

AERA Division I - Vice President's Message

Dear colleagues,

It's time to make your reservations for an inspiring AERA 2012 meeting in Vancouver. We have a stimulating program covering a variety of timely topics in the professions. Thanks to all of you who submitted very interesting research papers, and to Jack Boulet, who managed to attract a large number of proposal reviewers, organized a super efficient and delightful program committee meeting, and created an outstanding program. Thanks for all your efforts.

Along with our regular paper presentations, symposia, poster sessions and round table discussions, we have a **workshop** scheduled for Monday, April 16 from 8:15 – 9:45 AM about "Standard Setting in the Professions" by Jack Boulet and our incoming Program Chair Andre DeChamplain. The **Invited Session** for the VP address will focus on the impact of faculty development across the professions. Besides the keynote address there will be three panelists, Wim Gijssels, Janet Hafler, and Trudie Roberts, who will provide their perspectives and examine faculty development through different lenses. For more information about this session, please see page 18.

All those who are session chairs, please make sure that you contact the presenters of your session to upload their papers no later than **March 15**. Presenter and participant information can be found at <http://www.aera.net/Default.aspx?id=13680>. A list of tips and resources for delivering an exciting presentation is found on pages 6 and 7.

For the third consecutive year, the **Mentoring Committee** is continuing its successful initiative of pairing graduate students and junior faculty members with senior scholars, who will be providing constructive feedback on both their presentation skills and future directions for research. For more details, please read their announcement on page 4.

The two **Breakfast Sessions** will be on Saturday and Sunday, from 7:00 – 8:00 AM in the VP Suite in Pan Pacific, and the discussions will focus on **strategic planning**, and **membership** and **mentoring** respectively. The **Strategic Planning** Committee has an important initiative that will be discussed in greater detail on Saturday. For more information, please see page 8. I would strongly encourage a large number of you to attend and present your thoughts.

Our regular **Business Meeting** followed by a sumptuous reception will take place on Saturday, April 14 from 6:15 – 8:15 PM. There will be several short presentations by the chairs of the various committees, new proposals discussed, and awards provided that evening. Please attend and bring along potential new members to our Division.

Our famous **Division I Social** will be at Al Porto Ristorante at 321 Water Street on Sunday, April 15th at 6:30 PM. Please make your reservations the latest by March 30 (complete the form on page 3).

My term as VP comes to an end this April, and on that occasion, I would like to thank all the officers and members of the different committees who assisted me in various capacities to make the Division I activities and initiatives a success. I would also like to thank Felice Levine, Phoebe Stevenson, Laurie Cipriano, Katie Coons, and the entire AERA Executive Committee members for their continuous support during my tenure. I look forward to seeing you all in Vancouver.

Ara Tekian



**AERA 2012
Vancouver, BC,
Canada
Friday, April 13 -
Tuesday, April 17**



Inside this issue:

VP Message	1
Program Chair's Message	2
Division I Social	3
Mentoring Initiative	4
Affirmative Action	4
Membership Report	5
Presentation Tips	6
Strategic Planning	8
Division I Schedule	9
Division I Sessions & Abstracts	10
Professional Licensure and Certification SIG Schedule	27
Division I Information	29

2012 Annual Meeting Division I Program Chair's Message

Greetings to all Division I members! I look forward to seeing everyone in Vancouver for the 2012 meeting. Although I have safely weathered most of the Winter (by traveling to the southern hemisphere), the west coast of Canada should provide a nice start to Spring. For those of you who ski or snowboard, there should still be snow in the mountains. If you have never traveled to Canada, it's "a boot" time that you did. Vancouver is certainly one of the most picturesque and lively cities in the "Great White North". If you haven't already done so, register for the meeting, book your flight, and find a hotel. Then, while you are at it, sign up for the Division I Social Dinner scheduled for Sunday, April 15.

With the help of an outstanding Review Committee, we have put together an exciting Division I program. In early October, Ara Tekian (University of Illinois at Chicago), Sara Kim (University of California Los Angeles), André De Champlain (Medical Council of Canada), Hugh Stoddard (University of Nebraska College of Medicine), Amy Opalek (Foundation for Advancement of International Medical Education and Research – FAIMER), Danette McKinley (FAIMER), Marta van Zanten (FAIMER) and myself (FAIMER) met to adjudicate the 119 submissions. This year, we had 87 reviewers and a total of 425 individual reviews. Like previous years, we aimed to have at least 3 reviews per submission and averaged almost 4. On behalf of the Committee, we hope that all of the researchers who took the time to write a proposal received valuable feedback that will help them to improve their future research projects.

Because of the large number of submissions, Division I was allotted a reasonably large number of slots on the AERA program. In addition to the Division I Business Meeting and Vice President's Address, we have three symposia, one poster session, six roundtables, and 11 paper sessions (see pages 10-26 for the division's full program details). We have done our best to organize the program, including the grouping of papers, to spur discussion of the important educational, research, and measurement issues that cut across all of the professions. We hope that you enjoy the program (you can go skiing or snowboarding before or after the conference), and we welcome your feedback.

As my tenure as Chair comes to a close, I want to take the opportunity to thank all those people who were involved in setting up the 2012 program, many of whom provided direct support and guidance throughout the year. First, I acknowledge the efforts of the individuals who submitted their work for consideration. I hope that the researchers whose work was not accepted (47 proposals) will consider Division I in the future. Second, the dedication of the reviewers, many of whom "came off the bench" at the last moment (you know who you are), is greatly appreciated. Third, the camaraderie and professionalism of the Selection Committee was especially gratifying – it made the arduous PROcess of synthesizing reviews much more palatable. Fourth, the AERA central team, including Laurie Cipriano and Katie Coon, was exceptional, both for educating the naïve Chair (me) and responding to numerous queries and desperate phone calls.

There are also a couple of individuals I would like to thank. The boundless enthusiasm and passion of Ara Tekian, our outgoing Vice President, was contagious, and helped me find the energy to keep up with the many competing demands of the job. Ara, wherever you are in the world, thank you! Sara Kim, last year's Program Chair, was exceptionally generous with her time. In the future, I promise to recognize the 3 hour time difference between the East and West Coast. Since we are going to Canada, *merci beaucoup*.

For those of you traveling from the United States, Europe, or other parts of the world, don't forget your passport, eh. If it is a little cold in Vancouver (or you find yourself in a curling rink), and your ears are chilly, a "toque" is a hat.

See you all in April!

Jack Boulet

2012 Division I Program Chair



PERQ

Division I Social

Sunday, April 15th at 6:30 pm

Al Porto Ristorante (Private dining room in the loft)

321 Water Street

Phone 604.683.8376

Gastown's popular Water Street is alive with the taste of another era. Meander down the cobble sidewalk and stumble across a true find, the uniquely situated Al Porto Ristorante. Spacious yet cozy, the room is as distinct as the cuisine that defines the rich flavour and culture of Italy. Candlelight and a warm welcome await you as you cross through the iron-gate.



Menu includes:

Smoked BC salmon with capers and onion OR Mixed greens with Dijon and olive oil vinaigrette

Gnocchi boscaiola with mushrooms and shaved parmesan

Pan seared sablefish with lemon and tarragon sauce OR Grilled triple-A Alberta beef tenderloin

OR Braised veal shank with fettuccine pesto

Chocolate ganache torte OR Gelato

Cash bar, coffee, tea

Dinner cost: U.S.\$ 70.00 Payment by March 30, 2012 would be greatly appreciated.

Dinner fees may be paid by **check (preferable)** or credit card. A receipt will be emailed to you or provided to you in person at the Division I business meeting.

- Check: (Enclosed) made out to **AERA**
- Credit Card: ___ Visa ___ MasterCard ___ Other Expiration Date: _____

Card Number: _____

Signature: _____

Your name and names of any guests (print): _____

Mail to:

Jack Boulet
FAIMER
3624 Market Street
Philadelphia, PA 19104

Email: jboulet@faimer.org

PERQ

Division I Senior-Junior Scholar Feedback on Presentations: Participate in the 3rd Year of this Exciting Division I Mentoring Initiative!

This mentoring initiative gives novice scholars (graduate students or junior faculty members) the opportunity to have their presentations reviewed and to receive feedback from a senior faculty member at the 2012 AERA annual meeting in Vancouver. Graduate students or junior faculty members who choose to participate will be paired with a senior faculty member who will observe their presentation and offer constructive feedback on presentation style and future directions for the research project.

The main goals of this program are to provide fledgling scholars an opportunity to refine their scholarly presentations and to promote collegial relationships between junior and senior scholars in the division. At last year's annual meeting, twelve pairs of junior-senior faculty participated in the program—twice the number who participated in the first year. Junior scholars presented at paper, poster and roundtable sessions. The scholars agreed that participating in the program was a very useful and fun experience that promoted networking and professional development.

*Graduate students, junior faculty or senior faculty who are interested in participating in this exciting pilot program in any role should contact us at Maria.Blanco@tufts.edu or bridget.obrien@ucsf.edu by *March 23*!*

We are very much looking forward to sharing this exciting mentoring initiative with you!

Maria Blanco and Bridget O'Brien

Affirmative Action Committee Update

The mission of the Division I Affirmative Action Committee (DIAAC) is to welcome ideas from all research paradigms and to increase participation in the division by persons of all demographic groups and educators from all varieties of professions.

The Division I Affirmative Action Officer (AAO), who also serves as the chair of the Division's Affirmative Action Committee, participates on both the Division's Executive Committee and the annual Program Committee to promote the inclusion of a broad spectrum of viewpoints in the Division's activities. The AAO is not an 'enforcer' but rather serves to encourage the consideration of a broad spectrum of alternatives in conducting the Division's business.

The AAO also serves on the AERA Affirmative Action Council with counterparts from all other AERA divisions. The AAC facilitates the work of officers within each of their divisions and collaborates with the AERA leadership on matter of equity, diversity, and inclusion.

*IMPORTANT ACTION ITEM: At the Division I business meeting during the 2012 AERA Annual Meeting in Vancouver, a proposal will be introduced to change the name of the Division I Affirmative Action Committee to the "**Division I Committee on Diversity and Equity.**" Comments on the proposed change are welcomed, either at the business meeting or prior to that time. A vote on this change is proposed occur during the next AERA election.*

If you have comments or feedback about the presence or absence of diversity or social justice issues in the 2012 Division I program at the Annual Meeting, please contact the Division I Affirmative Action Office, Hugh Stoddard at hstoddard@unmc.edu or at (402) 559-7837.

Division I Membership Report

Membership Committee Report, Division I, Fall 2011 through Spring 2012

The ongoing membership drive continues to show positive results. In September 2011, a total of 548 members were listed as active (AERA and Division membership active through December 2011), which represented an increase of over 17% from the spring numbers. As of February 2012, the membership count is up to 694 (total count of those with memberships active as of December 2011), with 447 of those having already renewed their Division I memberships in 2012.

Included in the count of 447 are 114 members joining Division I for the first time this year.

We will continue to implement plans to reach out to potential new members and hope that the membership will increase even more following the 2012 Annual Meeting in Vancouver.

The Division I Twitter feed (<http://www.twitter.com/#!/AERADivisionI>), which is regularly updated with tweets regarding education in the fields of medicine, nursing, pharmacy, dentistry, engineering, law, and STEM in general, now has 58 followers. The Division I LinkedIn page (<http://www.linkedin.com/groups/American-Educational-Research-Association-AERA-3920670>), which allows Division I members to network directly with others who are interested in the same areas of education and research, is also active. We hope these additional venues will continue to allow us to recruit new members and provide additional value to those who are already members. We anticipate that the Twitter feed will be especially active during the weeks leading up to the Annual Meeting, and we intend to use it to disseminate information about Division I events at the meeting itself.

We are always happy to hear your ideas for Division recruitment and ways in which the Membership Committee can grow. If you are interested in adding your voice to the discussion on increasing membership for Division I, please join us at 7 am on Sunday, April 15, in the VP Suite in the Pan Pacific Hotel for the Membership Committee breakfast. This gathering, which will include the Mentorship Committee, will be an opportunity to brainstorm ideas for outreach and recruitment, as well as a venue for suggesting potential members of the Membership Committee. So please feel free to join us!

Many thanks go out to the Division I Executive Committee, as well as the many individuals who are on other Division I Committees. It takes a village of committee members to continue our outreach, to build our network and to support membership.

Thank you,

Kimberly Swygert, AERA Division I Membership Chair

KSwygert@nbme.org



Join us on Twitter!

<http://www.twitter.com/#!/AERADivisionI>

Join us on LinkedIn!

<http://www.linkedin.com/groups/American-Educational-Research-Association-AERA-3920670>

Tips and Resources for Delivering an Exciting Presentation!

from the Division I Mentoring Committee

As you begin preparing for your session at the Annual Meeting, please consider the following tips to help you prepare and deliver a memorable paper, poster or round table presentation. Also, please consider participating in the Division I Mentoring Committee's Senior-Junior Feedback Program to discuss your presentation with a colleague (more information can be found on page 4 in this PERQ).

PAPER PRESENTATION

Careful Preparation

- Think about a **story** that you can craft from your work. Select three main story- points to share with the audience that are memorable and that capture the essence of your work.
- Be creative and illustrative in your wording.
- Practice, practice, practice. Time your presentation to make sure you can give the whole story without having to omit points or rush through your conclusions.
- Arrive at the room early, meet your co-presenters, moderator and discussant, and allow enough time to load your presentation on unfamiliar equipment. **Relax!**

Organization

- Think about an introduction, body and conclusion for your story.
- Address your contextual/theoretical framework (introduction); research methodology and main findings (body) and conclusions in your story.

Audiovisual Aids

- Do not have slides typed out in full sentences, just include key words or phrases and – better yet – illustrations.
- Select easy to see and pleasant colors and images.
(refer to: <http://office.microsoft.com/en-us/powerpoint/HA010120721033.aspx> for ideas)
- Be gentle with animations (you do not want to distract the audience from your exciting story).
- Use **bold** or **color** font to emphasize key points rather than UPPER CASE.

Dynamic Delivery

- Talk to the **audience**, not the screen or the monitor.
- Bring the passion and energy you feel for your work with you proudly to demonstrate to the audience.
- Avoid stereotyped movement. Use gestures gently to emphasis key points.
- Vary your voice and pause to convey your energy and boost interest.
- Repeat any questions that have been posed to you for the audience (this will also give you time to think about how you will reply!)

After the Presentation

- Reflect on what went well and areas to improve.
- Seek feedback from the audience.

References:

Irby, D.(2004). Practical teaching: great presentations every time. *The Clinical Teacher* 1: 5-9.

Litin, S. (2008). Faculty Development Presentation Skills for Physicians: Making Your Next Teaching Presentation Go Better Than Your Last. Presented at American College of Physicians Internal Medicine Meeting, Washington DC, May 15-17.

POSTER PRESENTATION

We strongly encourage that you review the following paper:

Gess, G. ,Tosney, K. Liegel, L. Creating effective poster presentations: AMEE Guide no. 40. *Medical Teacher* 2009; 31: 319–321.

ROUNDTABLE PRESENTATION

Purpose

This is an opportunity for discussion and consultation about your research work in progress. An experienced educational researcher will moderate the discussion and, along with roundtable participants, will provide feedback and advice on your research project. Therefore, think carefully about the time allocation of your presentation and the specific topics you would like the audience to discuss while you prepare your presentation.

Session Dynamic

- Provide a succinct overview of your research project and leave most of the time for discussion and consultation.
- Introduce you work to the audience by describing: background including purpose and significance of the study; methods; preliminary results; conclusions/implications; reflective critique; questions for feedback.
- Ask your audience if they have any clarifying questions at the end of your presentation.
- Consider using a “step back” technique in which you allow your audience to take up your work as if it were their own and let them discuss it without interruptions. During this “step back” time, keep detailed notes on comments and suggestions from your audience.
- After the step back, ask clarifying questions that you have about any comments made.
- Towards the end, you can provide a summary of your take-home point and next steps to check and share with your audience.

Go for it!

Strategic Planning Committee Update

The Division I Strategic Planning Committee is charged with formulating initiatives to help define the future path of the Division. The Committee members are Steven Durning, Louis Grosso (Co-Chair), Summers Kalishman, Patricia O'Sullivan, and Ruth Streveler (Co-Chair).

In the Fall 2011 issue of PERQ we introduced our proposal to create "Communities" within the Division. The goal of Communities is to offer Division members opportunities to connect with others who have similar research interests. Each Community would provide mechanisms to network, help promote scholarship, and help recruit participation in the Division and in the Division's program. Community membership is voluntary and open to all Division I members. For those interested, there will be two opportunities at the 2012 AERA Annual Meeting to learn more about this proposal and help to move this initiative forward.

Please join members of the Strategic Planning Committee Members and other interested colleagues at one or both of the following sessions:

Strategic Planning Breakfast Meeting
Saturday April 14, 7:00 am – 8:00 am
Vice President's Suite, Pan Pacific Hotel

Business Meeting
Saturday April 14 6:15 pm – 8:15 pm
Pacific Rim Suite 2, Pan Pacific Hotel

The Strategic Planning Committee welcomes your feedback on the concept of Division I Communities. We also encourage you to share your ideas on strategic initiatives the Division should consider. Your feedback can be directed to Louis Grosso (lgrosso@abim.org).

Proposed Communities:

1. **Teaching and Learning:** This Community addresses research around teaching and learning including theoretical and practical applications. Examples include pedagogy, workplace learning, neurobiology and skills acquisition.
2. **Assessment:** This Community is broadly defined to address the research issues of individual and program performance. Examples include methodology, admission and selection of learners into the professions, evaluation of competencies and evaluation of programs.
3. **Professional Development:** This Community broadly focuses on research around the development of individuals within the profession. Examples include development of professional competency, development of educational competency and development as an educational researcher.

AERA Annual Meeting Mobile Tips

The AERA annual meeting program mobile app gives attendees comprehensive information on the meeting including session times and locations, presenter names, affiliations, and an exhibitor listing and exhibit hall map. The mobile app will be available at the beginning of April and can be downloaded free. It is compatible with the iPhone, iPad, iPod Touch, Android and BlackBerry devices and is available for all other web browser-enabled phones, as well as PCs, through a web-based platform version. For non-Canadian delegates, it is strongly recommended that you download the app before arriving in Canada. To avoid cellular charges, you will need to turn off roaming cellular data service on your phone. During the meeting, free WiFi will be available at the Convention Center.



Download the free Annual Meeting Program App!

Division I Schedule Overview

	April 13, Friday	April 14, Saturday	April 15, Sunday	April 16, Monday	April 17, Tuesday
7:00		7:00—8:00 Strategic Planning Committee Breakfast <i>Pan Pacific Vice President's Suite</i>	7:00—8:00 Membership & Mentoring Committee Breakfast <i>Pan Pacific Vice President's Suite</i>		
8:15		8:15—10:15 Measurement of Reasoning Skills in the Health Professions (Paper Session) <i>Pan Pacific, Rest. Level Pacific Rim Suite 1</i>	8:15—10:15 Clarifying Assessment and Measurement Issues Across Disciplines and Professions (Symposium) <i>Pan Pacific, Rest. Level Pacific Rim Suite 2</i>	8:15—9:45 Standard Setting in the Professions (Workshop) <i>Pan Pacific, Rest. Level Pacific Rim Suite 2</i>	
10:35		10:35—12:05 Becoming an Expert & Knowledge in Professional Development (Roundtables) <i>VCC, 2nd Floor East Room 2 & 3</i>	10:35—12:05 Measuring and Improving the Teaching Skills of Health Professions Faculty (Paper Session) <i>Pan Pacific, Rest. Level Pacific Rim Suite 2</i>	10:35—12:05 Sustaining Interest in and Preparing Students for Successful Transitions to Professional Programs of Study: Insights from NSF (Symposium) <i>Pan Pacific, Rest. Level, Pacific Rim Suite 2</i>	10:35—12:05 Issues for Students in the Professions: Moving from School to the Workforce (Paper Session) <i>VCC, 2nd Level East Room 16</i>
12:00	12:00—1:30 Improving the Teaching Skills of Educators in the Profession (Paper Session) <i>Pan Pacific, Rest. Level Pacific Rim Suite 2</i>	12:25—1:55 Cross-National and Cross-Profession Analyses of Coherence & Errors and Their Potential for Learning in the Professions & Factors Affecting Success & Simulation and Technology (Roundtables) <i>VCC, 2nd Level East Room 2 & 3</i>	12:25—1:55 Division I Poster Session <i>VCC, First Level East Ballroom B</i>	12:25—1:55 Instructional and Technological Innovations in Education (Paper Session) <i>Pan Pacific, Rest. Level Pacific Rim Suite 2</i>	12:25—1:55 Measurement Issues in Medical Licensure and Certification (Paper Session) <i>VCC, First Level West Room 114 & 115</i>
2:15	2:15—3:45 Characteristics of Students in Professional Education Programs (Paper Session) <i>Pan Pacific, Rest. Level Pacific Rim Suite 2</i>	2:15—3:45 Recruiting and Advance- ment of Underrepresented Groups in the Professions (Paper Session) <i>Pan Pacific, Rest. Level Pacific Rim Suite 2</i>	2:15—3:45 Measuring the Non- cognitive Traits of Students in the Professions (Paper Session) <i>Pan Pacific, Rest. Level Pacific Rim Suite 2</i>		2:15—3:45 Teaching Innovations in the Education of Professions (Paper Session) <i>VCC, 2nd Level East Room 19 & 20</i>
4:05	5:30—7:00 Executive Committee Meeting (Invite Only) <i>Pan Pacific Vice President's Suite</i>	4:05—6:05 Does Faculty Development Improve Learning and Performance Across the Professions? (Invited Session) <i>Pan Pacific, Rest. Level Pacific Rim Suite 2</i>		4:05—6:05 Rating and Scoring Issues in Assessment (Paper Session) <i>Pan Pacific, Rest. Level Pacific Rim Suite 2</i>	
6:15	7:00 Executive Committee / Committee Chairs Dinner (Invite Only)	6:15—8:15 Division I Business Meeting <i>Pan Pacific, Rest. Level Pacific Rim Suite 2</i>	6:30 Division I Social Al Porto Loft Dining Room 321 Water Street		

Division I Sessions & Abstracts

Fri, Apr 13 - 12:00pm - 1:30pm

Improving the Teaching Skills of Educators in the Professions

Session type: Paper Session

**Pan Pacific, Floor Restaurant Level
Pacific Rim Suite 2**

Discussant: Eugene L. Anderson (American Dental Education Association)

Clinical Teaching Based on Principles of Cognitive Apprenticeship: Views of Experienced Clinical Teachers

Renee Stalmeijer (Maastricht University), Diana Dolmans (Maastricht University), Hetty Snellen-Balendong (Maastricht University), Marijke Van Santen-Hoeufft (Maastricht University), Ineke Wolfhagen (Maastricht University), Albert Scherpbier (Maastricht University)

To design an instructional model that speaks directly to teaching behaviours of clinical teachers principles of cognitive apprenticeship were used. During semi-structured interviews seventeen experienced clinical teachers discussed the model and described factors influencing clinical teaching according to the model. Thematic analysis of the data indicated that all participants recognized the theoretical model as a structure picture of the practice of teaching during clerkships. According to them modelling and creating a safe learning environment were fundamental to the process. Longer attachments and pro-active behaviour of teachers and students ensured application of all steps in the model. The theoretical model can offer valuable guidance in structuring clinical teaching activities and offers design suggestions for effective clerkships.

Building Research Capability Among University Staff: The Case of Teacher Educators

Mary F. Hill (University of Auckland), Mavis Haigh (The University of Auckland)

Internationally, professional education has moved into the academy. Concurrently, in many jurisdictions, research performance measures and pressure to increase the research evidence about professional preparation have been brought to bear on those who teach in professional programmes. Our study investigated research capability building amongst teacher educators. We interviewed research leaders in education faculties in four countries, and interviewed and surveyed teacher educators in one faculty over time to understand how, if at all, research capability increases. Our analysis revealed that teacher educators can learn to build research work into their existing teacher educator

identities and that supportive communities of practice can play a strong role in this process.

College Teachers' Instructional Practices: Exploratory and Confirmatory Factor Analyses

Linda S. Behar-Horenstein (University of Florida), Lian Niu (University of Florida)

Higher education administrators and researchers are increasingly advocating for the movement from teacher-centered teaching towards student-centered teaching. To achieve this goal, it is important to examine the teaching practices of faculty members. The purpose of this study is: (1) to develop a standardized instrument to measure higher education faculty's teaching practice; and (2) to provide preliminary validity support for this instrument. We developed The College Teachers' Instructional Practices (CTIP), a 16-item Likert-scale. Exploratory and confirmatory factor analyses will be conducted to identify the factor structure and to provide validity support for the instrument. The development of this instrument will provide higher education administrators, faculty, and researchers an assessment tool that is valuable in improving college teaching.

A Content-Driven Collaboration Model for Engineering Faculty Development

Margret A. Hjalmarson (George Mason University), Jill K. Nelson (George Mason University)

The goal of this paper is to describe a professional development model being used with electrical engineering faculty. We are focusing on small-group, content-driven teaching development activities.

Fri, Apr 13 - 2:15pm - 3:45pm

Characteristics of Students in Professional Education Programs

Session type: Paper Session

**Pan Pacific, Floor Restaurant Level
Pacific Rim Suite 2**

Chair: Kamlesh Kumari Sharma (Rayat & Bahra College of Education)

Discussant: Trudie E. Roberts (University of Leeds)

Undergraduate Students' Attrition in Engineering: A Literature Review from 1980 to 2011

Xiushan Jiang (University of Kansas), Stacey Vicario Freeman (Arizona State University; UC-Irvine)

To gain a better understanding of the causes of high attrition rates in undergraduate engineering, this literature review examines 38 empirical studies conducted between 1980 and 2011. Based on this analysis, four important factors contributed to engineering undergraduate students' migration to non-engineering disciplines. These factors include: high school math background, college academic ability, instructional and institutional environment, and self-efficacy. Specifically, high school cognitive variables, college cognitive variables, institutional environment and self-efficacy were analyzed in this review. Based on these findings, recommendations for improving undergraduate engineering students' retention are proposed, such as mentoring programs, academic assistance programs and college transition programs.

Freshmen Aspirations and Application to Law School

Ann Gallagher (Law School Admission Council), Philip G. Handwerk (Law School Admission Council), Linda T. Deangelo (University of California - Los Angeles)

This study examines a longitudinal data set combining law school admission data and data on students' backgrounds, attitudes and goals. Law School Admission Council data were combined with data from The Freshman Survey available through UCLA's Cooperative Institutional Research Program. Analyses of background variables examined subgroup differences by race/ethnicity, gender and interest in law as a freshman. Although demographic differences were found, one-third of law school applicants expressed interest in law as freshmen. Contrasting lower socioeconomic backgrounds and high school grades, under-represented minority applicants were more focused on their career plans and expressed higher self-ratings on drive to achieve. Grades and standardized test scores were the strongest predictors in deciding to apply to law school and being admitted.

What's in a Number?: The Impact of the New Federal Guidelines on Collecting and Reporting Racial and Ethnic Data on Enrollment in Graduate Professional Schools

Eugene L. Anderson (American Dental Education Association), Gloria Gonzalez (American Dental Education Association), Erin W. Bibo (University of Maryland - College Park), Nan Zhou (American Dental Education Association)

This paper examines the impact the federally mandated changes in the collection and reporting of racial and ethnic data will have on public policy; higher education institutional administrators, higher education associations, and higher education policy researchers. The impact of these changes is already being seen in dental and medical schools. Medical schools first began requiring applicants to utilize the new format in 2002 and dental schools recently made the change in 2010. The paper utilizes applicant and enrollment data in dental and medical schools to answer three critical questions: what do the changes in race/ethnicity reporting mean for specific ethnic groups; how do these changes affect institutional data; and what are the implications for national trend analysis?

Persistence of Nontraditional-Aged Students in the Profession of Occupational Therapy

Susan P. Tons (Baker College Center for Graduate Studies)

Non-traditional aged students are gravitating to majors in the professions and there are few studies in which retention theories have been applied to students in the professions. This study explored how non-traditional aged students in professional level occupational therapy programs persisted despite facing obstacles. Cross-case analysis discovered what factors helped students persist in their programs. One factor facilitating their persistence was unique and is not explicitly mentioned in the education retention literature. Participants all spoke of a desire to become someone different. Enrollment in their program was viewed as a way to enact this desire to become "a new possible self."

Sat, Apr 14 - 7:00am - 8:00am

Strategic Planning Committee Breakfast Meeting

Place: Vice President's Suite

Pan Pacific

Sat, Apr 14 - 8:15am - 10:15am

Measurement of Reasoning Skills in the Health Professions

Session type: Paper Session

Place: Pan Pacific, Floor Restaurant Level Pacific Rim Suite 1

Discussant: Danette W. McKinley (Foundation for Advancement of International Medical Education and Research)

Chair: Rebecca A. Baranowski (American Board of Internal Medicine)

An Evaluation of Standardized Patient Performance Over Time

Crystal B. Brown (National Board of Medical Examiners), Nilufer Kahraman (National Board of Medical Examiners), Jeannette M. Sanger (National Board of Medical Examiners)

The purpose of this paper is to explore methods to assess standardized patient performance over time to help sustain objective performance in a high-stakes clinical skills examination and inform quality assurance intervention. Data from a single USMLE Step 2 Clinical Skills Examination site were selected to compare SP-case leniency and

discrimination on communication scores. The data consisted of 102 SP-case combinations that were active between January and November of 2010. Observed SP-case means and case-corrected total test correlations were computed and compared to corresponding estimates from a common factor model. Results show that, while either method is practical for assessing SP-case leniencies, the common factor model could be a useful source of additional information to routinely evaluate SP-case discrimination.

Physician Performance Assessment: Prevention of Cardiovascular Disease

Rebecca S. Lipner (American Board of Internal Medicine), Weifeng Weng (American Board of Internal Medicine), Brian J. Hess (American Board of Internal Medicine)

Given the rising burden of healthcare costs, both patients and healthcare purchasers are interested in discerning which physicians deliver quality care. We examined performance of physicians in preventive cardiology care, evaluated measurement properties of a composite score derived from a set of evidence-based clinical measures, and determined a benchmark for performance. We used chart data from 811 physicians with 25 patients per physician. Reliability of the composite was 0.87 and the classification accuracy index was high (0.98). The mean composite score was 74% (SD = 12.0) and 2.7% of the physicians fell below the minimally-acceptable level (47.38%). We found an effective means for assessing physician performance in clinical practice by providing relative feedback with the hope of improving patient care.

Scaffolding Diagnostic Reasoning Skills of Emergency Medical Technicians: Cognitive Apprenticeship Emphasized Simulation-Based Instruction

Woei Hung (University of North Dakota), Sherman Syverson (FM Ambulance Service)

Diagnostic reasoning skills are vital to EMTs' competence because treatment decisions could have significant consequences. This study investigated the effects of a simulation-based instructional method that focused on contextualized learning environments and cognitive modeling on the development of EMT students' diagnostic reasoning skills. Thirty-one EMT-Basic students participated in the study. The results indicated that overall, the simulation group outperformed the traditional group in almost all categories in the ERE exam and final simulation evaluation. Specifically, the simulation group significantly outperformed the traditional group in the cardiology problem solving questions in the ERE exam, and Secondary Assessment in the final simulation evaluation.

Consistency in Diagnostic Suggestions Does Not Influence the Tendency to Accept Them

Silvia Mamede (Erasmus University), Tamara Van Gog (Erasmus University), Jan Van Saase (Erasmus MC), Remy M. Rikers (Erasmus University)

A recent study showed that physicians have difficulty rejecting incorrect diagnostic suggestions on clinical cases,

which could lead to diagnostic errors. In that study, correct and incorrect suggestions alternated, which is unlikely to happen in clinical practice. In the present study residents evaluated suggested diagnoses on 8 written clinical cases, four of those suggested diagnoses were correct, and 4 were incorrect. Half of the participants first evaluated the 4 correct suggestions and finished with the evaluation of the 4 incorrect suggestions. The other half started with the incorrect suggestions and finished with the correct suggestions. No differences between groups were found, meaning the tendency to accept suggested diagnoses does not depend on the consistency of the source of the suggestions.

Impact of Bedside Physical Diagnosis Training on Third-Year Medical Student's Physical Exam Skills

Lloyd Roberts (Stony Brook University Medical Center), Wei-Hsin Lu (Stony Brook University Medical Center)

Graduating medical students when surveyed noted a deficit in training in physical examination (PE) skills. To remedy this deficit we developed and implemented a pilot program for third-year medical students consisting of twice-weekly bedside diagnosis rounds as part of their eight-week internal medicine clerkship. To evaluate the success of this program we reviewed students' objective structured clinical exam (OSCE) PE scores at the completion of the clerkship compared with prior years' students who did not have the training. Results show that students who were trained had an overall higher OSCE PE score (n=109, M=12.57) than students without the training (n=85, M=11.5). Additionally, trained students reported increased comfort level and self-assessed higher physical exam skills at the end of the clerkship.

Sat, Apr 14 - 10:35am - 12:05pm

Becoming an Expert

Session type: Roundtable Session

**Place: Vancouver Convention Center,
Floor Second Level - East Room 2&3**

Chair: Sara Kim (University of California - Los Angeles)

Expertise Differences in the Comprehension of Visualizations: A Meta-Analysis of Eye-Tracking Research in Professional Domains

Andreas Gegenfurtner (University of Turku), Erno A. Lehtinen (University of Turku), Roger Saljo (University of Gothenburg)

This meta-analysis integrates 296 effect sizes reported in eye-tracking research on expertise differences in the comprehension of visualizations. Three theories were evaluated: the theory of long-term working memory, the information reduction hypothesis, and the holistic model of image perception. Results indicated that experts, when compared with non-experts, had shorter fixation durations,

more fixations on task-relevant areas, and fewer fixations on task-redundant areas; experts also had longer saccades and shorter times to first fixate relevant information. Eye movements, reaction time, and performance accuracy were moderated by characteristics of visualization (dynamics, realism, dimensionality, modality, and text annotation), task (complexity, time-on-task, and task control), and domain (sports, medicine, transportation, other). Implications of these findings for the design of professional education are discussed.

Can Medical Licensing Examination Scores Predict Examinees' Subsequent Professional Development and Conduct?

Linjun Shen (National Board of Osteopathic Medical Examiners), Feiming Li (National Board of Osteopathic Medical Examiners)

No study reported the relationship between medical licensing examination scores and examinees' subsequent professional development. The purpose of this study was to investigate whether COMLEX scores have any meaningful relationships with subsequent professional development and professional conduct. Equated COMLEX scores of Florida osteopathic physicians were compared between the groups with and without the following records: certification, faculty appointment, publication, professional/community service awards, disciplinary actions, closed liability claim, criminal offense. Those with documentable achievements in professional development had a significantly higher COMLEX Level 3 score than those who without. And the difference in COMLEX scores between the physician with or without misconducts was not significant. This study provided strong evidence that licensing examination scores are correlated with professional development.

Factors Related to Occupational Expertise of Employees Working in Education, Finance, and Health Care

Isabel Raemdonck (Université Catholique de Louvain), Mien Segers (Maastricht University), Harm H. Tillema (Leiden University)

This paper aims to investigate the influence of job characteristics (job demands and job control) and self-directed learning orientation and career phase on the level of occupational expertise of employees. The paper presents results from three studies conducted in education, finance and health care. The organisations the employees worked for were all located in the Netherlands. A questionnaire using scales adapted from validated instruments was used. It was hypothesized that high scores for self-directed learning orientation, job demands and job control would be associated with high levels of occupational expertise and that senior employees would demonstrate lower levels of occupational expertise. The results indicated that a self-directed learning orientation and job demands were consistently and positively related to occupational expertise.

Modeling the Characteristics of Vocational Expertise and Excellence: Case Study With Finnish World Skills Competition Participants

Petri J. Nokelainen (University of Tampere)

This mixed-method study investigated the role of Finnish World Skills Competition (WSC) participants natural abilities, intrinsic characteristics and extrinsic conditions to their talent development with qualitative (n = 30) and quantitative (n = 64) samples. Results of the semi-structured interviews showed that self-reflection (stress tolerance), volition (perseverance, time management skills), cognitive skills (development potential) and motivation (extrinsic and intrinsic) were considered to be the most important characteristics. Results of the survey showed that the most successful competitors were characterized by their linguistic and interpersonal abilities. They also believed that effort is more important to their success than ability. The most successful competitors were more performance-approach goal oriented and less performance-avoidance oriented than their less successful peers.

Sat, Apr 14 - 10:35am - 12:05pm

Knowledge in Professional Development

Session type: Roundtable Session

**Place: Vancouver Convention Center,
Floor Second Level - East Room 2&3**

Chair: Judith I. Brooks-Buck (Virginia State University)

Decomposition in Professional Education: Professional Ontologies for Guiding Perception and Practice

Jamie O'Keeffe

Professional ontologies, or shared languages of practice, may be powerful pedagogical tools for guiding novice perception and practice in the context professional education. As Grossman et al. (2009) described, instructors introduce discrete categories when they decompose, or break down, "complex practice into its constituent parts" (p. 2069). These categories, if used consistently, may support students' perception, communication, and practice. To explore this hypothesis, the current analysis examines fieldnotes and transcripts of ten classroom observations, across five instructors, in one clinical psychology program. Decompositions were observed across all classrooms; however, their pedagogical robustness varied considerably across instructors. One instructor, in particular, used decomposition to create an especially rich professional ontology for guiding students' perception and practice.

Calibration of Self-Efficacy and Knowing

Glenda Simonton Stump (Arizona State University), Sarah K. Brem (ASU), Jenefer E. Husman (ASU)

An accurate assessment of one's own knowledge and skill are important aspects of learning in that they influence self-regulation behaviors. In the health care arena, this self-knowledge extends beyond learning to provision of care to hospitalized patients, and may influence whether nursing students seek help or engage in activities beyond their level of competence. This work examined the calibration of self-efficacy for performance along with judgments of knowledge in a sample of 16 nursing students enrolled in their second semester clinical course in a university nursing program. Bias and accuracy scores for self-efficacy and knowledge related to course content identified potential areas of remediation for students as well as areas for possible revision of instructional practices.

Computational Thinking "In Action" in America's Workplaces

Joyce Malyn-Smith (Education Development Center, Inc.), Irene Lee (Santa Fe Institute), Joe Ippolito (EDC, Inc.)

Computational thinking (CT) is a key ingredient in technology-enabled discovery and innovation. Yet a coherent definition of CT has yet to emerge from among different communities of practice. Computational Thinking in America's Workplace, funded by the NSF, sought to address this issue by exploring CT as a foundational skill for STEM professionals and developing a Job Task Analysis that describes the ways scientists and engineers use CT as they carry out routine tasks and solve problems associated with their work. This session will present the workforce development research strategies employed, their resulting Job Task Analysis and a series of examples of how STEM professionals use CT.

Knowledge Exchange Between Experiential Learning and Classroom Teaching of Pharmacy Students on Medication Safety

Certina Ho (OISE/University of Toronto), Patricia Hung (University of Waterloo), Brett Morphy (University of Waterloo), Nancy Waite (University of Waterloo)

Medication Safety Self-Assessment® (MSSA) (<http://www.ismp-canada.org/amssa/index.htm>) is a questionnaire used to assess medication safety in community pharmacies. Undergraduate pharmacy students were introduced to MSSA in class. During the following co-op term, with the employers' consent, students conducted MSSA at their community work placements. Aggregate MSSA results of 14 community pharmacies were then presented to students in class. Students worked in teams and offered quality improvement recommendations to these 14 sites. Pharmacy students were able to adopt existing knowledge in medication safety to their workplace through self-reflection and in-class discussion of the MSSA results. Pharmacy co-op students can serve as liaison between the academic and "real" world by offering state-of-the-art knowledge exchange between the school and their employers.

Sat, Apr 14 - 12:25pm - 1:55pm

Cross-National and Cross-Profession Analyses of Coherence in Educating for the Professions

Session type: Working Group Roundtable Session

Place: Vancouver Convention Center, Floor Second Level - East Room 2&3

Chair: Judith Warren Little (University of California - Berkeley)

Connections between the ideas teachers learn in their coursework and their opportunities to observe, practice and receive feedback on teaching strategies, have tended to be weak (Zeichner, 2011). Drawing on the findings emerging from The Carnegie Foundation's study of professional education, this symposium addresses this problem of enactment (Kennedy, 1999) through the concept of coherence. Coherence is often understood as connections between elements of a program, but the papers in this symposium will shed light upon different ways in which coherence can be/is/has been/ enacted in programs across the professions and across two national settings, bringing theory to bear upon practice in more substantial and meaningful ways, and contributing to a deeper understanding of coherence in education for the professions.

Biographic, Program, and Transitional Coherence

Jens-Christian Smeby (Oslo and Akershus University College of Applied Sciences), Kaare Heggen (Volda University College)

Program Coherence and Learning in Four Professional Educational Programs: A Qualitative Study

Andre Vagan (Oslo University College)

Coherence in Nursing Education in Norway and the United States: Knowledge, Know-How, and Professional Responsibility

Kristin Ma Heggen (University of Oslo), Molly Sutphen (The Carnegie Foundation for the Advancement of Teaching)

Experiencing Continuous and Interactional Coherence in Initial Teacher Education

Elaine Munthe (University of Stavanger), Karen M. Hammerness (Bard College)

Sat, Apr 14 - 12:25pm - 1:55pm

Errors and Their Potential for Learning in the Professions

Session type: Working Group Roundtable Session

**Place: Vancouver Convention Center,
Floor Second Level - East Room 2&3**

Chair: Christian Harteis (Paderborn University)

This session aims at providing theoretical concepts and empirical evidence for work condition which supports learning from errors in the professions. The contributions comprise empirical studies investigating different aspects of learning from errors in order to analyze the broad scope of this issue. By discussing strategies of detecting errors, knowledge resulting from error experiences, competence of dealing with errors and individual beliefs influencing the way of dealing with errors, this symposium provides a comprehensive examination of an unavoidable aspect of daily working life: Human fallibility.

What are Typical Mistakes of Teachers in Parent Interviews? Findings from a Delphi Study

Martin Gartmeier (University of Regensburg), Johannes Bauer (Technische Universität München), Manfred Prenzel (Technische Universität München)

Towards a theory of Negative Knowledge (NK): Almost-mistakes as amplification-motor for remembering

Fritz K. Oser (University of Fribourg), Catherine Naepflin (University of Fribourg)

Development of a Training Toolbox to Prevent Handover Error in Health Care

Henny Boshuizen (Open Universiteit Nederland), Wendy Kicken (The Open University of the Netherlands), Slavi Stoyanov (The Open University of the Netherlands), Marcel Van der Klink (The Open University of the Netherlands)



Factors Affecting Success

Session type: Roundtable

Sat, Apr 14 - 12:25pm - 1:55pm

**Vancouver Convention Center,
Floor Second Level - East Room 2&3**

Chair: Joy L. Matthews-Lopez (National Association of Boards of Pharmacy)

Predicting Academic Success: Learning-Style Inventory Use in Graduate Allied Health

Antone Robert Opekun (Baylor College of Medicine), Denise M. McDonald (University of Houston - Clear Lake)

Most candidates accepted into highly competitive Physician Assistant (PA) Program at a nationally-recognized College of Medicine, perform well, but some lack certain critical learning skills needed for highly successful outcomes. Learning skills determine the mastery of target content. Many of these skills can be estimated by direct observation or self-reporting responses to specific queries and the patterns and preferences derived from those metrics comprise the construct of students' dominant learning style. The purpose of this study was to determine if a well-validated, proprietary instrument assessed learning skills of students as predictive of academic outcomes. Findings may prove helpful in the selection process of candidates, and may provide insight into the learning skill needs of students identified at risk for non-success.

The Effect of Socialization on Doctoral Student Persistence in Engineering: A Structural Equation Model

Evelyn Felina Castillo (University of Southern California), Linda A. Fischer (University of Southern California), Dennis Hocevar (University of Southern California)

A structural equation model technique is used to examine the socialization and the persistence of doctoral students in engineering at a large private, 4-year research university. Areas of socialization and mediating effects of satisfaction on student persistence are examined. A model for doctoral student persistence in engineering is presented. Recommendations to provide services, programs and an environment for successful socialization and integration is discussed.

Self-Reported Research Experience: Does It Predict Performance in Medical School and Internship?

Ting Dong (The Uniformed Services University of the Health Sciences), Anthony R. Artino (USUHS), William Gilliland (USUHS), Donna Waechter (USUHS), David Cruess (USUHS), Kent DeZee (USUHS), Margaret Calloway (USUHS), Steven J. Durning (USUHS)

PURPOSE: To investigate the impact of self-reported research experience on medical students' performance during medical school and into internship, controlling for undergraduate GPA and gender. **METHODS:** We collected data from seven year groups and conducted multiple linear regressions to detect the influence of self-reported research experience on seven outcome measures. **RESULTS:** Students who reported prior research experience performed significantly better on USMLE Step 1 and had a higher average medical school preclinical GPA but scored significantly lower on intern professionalism and expertise. **CONCLUSIONS:** These results suggest that prior research experience has a positive effect in the early stages of medical school training; the positive effect became weaker as the students progressed into the more senior phases of training.

The Effect of Using a Personal Development Plan on the Pharmacy Assistant's Learning and Performance

Simon Beusaert (Maastricht University), Mien Segers (Maastricht University), Didier Fouarge (Maastricht University), Wim H. Gijsselaers (Maastricht University)

In order to promote employees' learning and development, more and more companies are starting to implement Personal Development Plans (PDPs). Empirical studies researching the effectiveness of PDPs in the workplace are scarce, however. To help rectify this, this study examines the effects of using a PDP on the undertaking of learning activities and the employee's job competencies. To that end data from European pharmacy assistants was collected (N=2271). The results indicate that PDP users undertook more learning activities in the past than non-users, but using a PDP does not stimulate users to plan more learning activities in the future. Next, PDP users do not score themselves significantly higher on job competencies than non-users.

Sat, Apr 14 - 12:25pm - 1:55pm

Simulation and Technology

Session type: Roundtable Session

**Place: Vancouver Convention Center,
Floor Second Level - East Room 2&3**

Chair: Eunmi Park (Johns Hopkins University)

Impact of a Postsimulation Reflective Tool on Residents' Identification of Nontechnical and Cognitive Skills for Practice Improvement

Yue Ming Huang (University of California - Los Angeles), Anahat Dhillon (University of California - Los Angeles), Sara Kim (University of California - Los Angeles), Jamie Stiner (University of California - Los Angeles), Sebastian Uijtdehaage (University of California - Los Angeles), Sarah Zacharia (University of California - Los Angeles), Marjorie Stiegler (University of California - Los Angeles)

Purpose: To determine whether a self-reflection tool can aid in identification of weaknesses in nontechnical and cognitive skills (NTCS). **Perspective:** Nontechnical skills and cognitive error prevention are essential to crisis management and patient safety. **Methods:** 34 anesthesia residents were randomized to NTCS (self-reflection tool) or control (no tool), then listed three topics for practice improvement after completing a simulated case. **Results:** NTCS group identified a mean of 1.77 nontechnical topics for improvement compared to 1.17 in control group ($p=0.127$); proportions were 53.8% vs. 39.5%. Teamwork, communication and decision making were the most frequently reported. **Significance:** Reflective practice and improvement is required for maintenance of competence. A tool with clear anchors could promote life-long self-directed learning of nontechnical and cognitive skills.

The Effects of Authenticity and Self-regulation: Comparing the Power of Innovative and Traditional Practical Simulations

Anne Khaled (Wageningen University), Judith Gulikers (Wageningen University), Harm Biemans (Wageningen University), Martin Mulder (Wageningen University)

Present study illustrates how adding authenticity and self-regulation to practical (i.e., not virtual) simulations stimulates students to develop vocational and generic skills crucial for their future profession. This is a challenge because practical simulations were traditionally developed to train specific and technical skills under strict guidance of instructors. Comparison of learning outcomes of 96 first-year Applied Biology students participating in an innovative (authentic and self-regulative) and traditional practical simulation showed that they gained 5 out of 6 vocational and generic skills. There were no differences between groups. Surprisingly, students in the traditional simulation scored higher on the transfer test and their simulation was perceived as more authentic than the innovative simulation. The discussion elaborates on possible explanations for the results.

Baseline Characteristics of Nursing Faculty Participating in a Patient Care Technology Faculty Development Program

Denise Passmore (University of South Florida), Laura Gonzalez (USF), Joan Perl (USF), Allyson Radford (USF)

To develop a nursing faculty technology education program, this study was initiated to describe faculty's baseline knowledge, skill and needs with patient care technology, specifically simulation, telehealth, and informatics. Online surveys were completed by 26 applicants to the faculty development program, and subsequent focus groups conducted at applicants' institutions. Though all participants reporting having some knowledge and skills in simulation and informatics, the majority ($n=19$) reported having no skills in telehealth, and 9 stated they had no knowledge of telehealth. Focus group analysis identified three areas of concern with nursing faculty: lack of resources, resistance to change, and lack of information. As a result, an online program and consortium was implemented to meet the education and collaboration needs of faculty.

Sat, Apr 14 - 2:15pm - 3:45pm

Recruiting and Advancement of Underrepresented Groups in the Professions

Session type: Paper Session

**Place: Pan Pacific, Floor Restaurant Level
Pacific Rim Suite 2**

Discussant: Glen P. Rogers (Alverno College)

Chair: Brian J. Hess (American Board of Internal Medicine)

Relationship of Geographic Mobility and Institutional Prestige to Career Advancement of Women in Academic Medicine

Marsha R. McLean (Fayetteville State University), Sharon Anderson Dannels (The George Washington University), Sharon A. McDade (American Council on Education)

This study explored the relationship of geographic mobility and institutional prestige to career advancement (administrative promotions) of women seeking mid- to executive-level positions in academic medicine. Both factors have been positively related to career advancement in higher education, but not investigated in academic medicine where women are disproportionately underrepresented in the higher ranks (full professor to dean). This quantitative study explored these two potential barriers to recruiting, hiring, and promoting women, using an existing dataset from the Executive Leadership in Academic Medicine® Program for Women (380 participants who completed this leadership development program, 1996-2005) and descriptive and associational statistics. Geographic mobility was found to be advantageous to career advancement for the small proportion (24%) of movers, while institutional prestige was not.

The Production of Engineering Doctoral Degrees for Women and Underrepresented Minorities: An Institutional Capital Examination

Amanda Ostreko (The University of Kansas)

This study used institutional productivity as a way to examine the relationship between institutional factors and doctoral degree production for women and underrepresented minorities (URMs) in engineering programs. Data were drawn from the American Society for Engineering Education's (ASEE) Engineering College Profiles and Statistics, U.S. News & World Report's (USNWR) ranking of graduate programs, the Integrated Postsecondary Education Data System (IPEDS), and Association of American Universities (AAU) listing of member institutions. Significant results were found for variables related to the rate of women and URM professors employed at the full professor-level, percentage of women and URMs enrolled at the undergraduate and master's-level, AAU status, USNWR rank, doctoral cohort size, and average annual research expenditures.

Understanding Stereotype Threat amongst Pre-Medical and Pre-Dental Underrepresented and Disadvantaged Students

Lawrence Hy Doyle (University of California - Los Angeles), Lourdes R. Guerrero (University of California - Los Angeles), Michelle Lynn Vermillion (University of California - Los Angeles), Sebastian Uijtdehaage (University of California - Los Angeles)

In an examination of aspects of performance differences related to a perceived 'Stereotype threat', 211 pre-medical and pre-dental students enrolled in a summer pipeline program were given instructions related to the possibility for change in performance levels for the taking of a verbal section of a standardized exam. Results found significant differences between students instructed that change was 'possible' vs those who were instructed that change was 'unlikely.'

Engineering Messaging and Female Role Models: Do They Make a World of Difference?

Stephanie Rivale (University of Colorado), Janet L. Yowell (University of Colorado), Jayne Aiken (University of Colorado), Sweta Adhikary (University of Colorado), Alexander I. Archuleta (University of Colorado), Daniel W. Knight (University of Colorado), Jacquelyn F. Sullivan (University of Colorado)

This study evaluates pre/post 5th grade students' (n=611) perceptions of engineering using an attitudes assessment and a Draw-an-Engineer Test in eight elementary schools. The control group participated in the program prior to the implementation of an explicit engineering messaging intervention, while the treatment group received the messaging intervention. Engineering attitudes were measured on two dimensions, knowledge of engineering as a career and interest in engineering. All students significantly gained on the knowledge of engineering dimension. Prior to the messaging intervention, interest in engineering actually decreased, yet increased after the messaging intervention, resulting in a significant time and messaging interaction effect. Gender of the Graduate Teaching Fellow was the only factor that impacted the engineers drawn by the students.



Sat, Apr 14 - 4:05pm - 6:05pm

Division I Vice Presidential Address:

Does Faculty Development Improve Learning and Performance Across the Professions?

Session type: Invited Session

**Place: Pan Pacific, Floor Restaurant Level
Pacific Rim Suite 2**

Ara Tekian (University of Illinois at Chicago)

Chair: David Irby (University of California—
San Francisco)

Panel Discussion:

1. How Much of What Is Termed “Faculty/Professional Development” Develops Professionals? How Could the Impact of This “Development” Be Measured?
Wim Gijssels, Maastricht University, the Netherlands
2. Does Faculty Development Imply Culture Change? What Seem to Be the Most Productive Forms of Faculty/Professional Development?
Janet Hafler, Yale School of Medicine, USA
3. How Could Faculty Development Programs Become Effective? What Could Be Done to Improve the Link Between Faculty Development and Participant Performance?
Trudie Roberts, Leeds University, UK

Sat, Apr 14 - 6:15pm - 8:15pm

Division I Business Meeting

**Place: Pan Pacific
Floor Restaurant Level
Pacific Rim Suite 2**

Sun, Apr 15 - 7:00am - 8:00am

**Membership & Mentoring Committee
Breakfast Meeting**

**Place: Vice President’s Suite
Pan Pacific**

Sun, Apr 15 - 8:15am - 10:15am

**Clarifying Assessment and Measurement Issues
Across Disciplines and Professions**

Session type: Symposium

**Place: Pan Pacific, Floor Restaurant Level
Pacific Rim Suite 2**

Chair: Danette W. McKinley (Foundation for Advancement of International Medical Education and Research)

In this interactive symposium, panelists and participants will examine challenges and opportunities related to defining constructs and capabilities within and across professions, illuminating and then refining measures to inform teaching and learning. While there is little consensus about the nature of relationships between knowledge bases and professional aptitudes, outside pressures are increasing on secondary and undergraduate schools to appropriately prepare students for professional study, and on professional schools to graduate students who perform competently. Thus, educational researchers are reviewing opportunities to refine and assess students’ abilities to define and solve problems they will encounter, especially in interprofessional contexts. We are initiating this symposium as an initial step toward developing a research agenda and additional resources.

Learning and Assessment of Competencies: Two Sides of the Same Coin

Paul F. Wimmers (University of California - Los Angeles),
Lourdes R. Guerrero (University of California - Los Angeles),
Susan Baillie (University of California - Los Angeles)

Assessing Student Learning Outcomes Across a Curriculum: Resolving Judgment and Validity Issues Across Disciplines and Professions

Marcia Mentkowski (Alverno College)

Measurement Issues in Conducting Action Research Across Primary Care Professions

Anne Christine McKee (Anglia Ruskin University)

Assessment Challenges in Creating the Uniform Bar Examination: The Three P’s—Politics, Practicality, and Psychometrics

Douglas R. Ripkey (National Conference of Bar Examiners)

Clarifying Definitions and Measures of Clinical Thinking: A Systematic Review

Lily Fountain (University of Maryland)

Sun, Apr 15 - 10:35am - 12:05pm

Measuring and Improving the Teaching Skills of Health Professions Faculty

Session type: Paper Session

Place: Pan Pacific, Floor Restaurant Level Pacific Rim Suite 2

Chair: Ilene B. Harris (University of Illinois at Chicago)

Characteristics of Educator Networking: Collegial Support and Collective Efficacy Among Health Science Educators

Gustavo Loera (Mental Health America of Los Angeles), Jonathan Nakamoto (WestEd), Robert S. Rueda (University of Southern California), Katie Moulton (University of Southern California), Youn Joo Oh (Education Development Center, Inc.)

This study investigated the support networks and collegiality of career technical educators working in the area of health science. Participants included 317 educators (secondary educators and individuals from the career technical sector), all part of the health science career pathway programs in the state of California. The results indicated that most of the educators reported having access to some type of support network. Also, the results of a structural equation modeling analysis indicated that respondents who reported having more educators in their program were more likely to report higher levels of collegial support and collective efficacy. Similarly, educators who reported working more with other educators on interdisciplinary curriculum projects tended to report higher levels of collegial support and collective efficacy.

The Chair's Perspective of Part-time Faculty in Departments of Pharmacy Practice: Benefits and Consequences

Nancy F. Fjortoft (Midwestern University), Susan R. Winkler (Midwestern University), Thy Mai (Midwestern University)

The objective of this study was to describe benefits and consequences of part-time faculty in departments of pharmacy practice from the Chair's perspective. A stratified purposive sample of 12 chairs was selected from the total population. Eleven telephone interviews were conducted. Two investigators independently read interview notes, categorized and enumerated responses to determine major themes using content analysis methods. The investigators jointly reviewed the data and came to consensus on major themes. Benefits include faculty retention and individual faculty work/life balance. Consequences include managing individual and departmental workload, marginalizing part-time faculty, and promotion and tenure issues. All the requests to switch to part-time status were faculty driven and most were approved. Clear expectations need to be established for optimal success.

Assessing Cross-Disciplinary Thinking in Cancer Prevention Research Training

Loran Carleton Parker (Purdue University), Meghana Suchak (Purdue University), Omolola Adedokun (Purdue University), Robin Adams (Purdue University), Dorothy Teegarden (Purdue University), Amy L. Childress (Purdue University), Wilella Burgess (Purdue University)

Professional education requires that students develop not only discipline specific competencies, but also cultivate broad knowledge across multiple disciplines that will allow them to apply and utilize their education and training to solve complex problems. Despite the recent national interest in interdisciplinary learning and research, little is known about the effectiveness of programs designed to enhance student interdisciplinary skills. Although the challenges associated with cancer prevention and treatment often require concerted research and education efforts across multiple disciplines, little is known about effective programs and best practices for training students in interdisciplinary cancer research. This study describes the impact of an interdisciplinary internship program in cancer prevention research on student understanding of the breadth of cancer issues.

Contextualizing Culture in Medical Practice: A Qualitative Study of Faculty at an Academic Health Center

Madison L. Gates (University of Kentucky), Kelly D. Bradley (University of Kentucky)

Medicine increasingly frames aspects of health disparities in terms of cultural differences between patients and physicians. However, medical education does not frame explicitly its understanding of culture despite the myriad ways other disciplines approach the construct. Conducted at a large academic health center, this study explored how primary care physicians frame culture. Faculty and resident physicians in primary care specialties provided open-ended responses regarding their perspective of culture. Faculty and resident physicians primarily framed culture in concrete terms where beliefs are somewhat stable and inescapable. However, residents do not attribute their competency to faculty. Our findings suggest that faculty and resident physicians believe culture to be important, but their understanding of the construct lends itself to stereotyping patients.



Sun, Apr 15 - 12:25pm - 1:55pm

Division I Poster Session

Session type: Poster Session

**Place: Vancouver Convention Center,
Floor First Level - East Ballroom B**

A Process Model of Continuing Professional Learning and Change: A Longitudinal Mixed-Method Study of a Faculty Development Program in Geriatrics

Eunmi Park (Johns Hopkins University), Colleen Christmas (Johns Hopkins / Medicine), Gary J. Confessore (The George Washington University), Samuel C. Durso (Johns Hopkins / Medicine)

Effective Interprofessional Education in Child Welfare for Prelicensure Nursing, Social Work, and Education Students

Robert F. Whiteley (The University of British Columbia - Okanagan), Deb Carter (The University of British Columbia - Okanagan)

Assessing the Moral Judgment of Medical Students at the Start of a Four-Year Professional Curriculum

Kirk L. Smith (The University of Texas - Medical Branch at Galveston), Sandra Riegler (Morehead State University), Ann W. Frye (The University of Texas - Medical Branch at Galveston), Jason Glenn (The University of Texas - Medical Branch at Galveston)

Academic Socialization in Online Doctoral Programs

Liam Rourke (University of Alberta), Heather A. Kanuka (University of Alberta)

Entrepreneurial Internship Experiences: Changes in Perceptions and Interest in Small Businesses and Entrepreneurship

Loran Carleton Parker (Purdue University), Mary E. Varghese (Purdue University), Omolola Adedokun (Purdue University), Wilella Burgess (Purdue University), Monica Shively (Purdue University), Ann Bessenbacher (Purdue University)

Modeling Cultural Competency: Student-Perceived Qualities of Culturally Competent Providers

Regina Richter (University of California - Los Angeles), Arthur Gomez (University of California - Los Angeles), Arleen Brown (University of California - Los Angeles)

From Knowing What Is Better to Doing What Is Best! Patient-Centered Interprofessional Education: Evaluation of a Campus-Wide Implementation

Deidre Houston Magee (University of Colorado - Denver)

Are Feedback Sandwiches Junk Food or Healthy Fare?

Jay Parkes (University of New Mexico), Sara A. Abercrombie (Bowling Green State University), Teresita Mccarty (University of New Mexico)

Standardized Open-Ended Questionnaires as a Substitute for Personal Interviews in Admissions to Various Educational Programs

Naomi Gafni (National Institute for Testing & Evaluation), Avital Moshinsky (National Institute for Testing & Evaluation), Janine P. Woolfson (NITE, Israel)

Assessing Clinical Skills of Veterinary Medical Students: A Validation Study

Mo Zhang (Washington State University), Long Luo (Southern Methodist University)

Design Formats of Continuous Learning Pathways in Dutch Vocational Education and Training Related to Student Performance and Satisfaction

Harm Biemans (Wageningen University), Martin Mulder (Wageningen University)

Sun, Apr 15 - 2:15pm - 3:45pm

Measuring the Noncognitive Traits of Students in the Professions

Session type: Paper Session

**Place: Pan Pacific, Floor Restaurant Level
Pacific Rim Suite 2**

Discussant: Dorthea H. Juul (American Board of Psychiatry and Neurology, Inc.)

Chair: Louis J. Grosso (American Board of Internal Medicine)

Cross-Classified Model of Repeat Examinee's Ratings of Humanistic Competence on a Medical Licensure Examination Assessing Clinical Performance

Xiaoshu Zhu (University of Maryland - College Park), William L. Roberts (National Board of Osteopathic Medical Examiners), Xiuyuan Zhang (National Board of Osteopathic Medical Examiners)

Examinees were observed with improved performance on subsequent attempts on licensure examinations. Benefit of previous exposure to material on performance is equivocal. This study investigated standardized patient (SP) gender effects and pre-exposed material on repeat examinees' ratings of humanistic competence on a medical licensure

performance assessment. Using cross-classified multilevel model methods, examinee, SP and portrayed case were treated as random effects, providing means to assess unwanted variation attributed to SPs and cases on ratings. Inconsistent results of SP gender and repeat case effects suggest neglect of specifying the complex multilevel structure could lead to imprecise estimates of coefficients and SEs in the analysis resulting in incorrect extrapolation. Implications address the administration of prior exposure of material in a SP-examination.

Development and Validation of an Observation Scale for Assessing Humanistic Patient Care: A Preliminary Study

Ming Lee (University of California - Los Angeles), Paul F. Wimmers (University of California - Los Angeles), Cha-Chi Fung (University of California - Los Angeles)

This study developed and examined a brief instrument designed to assess medical students' performance in humanistic patient care. The instrument included five subscales assessing Integrity, Compassion, Altruism, Respect, and Empathy (ICARE). Fifty Class of 2010 students' videotaped performances in an OSCE station were rated by three investigators. The Cronbach's alpha, intraclass correlation, and the generalizability (G) study were conducted for reliability examination. To examine validity, a factor analysis was conducted to explore the latent structure of the scale and the correlations of the scale scores with four external criterion measures were calculated. Psychometric findings provided support for internal consistency, inter-rater and reproducibility reliability as well as construct validity of the scale scores. The criterion-related validity remains to be further investigated.

Many-Facet Rasch Analysis of Standardized Patient Ratings of Students' Humanistic Competence on a Medical Licensure Examination

Xiuyuan Zhang (National Board of Osteopathic Medical Examiners), William L. Roberts (National Board of Osteopathic Medical Examiners)

Global Patient Assessment (GPA) is a humanistic clinical skills assessment tool utilized in a high-stake medical licensure examination. Standardized patients (SPs) utilized the GPA tool to rate examinee's competence on physician-patient communication, interpersonal skills, and professionalism. The present study investigates the function of the GPA rating scale and the effects of SP raters and SP/case characteristics on SP ratings through Many-Facet Rasch Measurement (MFRM). 39,882 GPA ratings from the 2010-11 testing cycle were analyzed. It was found that SP raters showed different severity in ratings, could overall differentiate the six GPA traits that displayed different difficulty, utilized a reasonable range of the scale. The current 9-point scale had good separation reliability at .94.

Development and Initial Validation of a Survey to Assess Self-Efficacy in Undergraduate Medical Education

Anthony R. Artino (Uniformed Services University of the Health Sciences), Ting Dong (The Uniformed Services University of the Health Sciences), William Gilliland (The Uniformed Services University of the Health Sciences), Donna Waechter (The Uniformed Services University of the Health Sciences), Kent DeZee (The Uniformed Services University of the Health Sciences), David Cruess (The Uniformed Services University of the Health Sciences), Steven J. Durning (The Uniformed Services University of the Health Sciences)

The purpose of this study was to develop a survey for measuring students' medical knowledge and skills self-efficacy across the undergraduate medical education continuum, and to collect reliability and validity evidence for the instrument. A secondary purpose was to explore differences in students' self-efficacy from year 1 of medical school to year 4. We created 19 survey items and collected data from 304 medical students. Results from an exploratory factor analysis suggested three interpretable factors: patient care self-efficacy, interpersonal skills self-efficacy, and evidence-based medicine self-efficacy. We then compared students' self-efficacy at different stages of training. Consistent with our expectations, we found several significant differences, suggesting students' self-efficacy increases considerably from year 1 to 4. Implications and future research are discussed.

Sun, Apr 15 - 6:30pm
Division I Social
Al Porto Restaurant
321 Water Street
Vancouver, BC



Mon, Apr 16 - 8:15am - 9:45am

Standard Setting in the Professions

Session type: Workshop

**Place: Pan Pacific, Floor Restaurant Level
Pacific Rim Suite 2**

John R. Boulet (Educational Commission for Foreign Medical Graduates), Andre F. De Champlain (Medical Council of Canada)

Mon, Apr 16 - 10:35am - 12:05pm

Sustaining Interest in and Preparing Students for Successful Transitions to Professional Programs of Study: Insights From NSF (National Science Foundation)-Supported Engineering Education Initiatives

Session type: Symposium

**Place: Pan Pacific, Floor Restaurant Level
Pacific Rim Suite 2**

Chair: James S. Dietz (National Science Foundation)

Discussant: James S. Dietz (National Science Foundation)

Research agendas to promote high quality education in the professions are rich and varied, addressing issues from elementary through postsecondary which impact awareness of the educational trajectories that place one on-course for pursuing professional education; the quality of instruction which enhances learning along those trajectories; the effects of innovative curricula on student interest, engagement, and learning outcomes; methods for assessing student learning to inform instruction; and the training, expertise, and ongoing professional development activities that enhance instruction and may culminate in more and better prepared students pursuing education in the professions. This symposium presents insights from four NSF-supported studies with important implications for sustaining interest in and preparing students for successful transitions to professional programs of study.

Exploring the Role of Engineering and Real-World Problems in K-12 Learning of Science, 21st-Century Skills, and STEM Career Development

Elisabeth McGrath (Stevens Institute of Technology)

The Expert Blind Spot and Implications for the Teaching and Learning of K-12 Engineering

Anthony Petrosino (The University of Texas - Austin), Sara Hawkins (The University of Texas - Austin), Wonsoon Park (The University of Texas - Austin)

Developing a New Generation of Concept Inventories to Increase Diagnostic Capability

Ruth A. Streveler (Purdue University)

Mon, Apr 16 - 12:25pm - 1:55pm

Instructional and Technological Innovations in Education

Session type: Paper Session

**Place: Pan Pacific, Floor Restaurant Level
Pacific Rim Suite 2**

Chair: Katherine M. Edmondson (Cornell University)

Discussant: Luann Wilkerson (University of California - Los Angeles)

The Effects of a Narrative Introduction on Medical Students' Clinical Knowledge in a Multimedia Learning Environment

Hyuksong S. Song (New York University; Georgian Court University), Michael Nick (New York University), Umut Sarpel (New York University), Martin V. Pusic (Teachers College, Columbia University), Jan L. Plass (New York University), Adina L. Kalet (New York University)

We studied the effects of a contextualizing narrative on medical students' clinical knowledge and skills in a multimedia learning environment. It was hypothesized that a contextualizing narrative introduction would help students understand the core features of the instructional material, transfer knowledge to a similar case, and improve clinical skills than an expository introduction. One hundred fifty four 2nd year medical students agreed to participate in this study. It found that the expository group showed a higher score in the items that were described in the introduction (both narrative and expository) but not central to the narrative structure and the narrative group showed a higher score in the items that applied their knowledge to a novel case.

Why Animate? A Review of Instructional Design Features in Medical Animations

Sara Kim (University of California - Los Angeles), Rikke Ogawa (University of California - Los Angeles), Jessie Kim (University of California - Los Angeles), Jade March (University of California - Los Angeles), Elena Stark (University of California - Los Angeles)

Purpose: We reviewed medical animations for identifying design features that are applied in animation design. **Theoretical Framework:** Guidelines for animation design are grounded in: (1) the theory of mental modeling and (2) multimedia learning theory. **Methods/Data Sources:** Through Google keyword searches, we sampled 5% of initially identified 4,400 animations for review. Five evaluators reviewed 92 animations in the final sample pool. **Results:** Three major gaps were identified: (1) lack of teaching context; (2) low degree of optimizing dynamic interactive features; and (3) low availability of user interactivity features. **Conclusion:** Many unrealized opportunities exist for optimizing graphics power to deliver user-driven, interactive medical animations. **Scholarly Significance:** This is the first reported review of animations based on the existing instructional design guidelines.

Using Design-Based Instruction to Increase Engineering Adaptive Expertise in Teachers

Pat Ko (The University of Texas - Austin), Stephanie Baker Peacock (The University of Texas - Austin), Taylor Martin (The University of Texas - Austin)

With the growing popularity of high school engineering design courses, teachers with varying engineering backgrounds, multiple course options, and the open-ended nature of design, engineering design teachers need to be trained towards adaptive expertise (AE). Adaptive experts are both efficient and innovative. Working with 33 in-service teachers, we investigated whether design-based instruction (DBI) can develop AE in a 6-week summer professional development course. We measured teachers' beliefs about engineering before and after the course, as well as their innovation and efficiency before and after each course challenge unit. From the results, we conclude that DBI has improved the teachers' AE.

Teacher Learning as Group Composition: Thinking With the Theater Arts

David Allen (College of Staten Island - CUNY)

This cross-professional study investigates teacher learning groups within schools. It addresses two critical problems associated with learning groups: (1) What are the products of teacher learning group activity? and (2) How does activity within the groups promote composition of these products? It exploits contemporary theater-arts practices that promote collaborative creativity to create an analytical framework for teacher learning group activity. Applying the framework to three elementary school teacher learning groups, it identifies a range of resources produced within the groups, including instructional strategies, analytical categories, and inquiry questions, and factors that contribute to or constrain the development of such resources, including coherence of purpose, use of structures, and mode of interaction. It identifies implications for learning about practice across professions.

Mon, Apr 16 - 4:05pm - 6:05pm

Rating and Scoring Issues in Assessment

Session type: Paper Session

**Place: Pan Pacific, Floor Restaurant Level
Pacific Rim Suite 2**

Discussant: Jeremy W. Dugosh (American Board of Internal Medicine)

Chair: Jay Parkes (University of New Mexico)

Comparing Performance of Pairs of Content-Parallel Items With Different Response Formats in a Licensure Exam

Paul Edward Jones (National Association of Boards of Pharmacy), Maria Boyle (National Association of Boards of Pharmacy), William Finnerty (National Association of Boards of Pharmacy), Andrew Dedes, Joy L. Matthews-Lopez (National Association of Boards of Pharmacy)

This study compares the performance of standard multiple-choice items and pairwise matching items that are content parallel but differ in their response requirements (i.e., "fraternal twins"). The twin pairs were released simultaneously as evaluation items embedded in a high-stakes, computer-adaptive licensure exam. The distinguishing component of this work is the data collection design: parallel or "twin" items marked as enemies and simultaneously field tested on an authentic audience. Study results demonstrate that relative item information produced by well-written constructed response items is greater than that produced by strictly parallel multiple-choice items. The results of this study have important implications for practitioners of certification and licensure programs. This study should appeal to broad group of professions.

Leveling the Field in Performance Assessment: A Deviation Model for Adjusting Rater Biases

Andrew Jones (American Board of Surgery)

The use of performance assessments is widespread in high-stakes certification examinations. As these assessments are attached to such important outcomes for individuals and the public, it becomes critical to ensure that the examination process is as fair as possible. As many performance assessments utilize human raters for these high-stakes decisions, it becomes important to attempt to mitigate the effects of rater biases. Previous research has demonstrated the utility of adjusting ratings in performance assessment. The purpose of the current research is to present a deviation model for adjusting rater biases to mitigate the effects of rater leniency in performance assessment. The deviation method showed promise as a simple method to reduce rater bias in performance assessments.

Effects of Rater Monitoring on Rater Bias in Grading Essays on a High-Stakes Licensing Examination

Mark A. Albanese (National Conference of Bar Examiners), Douglas R. Ripkey (National Conference of Bar Examiners)

This study assessed the consistency of rater grading of essays when rater training includes monitoring as well as initial training to consensus. Essays by 112 bar examiner candidates were evaluated by raters who received pre-training with monitoring after every 12th paper while 191 were graded by raters receiving initial training only. Maximum Effect Sizes (MES) and R-squared values served as criterion measures. Ratets with monitoring produced smaller MES and R-square values for 5 of 7 questions than were obtained for values based upon group differences only compared to 1 (MES) or 2 (R-squared) of 7 for the training without monitoring. Monitoring grading of performance tasks can be a useful tool in a high-stakes assessment program for controlling general rater bias.

Estimating the Reliability of Performance Scores: Important Considerations

Regina Richter (University of California - Los Angeles)

Though performance-based assessment provides a mechanism for assessing complex skills like clinical competence, it also poses unique challenges to the estimation of score reliability. This study uses generalizability theory to illustrate the importance of accounting for multiple sources of error, the natural structure of data, and the decision-making standard in establishing score reliability. Performance data from 152 students who completed an OSCE in 2008 were used to conduct a series of generalizability studies that took into consideration different potential error sources and study designs. Results indicate that careful consideration of multiple error sources, the naturally occurring structure of the performance data, and the standard used are needed to avoid misinterpretation of score generalizability.

The Spectrum of Invariance: Measurement, Prediction, and Selection Invariance in Certification Testing

Andrew Jones (American Board of Surgery), Jonathan D. Rubright (University of Delaware)

A key component in the process of validating psychological and educational measures is to ensure that the measure being used has scores that are invariant across demographic groups. In testing, invariance can have a spectrum of meaning spanning measurement, prediction, and selection bias. Borsboom et al. (2008) demonstrated that, under certain conditions, measurement invariance and selection invariance may be incompatible, leading to a conundrum for psychometricians. This research investigates the full spectrum of invariance in a selection/certification context and the compatibility of selection invariance and measurement invariance in an applied setting. Results suggest that measures may essentially demonstrate measurement, prediction, and selection invariance in applied settings.

Tue, Apr 17 - 10:35am - 12:05pm

Issues for Students in the Professions: Moving From School to the Workforce

Session type: Paper Session

**Place: Vancouver Convention Center,
Floor Second Level - East Room 16**

Discussant: Renee Stalmeijer (Maastricht University)

Economics and Business Administration Post-graduates in Transition From University to Work: Labor Market Success Factors

Monique Bijker (Open University of the Netherlands), Marcel Van der Klink (The Open University of the Netherlands), Henny Boshuizen (Open Universiteit Nederland)

Due to rapid economic changes employers require more versatile competences from post-graduates in economics and business administration. The goal of the current study was to develop generalizable measures for self-reported competences in labor market surveys, and to investigate their predictive validity. The sample consisted of more than 4000 Dutch post-graduates in economics and business administration. The Rasch rating scale model indicated that self-reported acquired competences and self-reported required competences are two different constructs. Employers (as reported by the alumni) prioritize competences in different ways than education programs. Regressions revealed that specifically alumni's self-reported required competences and GPA were powerful positive predictors of labor market success, while the self-reported acquired competences were negative or neutral predictors.

Have I Chosen the Right Occupation? Determinants of Successful Vocational Education and Training

Patrizia Salzmann (University of Fribourg), Simone Berweger (University of Teacher Education St. Gallen), Samuel Krattenmacher (U of Teacher Education St. Gallen)

Determinants of student achievement in Vocational Education and Training (VET) are researched in a cohort of 843 apprentices from healthcare, social care and construction within a dual VET system. Our theoretical framework refers to Deci and Ryan's self-determination theory, Krapp's person-object-theory of interest and Holland's congruence theory. Longitudinal data will be collected throughout the three-year VET program (five measurement points and a follow up). Results from the 1st year (t0, t1) show a slight, but significant decrease in satisfaction in both fields of occupation. Regression analysis revealed that well being in the company, belief to have chosen the appropriate company, life satisfaction and experiences of competence through in-company training emerged as best predictors, explaining 40% of variance in satisfaction.

The Impacts of Economic Decline on Career Decision Making among Early Career Engineers

Katherine Winters, Holly Marie Matusovich (Virginia Polytechnic Institute and State University), Samantha Ruth Brunhaver (Stanford University)

The purpose of this work was to determine how early career engineering professionals describe the impact of the recent economic downturn on their career decisions. Using qualitative methods and Social Cognitive Career Theory, we interviewed 30 engineering graduates from the classes of 2007 and 2008. Results show that participants either felt the economy had no impact on their career decisions, that they had been negatively impacted by the economic decline, or that the economy caused them to change their plans but they are happy with their current career path. This study suggests the need to better prepare engineering graduates to adapt in order to succeed in an uncertain economy.

The Professional and Social Integration Experiences of International Medical Graduates in Canada

Efrem Mauro Violato (University of Calgary), Sonia Faremo (University of Calgary), Claudio Violato (University of Calgary), David Watt (University of Calgary), Deidre Lake (University of Calgary)

This paper seeks to characterize the expectations and actual experiences of International Medical Graduates (IMGs) relating to their social and professional integration after arrival in Canada. Participants (n=30) completed background information questionnaires and semi-structured interviews concerning their integration experiences in Canada. Demographic data were analyzed using basic descriptive statistics and a thematic analysis of interview data was conducted to identify themes relating to IMGs' social and professional integration. Several common themes were identified including language issues, professional and social supports and the interaction of professional and social integration, among others. Highlighted is the need for educational support and theoretical development.

Tue, Apr 17 - 12:25pm - 1:55pm

Measurement Issues in Medical Licensure and Certification

Session type: Paper Session

**Place: Vancouver Convention Center,
Floor First Level - West, Room 114&115**

Discussant: Rebecca A. Baranowski (American Board of Internal Medicine)

Chair: Anthony R. Artino (Uniformed Services University of the Health Sciences)

The Impact of Changes to the Written Communication Construct on Examinee Performance and Pacing: Findings from the USMLE® Step 2 CS® 2011 Pilot Examinations

Kimberly A. Swygert (National Board of Medical Examiners), Su G. Baldwin (National Board of Medical Examiners), Thomas Rebbecchi (Educational Commission for Foreign Medical Graduates), Colette Scott (National Board of Medical Examiners), Gail E. Furman (National Board of Medical Examiners), Jeannette M. Sanger (National Board of Medical Examiners)

The USMLE® Step 2 Clinical Skills (CS®) examination is a standardized-patient (SP) based assessment that assesses readiness of physicians to enter supervised practice. The examination is undergoing changes in the constructs being measured. One change is to the patient note (PN), a written

communications component that is being modified to include an explicit measure of clinical reasoning. Data from pilot studies were analyzed to assess the impact of changes on examinee time use and the relationship between PN time and scores. Preliminary results suggest examinees are using more time on the new PN, with a widening gap between US and international medical graduates. Results will have implications for time limits and components of Step 2 CS in the future.

Certified Internist's Knowledge of the Care for Underserved Patients

Rebecca S. Lipner (American Board of Internal Medicine), Rebecca A. Baranowski (American Board of Internal Medicine), Michelle Johnston-Fleece (American Board of Internal Medicine)

Although U.S. healthcare quality is improving, disparities are not. We analyzed properties of the Care for the Underserved module which assesses practitioners' knowledge-base related to care of the underserved. 1,219 physicians completed the module plus two surveys. Analyses included descriptive statistics, factor analysis, and a multiple linear regression. Performance was good (mean of 73%) but left room for improvement. Factor analysis provided evidence of validity and reliability was respectable (0.67). Certain physicians had a better knowledge-base (e.g., U.S./Canadian born and trained, in group practice, fewer privately insured patients). Physicians found the process valuable but requested guidance for improvement. Our research recognizes the importance of a sound knowledge-base in order to close the gap in the disparities of care.

Assessment of Clinical Reasoning: Effect of Case Characteristics on Raters

Danette W. McKinley (Foundation for Advancement of International Medical Education and Research), Thomas Rebbecchi (Educational Commission for Foreign Medical Graduates)

The purpose of the current investigation was to examine the relationship between time spent rating post-encounter exercises and characteristics of the cases used in a standardized patient (performance-based) assessment of clinical skills. Data from the rating of 282,955 notes scored in 2010 was collected. A univariate analysis of covariance (ANCOVA) was conducted with rating time as the dependent variable, case characteristics as the independent variables, and rater experience at the case level as the covariate. The features of the case did not account for much of the variance in time spent rating, after controlling for rater experience on the case. Despite variation in case content, there is no adverse effect on the time needed to review and score the post-encounter exercise.

Assessing the Psychometric Impact of Enhancements to the Documentation Component of the USMLE (United States Medical Licensing Examination) Step 2 CS

Su G. Baldwin (National Board of Medical Examiners),

Polina Harik (National Board of Medical Examiners), Kimberly A. Swygert (National Board of Medical Examiners), Brian E. Clauser (National Board of Medical Examiners), Thomas Rebbecchi (Educational Commission for Foreign Medical Graduates)

Step 2 CS Examination intends to assess student readiness to enter into supervised practice. The Patient Note (PN) component requires examinees to summarize the patient history and physical examination, list possible diagnoses and follow-up tests. However, the PN does not provide examinees with an opportunity to support their diagnoses. Thus, in scoring notes, raters are forced to make assumptions regarding examinees' understanding of the case. Moreover, merely reporting findings is likely too simple a task for the level of maturity of a typical examinee. A pilot study was undertaken to study the modified PN including a Clinical Reasoning component. The present paper reports on the psychometric impact of this change. The preliminary findings support the feasibility of this approach.

Tue, Apr 17 - 2:15pm - 3:45pm

Teaching Innovations in the Education of Professionals

Session type: Paper Session

Place: Vancouver Convention Center, Floor Second Level - East, Room 19&20

Chair: Renee Stalmeijer (Maastricht University)

Discussant: Muriel J. Bebeau (University of Minnesota)

Improving Economics and Business Students' Critical Thinking: Empirical Support for Explicit Instructions

Anita Heijltjes (Avans University of Applied Sciences), Tamara Van Gog (Erasmus University), Fred Paas (Erasmus University)

Although critical thinking is considered to be a central goal in economics education, it is rarely explicitly taught. An experimental study is presented investigating the impact of dispositions and instructions on economics students' gains in critical thinking. Participants (N=84) were exposed to one of three conditions: implicit instruction, implicit + explicit instruction + practising, and implicit instruction + practising. Results showed that participants exposed to explicit instructions + practise had higher pre-test to post-test gains in critical thinking than participants in the other conditions. Regarding dispositions, participants with lower scores on actively open-minded thinking also had lower pre-test scores compared to participants with higher scores, but this did not interact with how much they gained from instructions.

Learner-Centered Higher Education in East Asia: Assessing the Effects on Student Engagement in Management Education

Philip Hallinger (The Hong Kong Institute of Education)

It has been observed that higher education in East Asia has adhered to a strong tradition of lecture-based instruction. Yet, scholars have asserted that East Asian students can adapt and thrive when taught with 'active learning' approaches. This study examines the process and effects of change in teaching and learning at a graduate school of business in Thailand which implemented active learning methods designed to increase student engagement. The quasi-experimental study analyzes data from more than 33,000 student course evaluations collected over a seven year period to assess the long-term impact of change in teaching and learning methods on student engagement. Findings suggest that the change to more active learning methods was related to positive sustained change in student engagement.

Interventions That Work: Improving Use of Medical Literature Sourcing by Beginning, First-Year Medical Students

Sally Krasne (University of California - Los Angeles), Carl D. Stevens (University of California - Los Angeles), Luann Wilkerson (University of California - Los Angeles) benefit.

Previous studies have indicated that medical students and residents demonstrate insufficient reliance on primary literature sources when researching questions related to patient health. The present study focuses on interventions aimed at increasing the quality of resource choices early in medical education training. We evaluated 3,204 references from 665 written PBL learning-issue summaries. These summaries were prepared by individual students or pairs of students during the first 8 weeks of medical school. Interventions in the form of early lectures on high-yield literature searching, workshops with librarians on targeting resources, and peer collaboration and feedback were introduced over a three-year period. Significant increases in journal and guideline-based resources and decreases in general public-level resources were observed over the three-year period.

Preparing Pharmacy Students to Consider Issues of "Public Good": Research Evidence From an Innovative Classroom Unit

Eva E. Toth (West Virginia University), Paula Witt-Enderby (Duquesne University), Maria Demetriou (Duquesne University), Stephanie Horner (West Virginia University)

This paper illustrates how socially-complex decision-making can be applied in fourth year pharmacy classes as a preparation for students' upcoming practicum. The instructional approach integrated large-classroom lectures on medicinal chemistry, pharmacology and clinical practice with the analysis of pharmaceutical advertisements. The results indicated that students (a) evaluated common advertisements as less than optimal in communicating scientific facts and (b) recognized several claims that targeted consumer values to influence purchasing behavior. After instructions, students' (c) rationale for their perspective was more complex with deeper consideration of public benefit.

Professional Licensure and Certification SIG Sessions & Abstracts

Sat, Apr 14 - 12:25pm - 1:55pm

Achieving Certification: Factors That Impact Success and Potential Outcomes

**Building/Room: Vancouver Convention Center,
Floor First Level - West, Room 111&112**

Discussant: Javarro Antoine Russell (National Board of Medical Examiners)

Chair: Andrew Jones (American Board of Surgery)

Strength in Numbers? Collaboration Effects on Achievement of National Board Certification

Rita Pin Ahrens (National Board for Professional Teaching Standards)

Spurred by a desire to improve student achievement, state and local policymakers across the nation have invested in programs intended to increase the volume of National Board Certified Teachers. With the growing popularity of professional learning communities and teacher collaboration, some districts and schools have encouraged and sponsored cohorts of teacher applicants for National Board Certification. Using hierarchical linear modeling, this study examines the effects of teacher collaboration on the likelihood of achieving National Board Certification. Teacher factors are examined for cross-level interaction effects on the relationship between teacher collaboration and advanced certification.

Does the Timing Matter to Pass a Professional Certifying Examination?

Ying Du (American Board of Pediatrics), Linda A. Althouse (American Board of Pediatrics)

The study is to investigate the performance difference among candidates who took a general certifying examination at different time after their training. For the purpose of the study, candidates are classified into three groups: Group 1: Candidates who took the first available certifying examination right after training. Group 2: Candidates who took the certifying examination one year after their training. Group 3: Candidates who took the certifying examination more than one year after their training. The result shows that significant group difference in mean score and passing rate even after controlling the pre-examination knowledge. The longer candidates waited to take the certification examination after resident training, the less likely they can pass the examination.

Slaying Ghosts in the Room: How Licensure Exams Become Racialized Testing Events for Black Pre-service Teachers

Emery Marc Petchauer (Lincoln University)

Empirical research on teacher licensure exams has illustrated that they do not function uniformly across racial groups. With this background, this paper reports findings from a 4-year, qualitative study exploring how Black pre-service teachers experience the comprehensive “testing event” of licensure exams (e.g., Praxis). Using the social psychological construct of identity contingencies/threats, this study found the testing event can become a radicalized experience for some Black students in two ways: (a) specific interactions with proctors and site administrators and (b) the racial composition and actions of other test takers. Importantly, these racialized experiences were not based upon any specific test questions or content. From these findings, this paper outlines ways to reduce identity threats that likely undermine performance.

The Effects of Traditional Certification on Elementary Students’ Reading Achievement

John M. Weathers (University of Colorado - Colorado Springs), Hsien-Yuan Hsu (National Taiwan Normal University), Melissa Tran (University of Colorado - Colorado Springs)

In this study, we use propensity score matching techniques to examine the effects of teacher certification on student achievement by comparing teachers with traditional and alternative certifications using national data from the Early Childhood Longitudinal Survey-Kindergarten Cohort (ECLS-K). We find that there is a substantial difference in third grade reading achievement between matched students taught by a traditionally certified teacher and those taught by alternatively certified teachers. The study has broad implications for state certification policy and teacher hiring practices.



Sun, Apr 15 - 10:35am - 12:05pm

Using Psychometrics to Optimize Certification Testing

**Building/Room: Vancouver Convention Center,
Floor First Level - East, Ballroom A**

Chair: Andrew Jones (American Board of Surgery)

An Investigation of Response Time Differences on a Certification Examination With Multiple Item Formats

Brian J. Hess (American Board of Internal Medicine), Mary Johnston (American Board of Internal Medicine), Rebecca S. Lipner (American Board of Internal Medicine)

Research on examination response time has focused on investigating traditional multiple-choice items, and consequently the impact of other innovative or complex item formats on response times is not understood. The present study applied a multilevel modeling framework to investigate examinee characteristics associated with response time differences on a high-stakes examination comprised of multiple item formats. Results showed that a linear growth model described examinee pacing on the traditional multiple-choice section, while a growth curve model described pacing on a diagnostic study section comprised of complex, graphic-intensive selected-response items. Examinees' gender, ability, and age explained variability in response times for each exam section. These findings have implications for test developers who intend to incorporate complex item formats into their high-stakes examinations.

The Consideration of Subscores: Dimensionality Analyses of the Multistate Bar Examination

Michelle Langer (National Conference of Bar Examiners)

A licensure exam is often administered with multiple purposes in mind, including providing both an overall score and subscores. Given the potential utility of subscores, it is essential to establish their validity before regularly providing them. Employing factor analysis to assess dimensionality both informs subscore validity and addresses potential consequences related to the estimation of the scale's psychometric properties and examinees' trait estimates. In addition to traditional factor analytic approaches, this research explores the application of the bi-factor model as an alternative conceptualization; the bi-factor model uniquely addresses the dual goals of assessing unidimensionality in terms of reporting an overall score and evaluating subscore viability. Dimensionality analyses are applied to the Multistate Bar Examination (MBE), a licensure exam for lawyers.

The Effects of Image Zooming in a Medical Certification Examination

Timothy A. Sares (American Board of Internal Medicine), Renbang Zhu (American Board of Internal Medicine)

Computer-based testing makes possible the integration of innovative forms of digital media such as image zooming for enhancing the fidelity of the examination. The objective of this study is to compare item statistics and response times with and without the image zooming feature and to examine candidates' post-exam reactions to the image zooming feature. We will use data from a medical certification exam that will be administered in fall 2011 that incorporates 19 items with the image zooming feature and that will be based on approximately 500 candidates. The logistic regression differential item functioning (DIF) method will be used (Swaminathan & Rogers, 1990). This methodology provides a model-based approach for testing the impact of zoomed image item variants on performance.

Sun, Apr 15 - 6:15pm - 7:45pm

**SIG-Professional Licensure and Certification
Business Meeting**

**Building/Room: Vancouver Convention Center,
Floor Second Level - West, Room 205**

Did you know.....

Vancouver is the second or third largest film production center in North America. It is second to Los Angeles in television production and third behind Los Angeles & New York City in feature film production. This is due to favorable tax concessions to the industry, the year round mild climate, and Vancouver's wide variety of locales.

PERQ is the official newsletter of Division I (Education in the Professions) of the American Educational Research Association. Current division officers and committee chairs are:

Vice President (2009-2012):

Ara Tekian, University of Illinois, Chicago

Vice President-Elect (2012-2015):

LuAnn Wilkerson, University of California, Los Angeles

Past Vice President:

Patricia O'Sullivan, University of California San Francisco

Secretary (2010-2012):

Katherine Edmondson, Cornell University

Secretary (2012-2014):

Eugene Anderson, American Dental Education Association

Members-at-Large:

Janet Hafler, Yale University

Paul Wimmers, University of California, Los Angeles

Chair, 2012 Program Committee:

John (Jack) Boulet, ECFMG / FAIMER

Chair, 2013 Program Committee

Andre de Champlain, Medical Council of Canada

Chair, Affirmative Action Committee:

Hugh Stoddard, University of Nebraska College of Medicine

Co-Chairs, Awards Committee:

Danette McKinley, FAIMER

Summers Kalishman, University of New Mexico

Chair, Membership Committee:

Kimberly A. Swygert, National Board of Medical Examiners

Chair, Nominating Committee:

Dorthea Juul, American Board of Psychiatry and Neurology

Co-Chairs, Mentoring Committee:

Maria Blanco, Tufts University

Bridget O'Brien, University of California, San Francisco

Ad Hoc Strategic Planning Committee:

Ruth Streveler, Purdue University

Louis Grosso, American Board of Internal Medicine

Arianne Teherani, University of California, San Francisco

Steven Durning, Uniformed Services University of the Health Sciences

PERQ Editor:

Marta van Zanten, ECFMG / FAIMER

Web Liaison:

Genevieve Gauthier, University of Alberta, Canada

Graduate Student Representative:

Robert Ellis, University of Texas, Austin (Senior Representative)

Lauren Taylor, Northwestern University (Junior Representative)

Member Liaison to Graduate Student Committee:

Dorthea Juul, American Board of Psychiatry and Neurology

Professional Education Researcher Quarterly (PERQ)

is published three–four times a year and is available on the Division I website, <http://www.aera.net/divisions/?id=542>. Announcements for new issues are posted on the Division I listserv.

Suitable publications for PERQ include official notices to the Division I membership, articles, descriptions of research in progress, reviews of research, book reviews, letters, and announcements of jobs, funding, or events judged to be of interest to researchers in professions education. Publication of such items is dependent on available space. Materials should be submitted using APA style (in MS Word, .rtf or .txt format) to:

Marta van Zanten, PERQ Editor

Educational Commission for Foreign Medical Graduates (ECFMG)

Foundation for Advancement of International Medical Education and Research (FAIMER)

3624 Market Street

Philadelphia, PA 19104

mvanzanten@faimer.org

PERQ is archived on the Web at:

http://www.aera.net/divisions/Default.aspx?menu_id=80&id=542