM Enhances DHA Transport in Mouse Soleus Muscle Via Promotion of GLUT 1 Cell Surface Appearance  
GLUT 1 is the primary dehydroascorbic acid (DHA) transporter in skeletal muscle. The GLUT1 carboxy-terminus contains a known ataxia telangiectasia mutated (ATM) phosphorylation site. The objective of this study is to determine whether doxorubicin (DXR), an ATM activator, affects GLUT1-mediated DHA transport. Soleus muscles exposed to DXR displayed a two-fold increase in DHA transport. However, when L6 myoblasts were treated with DXR coupled with ATM inhibitors, DHA transport was severely blunted. L6 myoblasts treated with DXR and subjected to a GLUT1 cell surface assay displayed increased cell surface GLUT 1. These findings provide evidence that ATM affects DHA transport in soleus muscle.

3:00-5:00 PM  BSC 171-173  Table 25

Eric Marin, James Brabbins, Nicholas Heugal, and Abdulrahman Alsheraimi  
Biomedical Engineering  
Faculty Sponsor: Gary Bledsoe  

Medical Alert System Technology for Emergency Medical Services (MASTERS)  
Personal safety alarms alert emergency personnel to the scene at the push of a button from the wearer. While useful in emergencies, these devices fail in the event that the end user is incapacitated. MASTERS is a multidisciplinary team of biomedical and electrical engineers working to create an improved safety alarm. This team was formed to develop an improved fall detection system that automatically alerts emergency medical services and emergency contacts via SMS in the event of an irregularity without any action from the user. The cost of the working prototype, including research and design, was approximately $225.

3:00-5:00 PM  BSC 171-173  Table 49

Michael McRae, Brandon Shelby, and Nidaa Bugis  
Biomedical Engineering  
Faculty Sponsor: Gary Bledsoe, Ph.D.  

Microdosimeter for Quantification of Instantaneous and Cumulative Radiation Dose  
Active dosimeters quantify radiation on a real-time basis and are capable of alarming the user when a high-energy radiologic event occurs. The Real-time Active Dosimeter (RAD) replaces passive dosimeters currently used in professions with high risk for radiation exposure. The RAD implements a Geiger-Müller (GM) tube to sense alpha, beta, and gamma radiation. The data is sampled by a microcontroller, and the user views the instantaneous dose rate and cumulative dose on an LCD screen. An alarm rings when a certain cumulative dose threshold is reached in accordance with National Council on Radiation Protection and Measurements (NCRP) standards.

3:00-5:00 PM  BSC 171-173  Table 48

Leah Vandiver and Jessica Stukel  
Biomedical Engineering  
Faculty Sponsor: Dr. David Henthorn  

Microdevice for the Examination of Cells at Varying Oxygen Tensions  
A tissue engineering microdevice is being designed to elucidate cellular response to various oxygen tensions and substances that mimic hypoxia. The planar device is designed for constant monitoring of the cells using standard microscopy techniques. Cells are cultured in a poly(ethylene glycol)-rich hydrogel scaffold, allowing for nutrient transport with simultaneous oxygen measurements. Sensor spots (pre-calibrated, oxygen-sensitive porphyrin sensor spots or lab-synthesized ruthenium-based microparticles) are embedded in the flow cell to provide a non-invasive optical method for verification of local oxygen tensions through the use of phase shift phosphorescence. Materials used in the microdevice design were chosen for their optical properties, biocompatibility, and impermeability to oxygen.

3:00-5:00 PM  BSC 171-173  Table 47
Umberto Paolo Villa  
*Chemistry*  
Faculty Sponsor: Alexa Serfs

**Crystal Structure of Thrombin Bound to the Activation Peptide of Protein C**  
In the absence of thrombomodulin, thrombin and protein C weakly interact, thus complicating the crystallization of the thrombin-protein C complex. This problem was circumvented by synthesizing a peptide (AP162-181) mimicking the protein C activation domain substrate which thrombin cleaves with identical specificity. The crystal structure of S195A inactivated thrombin mutant was solved bound to AP162-181. Unexpectedly, the AP162-181 binding mode is alike that observed for thrombin receptor PAR1. The acidic P3 residue D167 favorably interacts with thrombin G219. This contradicts the current notion attributing the low specificity of thrombin toward protein C to D167 in the absence of thrombomodulin.

3:00-5:00 PM  BSC 171-173  Table 05

Suomia Abuirqeba  
*Clinical Laboratory Science*  
Faculty Sponsor: Uthay Ezekiel, PhD

**Antiproliferative effect of curcumin and silymarin on colon cancer cells**  
Declines in physiological function of the colon have been associated with the aging process. The colon is regularly presented with diet-derived factors and is therefore exposed to phytochemicals. The focus of this project was to ascertain anti-proliferative effects of several plant-derived compounds when the phytochemicals were presented singly or in combination. Results indicated that phytochemicals inhibit cancer cells to varying extents and importantly, curcumin (from the spice turmeric) inhibited proliferation of colon cancer cells of epithelial origin (DLD-1 cell line). Preliminary data suggests that combination of curcumin with silymarin (derived from milk thistle) inhibited colon cancer cell proliferation synergistically.

3:00-5:00 PM  BSC 171-173  Table 22

Tyler Gouge, Lila Wahidi, and Anthony Knese  
*Clinical Laboratory Science*  
Faculty Sponsor: Tim R. Randolph, PhD, MT(ASCP)

**Laboratory Support for Sickle Cell Diagnosis and Monitoring in Underdeveloped Countries**  
This study has developed three novel testing methods that are simple and inexpensive: hemoglobin, HbF and HbC, to support the diagnosis and treatment of sickle cell in underdeveloped countries. The hemoglobin method does not require power and is based on the rate a drop of blood sediments in a copper sulfate solution. The HbF method is based on selective elution of HbS in a citric acid solution and its inverse relationship to HbF. The HbC method induces intracellular HbC crystal formation when RBCs are exposed to a hypertonic phosphate buffer. All three methods can measure the analyte and quantitate concentration.

3:00-5:00 PM  BSC 171-173  Table 21

Michelle Robben, Christina Yakopovic, Matthew Welz, and Kelci Cortrecht  
*Clinical Laboratory Science*  
Faculty Sponsor: Donna M. Duberg

**Developing Methods for Isolating, Quantifying, and Identifying Enteric Pathogens from Compost Samples Including the Determination of an Effective “Killing” Temperature**  
The practice of composting has emerged as an important alternative for recycling waste organic matter instead of land-filling and incineration. However, commercial compost has been found to contain enteric pathogens such as Escherichia coli O157:H7, Salmonella, Shigella, and Listeria. Temperature is considered a major factor determining pathogen inactivation during composting and storing composting. The methods developed were successful in capturing, isolating, quantifying, and identifying various bacteria from compost samples and the research has shown that if a commercial compost or compost method reaches between 60°C to 70°C it greatly reduces the viability of pathogenic bacteria that cause food-borne illness.

3:00-5:00 PM  BSC 171-173  Table 20

Megan Diestelmeier  
*Communication Science and Disorders*  
Faculty Sponsor: Sara Steele, Ph.D

**EVT-2 Error Analysis: Low-Income Children With and Without Language Impairment**  
This study examined errors on the Expressive Vocabulary Test-2 (EVT-2) made by children from low socioeconomic status (SES) backgrounds. Thirty children comprised equal groups: those identified with Language Impairment (LI), same-age peers with typical language skills, and younger children who were vocabulary-matched to the LI group. Using EVT-2 results, error responses were analyzed and categorized into semantic, phonological, non-related, or non-informative classes, including various sub-groups. Conclusions will derive from proportions of responses within the error categories and systematic patterns of errors. Clinical implications for the utility of error analysis and the impact of SES on vocabulary assessment will be discussed.

3:00-5:00 PM  BSC 171-173  Table 06

Lauren Schuster  
*Communication Sciences and Disorders*  
Faculty Sponsor: Dr. Travis Threats

**The Relationship Between Hearing Impairment, Cognition, and Mood in the Elderly**  
The purpose of my project is to determine the relationships between hearing impairment, cognition, and mood in the elderly. Hearing loss can impede both receptive and expressive communication. This can cause a person to withdraw. The lack of social interaction can lead to depression and can worsen dementia. I also looked at whether or not wearing a hearing aid improved a person’s mood and cognition.

3:00-5:00 PM  BSC 171-173  Table 08
**Marilynn Pathiyil**  
*Communication Sciences and Disorders*  
Faculty Sponsor: Dr. Richard McGuire

**The Effects of Tablet Computing on Literacy Development**  
A recent study related to tablet computing applications (apps) found that half of the children under 8 had access to a mobile device (tablet computer or similar device). The question of what impact these devices have on development has become a popular topic. This study examined the effect of tablet based story interaction on emergent literacy skills in preschool children. Specifically, this study examined the literacy development skills of two preschoolers following a series of developmental literacy activities using both traditional story-books and similar book apps on the iPad. Differences in emergent literacy learning skills will be presented.

3:00-5:00 PM  BSC 171-173  Table 07

**Hannah Donahue**  
*Earth and Atmospheric Sciences*  
Faculty Sponsor: John Encarnacion

**Saint Louis Zoo Socio-Sexual Behavioral Analysis**  
The Endangered Species Research Center at the Saint Louis Zoo strives to strengthen the mission of the zoo; to conserve animals and their habitats through animal management, research, recreation, and educational programs that encourage the support and enrich the experience of the public. The primary focus of the Saint Louis Zoo's Research Department is reproduction. This includes studies of behavior, physiology, endocrinology and gamete biology. Today’s topic will be about the Socio-sexual behavior of Island foxes, Mexican grey wolf, Somali wild ass, Grevy’s zebra, maternal-offspring behavior of Addax and Speke’s gazelle.

3:20 PM BSC 251A

**Matthew Stalley**  
*Earth and Atmospheric Sciences*  
Faculty Sponsor: Charles Graves

**Quantifying the Significance of the 26-27 April 2011 Severe Weather Outbreak**  
The devastating severe weather outbreak from 26-27 April 2011 is second to none in United States history. Assessing the significance of this event using the number of severe weather reports provides little insight into the frequency of major outbreaks under similar meteorological environments. Classifying the distribution of major outbreaks using a conditional climatology approach can lead to a more appropriate measure of outbreak significance. Using large-scale fields over the southeastern United States, the April 2011 outbreak is compared with similar environments since 1979. The results will be presented using a variety of severe weather impacts in combination with similar large-scale environments.

3:00 PM  BSC 251A

**Nino Przulj**  
*Economics*  
Faculty Sponsor: Bonnie Wilson

**International Trade from Behind a Rawlsian Veil**  
This is an oral presentation concerning the question of whether John Rawls’ Theory of Justice provides an ethical justification for international trade. The Theory of Justice offers a system that appears too risk averse and does not justify international trade, though many important concerns are brought to the forefront as a result of Rawls’ work that can help provide an outline or guide for future theories.

4:20 PM  BSC 253B

**Brandon Coventry, Elizabeth Honigfort, and Caroline Seroka**  
*Electrical and Computer Engineering*  
Faculty Sponsor: Dr. Roobik Gharabaghi

**Movement Assistance Technology and Engineering: Parkinson’s Fine Motor Skills Assistance Device**  
This paper is a proposal for St. Louis University’s ECE 490/BME 495 Senior Design Project Parkinson’s MATE. The design team is made up of one Biomedical Engineering senior, one Electrical Engineering senior, and one Electrical and Computer Engineering senior. The objective of the design is to create a hand-held device to assist users with Parkinson’s disease with the fine motor skills necessary to eat with a fork or spoon. The device will effectively cancel the hand tremors of users, making it possible for them to feed themselves with reliable movements and little spillage.

3:00-5:00 PM  BSC 171-173  Table 56

**Matt DiLalla, Griffin Jones, and Nick Phillips**  
*Electrical and Computer Engineering*  
Faculty Sponsor: Dr. Roobik Gharabaghi

**Pressure and Weight Distribution System**  
The purpose of this project was to design and develop a device capable of assisting podiatrists in the diagnosis of problems caused by the normal daily activities of patients. This device was developed to be capable of passively monitoring the pressure exerted on a patient’s foot throughout a normal day. The device is capable of gathering data from a sensor array imbedded in the insole of a shoe, storing data in a microcontroller worn around the patient’s ankle, and outputting data for analysis. The device was designed not to impede the patient’s normal daily activities.

3:00-5:00 PM  BSC 171-173  Table 55
Alison Orr, Xinnian Zheng, and Hao Zhao
*Electrical and Computer Engineering*
Faculty Sponsor: Dr. Roobik Gharabagi

**Evaluation of Off-The-Shelf hardware for Musculoskeletal Ergonomic Assessment**

This project provides a low-cost and less cumbersome approach to motion capture and automated evaluation of worker pose during critical work movements compared to what is currently on the market. This project will use the Microsoft Kinect to capture the motion of a worker which allows one to have natural body movements while working. The positions of the worker are recorded and put into the Recommended Weight Limit (RWL) equation to calculate the RWL. By calculating the RWL in real time, the worker will know when he is overexerting his body, which will ultimately reduce MSDs in the workplace.

3:00-5:00 PM  BSC 171-173  Table 54

Kathryn Newcomb
*English*
Faculty Sponsor: Ruth Evans

**The Body: Far From Obsolete**

In today’s technological world, we sometimes imagine a time when we will be able to download our brain functions onto a computer, making the physical body obsolete. But what if we were no longer marked by “race,” gender, or family resemblance? I will use a number of literary texts to argue that the body is crucial to human identity: Jan Morris’s memoir of her sex change, Conundrum; Toni Morrison’s tragic account of the desire for whiteness, The Bluest Eye; J.G. Ballard’s warning about our love-affair with the car, Crash, and Kazuo Ishiguro’s dystopic fiction about cloning, Never Let Me Go.

4:40 PM  BSC 251B

Kristine Gage
*Fine and Performing Arts*
Faculty Sponsor: Dr. Robert Hughes

**Decadence A Cappella: Behind the Scenes of SLU’s Newest Performance Group**

This project will examine the establishment and expansion of the a cappella group Decadence at Saint Louis University. As a co-founder and music director of the group, I will explore a brief history of a cappella singing dating as far back as the Renaissance, the origins of collegiate a cappella and the foundation of a cappella on Saint Louis University’s campus. I will also explicate the necessary steps it took to successfully launch the group, including member recruitment, vocal arranging, concert planning, etc. in order to get us ready to compete at the national level.

4:00 PM  BSC 253A

Donghyun Kang
*Fine and Performing Arts*
Faculty Sponsor: Jim Burwinkel

**Imprint**

The self-portrait sculpture is an outcome from exploring ideas of who we are and what makes an individual unique. The initial inspiration came from a fingerprint, as its pattern physically distinguishes a person from others. My attempt was to symbolically indicate that we are imprints of God with different capabilities, life stories, and plans that God has in individuals.

The project gave me an opportunity to acknowledge the importance of testing and eliminating options to create the best solution for the idea I am trying to communicate as an artist.

3:00-5:00 PM  BSC 171-173  Table 09

Sean Powers, SJ
*Fine and Performing Arts*
Faculty Sponsor: Mr. Theodore Wood

**City Streets, Big Truths, and God**

These selected oil paintings and ink drawings exhibit various topics ranging from the gritty phenomena of urban life in St. Louis to larger abstract questions of humanity, faith, and God. As a Jesuit artist, I hope my work leads its viewers to ask deeper questions regarding their role in the development of their society and culture as well as their understanding of God’s active participation in their lives.

3:00-5:00 PM  BSC 171-173  Table 10

Abigail Unverferth
*Fine and Performing Arts*
Faculty Sponsor: Dr. Cathleen Fleck

**Beauty and the Ideal in Cavaliere d’Arpino’s Perseus Rescuing Andromeda**

The painting, Perseus Rescuing Andromeda (c. 1593-94), by Cavaliere d’Arpino, depicts the heroic rescue of Andromeda by Perseus from the sea monster threatening to devour her, as told in the classical myth. This paper analyzes d’Arpino’s painting through the literary and artistic traditions based on the story of Perseus and Andromeda, the idea of heroism as represented in the figure of Perseus, ideas of beauty as seen in the depiction of Andromeda, and the impact of the artist’s use of lapis lazuli on the overall quality of the piece.

3:20 PM  BSC 253A
Unique Femininity in Louise Nevelson’s New Continent
It is common knowledge that the latter half of the 20th century marked a period of immense change for women in America, especially within the art world. The artwork of Louise Nevelson (1899-1988) had a profound impact on the artists of the feminist art movement and thus helped cultivate this change. This paper analyzes one of Nevelson’s seminal sculptures, New Continent (1962), to discover femininity in the artwork, and attempts to answer why this femininity is important within the context of the male-dominated culture that surrounded the work’s creation.

Elizabeth Burns
History
Faculty Sponsor: Silvana Siddali, Ph.D
Cultural Response to the 1849 Cholera Outbreak in St. Louis
This paper examines and analyzes the civilian response to the 1849 cholera epidemic in St. Louis. Rather than focusing on the altruism displayed by the citizenry during this crisis, as prior historians have done, this paper considers the contemporary understanding of public health in order to explain the varied responses to the epidemic. The research for this project involved an extensive examination of the Daily Missouri Republican newspaper along with other archival primary and secondary sources. This paper argues that the public response to the epidemic reveals a new combination of moral and scientific solutions to a deadly health crisis.

Christopher Fidler, Meghan Powers, and Evy Lang
International Business
Faculty Sponsor: Dr. Seung Kim
¡Panamania!: A Guide to Doing Business in Panama
A small country settled by Spanish conquistadors and annexed by Colombia, Panama serves as the link between North and South America. Following the completion of the Panama Canal in 1914, international trade and business was revolutionized as the speed of transporting goods from the Atlantic to the Pacific Oceans increased. With the development of the canal and the influence of the United States, Panama has become an outstanding economy within Latin America. By examining the culture and canal of Panama in the context of international business, we will see how this tiny nation has been heralded as “The Singapore of Latin America”.

Rebecca Austin, Andrew Moses, Donald Green, and Patrick Ettorre
Management
Faculty Sponsor: Anastasios Kaburakis
US Soccer Federation Summer Camp Proposal
The purpose of this project is to develop a comprehensive summer soccer camp plan for the US Soccer Federation, the sport’s governing body. The camps are designed as a grassroots initiative to expand the US Soccer brand and to spark excitement about soccer in local youth. While the camps in this plan are focused in St. Louis, the proposal is created to be expanded nationally.

Cassandra Curran and Rynn Zhou
Marketing
Faculty Sponsor: James Fisher
The Grand Center: Social Media Campaign
Our objective was to carefully construct an effective social media campaign in order to assist the Grand Center to attract more people, especially the students of Saint Louis University, to attend the various events and offering within the Grand Center area. More specifically, to attract the student and establish an active community through the use of social media sites. We established that Grand Center is currently lacking a strategic implementation and execution of social media as a business tool to effectively acquire and retain a target market. Through our recommendations of a focus on fewer, more frequently updated channels including Facebook, Twitter, Blog, and Mobile Applications we created a strategy that will be both effective and simple to implement. Our strategy provides both data, a plan of action and specific recommendations that will be consistent with Grand Center’s image and fulfill their need in attracting more students.

Erika Klotz
Marketing
Faculty Sponsor: James Fisher
Integrated Marketing Strategy for Grand Center
Grand Center has long strived to become more relevant in the city of Saint Louis as a major center for the arts. This integrated marketing strategy was designed to bring more people to the Grand Center area to enjoy all of what it has to offer. We put together specific events that Grand Center could hold as an effort to achieve this overall goal. These art-centered events are based off real events that other cities have held with great success.
**Taylor McNamara and Maria Muldoon**  
*Marketing*  
Faculty Sponsor: James Fisher

**Grand Arts Center Marketing Plan**  
We developed a marketing plan for the Saint Louis Grand Arts Center as part of our Integrated Marketing Communications Course. The Grand Arts Center had been struggling to raise awareness of their neighborhood as much of the city focuses primarily on the Central West End and the Loop. Through our marketing plan, Maria and I put forth our ideas of how the Grand Arts Center can raise awareness amongst college aged individuals and ultimately re-create their image within the city limits.

3:00-5:00 PM  BSC 171-173  Table 42

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**Matt Kelly**  
*Mathematics and Computer Science*  
Faculty Sponsor: David Letscher

**Improving Math on the Web**  
The goal of this project is to build an initial prototype for a user friendly full-scale web-based math test taking application to replace the systems currently in place in the Department of Math and Computer Science. The overall project was split into multiple parts with this part of the project focusing on subsystems that generate a unique math problem for each user and check if the user's answers are correct.

3:00-5:00 PM  BSC 171-173  Table 11

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**Samyuktha Balabhadra**  
*Medical Humanities*  
Faculty Sponsor: Anne Stiles

**Medicine Beyond Science: Solutions for Issues with Health Equity**  
This presentation is meant to identify non-scientific factors, related to culture, that can influence the care of patients. The project considers past cases of healthcare disparities, as explained in literary narratives and from the student researcher’s own experience abroad. The project aims to suggest solutions for preventing future disparities in healthcare.

4:20 PM  BSC 251B

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**Konstantin German**  
*Medical Humanities*  
Faculty Sponsor: Anne Stiles

**Numbness Through The Ages**  
My presentation is an overview of several of the major pharmacological methods of analgesia that have been implemented from early history to the Renaissance. Opium, alcohol, willow bark, hemlock and mandrake are all analgesics that have been heavily relied on by both medical and common man to fight pain. These analgesics have been around for thousands of years and several (opium, alcohol, willow bark) continue to be an important part of modern medicine.

3:40 PM  BSC 251B

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**Jillian Kelly**  
*Medical Humanities*  
Faculty Sponsor: Anne Stiles

**Moral, Social, Cultural, and Economic Changes As a Result of the Black Death in Europe**  
The purpose of this project is to explore the moral, social, economic, and cultural changes that resulted from the Black Death. It is first necessary to provide a view of Medieval Europe in the early 1300s, before the plague had struck Europe. The examination of primary sources such as Pistoia’s “Ordinances for Sanitation in a Time of Mortality”, The Florentine Chronicle, and Giovanni Boccaccio’s Decameron will provide an inside view into what life was like at the onset of the epidemics. Finally, a study of Europe in the years following the Black Death sheds light on the depth of changes.

3:20 PM  BSC 251B

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**Ashley Klein**  
*Medical Humanities*  
Faculty Sponsor: Anne Stiles

**Pregnancy: An Analysis of Women’s Experiences and Bodily Perceptions**  
The purpose of my capstone project is to determine how pregnant women view their pregnancy as a different state of being. I will gain a better understanding of their socially- and culturally-influenced views of the pregnant body and its purpose. My research includes peer-reviewed journal articles, pregnancy narratives, and an integration of my physician shadowing experiences in Obstetrics. Through my findings, I will show that a woman’s culture, values, and beliefs shape her perception of her pregnant body. Therefore, in guiding women throughout pregnancy, physicians must be sensitive to the sociocultural factors that influence women’s perceptions, emotions, and decisions.

4:00 PM  BSC 251B

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**Ryan Town**  
*Medical Humanities*  
Faculty Sponsor: Anne Stiles

**Medical Decision Making at the End of Life**  
This paper seeks to address important issues regarding medical decision making at the end of life. Topics of discussion include: confronting the reality of illness and death, the importance of utility for maximizing patient benefit, and an exploration of the roles of the physician, patient and their loved ones in the decision-making process.

3:00 PM  BSC 251B
**Matt Barton**  
*Modern and Classical Languages*  
Faculty Sponsor: Dr. Evelyn Meyer

**Johann Wolfgang von Goethe: The Man, his Works, and his Cultural Influence**  
Johann Wolfgang von Goethe is renowned as one Germany’s literary geniuses. In my project, I seek to explore Goethe’s life while analyzing how certain aspects of his life were reflected in his works, and how these works influenced the literary world. I will also expand on how some of Goethe’s other hobbies and studies have influenced culture and our understanding in other, non-literary contexts.

4:00 PM  BSC 253D

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**Eric Watson**  
*Nuclear Medicine Technology*  
Faculty Sponsor: Crystal Botkin

**Comparing Vendor Reported CTDI to Actual CTDI in SPECT/CT**

We compared vendor CTDI values to actual CTDI values calculated from phantom studies performed on a SPECT/CT scanner. Phantom studies were performed using a CT body phantom, dosimeter, and ionization chamber probe to measure penetrating x-rays from the CT scan. Data was recorded and actual CTDI values were calculated. Results show that the actual CTDI from the phantom studies is slightly lower, within 20% of reported CTDI (6.5mGy). Further testing should be done to validate accuracy of using CT body phantoms and to investigate relationships between CTDI in phantom studies and actual dose to patients undergoing clinical studies.

3:00-5:00 PM  BSC 171-173  Table 29

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**Robert Krawiecki**  
*Nuclear Medicine Technology*  
Faculty Sponsor: Crystal Botkin

**Added Benefits of SPECT/CT in Non-Malignant Nuclear Medicine Studies**

The purpose of this project is to evaluate the added value of the anatomical information received from adding CT to non-malignant SPECT nuclear medicine studies. 99 SPECT/CT studies done in a single institution were retrospectively reviewed. A log was kept of patient demographics, indication, and study results. These studies were compared to the planar or SPECT only portions of the exam. It was concluded SPECT/CT is better than planar and/or SPECT alone imaging. The increase in physician certainty in lesion localization and increased diagnostic accuracy justifies the minimal increase in radiation exposure to the patient from the CT component.

3:00-5:00 PM  BSC 171-173  Table 30

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**Nick Simpson**  
*Nuclear Medicine Technology*  
Faculty Sponsor: Crystal Botkin

**Added Value of SPECT/CT in Cancer Imaging**

Objective: SPECT/CT has become a more popular in nuclear medicine. There is heightened awareness of the radiation exposure to patients from these exams. The purpose of this study is to evaluate the value of anatomical information from adding CT to SPECT imaging for cancer patients. Methods: 49 SPECT/CT cancer studies done in a single institution were retrospectively reviewed. The SPECT/CT reports and images were compared to the SPECT portions of the exam. Results: SPECT/CT added value of some level to all of the studies reviewed. Conclusion: SPECT/CT is better than SPECT imaging alone and outweighs the risk from further radiation

3:00-5:00 PM  BSC 171-173  Table 28

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**Lauren Butler, Lilian Hartzell, and Kelly Weeden**  
*Nursing*  
Faculty Sponsor: Dr. Rita Wunderlich

**Nursing Care of a Patient Undergoing Induced Hypothermia**

Unintended Injury is the fifth leading cause of death in the United States, of which Traumatic Brain Injuries (TBI) contribute to 30.5%. Induced Hypothermia is used in patients with TBI to reduce increased intracranial pressure (ICP) and prevent brain damage. We created a case study, based on clinical experience, of a 21-year-old Caucasian male who sustained a TBI. The patient’s postoperative ICP and Glasgow Coma Scale score indicated treatment with induced hypothermia. Focusing on fluid and electrolyte imbalances, we conduct a research review and discuss evidence-based nursing care of patients with TBI who are treated using induced hypothermia.

3:00-5:00 PM  BSC 171-173  Table 34

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**Michael Indergaard and Zachary Fox**  
*Nursing*  
Faculty Sponsor: Rita Wunderlich

**Our Experience at the AACN Student Policy Summit**

The AACN Student Policy Summit is a three-day conference for nursing students that is focused on nursing policy, research, and advocacy. Our purpose for participation was to gain knowledge of the policy processes that govern our country. Through interaction with our elected officials, we advocated on behalf of the nursing profession and nursing interests in research, and expanding an advanced practice nurse’s role in the primary care setting through nurse-managed health clinics. Through our participation in this summit, we gained the strength and confidence in our advocacy duties as a nursing professional that can enhance our careers as nursing leaders.

3:00-5:00 PM  BSC 171-173  Table 35
The Role of Fenugreek in Culinary Arts

Fenugreek is an ancient herb used scarcely in cooking today. This project aims to explore the historic and common uses of fenugreek in culinary applications. Thorough research revealed the plant source of the fenugreek herb, historical usage, authentic recipes with the herb, recommendations for use, and the nutritional and medicinal characteristics of the herb. As part of the project fenugreek was used to create a traditional dish in order to familiarize others with fenugreeks’ aroma and taste. The outcome of this project is an understanding of why fenugreek is beneficial and how it can be used successfully in cooking.

3:00-5:00 PM  BSC 171-173  Table 03

Decadent Chocolate Raspberry Tower

This dessert was created in order to capture the decadence of flourless chocolate cake, while improving the nutritional analysis of the dessert. Modifications, including substituting pumpkin for butter and meringue for whipped cream, were applied to an original recipe to produce this unique, nutritionally superior product which maintains the richness, appearance and consumer satisfaction of the original, while significantly reducing calories, fat and cholesterol and increasing fiber. This dessert has the potential to compete with the most popular, traditional desserts enjoyed by diners. Additionally, this product uses local eggs, dairy, nuts and berries to support local farmers.

3:20 PM  BSC 253B

A Renewed Look at the Mind-Body Dilemma

This project explores the mind-body dilemma using primarily the works of neurologist and writer Oliver Sacks. It advocates for a more integrated description of the relationship between the mind and body that accounts for the experiences of the whole person rather than solely fragmented examinations of the brain or the environment. Many of the current views in philosophy of mind and research in neuroscience cannot be adequately applied to understanding the experience of the embodied human being. Through his patient narratives, Dr. Sacks demonstrates a methodology fully open to the splendor of the human mind and personal experience.

3:40 PM  BSC 254

Second First Language: Acquisition as a Practice & What Learning Nepali from Urban Refugees Has to do with MacIntyrian Political Prescriptions

In my senior inquiry paper, "Second First Language' Acquisition as a Practice & What Learning Nepali from Urban Refugees Has to do with MacIntyrian Political Prescriptions," I introduce contemporary Aristotelian Alaisdair MacIntyre’s conception of a "practice" and consider whether my experience learning Nepali with recently resettled refugees in South City can legitimately be called a MacIntyrian practice. I will philosophically situate the relationships I’ve formed with refugee families over the past three years and explore alternative possibilities for “foreign” language instruction. Finally, I will ask whether certain types of multicultural encounters respond to MacIntyre’s call for philosophically informed political engagement.

4:00 PM  BSC 254
Thomas Piolata  
*Philosophy*
Faculty Sponsor: Kent Staley, PhD  
**Being as Being-with: A Relational Interpretation of David Bohm’s Worldview**  
This project articulates the physics and contributes to the metaphysics of quantum physicist David Bohm’s approach to the quantum theory. It consists of three sections. First, I articulate the physics of Bohm’s approach to the quantum theory. Second, I show how Bohm’s theory of the “Implicate Order,” in which each part of the universe internally relates to every other part, emerges out of this physical system. Third, I develop the Implicate Order in light of a metaphysics of relations wherein I intend to show that what is constitutes a relational structure. Thus, I propose that at the fundamental level of being lies relationship.

4:20 PM   BSC 254

Kristen Bartheld and Rachel Grimmer  
*Physical Therapy*
Faculty Sponsor: Chris Sebelski  
**Saint Louis University Dance Marathon**  
Saint Louis University Dance Marathon (SLUDM) was founded by two SLU students, Kristen Bartheld and Rachel Grimmer, to raise awareness and funds for Children’s Miracle Network of Greater St. Louis, which aids St. Louis Children’s Hospital and SSM Cardinal Glennon Children’s Medical Center. The SLUDM Executive Board planned family and fundraising events, while promoting and organizing the inaugural 12-hour Dance Marathon. As the premier event of 2011, Dance Marathon’s success culminated with over 300 participants whose fundraising efforts surpassed $30,000. SLUDM continues to provide students with an opportunity for leadership development and insight into the pediatric care and needs of St. Louis.

3:00 PM   BSC 253B

Lindsay Noesen  
*Physical Therapy*
Faculty Sponsor: Elaine Wilder, PhD, PT  
**Physical Therapy as a Ministry**  
Being a part of the SLU community and the Physical Therapy Department is an opportunity to explore one’s passions and to incorporate them into being a student at SLU, a physical therapist, and a global citizen. Through my experiences with the Micah Program, various faith and service communities, Campus Ministry, especially as this year’s Social Justice Intern, my semester in El Salvador, and a student in the PT Department, I have been able to discover my own gifts and challenges while envisioning what it will mean to be a physical therapist and a woman dedicated to faith and social justice.

3:00-5:00 PM   BSC 171-173   Table 02

Nicholas Weingartner  
*Physics*
Faculty Sponsor: William Thacker  
**Fundamentals of Bohmian Mechanics As Governing Dynamics**  
Quantum Mechanics is the most successful field of physics in history, and is at the core of the dynamics of the universe. Despite its successes, however, it presents conceptual challenges and relies on assumptions which are at best, counter-intuitive. In applying a realist interpretation of QM put forth by David Bohm in 1952, we sought to understand the fundamentals of this interpretation and apply them to radiation processes in the hydrogen atom. We also applied Bohm’s dynamics to a quantized electromagnetic field to see if it predicts “photons” (localized packets of electromagnetic field/energy). Final results are pending.

3:20 PM   BSC 254

Liz Ramsey  
*Political Science*
Faculty Sponsor: Dr. Matthew Hall  
**Local Control of the St. Louis Police Department: A Geographical Issue?**  
In 1861, control of the St. Louis Police Department was taken away from locals and given to the State of Missouri, more specifically the Governor. Today, St. Louis is one of only two cities that do not control their own police department. Numerous attempts have been made to restore local control to the St. Louis area, but to no avail. This project looks at the correlation between proximity to St. Louis, a feeling of accountability, and a state representative’s vote on local control. There is an statistically significant relationship between the two; the farther from St. Louis a representative, the more likely they are to vote for local control of the St. Louis Police Department.

4:40 PM   BSC 253D

Christina Ann Simpson  
*Political Science*
Faculty Sponsor: Ellen Carnaghan and Christopher Witko  
**Factors Underlying the Different Levels of Environmental Policy in the U.S. and EU**  
The paper examines why the European Union is a leader in attempts to protect the environment while the United States maintains comparatively limited and ineffective policies. Obstacles such as an anti-statist legacy, the federalist structure of government, low public interest, powerful interest groups, and polarized political parties bind American efforts. The EU benefits from higher public support for pro-environment movements, support from politicians, and the institutionalization of the precautionary principle in social democratic governance structures. If the U.S. does adopt more proactive environmental measures, they will likely be more decentralized than those in the EU.

3:00-5:00 PM   BSC 171-173   Table 15
Jasmina Vajzovic  
Political Science  
Faculty Sponsor: Dr. Ellen Carnaghan

Transitions from Communism in the Yugoslav States  
I examine factors that affected transitions from communism in five republics of former Yugoslavia, focusing on factors of geography, imperial legacy, and ethnic fragmentation. These republics were similar in many respects, but their transition paths were different. For example, each was a republic of the former Yugoslavia, existing under similar laws and rulers for a time. However, some republics succeeded in achieving democracy, while others did not fare as well. In addition to geography, imperial legacy, and ethnic fragmentation, I find that other factors, particularly the role of political elites, were also important in the success of transitions.

3:00-5:00 PM  BSC 171-173  Table 16

Katherine Anderson, Kathleen Cadigan, Jasna Dubo, and Liz Washam  
Pre-Law  
Faculty Sponsor: Janet O’Hallaron and Mike Skinner

Mock Trial of the case of State of Midlands v. Danny Dawson  
State of Midlands v. Danny Dawson is a criminal case where Danny Dawson is on trial for the murder of Vanessa Sullivan in a drunk driving accident. On September 24th, 2010, Danny was driving a white impala down Canyon Rd at 12:40am when she lost control of the car, causing it to go off the road and hit a utility pole and a tree, killing Vanessa Sullivan who was sitting in the front passenger seat. Jasna Dubo will be a directing attorney for the state of Midlands directing Liz Washam as Officer Ryan Foster, who was the first responding officer to the scene of the crash. Katie Anderson will be a crossing attorney for the state, crossing Kathleen Cadigan, as Danny Dawson, the defendant.

3:00 PM  BSC 256

Alisha Caldwell, Kathryn Newcomb, Alexis Vanstone, Nino Przulj, Blake Kocian, and Will Clark  
Pre-Law  
Faculty Sponsor: Janet O’Hallaron

Learning through Serving: Reflections on Legal Internships  
Students will discuss and reflect on what they have learned in their legal internship experience. Students will discuss their wide range of legal experiences which include working with pro bono attorneys predominantly in low income populations, advocacy organizations such as the ACLU, the federal court system, and law firms focusing on sport law or estates and trusts. Students will discuss the relationship between their academic understanding of law and its practical application.

3:20 PM  BSC 256

Melissa Keith, Jessica Bertrand, and Mia Baeza  
Psychology  
Faculty Sponsor: Dr. Kevin Fox

Goal Specificity and Creativity  
Creativity drives performance and marketability in organizations and leaders of these organizations are increasingly interested in the topic of promoting creativity in the workplace. Previous research suggests that goal setting has positive impacts on creative outcomes; however, research on this subject is limited. In particular, goal specificity has been highly neglected in creativity research thus far. Researchers are generally in consensus that productivity goals should be specific and moderately difficult, but what about goals for creative tasks? This study examined how goal specificity affects information gathering and creativity. Participants were asked to come up with a creative proposal for a new, modern Sanford and Son episode. It was expected that participants in the broad goal condition would generate more novel responses than the participants in the specific goal condition.

3:00-5:00 PM  BSC 171-173  Table 17

Sara Tepe  
Psychology  
Faculty Sponsor: Dr. Lisa Willoughby

Improving Quality of Life in Skilled Nursing Facilities using Occupational Health Perspectives  
This poster explores improving the quality of life of dementia residents in skilled nursing facilities by modifying occupational health factors of nursing staff. Cardinal Ritter’s Mary, Queen, and Mother Center is described by their mission, population composition, provided services, and my responsibilities as a volunteer. The goal of this project is to alleviate caregiver burden by modifying occupational health factors to ultimately improve resident-staff interactions. Research is presented discussing the detrimental effects of caregiver burden and the negative reactions it elicits in residents. Both parties will benefit from a proposed intervention that is tailored to Cardinal Ritter but applicable to any nursing facility that addresses specific problems that were observed in my practicum as well as in empirical research.

3:00-5:00 PM  BSC 171-173  Table 18
**Ryan Town and Elizabeth Hilvert**  
*Psychology*  
Faculty Sponsor: Dr. Chris Conway

**Electrophysiological Correlates of Visual Implicit Sequence Learning and Natural Language Processing**

Sequence learning is a form of implicit learning, which allows people to detect patterns from their environment in an automatic, unconscious fashion. Sequence learning abilities seem to be vital for the development and learning of linguistic knowledge, but there is little direct neural evidence supporting such a claim. In this study, adults participated in a visual sequence learning task containing an artificial grammar as well as a natural language processing task with sentences containing syntactic violations. Both tasks were designed to cause violations in participants’ expectations of items in a series. During both tasks, event-related potential (ERP) recordings were measured to examine the underlying neurophysiological responses. Our findings indicate that visual sequence learning and natural language processing share similar neurocognitive mechanisms.

3:00–5:00 PM  BSC 171-173  Table 19

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**Monica Kao**  
*Public Health*  
Faculty Sponsor: Dr. Alan Zelicoff

**Assessing physician knowledge of molecular diagnostics and implications for physician education: The example of hepatitis C**

Hepatitis C is a bloodborne viral infection that is the leading contributor to chronic liver disease and a major threat to the health status of populations worldwide. Despite the development of novel genomic analyses that guide optimal management, studies indicate that physicians may fail to properly diagnose, treat, or refer patients infected with chronic hepatitis C. This study assesses current knowledge of area physicians regarding the identification and management of hepatitis C. Findings from this study’s survey will help identify tailored initiatives to improve physician understanding of screening and gene-based tests for diagnosis and management of Hepatitis C.

3:00–5:00 PM  BSC 171-173  Table 37

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**Meghan Jendusa**  
*Public Policy*  
Faculty Sponsor: Tomey Allan

**Neighbors in Need: Measuring the Quality of Life in North St. Louis**

Under the leadership of Dr. Norm White, a field study is being conducted in Ward 4 of St. Louis City inventorying the housing conditions and levels of decay affecting living standards in ArcGIS and matching our findings with social indicators such as crime rates, education and employment rates, the count of retail and commercial properties in the ward, etc. to measure the overall quality of life to bring attention and change to the historic neighborhoods.

3:00–5:00 PM  BSC 171-173  Table 50

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**Ryan Mueller**  
*Radiation Therapy*  
Faculty Sponsor: Sherry Bicklein

**SIR-Spheres® Microspheres**

SIR-Spheres® Microspheres are a relatively new radiation therapy treatment modality by which liver cancer, both primary and metastatic, is treated. The goal of radiation therapy is to eradicate tumor cells, while sparing normal tissue as much as possible. Microspheres are exceptionally adept at this because they are injected into the blood vessel which provides blood supply to the liver tumors, where they become lodged in the smaller vessels of the tumor. This treatment can provide up to 40% more radiation to the tumor than conventional external beam radiation with minimal dose to the healthy liver tissue.

3:00–5:00 PM  BSC 171-173  Table 33

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**Jessica Noble**  
*Radiation Therapy*  
Faculty Sponsor: Sherry Bicklein

**Visicoil™ Linear Fiducial Marker What You See is What You Treat**

Advances in imaging and treatment devices have improved radiation therapy treatments and patient outcomes. Visualizing a tumor when developing a treatment plan is as important as visualizing a tumor for accurate daily set-ups. Linear fiducial markers allow for better visibility of the tumor, which results in increased dose to the tumor and tighter margins to surrounding critical structures. Organ movement and related tumor motion during radiation therapy treatment is a constant challenge for oncologists aiming to deliver quality treatments. Linear fiducial markers, which aid in visualizing the tumor and normal structures surrounding the tumor, should be utilized in daily radiation therapy practice which will result in maximizing treatment delivery accuracy. Visicoil markers reduce the subjectivity of daily patient positioning.

3:00–5:00 PM  BSC 171-173  Table 32

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**Tracey Skala**  
*Radiation Therapy*  
Faculty Sponsor: Sherry Bicklein

**Proton Therapy**

The purpose of this poster is to educate the public about the emerging cancer treatment option of proton therapy. The interest in proton therapy is attributed to its accuracy in treatment of cancer with minimal side effects compared to conventional x-ray radiation therapy. Proton therapy is a form of radiation therapy that delivers dose to the target while sparing healthy tissue and avoiding critical structures. The point where the highest energy release occurs is the “Bragg peak”. A physician can designate the Bragg peak’s location, causing the most damage to the targeted tumor cells. The proton beam can be contoured to conform to the shape of the tumor using modifiers. It is most effective in treatment of localized cancers, or cancers that have not spread to other parts of the body. With the advancement in research, the future for proton therapy looks promising.

3:00–5:00 PM  BSC 171-173  Table 31
Hannah Beaty  
*Service Leadership Certificate Program*  
Faculty Sponsor: Rob Boyle

**Reflections on Service Leadership and Susan G. Komen**  
The Service Leadership Certificate Program in the John Cook School of Business offered me the opportunity to continue my passion for helping others while honing my leadership abilities. This presentation will reflect on what I learned about myself and service leadership while interning at Susan G. Komen as well as the impact the Service Leadership Certificate had on my development as a servant leader.

4:00 PM  BSC 253B

Alexandra Brownfield  
*Social Work*  
Faculty Sponsor: Emily McGinnis

**Keys to Success**  
Keys to Success focuses on the low graduation rate of minority students at urban higher education institutions. The social justice goal is to increase opportunities that support and empower minority students to succeed at urban higher education institutions. The social justice goal objectives are to identify the target populations needs through research and needs assessment; develop a student resource and informational forum; establish a student community service and mentor program; compose an advocacy letter and guide in support of federal Pell Grant funding; and connect students with local legislators’ offices to advocate for continued federal Pell Grant funding.

3:00-5:00 PM  BSC 171-173  Table 44

Mercy Kamau  
*Social Work*  
Faculty Sponsor: Emily McGinnis

**Domestic Violence Awareness through Education**  
My project dealt with the problem of lack of awareness of domestic violence. I sought to address this problem through the use of education. Education leads to increased awareness which is key in prevention. My social justice goal therefore was to increase awareness of domestic violence through increased education. I accomplished this goal through a set of five tasks. The various tasks focused on macro, micro, and meso levels of social work practice. The tasks included creating check-lists, handouts, and writing articles for staff members; developing and co-facilitating group class for clients; and lobbying and speaking to local legislators about domestic violence. All the tasks were essential in increasing awareness about domestic violence.

3:00-5:00 PM  BSC 171-173  Table 45

Rosemary Laughlin  
*Social Work*  
Faculty Sponsor: Emily McGinnis

**Advocacy on Behalf of Latinos in St. Louis**  
Social Justice goal is to promote a welcoming environment for Latino immigrants and to challenge the contemporary discriminatory systems of oppression through 5 advocacy strategies. I will challenge workplace oppression, racial profiling and discriminatory legislation targeted toward the Latino immigrant community. Sweat-Free St. Louis Resolution will ensure city apparel suppliers are upholding labor standards. A racial profiling task force is assessing ways to end police discrimination toward Latinos. Legislation is challenged through Advocacy days and awareness. Finally community building and education will help break down biases.

3:00-5:00 PM  BSC 171-173  Table 46

Anele Doumanian  
*Sociology and Criminal Justice*  
Faculty Sponsor: Dr. Scott Harris

**An Evaluation of the Reality of the American Dream and the Analysis of the Myth of Meritocracy**  
Many Americans believe that our country functions primarily on a meritocracy model—that is, individual merit renders success in life. Innate in the American Dream is the notion that no matter where you come from in life, you have an equal chance to get ahead if you work hard enough. In this paper I will challenge the myth of meritocracy and examine social factors that shape people’s socio-economic standing in American society. This discussion will examine how elements such as inheritance, social and cultural capital, and discrimination factor into an individual’s socio-economic standing.

3:40 PM  BSC 253D

Timothy Janczewski and Joseph Wotawa, SJ  
*Sociology and Criminal Justice*  
Faculty Sponsor: Joel Jennings

**Latinos and Citizenship: Spaces of Immigration, Politics and Media Representation**  
As the Latino population continues to grow in size and depth in the United States, new geographical spaces of immigration and immigration politics are emerging. Reaching beyond traditional gateway and destination cities, the politics of immigration and the practice of citizenship by Latinos enter into places typically not associated with citizenship. Specifically, our review of the literature explores how labor organizations, the home and social networking serve as arenas for the practice of. The clearest example of the increasing importance of these new spaces of citizenship is that of the 2006 wave of protests advocating immigration reform.

3:20 PM  BSC 253D
Jennifer Kathleen Adkins
Theological Studies
Faculty Sponsor: Fr. Meconi, SJ

The Theology of Cain's Mark: Sr. Helen Prejean and Christian Theology on the Death Penalty
By examining the theology of capital punishment, this project unites the history of insight and debate on this form of civil retribution with Saint Louis University's endorsement of Sister Helen Prejean's call for clemency for Reggie Clemons. To show why Sr. Prejean is in line with the best of Christian theology, this presentation begins by examining scripture on the death penalty, then by looking at the tradition of the Catholic Church in the various ways the scriptures have been understood and applied and then how the 5 Dimensions of the SLU Experience instantiate very concretely the call for clemency running throughout the Christian tradition.

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4:00 PM
BSC 251A

* Indicates student is an honor student in the Honors Program
INDEX OF PARTICIPANTS

Jessica Rozycki  
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Lauren Schuster*  
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Caroline Seroka*  
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Brandon Shelby  
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Nick Simpson  
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Tracey Skala  
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Ignacio Soriano  
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Matthew Stalley  
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Jessica Stukel  
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Sara Tepe  
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Ryan Town  
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Miranda Turlin  
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Abigail Unverferth*  
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Jasmina Vajzovic*  
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Lucy Vandermolen  
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Leah Vandiver  
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Alexis Vanstone  
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Umberto Paolo Villa  
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Pablo Villarcorta  
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<td>Amy Wall</td>
<td>Fine and Performing Arts</td>
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<td>Liz Washam</td>
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<td>Eric Watson</td>
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<td>Andrea Webber</td>
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<td>Matthew Welz</td>
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<td>Hao Zhao</td>
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