

Thank You

The poster features an aerial view of a university building with a large, multi-story structure and a courtyard. The text is overlaid on this image. The main title "FACULTY DEVELOPMENT LEAVE SHOWCASE" is in large, bold, orange letters. Below it, the location "DUC BALLROOM" and the date and time "THURSDAY, APRIL 19, 2018 | 12-1PM" are in smaller, white, sans-serif font. At the bottom, a solid orange bar contains the text "Showcasing outcomes from Pacific faculty's most recent development leaves" in white, sans-serif font.

**FACULTY
DEVELOPMENT
LEAVE
SHOWCASE**

DUC BALLROOM

THURSDAY, APRIL 19, 2018 | 12-1PM

Showcasing outcomes from Pacific faculty's most recent development leaves

Cathy Peterson - Thomas J. Long School of Pharmacy and Health Sciences

Neuroscience: Fundamentals for Rehabilitation, 5th Edition

Dr. Peterson coauthored three chapters on the Motor System: 13. Motor Neurons and Spinal Motor Function; 15. The Cerebellum and the Spinocerebellar Pathways; and 16. Basal Ganglia. In addition, Dr. Peterson created reading objectives and developed diagnostic clinical reasoning cases with guiding questions structured throughout 23 of 29 chapters. A second objective for her leave was to accrue enough hours of experience as a seating and mobility expert to enable her to sit for the Assistive Technology Professional certification through RESNA, the Rehabilitation Engineering and Assistive Technology Society of North America. She participated in three seating distributions with Hope Haven West: Ecuador, Peru, and Vietnam and earned her ATP credential in 2017.

Chris Sablynski— Eberhardt School of Business

Job Embeddedness and Employee Retention: Industry Differences

The present study seeks to provide evidence to advance both management theory and practical application regarding the employee retention construct known as job embeddedness. Job embeddedness represents the combined affective and non-affective factors for staying with one's employer. It includes both on and off-the-job fit, links, and sacrifice and is a strong predictor of voluntary employee turnover. To date, there has been little attention placed on industry specific differences across the six sub-dimensions of job embeddedness. In addition to the quantitative responses captured to compare these differences, the present work also explores qualitative reasons for staying across three specific industry types: healthcare, tech, and public sector.

In a study of $n = 448$ full time workers, differences were found in the ways employees report being embedded based on industry type. As hypothesized, several of the six sub-dimensions of job embeddedness (e.g., on and off-the-job fit, links, and sacrifice) were more or less important based on the industry employees worked in. In addition, qualitative responses as to why employees remained with their employer were also collected and analyzed. This study represents one of the first efforts to explore the six sub-dimensions of job embeddedness as they relate to three different industry types. Additional contributions to both theory and practice as well as future research opportunities are discussed.

Mary Kay Camarillo - School of Engineering and Computer Science

Status of Well Stimulation Practices in California Following Implementation of Senate Bill No. 4 Regulations

With passage of California Senate Bill No. 4 – Well Stimulation: Oil and Gas (SB-4), oil and gas producers must now apply for permits before conducting a well stimulation and must report detailed information within 60 days of a well stimulation treatment. Reporting of water and chemical use is now mandated as well as reporting of water quality data for the fluids returned during production (flowback and produced water). In this study, we analyzed well stimulation information reported by oil and gas producers in California between May 5, 2015 and June 29, 2016. The main study objective was to describe the current state of well stimulation in California. Further objectives were to evaluate well stimulation in the context of the SB-4 Scientific Study and compare data collected under voluntary and mandatory reporting regimes. Major findings were that new chemicals are still being disclosed and data gaps exist for many of the chemicals used. Information collected under the new regulations compared favorably with data collected through the industry sponsored voluntary chemical registry. Variability exists in well stimulation practices and is related to geology and to producer and service company practices. The recovered water data sets reveal much about the water quality of produced water in California although compounds indicative of stimulation fluids were not identified.

Cherian Mathews - School of Engineering and Computer Science

Activities that enhance the curriculum and prepare students for success.

During 2010-2011 Dr. Mathews was the PI for a Department of Energy (DOE) sub-award to “Revitalize Electric Power Engineering Education by State-of-the-Art Laboratories”. The grant enabled acquisition of new lab equipment and led over a few years to the offering of a new course in Power Electronics, enhancements to a Power Systems course, and offering of a Control Systems course after a long hiatus. The Spring 2016 sabbatical led to the publication and presentation of two papers at American Society of Engineering Education (ASEE) conferences. The first paper reviewed curricular enhancements resulting from the DOE award and surveyed alumni who had benefited from these new / enhanced courses. Fifteen responding alumni, employed in Electric Power / Control fields, provided very positive feedback on the relevance of the new power / controls courses to their careers. The second paper discussed use of the grant-acquired lab equipment to provide meaningful hardware experience in a control systems course. The sabbatical also enabled Dr. Mathews to attend a Siemens training course on programmable logic controllers (PLCs), to acquire a few PLC units, and to introduce students to PLCs in several courses. PLCs are widely used in local industries (e.g., at Gallo for automation of their wine lines, at the Department of Water Resources to control their pumps) but were not reflected in our curriculum. The PLC work has already shown promise in opening up employment avenues to students; a student graduating this semester already had multiple job interviews for PLC-related careers.

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Mike Doherty - School of Engineering and Computer Science

Applications of Motion Capture Technology and Motion Analysis Methodologies

Professor Doherty used his FDL to investigate applications of 3D motion capture data describing human motion. The three primary focuses of this investigation were (1) application of machine learning to classify and segment human motion using Laban/Bartenieff classifications, (2) extraction of joint extension limits to support physical therapy research, and (3) generation of real-time animation from live actors to support theatrical productions.

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John Mayberry - College of the Pacific

Performance Analytics of Athletes at Pacific

Developing practical, reliable, and valid methods for monitoring athlete wellness and injury risk is an important goal for trainers, athletes, and coaches. Many professional and collegiate teams worldwide (include our teams at Pacific) employ Sparta Performance Science's patented "LED" scan as a tool in this pursuit. This scan involves averaging ground reaction forces from a series of six countermovement jumps and these measurements are in turn used to assess an athlete's injury risk, identify fatigue, and assign appropriate targeted workouts to athletes based on scan deficiencies. During my leave, I collaborated with Sparta Performance Science and Pacific Athletics on several projects including an analysis of the effect of different workouts on scan measurements, correlations between scan measurements and elbow injury risk in MLB pitchers, correlations between scan measurements and performance in Pacific pitchers, and the development of a related balance test for lower and upper body stability. I will be presenting some graphs and statistics to summarize the results of these various projects.

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Sarah Mathis - College of the Pacific

Title: An Ethnographic Study of Parenting Behaviors in Santa Cruz, CA

For many women, the birth or adoption of a child represents a moment of fundamental transition into a new status as a mother. Women find themselves faced with numerous decisions, such as where to give birth, how to feed and play with their children, and how to protect their children's health. In many wealthy, politically liberal communities in the United States, there is a cultural trend among women of higher class status to make decisions based on an idea of what constitutes "natural" processes – home birth, cloth-diapering, extended breastfeeding, delaying or refusing vaccinations, playing with wooden toys and many others. My research found that mothers who did not vaccinate believed that they had done more scientific research than those who did vaccinate and that they were protecting the health of their infants. Their decisions to not vaccinate were reinforced by the online communities that they engaged with, including secret Facebook groups, as well as real-world mother's groups often formed around natural birthing centers. Midwives and doulas also quietly reinforced these decisions by new mothers to go against medical advice. While narratives of illness based on vaccination did reference autism, this was not the primary concern—autoimmune diseases and contamination with heavy metals were more widely cited as fears from vaccination. Vaccines were also seen as interfering with the natural strengthening of the immune system from fighting off childhood diseases. This research collected these narratives and many others examining decision-making processes and how these decisions were justified and reinforced.

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Rachelle Hackett - Benerd School of Education

Metacognitive Scaffolding to Develop Critical Consumers of Research: A Contribution to the Scholarship of Teaching & Learning

One important student learning objective (SLO) of programs in applied disciplines is developing the ability to inform one's professional practice by reading published research critically, evaluating the validity of claims by unpacking the methodology/statistical analyses employed. Continuing to do so after a course concludes depends, however, on students' perceptions of how relevant research is and self-efficacious they feel as independent, critical consumers of research. Pedagogy designed to address this SLO among graduate-level students in education is presented along with samples of student work and student reactions to such assignments. A key component involves students annotating journal articles with comments containing their evaluations of methodology (strengths / weaknesses / confusing parts) and relevance (personal / professional) in a structured system designed to induce metacognitive reflection.

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Jeffrey Hole - College of the Pacific

Cunning Inventions and the Force of Law

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Ahmed Kanna - College of the Pacific

The Relationship Between Military Theory and Urban Theory

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Teresa Bergman - College of the Pacific

Commemoration of Women in the U.S.: Remembering Women in Public Space-

The late twentieth and early twenty-first centuries were a turning point for the commemoration of American women outside the home. The National Park Service dedicated four new memorials to women—Women in the Military Service for America Memorial, in Arlington, Virginia; Women's Rights National Historic Park, in Seneca Falls, New York; Vietnam Veterans Women's Memorial, in Washington, D.C.; and the Rosie the Riveter/World War II Home Front National Historical Park, in Richmond, California—as well as the Eleanor Roosevelt Statue in the Franklin Delano Roosevelt Memorial in the National Mall. Additionally, in 1997, the Portrait Monument of Susan B. Anthony, Lucretia Mott, and Elizabeth Cady Stanton was moved from the Capitol basement to the first floor Rotunda. These national memorials signaled a significant moment in the changing representation and definitions of how U.S. women's patriotism, citizenship, and nationalism were commemorated. These additions are the first steps in bringing women into the U.S. historical narrative. This book analyzes how these memorials mostly follow traditional commemorative practices, and one result is missed opportunities for recognizing U.S. women's complicated roles in U.S. history as citizens and patriots.

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Vyacheslav Samoshin - College of the Pacific

Research on Design of a New Type of Molecular Triggers for Pharmaceutical and Technological Applications

The major direction of my research is a design of smart materials for “liposomes” – nano-vesicles for targeted drug delivery. During my leave, several research articles based on previous results have been written and published. The results have been also reported at National and International meetings. A new area of studies has been initiated: a new type of molecular switches based on the structure of amide derivatives, which are able to change their shape, size and properties under purposeful change of conditions. The first compounds of this type have been designed, synthesized and studied. The research was performed with essential participation of graduate and undergraduate students who co-authored publications and made presentations at the meetings.

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Jim Mansoor - Thomas J. Long School of Pharmacy & Health Sciences

Using Exhaled Breath to Evaluate the Long-Term Mechanisms of Early-Life Arsenic Exposure

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Hector Estrada - School of Engineering & Computer Science

Earthquake Engineering

Material developed over my fall 2016 FDL formed the basis for a new textbook entitled Introduction to Earthquake Engineering. The book is intended to serve as a textbook for a first course in earthquake engineering; but, also appeals to a broader audience of industry practitioners in structural engineering. The textbook is particularly useful as a test preparation guide for the California Seismic Principles special exam, which is a required exam to become a licensed Professional Civil Engineer in California. The textbook covers three main areas in the analysis and design of structural systems subjected to seismic loading: basic seismology, basic structural dynamics, and code-based calculations used to determine seismic loads from an equivalent static method and a dynamics-based method. The textbook will provide students with the skills needed to determine seismic effects on structural systems and is unique in that it combines fundamentals of structural dynamics with the latest code specifications. I also developed several resources for instructors and students, specifically, extensive computer programs in MATLAB, PowerPoint presentations, and a solutions manual.

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Ann Miller - College of the Pacific

Unaccompanied Violin Works by Living Composers

During my leave, I studied and performed Karim Al-Zand’s Capriccios, Richard Einhorn’s Maxwell’s Demon No. 4, and Michael Nyman’s Zoo Caprices. I traveled to Houston to play the Capriccios for Karim Al-Zand, New York City to play for Richard Einhorn, and Baltimore to study Michael Nyman’s Zoo Caprices with violinist Jonathan Carney, concertmaster of the Baltimore Symphony and former member of Michael Nyman’s ensemble. By playing for the composers and Jonathan Carney, I was able to gain insights into the composers’ intent, which in turn informed my own performance of the works. During the summer of 2017, I continued to practice the works and to perform them as much as possible in order to polish my interpretation of them. In September of 2017, I performed all three works, in addition to Mozart’s Sonata for Piano and Violin in E Minor, K. 304 and Bartók’s Rhapsody No. 1, on a Resident Artist Recital at Pacific. (Videos of the recital can be found here: <https://youtu.be/cB2wyzvroBo>, <https://youtu.be/Tyzcd49Qjd8>)

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Cynthia Ostberg - College of the Pacific

Attitudinal Values of the Modern Justices of the Supreme Court of Canada, 2005-17

This study uses theories of strategic behaviour, leadership change and feminist theory to examine patterns of judicial activity by the three post-Charter chief justices. Building on prior scholarship, we use various methods to examine patterns of majority voting, dissenting activity, opinion writing, ideological voting, and panel size across the 1973-2014 period. While Chief Justice Lamer and Dickson exhibited clear patterns of task leadership, we find strong evidence of strategic change by Chief Justice McLachlin after her promotion to chief. She moved from a prolific dissenter as an associate justice to a chief that exhibited behaviour of both a task and social leader, which scholars see as highly uncommon. Her efforts to solidify her central role as a collegial leader within her own court are remarkable, and took place during a period of increasing panel sizes and a shrinking court docket.

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Stefanie Naumann - Eberhardt School of Business

When Do Structural Holes in Employees’ Networks Improve Their Radical Creativity? A Moderated Mediation Model

The study showed that characteristics of R&D employees’ team knowledge networks influence their acquired diversified knowledge from the team, which is critical to creativity. The results based on 558 members of 92 R&D teams demonstrated that, in order to benefit from their broker position in acquiring diversified knowledge, R&D employees should maintain their tie strength toward the team members with whom they are connected.

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Dan Wadhvani - Eberhardt School of Business**Innovation and Evolution for Personal Finance in Comparative Perspective**

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Marie Lee - College of the Pacific**Dawn of the Butterflies: The Last of Kam Women Artisans in Dimen**

Deep in the fir woods of southwestern China, in a village called Dimen, live several women who are masters of many cultural arts. Following the centuries-old lifestyle of their ancestors, they are the living repositories of their civilization. Marie Anna Lee's apprenticeship with the women resulted in the writing of the *Kam Women Artisans of China: Dawn of the Butterflies* manuscript, published by Cambridge Scholars Publishing in 2018. The 290-page book contains Lee's 64 technical illustrations and countless original photographs.

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Xiaoling Li - Thomas J. Long School of Pharmacy & Health Sciences**Scholarly Writing and Initiating New Research Projects and Directions**

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Martin Camps - College of the Pacific**Corrections on the Writings of Enrique Serna (Edition) and Travel Narratives in Latin America**

I dedicated my FDL to finish a book edition of essays on the writings of Enrique Serna. The book *La sonrisa afilada: Enrique Serna ante la crítica* [A Smile Sharp as a Blade: The Writings of Enrique Serna] was published this year by the National Autonomous University of Mexico and I presented it at the International Book Fair in Mexico City. Enrique Serna is a poignant observer of national reality and history and owner of a ruthless and incisive humor; Enrique Serna is one of the most recognized Mexican writers of contemporary literature. This volume covers his work from different critical perspectives and offers a broad panorama that attempts to open paths to initiate a dialogue with his work on dark humor and politically incorrect discourse that constitutes a transgression strategy. The book is divided into two parts, nine academic essays by US and Mexican literary specialists, including my own essay on his critique to intellectual arrogance, in addition to thirteen reviews previously published by writers of different generations. These texts aim to continue the reflection on one of our fundamental authors and his particular razor-sharp narrative universe.

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Ken Hughes - School of Engineering & Computer Science**Course Development-Microcontrollers**

The design of systems which use microcontrollers is an important component of modern society. The existence of thousands of different microcontrollers and the rapid pace of change means very few good texts exist which cover the details of specific devices. This FDL focused on developing materials for a "flipped lecture" organization of ECPE 172, creating videos discussing general microcontroller principles and specific examples for the devices and tools used in our course. The flipped delivery allows more time in class for students to perform activities to reinforce concepts.

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Chi-Wook Lee - School of Engineering & Computer Science**Development of Processes for Establishing and Implementing International Co-op in Korea**

A new program has been developed with Hanyang University. Pacific mechanical engineering students will spend one semester as an exchange student taking classes related to their major. After one semester as an exchange student, the student will do a co-op for Korean companies as experiential learning.

Students, who are interested in the program, can take Summer Statics and Beginning Korean courses at Hanyang University during the month of July. This experience will give students Korean cultural experiences as the first step toward the exchange + co-op program. Provost approved the Summer Statics and Beginning Korean program to run as a pilot program through CPCE for the summer 2018.

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Fei-Lin Hsiao - Conservatory of Music**Universal Design for Learning: Creating and Inclusive Education Environment to Reach All Learners**

The highlights of Dr. Hsiao's leave include (1) the completion of two training courses in universal design for learning (UDL) offered by the Center for Applied Special Technology (CAST) Professional Learning—A Framework for Addressing Learner Variability: Theory into Practice and the UDL Presenters' Academy for UDL Facilitators Institute, (2) the delivery of UDL workshops to participants of the UDL Faculty Learning Community and colleagues at the Conservatory of Music, (3) a publication in the International Journal of Music Education, entitled, "Academic Accommodations for Music Majors with Disabilities: A Collaborative Decision-Making Process," (4) a scholarly presentation at the Joint Conference of the American Musicological Society and the Society for Music Theory, entitled "Supporting Music Majors with Disabilities: A Cross-Departmental Collaborative Model," and (5) the transformation of courses according to UDL principles, emphasizing multiple means of content delivery and provision of various modalities for students to demonstrate their mastery of knowledge.