

**AERA 2011
New Orleans, LA
Fri April 8-
Tue April 12**



Inside this issue:

VP Message	1
2011 Program Chair Report	2
AERA Division Social RSVP	3
Tour LSU Sim Ctr	4
Mentoring Report	5
Affirmative Action announcement	6
Graduate Student report	6
Book Announcement	7
Tips for an Exciting Presentation	8
Tips for Chairs and Discussants	9
Division Schedule-At-a-Glance	10
Division Sessions & Abstracts	11
SIG Professional Licensure Sessions	31

AERA Division I - Vice President's Message

Dear colleagues,

We are so fortunate that this year's Annual Meeting will be in New Orleans. **Sara Kim, Jack Boulet, Stan Hamstra**, and I were there in January 2011 attending the Annual Conference by the Society for Simulation in Health Care (SSiH) and we loved their food, the blue sky, the vivacious atmosphere and the jazz music. New Orleans is back to normal with many more stories and places to visit. Sara Kim and I visited the restaurant **Palace Café**, a beautiful old building from the turn of the century, where the Division I Social dinner will take place, and it's just across from the Sheraton Hotel. If you have not made your reservations by now, just contact Sara at your earliest convenience (see ad on page 3), because you would not want to miss such an exquisite experience and indulgence in local delicious specialties.

Our Graduate Student Representatives have once more organized a welcome reception on the first day of the conference, together with the Mentoring Committee, and continuing the initiative that started last year, where graduate students and junior faculty members meet and receive constructive feedback from a senior scholar, both on their presentation skills and future directions for research. For more details, please read their announcement on page 5.

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 18**. All relevant information concerning the roles and responsibilities of chairs and discussants are available on page 9.

Similar to last year, this year's conference is again over a weekend, and therefore our Business Meeting will be on Saturday evening, April 9 at 6:15 PM at Astor Crowne Plaza, Astor Ballroom 1. Besides the regular business updates and the award ceremony, we will

celebrate the 40th Anniversary of the establishment of Division I. Come and join us to celebrate this important occasion together.

Our breakfast sessions are becoming quite popular and last year we had very good attendance. This year again the two breakfast sessions will be on Saturday and Sunday, from 7:00 – 8:00 AM in the VP Suite in Sheraton, and the discussions will focus on strategic planning and mentoring respectively. We will share the results of the survey conducted in 2010 by the Strategic Committee.

Based on the very-well attended invited workshops last year, we organized two new 90-minute invited workshops: *"An Introduction to Research Methods for Education in the Professions"* on Sunday at 8:15am by **Danette McKinley** and **John (Jack) Boulet**, and *"The Scholarship of Writing for Publication"* on Monday at 12:25 PM by **Brownie Anderson** and Ara Tekian. Both of these sessions are open to all.

Finally, one of the highlights of the program is the Invited Address on Saturday afternoon, April 9. The speaker is **Prof. Mitchell Chang** from UCLA, and his presentation is titled *"Becoming Scientists: Practices in Undergraduate Education that Contribute to Degree Completion and Advanced Study in STEM Disciplines."* For more information about the program, please see the Program Chair's report on page 2, and detailed schedule.

I would like to take this opportunity to thank the Division I officers and all the members of the different committees, who have helped in many different ways to make this program a success. Come and join us in New Orleans, and bring your friends too.



- Ara Tekian

2011 Annual Meeting Program Chair's Report

Greetings to Division I members! I trust that all of you have safely weathered the winter and are looking forward to balmy spring. I hope you are as excited as I am about attending the upcoming annual meeting in New Orleans.

The Division I is offering an excellent program this year covering a wide range of topics and issues that cut across many dimensions of professions education. The response rate to the Division I call for proposals was again high last year. We received 100 proposals including 92 paper and 8 symposium submissions. Creating a conference program is truly a collaborative effort among multiple individuals, who are recognized below.

First of all, the Division owes its gratitude to 64 reviewers who volunteered to review proposals over the summer. Their commitment helped uphold the long-standing Division tradition of having each proposal be reviewed by 5 reviewers. Every single reviewer met the deadline and provided rich, thoughtful, and constructive feedback to 100 submitters.

Second, I would like to acknowledge the dedicated services of the following Program Committee members: **Jack Boulet**, FAIMER (Foundation for the Advancement of International Medical Education and Research); **Stan Hamstra**, University of Ottawa Faculty of Medicine; **Lynne Robins**, School of Medicine, University of Washington; **Ruth Streveler**, Engineering Education, Purdue University; **Ara Tekian**, School of Medicine, University of Illinois at Chicago; and **Jennifer Turns**, Human Centered Design and Engineering, University of Washington. We met in Seattle on September 19 and 20, 2010 and shared intense time together pouring over the review results and brainstorming on the program content.

Third, a special recognition of **Jan Carline** at University of Washington, who provided invaluable services and support in synthesizing reviewers' evaluations and preparing reports for the Program Committee's review.

This remarkable collective effort of many individuals resulted in a program that includes 3 symposium, 9 paper, 5 roundtable,



1 poster, and 2 workshop sessions. I would like to draw your attention to a couple of sessions. This year, the program includes a unique opportunity for our members to visit and explore the state-of-the-art simulation center at the Louisiana State University School of Medicine. **Sheila Chauvin**, who is a long-time ardent supporter of Division I, and her colleagues are generous to organize a tour for you. Please come and witness first hand how the future inter-professional healthcare providers are trained in a simulation environment for mastering their technical and teamwork skills. In addition, this year's invited address will be given by **Mitchell Chang**, professor of Higher Education and Organizational Change at University of California, Los Angeles. Hope many of you can attend his address titled, *"Becoming Scientists: Practices in Undergraduate Education That Contribute to Degree Completion and Advanced Study in STEM Disciplines"*.

I would like to take this opportunity to thank you for your support in the past year. Serving as your program chair was a privilege that brought me close to many of you on an individual basis and gave me a greater insight into the AERA governance. I also learned that you cannot effectively carry out your role as a program chair without the Division Vice President, who stands ready to reach out for guidance whether he is in Chicago or in Saudi Arabia. Thank you, Ara, for shining a light of mentoring and advice every step of the way from recruiting reviewers to finalizing the program.

Lastly, I would like to recognize three individuals at the AERA headquarters whose timely communication and patience were key to my role. Thank you, **Laurie Cipriano**, Director of Meetings, **Samara Wolf**, Meetings Manager, and **Katie Coon**, Meetings Associate, for your ongoing support for Division I.

See you all at the Big Easy!

Sara Kim, Program Chair Division I



Division I Social Dinner

Sunday April 10, 2011, 6:30 p.m. at

Palace Café

605 Canal Street
Fleur de lis room
New Orleans, LA 70130
Phone: 504-521-8310

Please join Division I colleagues for memorable New Orleans cuisine at the acclaimed Palace Café. The Palace Café is located on historic Canal Street housed in the Werlein building (former home of Werlein's, the nation's oldest family owned retail music chain), which has served as a New Orleans landmark since the turn of the century. It is owned and operated by Dickie Brennan of the famed New Orleans restaurant family.



Menu will include:

Appetizers: Duck & Brie Spring Roll with Sweet Onion Marmalade and Smoked Cherry Tomato, Mozzarella & Basil Tarlet

Salad: Werlein Salad

Entrée: Chargrilled Ribeye or Andouille Crusted Fish. A vegetarian option will be available

Dessert: White Chocolate Bread Pudding

Tea and coffee are included in the price. There will be a cash bar with both alcoholic and soft drink beverages.

Dinner cost: U.S.\$ 60.00 Payment by **March 31, 2011** 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 name of any guests (print): _____

Mail to: Sara Kim, PhD
Director, Instructional Design and Technology
David Geffen School of Medicine
University of California Los Angeles
Box 957381
700 Westwood Plaza, Room 1220
Los Angeles, CA 90095-1722

Email: sarakim@mednet.ucla.edu

Louisiana State University Health Sciences Center Welcomes Division I Members to Tour State-of-the-Art Simulation Centers in the School of Medicine

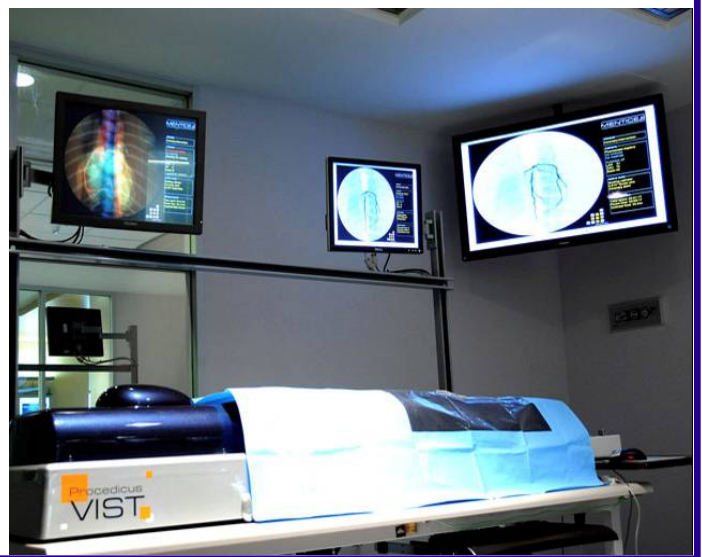
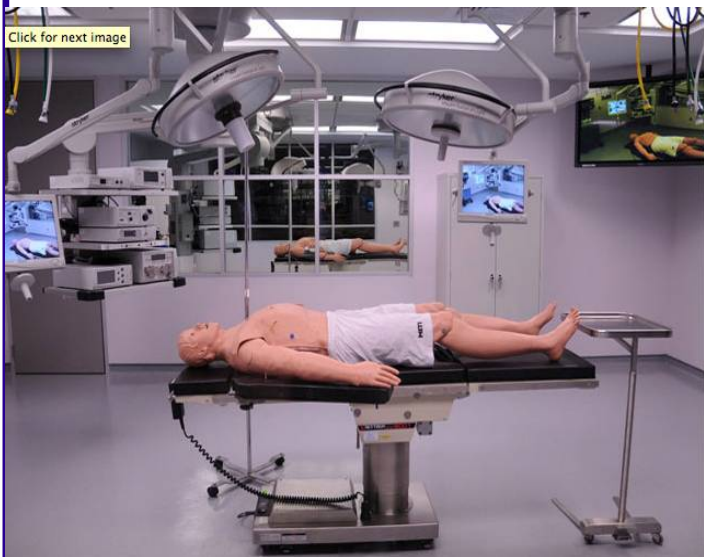
We are excited to announce an opportunity to tour the Louisiana State University Health Sciences Center's simulation centers in the School of Medicine. Thanks to a generous help of a long-time Division I member, Dr. Sheila Chauvin, this wonderful tour is offered to the Division I members during the AERA annual meeting.



The Isidore Cohn, Jr., MD Learning Center and the Center for Advanced Practice house sophisticated technology, including simulation and demonstration laboratories. The members will benefit from a first-hand view and opportunities to interact with LSU faculty and staff to learn about program and activities using this state-of-the-art technology to prepare the current and future healthcare providers for their cognitive, technical, and teamwork skills.

The tour will be offered **Monday, April 11 from 2:00 – 4:00 p. m.** Please send an email to sarakim@mednet.ucla.edu if you would like to participate in the tour. A follow-up email message will be sent to participants with the address and directions. The tour is free. The only anticipated expense involves a short taxi ride (10-15 mins) to the school.

Individuals interested in learning more about these Centers may go to the website at http://www.medschool.lsuhsu.edu/learning_center/ for descriptions and to view various videos of Learning Center activities.



Division I Mentoring Committee Initiatives at the AERA 2011 Annual Meeting in New Orleans

Come and join us!

Dear Division I Junior and Senior Scholars,

In an effort to address the wonderful suggestions about junior faculty mentoring for Division I proposed at last year's AERA meeting in Denver, we invite you to join us in the following mentoring initiatives for 2011.

Senior-Junior Scholar Feedback at Annual Meeting

The program 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 upcoming AERA annual meeting. 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 exercise 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, four pairs of junior-senior faculty participated in the program. All the participants appreciated the program and agreed that it provided useful information and networking for both senior and junior faculty. ***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***

Pre-Meeting Welcome & Orientation to Division I Session at Annual Meeting (Fri, Apr 10:30—11:45 am, Sheraton, Division I VP Suite)

This pre-meeting session introduces new members to Division I. Participants will have the opportunity to learn about the Division's meeting program and initiatives of the Graduate Student and Mentoring Committees, as well as to meet with senior and junior members of Division I. Juice and bagels will be served.

Mentoring Committee Breakfast (Sunday April 10, 7-8 am, Sheraton, Division I VP Suite)

At this meeting we will seek senior and junior member's feedback on the following initiatives that are being developed:

- Mentoring Website: creation of a junior faculty mentoring website to facilitate members networking prior to the meeting and provide junior scholars with: the mission of the committee; announcements of mentoring initiatives; research/publication resources; profile of senior scholars (scholarly interests, publications, contact information).
- Online module on writing good proposals: creation of a module to assist junior members with writing promising proposals.
- Pre-Meeting Mentoring: recruiting senior members who would be willing and able to connect with junior members prior to the meeting and offer feedback on how to best address reviewer's comments prior to presenting work at the meeting.
- Identifying colleagues in Division I (Division I Listserv upcoming request)
Connecting with colleagues who share a similar scholarly interest is one of the great benefits of attending the annual meeting. To facilitate these connections and provide an opportunity for graduate students, junior faculty, "middle-life" faculty and senior faculty to arrange meetings in advance of the meeting, we'd like to start a list providing members' names, institutional affiliations, areas of interest/research, self-identified status (grad student, junior faculty, or beyond junior faculty/senior faculty), and email address. We will be sending out an invitation to share your information via the Division I listserv. Keep an eye on Division I listserv messages!

Last, we recommend that you review the Tips for Delivering an Exciting Presentation from the Division I Mentoring Committee included in this issue (page 8). We hope that you will find them helpful!

We are very much looking forward to sharing these exciting mentoring initiatives with you!

Maria Blanco and Bridget O'Brien

Collaborators Needed for Division I Affirmative Action Committee

Ensuring that all members have equal opportunity to participate fully in the organization and that all viewpoints are allowed to be expressed freely is a priority for AERA. To achieve this, each AERA division has an affirmative action committee and an affirmative action officer who are charged with overseeing the diversity, inclusiveness, and social justice agenda within the division. 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. DIAAC's quest for social justice and affirmative action is closely entwined with profession specific efforts to enact appropriate affirmative action and social justice policies and to evaluate the impact of such policies.

Over the past decade, the cornerstone of DIAAC efforts has been an annotated bibliography of affirmative action and diversity issues that have appeared in the scholarly literature of professions education. The most recent iteration of this document can be found on the 'resources' page of the Division I website (http://www.aera.net/divisions/Default.aspx?menu_id=80&id=648). Division I researchers are encouraged to utilize this bibliography to aid their own research and to learn more about the role of educational research in social justice.

In 2011, the DIAAC will be working on a new edition of the Affirmative Action and Diversity in Professions Education bibliography. Currently, we are recruiting Division I members to help with the project.

If you are interested in participating in the creation of this new edition, please contact **Hugh Stoddard** (hstoddard@unmc.edu), **Division I Affirmative Action Officer**. Additionally, your suggestions for new initiatives for DIAAC or your comments about affirmative action and social justice in Division I and for its members are also welcomed.

A message from Your Graduate Student Representatives

For the AERA Conference 2011, Division I's Graduate Fireside Chat as planned will be:

"*Making the Most of Mentoring in Doctoral Education and Life Beyond*" with presenter **Carol A. Mullen, PhD**, Professor and Chair, Department of Educational Leadership & Cultural Foundations, School of Education, The University of North Carolina at Greensboro. According to Dr. Mullen: "This workshop focuses on self-initiated forms of mentoring in higher education with particular emphasis on the doctoral experience. Studies show that proactive mentoring interventions can make a positive difference in the success of graduate students during and following their formal studies. The presentation addresses primary and secondary types of support as well as informal and formal approaches to mentoring. The main question that informs this session is, *what mentoring ideas, practices, and strategies are effective for cultivating students' academic development and success?* Following a presentation on these concepts, there will be an interactive roundtable discussion. The audiences for this session are graduate students and junior faculty from Division I and the broader membership of AERA. All faculty and administrators are welcome."

We feel this session is applicable for graduate students of the professions who often seek support from scholars outside graduate schools of education (those working in medical, engineering, nursing, law, clergy, and the teaching profession, for example). But more importantly, it would be a great workshop for ALL graduate students and faculty interested in approaches to mentoring and being mentored across their career trajectories.

See page 24 for more information about the Fireside Chat with Dr. Mullen.

Christina Cestone and Robert Ellis



New Book on Workplace Learning Published

Congratulations Division I Contributors!

We are excited to tell Division I members about the publication of “*Extraordinary Learning in the Workplace.*” This book edited by Dr. Hafler and colleagues covers the theoretical underpinnings, supporting evidence, and examples of promising practices for workplace learning in four professions (medicine, nursing, education, and clergy). Workplace learning is discussed from a variety of angles, including curriculum, learning and instruction, assessment, faculty development, and future directions for practice and research.

Book Title: Extraordinary Learning in the Workplace

Editor: Janet P. Hafler, Ed.D.

Series Editor: W.H. Gijsselaers, School of Business and Economics, Maastricht University, The Netherlands

Series Associate Editors:

L.A. Wilkerson, David Geffen School of Medicine, University of California, Los Angeles CA, USA

H.P.A. Boshuizen, Center for Learning Sciences and Technologies, Open Universiteit Nederland, Heerlen, The Netherlands

Chapters and Authors:

OVERVIEW, Janet P. Hafler

I- CURRICULUM

Chapter 1: Conceptual Perspectives and the Formal Curriculum, Ilene B. Harris

Chapter 2: The Hidden Curriculum, Structural Disconnects, and the Socialization of New Professionals, Frederic W. Hafferty, Janet P. Hafler

II- LEARNING AND INSTRUCTION

Chapter 3: Theories of Learning for Workplace Education, Ilene B. Harris

Chapter 4: Instructional Theory and Design: Practices for Workplace Learning, Beverly W. Henry, Kathleen F. Malu

III-ASSESSMENT

Chapter 5: Conceptual Perspectives: Emerging Changes in the Assessment Paradigm for Professionals, Robert Galbraith, Stephen G. Clyman, Donald E. Melnick

Chapter 6: Assessment: Practical Strategies Applied to the Professions, Maurice Clifton, Elza Mylona

IV-IMPLEMENTATION

Chapter 7: Faculty Development for Workplace Instructors, Marilla D. Svinicki, LuAnn Wilkerson

Chapter 8: Envisioning the Future, Bridget O’Brien

To learn more about the book, visit the Springer website at <http://www.springer.com/education+%26+language/book/978-94-007-0270-7?changeHeader>

Many division members may recall the initial development of this book, which began in 2006 when several leaders from AERA Division I Committees (Executive, Publications Mentoring, 2006 Annual Program, and Strategic Planning) spent a day pre-AERA in San Francisco working with a facilitator to develop a potential handbook proposal to AERA. This work was inspired by an idea from one of the division’s wonderful leaders, Marcia Mentkowski, and then further developed at annual meeting working sessions with the goal of exploring important educational topics and issues that cut across our professions. Four book proposals emerged from this initiative, each with an opportunity to be published as part of the book series on *Innovation and Change in Professional Education* (Springer) edited by Series Editor, Wim H. Gijsselaers and Series Associate Editors, LuAnn Wilkerson and Henny Boshuizen.

The book is the product of a collaborative effort among members of Division I from a variety of professions. Over the past 4 years the authors participated in regular conference calls to brainstorm ideas and outline the chapters, share knowledge and resources, discuss drafts of chapters and provide feedback. This proved to be a rich and rewarding learning experience for all!

We hope that this synthesis will be applicable to a variety of disciplines in our division.

Tips 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 presentation:

Careful Preparation

- Think about a **story** that you can craft from your work. Select 3 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 to proudly 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!).
- **Go for it!**

After the presentation

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

Another tip for new investigators and “junior” faculty members:

- Participate in the Division I Mentoring Committee’s pilot program of feedback on your presentation (look for more information in this issue of PERQ, pg. 5).

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.

Annual Meeting Tips for Chairs and Discussants

Chair Responsibilities

As Chair of a session, you are responsible for the overall planning and execution of the session to facilitate the sessions' success, as well as evaluation of the session. Your responsibilities fall into the following three areas:

In Advance of the Session

- Ensure that all presenters upload final papers **no later than March 18th**. As Chair, when you login to the online program you will be able to view author's papers and email addresses for your session. All participants in the session (presenters and discussants) are able to view other author's papers in the session, irrespective of whether or not an author selected to participate in the repository.
 - **Send an email to participants reminding them to upload their papers.** This will reinforce the notification sent by AERA. For paper and roundtable sessions, the author's initial submission may serve as the final paper if a revised paper is not uploaded. For all other session types, authors must upload a paper no later than the March 18th deadline.
 - **Download and read the papers for your session after the March 18th deadline**, in order to effectively introduce and guide the session and organize your thoughts. (Instructions on how to access papers are at the bottom of this email.)
- Contact by email any discussants to ensure they have downloaded and read the papers and begin a conversation about shaping the session.

At the Session

- Be mindful of accessibility of sessions and help AERA cultivate a universally accessible environment. As Chair of the session, your attention to the recommended guidelines is greatly appreciated. View complete information for [presenting to persons with disabilities](#).
- Open the session at the scheduled time and orient the audience to the context with a few brief introductory remarks.
 - As introduced last year, an attendee evaluation will be conducted on a sample of sessions at the 2011 Annual Meeting. If your session is part of the sample, you will be asked to introduce the evaluation and encourage attendee participation. We will be emailing you with further instructions prior to the meeting should your session be part of the sampling.
 - Introduce the participants before their presentations.
 - Strictly limit time for each speaker and discussant. While chairs need to be attentive to time allocations, the role of chair is much more than keeping time. A session's success may depend on the Chair's ability to limit the time of presentations and temper discussion from the floor to allow sufficient time for interaction.
 - Raise issues that can facilitate audience engagement and moderate panel or floor discussions.
- Adjourn the session in time to allow the room to clear before the next session begins and remind the audience to complete the evaluation form (if application).

After the Session

Complete an online information form to provide baseline information about the sessions that AERA will email following the Annual Meeting. All Chairs for all sessions will receive this online information form and are expected to complete it.

Discussant Responsibilities

As Discussant for a session, you are responsible for commenting on papers and presentations to provide professional and constructive criticism and raise issues for broader consideration that connect to these works. Your responsibilities fall into the following two areas:

In Advance of the Session

- **Download and read the papers for your session after the March 18th author paper upload deadline**, in order to prepare comments and organize your thoughts. (Instructions on how to access papers are at the bottom of this email.)
 - Prepare appropriate analytical or critical commentaries on the significance and contribution of the papers presented in the session.
 - Discussants of paper and roundtable sessions: All paper and roundtable sessions include papers uploaded at time of submission or revised and uploaded by March 18.
 - Discussants of sessions including symposium, structured poster, working group roundtable and demonstration/performance: All authors of these types of sessions are expected to upload a commentary paper by March 18. You are under no obligation to comment on papers not uploaded in the online program.
- Connect with the session chair, who should have contacted you by email, to review the shape of the session and time constraints on the length of discussion.

At the Session

- Serve as commentator about the papers and issues on substantive points pertaining to these works. It is expected that you draw upon your expertise and views in commenting on papers or presentations; however, it is not the appropriate occasion to present your work.
 - Provide comments on papers that will assist authors in taking steps toward publication in order to help authors minimize the time between presentation and publication. Such commentary may include remarks in the session, comments written directly on the papers, and/or discussions with the authors.
- If you have knowledge of appropriate journals, do not hesitate to encourage authors to submit papers to the appropriate AERA journals.

How To Access Author's Papers and Emails

Chair and discussants within paper sessions should follow the instructions below to access papers uploaded by presenters and authors for your session.

- **Step 1:** Login to the [online searchable program](#).
- **Step 2:** Click the 'My Schedule' link, located at the top right corner of the main menu above the tabs. You will see a list of sessions in which you are listed as a participant (as chair, discussant, presenter, etc.)
- **Step 3:** Click on the 'Title' of a listed session. You will see the session information including the participant's emails and papers.
- **Step 4:** Click on the 'Download' link in green lettering located next to each paper title. If there is no link associated with a paper title, it means that the author has not uploaded a copy of their paper.

Division I Schedule-at-a-Glance

	April 8, Friday	April 9, Saturday	April 10, Sunday	April 11, Monday	April 12, Tuesday
7:00		Division I Breakfast Meeting: Strategic Planning Division I VP Suite, Sheraton	Division I Breakfast Meeting: Mentoring Division I VP Suite, Sheraton		
8:15		The Impact of Bias and Reflection on Clinical Reasoning (Symposium) Astor Crowne Plaza, Astor Ballroom III	An Introduction to Research Methods for Education in the Professions (Invited Session) Astor Crowne Plaza,	Enhancing Learning Through Peer Interaction (Paper) Astor Crowne Plaza, Astor Ballroom I	Cognitive and Affective Domains in Professions Education (Paper) Sheraton, Napoleon Ballroom C1
10:35	10:45—11:30 Pre-Meeting Welcome & Orientation to Division I Division I VP Suite, Sheraton	10:35 Division I Poster Session Sheraton, Grand Ballroom C	10:35 GSC Fireside Chat Astor Crowne Plaza, St. Charles Ballroom 10:35 Learning From the Professions: Innovative Designs in Teacher Education...(Symposium) Astor Crowne Plaza,	10:35 Examining Cross-Professional Studies (Paper) Astor Crowne Plaza, Astor Ballroom III	10:35 Cultural Issues in Professional Education (Round Table) Sheraton, Grand Ballroom A
12:-00	12:00 Gathering Validity Evidence (Paper) Sheraton, Rhythms Ballroom II				
12:25		Increasing Inclusion in the Professions (Paper) Astor Crowne Plaza, Bourbon	Improving Quality of Care: Measures and Methods (Paper) Astor Crowne Plaza, Astor Ballroom II	The Scholarship of Writing for Publication Workshop (Invited Session) New Orleans Marriott, Balconies MN	Teaching to Learn, Learning to Teach (Paper) Sheraton, Oakley
2:15	Implementing Change in the Professions (Round Table) Sheraton, Grand Ballroom D Building a Better Curriculum (Paper) Astor Crowne Plaza, St. Louis	Becoming Scientists: Practices in Undergrad. Education That Contribute to Degree Completion and Advanced Study in STEM Disciplines (Invited Address) Astor Crowne Plaza,	Institutional Culture: Social and Environmental Factors (Paper) Astor Crowne Plaza, Grand Ballroom A	2:00-4:00 LSU HSC Simulation Center Tour 2:15 Methodologies in Professions Education (Round Table) Sheraton, Grand Ballroom A	
4:05	Learning in the Professions Across the Life Span (Roundtable) Sheraton, Grand Ballroom D	Using Simulation to Achieve Standardized, Competency-Based Curricula & Assessments (Symposium) Doubletree, Crescent		Professional Activity, Professional Education (Round Table) Sheraton, Grand Ballroom A	
5:30	Executive Committee Meeting (By Invitation), Division I VP Suite				
6:15		Division I Business Meeting and Reception: Celebrating 40th Anniversary Astor Crowne Plaza, Astor Ballroom I			
6:30			6:30 Division I Social Dinner Palace Café 605 Canal St.		

Division I Sessions & Abstracts

Fri, Apr 8— 10:30—11:45 am

Pre-Meeting Welcome and Orientation to Division I

Building: Sheraton, **Room:** Division I VP Suite

Fri, Apr 8 - 12:00pm to 2:00pm

Gathering Validity Evidence

Building: Sheraton, **Room:** Rhythms Ballroom II

Discussant: Andre F. De Champlain (National Board of Osteopathic Medical Examiners)

Chair: Sheila W. Chauvin (Louisiana State University - Health Sciences Center)

The Nursing Student Self-Efficacy Scale: Development Using Item Response Theory

Glenda Simonton Stump (Arizona State University)

The focus of this study was development of a psychometrically sound instrument to measure nursing students' perceived self-efficacy for performance of patient care tasks for critically ill patients. Item Response Theory was used as the measurement model to accomplish this goal. After item development and pilot testing, the Nursing Student Self-Efficacy Scale was administered to 421 nursing students. Data analysis provided evidence for reliable interpretation of scores indicating self-efficacy beliefs for second and third semester students. Comparison of self-efficacy scores from students in different semesters of the nursing program provided validity evidence in that the instrument could discriminate between beginning students and more advanced students who possessed different levels of self-efficacy for skills due to their progress in the curriculum.

Applying the Bookmark Method to Medical Education: Standard-Setting for an Aseptic Technique Station

Monica L. Lyson (University of Michigan), Larry D. Gruppen (University of Michigan), Paula T. Ross (University of Michigan)

Standard setting exercises in graduate medical education (GME) have only recently begun to surface in the literature. This gap has left many post-graduate medical educators with limited exposure to the concepts of standard setting, yet in an era of competency-based education an understanding of how standards are determined and used is essential for establishing competency guidelines. In this study, we sought to determine the applicability of applying the Bookmark method in medical education and its acceptability to a group of residency educators. By providing a set standard, using this method, we hoped to methodologically separate judgment scores that differentiate examinees at different performance levels (e.g. as characterized as advance beginners, competent and proficient) as determined by the judges' assessments.

Scores Gains on Performance Tests for Repeat Examinees: An Evaluation of Construct and Criterion-Related Evidence

Mark R. Raymond (National Board of Medical Examiners), Nilufer Kahraman (National Board of Medical Examiners), Kimberly A. Swygart (National Board of Medical Examiners), Kevin Balog (National Board of

Medical Examiners)

Examinees who repeat performance tests experience large score gains. Limited evidence from multiple-choice testing programs suggests that the validity of scores from the second occasion is compromised. This study investigated the internal and external validity of scores for repeat examinees on a performance-based clinical skills test in medicine. Multi-group, confirmatory factor analysis indicated that the factor structure for repeat examinees on their first-attempt was markedly different from the structure for single-take examinees, but that by the second attempt the factor structure for repeat examinees differed only slightly. Scores on the second attempt correlated more highly with three external measures. Both sources of evidence support the validity of scores from a second administration.

Effect of Postgraduate Training on the United States Medical Licensing Examination (USMLE®) Step 3® Examination Computer-Based Case Simulation (CCS) Component

Richard A. Feinberg (University of Delaware), Kimberly A. Swygart (National Board of Medical Examiners), Steven Arthur Haist (National Board of Medical Examiners), Gerard F. Dillon (National Board of Medical Examiners), Constance T. Murray (National Board of Medical Examiners)

The purpose of the following study is to investigate whether the focus of examinees' postgraduate training impacts performance on the computer-based case simulation (CCS) component of United States Medical Licensing Examination (USMLE) Step 3. CCS scores of graduates from US and Canadian medical schools were regressed on Step 1 and Step 2 Clinical Knowledge (CK) scores. Examinees in broadly-focused residencies performed better overall and as length of training increased, as opposed to examinees in more narrowly-focused residencies. Results suggest similar patterns for performance on CCS and Step 3 as a whole. Findings are supportive of the validity of the Step 3 program and may be useful to program directors and residents in considering readiness to take this component of USMLE.

Modeling Relationships Between Preadmission Achievement and Clinical Skills Performance on a Medical Licensure Examination

Gina Pugliano (National Board of Osteopathic Medical Examiners), William L. Roberts (National Board of Osteopathic Medical Examiners), Erik Langenau (National Board of Osteopathic Medical Examiners), John R. Boulet (Educational Commission for Foreign Medical Graduates), Tom Levitan (American Association of Colleges of Osteopathic Medicine)

The purpose of this study is to estimate the magnitude of the relationship between preadmission achievement on MCAT scores, undergraduate GPA, and pass/fail performance on the Comprehensive Osteopathic Medical Licensing Examination USA Level 2-Performance Evaluation while controlling for within- and between-school characteristics. Data represent 3,281 2006 osteopathic matriculates from 23 medical schools presently being assessed for their clinical skill performance. A hierarchical generalized linear model is used to assess the extent of variation in the multilevel structure of the data. Investigating relationships between preadmission achievement and pass/fail outcomes of a high-stakes test of clinical skills performance with a nationally representative sample of medical school matriculates contributes to better understanding of variation in abilities both within and between medical schools.

The Impact of Intelligence, Educative, and Reproductive Ability, on Objective Structured Clinical Exam (OSCE) Performance

Paul F. Wimmers (University of California - Los Angeles), Guido F. Schauer (University of Texas - Houston)

Objective: To investigate the relationship between medical students' educative ability as measured by the advanced version of the Raven's Progressive Matrices (RPM) test, reproductive ability as measured by performance on USMLE Step I, and the Clinical Performance Exam (OSCE). Method: Thirty-two third-year medical students took the APM online, which consists of two parts: 1) a practice set of 12 items, and 2) 36 items which become progressively more difficult as the test proceeds. Several models representing different causal structures are tested and compared. Results: Comparison of the different structural models revealed that educative reasoning ability better predicted OSCE performance than reproductive ability. Discussion: The relationship between APM and OSCE performance indicates that more in-depth research in domain-general abilities is important.

Fri, Apr 8 - 2:15pm to 3:45pm

Building a Better Curriculum

Building: Astor Crowne Plaza **Room:** St. Louis

Discussant: Ilene B. Harris (University of Illinois - Chicago)

Chair: Katherine M. Edmondson (Cornell University)

Assessing Competency: Using Evidence-Based Decision Making During Development and Piloting of an Innovative Program

Cheryl-Anne Nadine Poth (University of Alberta), Shelley Paige Ross (University of Alberta), Chiara Papile (University of Alberta), Rebecca Georgis (University of Alberta)

In response to the need for a valid and reliable means of documenting, measuring, and tracking progress towards the achievement of competency in medical education, our team developed the Competency-Based Achievement System (CBAS) based on the use of formative feedback. The purpose of the current study was twofold: (1) to assess alignment between the core principles underlying the development of CBAS and their interpretation by residents and advisors during the pilot implementation; and (2) to document the subsequent programmatic changes in response to user responses. Variations in implementation were identified using interviews with the development team and residents who were part of the pilot implementation. Implications for training and full implementation are discussed.

Lessons Learned About Medical School Curricular Integration: Perceptions of Curriculum Leaders, Teaching Faculty, Students, and Staff

Stephanie D. Sutherland (University of Ottawa), Genevieve Moineau (University of Ottawa), John Leddy (University of Ottawa), Stanley John Hamstra (University of Ottawa)

Curricular integration in medical schools has increasingly become the norm in North America due in a large part to the dissatisfaction with the way basic sciences have been taught as individual disciplines or "silos" with little/no clinical application. In September 2008 the University of Ottawa implemented a radically reformed undergraduate curriculum. This paper presents data on the first two years of the curricular integration efforts. To explore the lived experiences of participants (students, faculty and curriculum leaders) a qualitative research design was used to guide data collection and subsequent analysis. Results will illustrate successes and challenges in integrating a curricu-

lum from the perceptions of key stakeholders. Lessons learned will be provided so as to promote the transferability of findings.

Assessing a Writing Across the Curriculum (WAC) Initiative: Making Analysis Meaningful for All Disciplines

Jennifer M. Good (Auburn University), Kelly Birchfield (Auburn University), Kevin Osborne (Sandhills Community College)

Writing is complex, and assessment of writing is equally complex, particularly when considering the need to measure large-scale comparative outcomes at the institutional level while providing meaningful data that informs curriculum reform and supports learning at the discipline-level. Using a multi-layered assessment that incorporates standardized measures of writing assessment, such as the CAAP published by ACT, as well as locally developed rating rubrics, data from the assessment system can provide useful information to departmental faculty, assisting them in understanding students' skills in their given profession. The data generated in this system provides unique perspectives on discipline-specific writing expectations and outcomes.

Fri, Apr 8 - 2:15pm - 3:45pm

Roundtable Session 5 Implementing Change in the Professions

Building: Sheraton, **Room:** Grand Ballroom D

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

A Systematic Approach to Implement Curriculum Reform in the Professions

Marcia R. O'Neal (University of Alabama - Birmingham), *Brian F. Geiger (University of Alabama - Birmingham), Nataliya V. Ivankova (University of Alabama - Birmingham), Kent G. Palcanis (University of Alabama - Birmingham), Karen A. Werner (Oak Ridge Institute for Science and Education), Retta R. Evans (University of Alabama - Birmingham), Lasonja B. Kennedy (University of Alabama - Birmingham)

A systematic approach to curriculum reform was guided by a mixed methods conceptual framework of four phases, solicited perceptions of multiple professional stakeholders, and featured educational researchers as external consultants. The framework includes four conceptual phases and eight sequential procedural steps grounded in the collection and analysis of both qualitative and quantitative data. Conceptual phases included (1) exploration of the phenomenon; (2) development of two new instruments; (3) data collection, analysis and evaluation of results; and (4) application to curriculum reform. An application of the conceptual framework to infuse evidence-based teaching in dentistry is provided. The systematic process yielded essential information to indicate faculty support for the curriculum revision. The framework proved useful to guide revision of professional education.

Evaluation of a Professional School Recruitment Program and Its Impact on Diversity

Alicia Ayodele (University of Minnesota), Doneka R. Scott (University of Minnesota)

The recruitment program for a College of Pharmacy located on two campuses was evaluated by utilizing a Process Evaluation and focusing on Problem Identification. Electronic surveys, structured interviews, and admission data analysis were conducted to identify areas needing improvement and to determine barriers to students of color obtaining interviews after applying. Results indicate overall satisfaction from

advisors and students with recruitment. However, results also indicate that student group disparities exist in applicants, entrance exam scores, grade point averages, and application completion. Implications for future study include partnering with feeder colleges that target underrepresented students, identifying the recruiter's role in helping students to be better prepared, improving financial accountability, and determining non-cognitive factors that contribute to a strong application.

Understanding Change and Innovation in Dental School Curriculum From 1995 to 2009

Eugene L. Anderson (American Dental Education Association), N. Karl Haden (Academy for Academic Leadership), Karen Novak (University of Kentucky), Gloria Gonzalez (American Dental Education Association)

In 1995, the Institute of Medicine (IOM) published the findings of the Committee on the Future of Dental Education. This publication emphasized that significant educational reform was necessary for academic dentistry to be prepared to face the challenges of the next century. In the years following the IOM report few dental schools sought to implement significant curricular change. As a result of the lack of implementation, ten years later, the American Dental Education Association (ADEA) established the Commission on Change and Innovation in Dental Education (ADEA CCI) to serve as a "facilitator of change and innovation" in dental education. This research paper utilizes multiple longitudinal surveys to examine the impact of ADEA CCI on curriculum change from 2002-03 to 2008-09.

Fri, Apr 8 - 4:05pm to 5:35pm

Roundtable Session 8 -

Learning in the Professions Across the Lifespan

Building: Sheraton, **Room:** Grand Ballroom D

Chair: Kimberly A. Swygert (National Board of Medical Examiners)

Crashing the Gate: Identifying Alternative Measures of Student Learning in Introductory Science, Technology, Engineering, and Mathematics Courses

Kevin Eagan (University of California - Los Angeles), Sylvia Hurtado (University of California - Los Angeles), *Felisha Herrera (University of California - Los Angeles), Mitchell J. Chang (University of California - Los Angeles)

Students' success in introductory science, technology, engineering, and mathematics (STEM) courses often determines their progression along STEM pathways toward an undergraduate degree. Given the disparities in STEM undergraduate degree completion between underrepresented racial minority students and their White and Asian American peers, this paper examines how campus structures, pedagogical strategies, and student experiences facilitate students' learning in introductory STEM courses. We analyze data from nearly 90 classrooms across 15 institutions to identify effective pedagogical strategies that support students' learning and alternative measures of student success that go beyond course. Participants will discuss how the findings from the study can be applied to introductory STEM courses at their institutions.

Participatory Game Design to Teach First-Year Engineering Students Career-Relevant Competencies

Angela Van Barneveld (Concordia University), Kevin Berkopos (Purdue University), Jea Hong Choi (University of Georgia), Peggy A. Ertmer (Purdue University), Jun Fang (Purdue University), Belen Garcia de Hurtado (Purdue University), Constance A. Harris (Purdue University), Youngmi Lee (Purdue University), Wei Liu (Purdue University), Celia (Rui) Pan (Purdue University), Johannes Strobel (Purdue University), Nicole R. Weber (Purdue University), Ji Hyun Yu (Purdue University)

In the formation of 21st century engineers, it becomes increasingly important to understand how engineers integrate environmental and sustainability issues. A promising method to enhancing students' engineering identities is project-based learning, in which students engage in authentic problems. In this study, we examined the influence of project based learning on knowledge attainment, identity formation, and self-efficacy for design activities. The context of the project was the participatory design of a game to teach sustainability. The research team employed a mixed method approach in a pre-posttest setting. Quantitative results indicate a statistically significant decrease in self-efficacy; qualitative results indicate a realization of the complexity of engineering design and an increased use of sustainability language throughout the project.

The Desire to Learn: Learning Across Generations

Lillie R. Albert (Boston College), Peiyun Zhou (Boston College)

The study examines the learning activities and preferences of professionals who belong to associations; it is the most comprehensive survey to date of association members and their learning behavior. Specifically, the study presented in this paper provides insight into adult learning across generations by members of associations. The way in which generations relate to the world has long been an interest for those providing educational experiences for adult learners, but age may not be a major motivational factor in adults' desire to learn. Rather, it is of primary importance to determine whether learners across all generations have similar preferences for engaging in professional education programs despite the differences in historical events and experiences that characterize their generation.

Fri, Apr 8 5:30pm

Executive Committee Meeting (By Invitation)

Division I VP Suite

Did You Know?

Louisiana is the only state in the union that does not have counties. Its political subdivisions are called parishes.

New Orleans has over 35,000 structures on the National Register of Historic Places. That's 15,000 more than its closest competitor, Washington, DC.

Why is New Orleans called the Crescent City?

The Mississippi River flows in the shape of a crescent around the city.

Sat, Apr 9 7:00am to 8:00 am

Division I Breakfast Meeting: Strategic Planning Committee

Building: Sheraton **Room:** Division I VP Suite

Sat, Apr 9 - 8:15am to 9:45am

The Impact of Bias and Reflection on Clinical Reasoning

Building: Astor Crowne Plaza, **Room:** Astor Ballroom III

Discussant: Fred Paas (Erasmus University Rotterdam, Netherlands)

Chair: Remy M. Rikers (Erasmus University Rotterdam, Netherlands)

Abstract:

Reflection on own practice has been recognized as a key requirement for appropriate performance in medicine. The value attributed to reflection has grown in recent years, as complexity, uncertainty, and fallibility have been acknowledged to be inherent to clinical reasoning. Studies on the effect of reflective reasoning on diagnostic performance suggest that medical students and experienced physicians should be concerned with the refinement of their analytical reasoning and the development of the ability to flexibly combine non-analytical and reflective approaches. The aim of the symposium is to provide new and interesting approaches to improve clinical reasoning, for both students and physicians. Moreover, it will demonstrate how reflection can improve performance and minimize diagnostic errors.

The Influence of Medical Students' Self-Explanations on Diagnostic Performance

Martine G. Chamberland (University of Sherbrooke), Christina St-Onge (Université de Sherbrooke), Linda Bergeron (Université de Sherbrooke), Annick Bourget (Université de Sherbrooke)

The purpose of this study was to investigate the effect of generating self-explanations on students' learning of clinical reasoning during their clerkships. Adequate clinical reasoning is a highly valued attribute of physicians and a skill particularly well developed through many years of clinical experience. However, instructional approaches to promote medical students' clinical reasoning remain scarce, although many studies have highlighted the benefits of reflection on clinical reasoning and medical expertise (e.g., Mamede et al. 2004). Moreover, research on medical expertise has led to many suggestions to improve the development of students' clinical reasoning skills. Students should, for example, actively engage in problem-solving, reflecting and elaborating on patients' problems to gradually develop their knowledge and skills. Generating self-explanations is an instructional reflective procedure which positive effects on learning have been demonstrated in a variety of domains (Chi et al., 1994) but it remains largely unexplored in medical education. Self-explanations are remarks made by, and directed to, oneself, after reading one or more statements in a text to-be-learned or

a problem to-be-solved. In particular, this learning strategy fosters reflections during learning and is most effective if the problem at hand is complex. The present study investigates the influence of self-explanations while solving simple and complex clinical cases. An experimental study with a training phase and an assessment phase was conducted with 36 third-year medical students, randomly assigned to two groups. In the training phase, students solved 12 clinical cases (4 simple cases, 4 complex cases, and 4 filler cases), either generating self-explanations ($n = 18$) or without self-explanations ($n = 18$). It is important to note, that no feedback was given to the students in the self-explanation condition concerning the quality of their explanations. In the assessment phase, one week later, students were requested to diagnose 12 different cases, similarly distributed among the same more complex, less complex topics, and filler cases. We hypothesized that self-explanations while solving clinical problems would facilitate acquisition of knowledge required for clinical reasoning, leading students to better diagnostic performance in subsequent similar problems. This positive effect of self-explanation would only occur, or at least be more substantial, for complex problems. In the training phase the performance of the two groups did not differ. More importantly, a significant interaction effect was found, in the assessment phase, between self-explanation and case complexity, $F(1, 34) = 6.18, p < .05$. Self-explanations led students to better diagnostic performance, but this effect only occurred for the clinical problems that were more complex. In sum, generating self-explanations while solving clinical cases, even without feedback, enhanced learning and improved diagnostic performance on subsequent similar but complex cases. These results have potentially important implications for medical education, as self-explanation could easily be introduced and implemented in many ways in clinical teaching.

Explicitation Interview: A Guided Reflexivity Activity to Support Medical Students' Expertise Development

Annick Bourget (Université de Sherbrooke), Martine G. Chamberland (University of Sherbrooke), Jacques Tardif (University of Sherbrooke)

Clinical reasoning is central to medical expertise. Reflexivity upon action is considered important for medical expertise development (Mamede, 2004). Thus, guiding medical students in a reflective activity while they are reasoning about a patient may foster the development of their expertise. The purpose of this presentation is to illustrate the potential of the Explicitation Interview (Vermersch, 2006) as a guided reflective activity to support medical students' expertise development. Reflective practice (Schön, 1983), which refers to critically thinking and being engaged in reflection upon professional activities, plays a significant role in expertise development. Schön (1983) proposed the construct of "Knowing-in-action," "Reflection-on-action," and "Reflection-in-action". The first should increase with experience but may not lead to reflective practice whereas the other two are susceptible to enrich professionals' knowledge structure and provide opportunities to learn from experience. Similar to physicians in practice, medical students might also benefit from reflective activities, learn from experiences and develop their expertise. The Explicitation Interview, which consists of participants' verbalization of cognitive actions while being guided, may improve the reflective activity. A qualitative multiple case studies has been conducted with third-year medical students going from the pre-clerkship to the clerkship, a period recognized for cognitive changes (Schmidt et al., 1990). Over twelve months students were met four times. Each time students led a medical interview with a standardized patient. A video captured students' point of view about the patient. Then with the use of the video an Explicitation Interview was conducted with the student. The video allowed students to put themselves in the same cognitive state as during the medical interview. Students reliving

their cognitive actions are guided to verbalize them. Explicitation Interviews were recorded and transcribed. Content analysis was done using a similar approach as Miles and Huberman's (1994). The results indicate that Explicitation Interview enabled students to successfully verbalize cognitive actions. This led them to an explicit comprehension of their clinical reasoning approach and brought to consciousness their own medical expertise development. Students appreciated the activity because it allowed them not only to articulate their cognitive actions while reasoning, but also because it helped them to build a clearer conception of their strengths and weaknesses. Interestingly, students seemed surprised to realize that they could verbalize their cognitive actions involved in clinical reasoning. For educators and students the Explicitation Interview offers a promising reflective activity to guide learning from experience. However, four Explicitation Interviews in one year is not sufficient to build reflective capacity in students. Nevertheless, in the context of medical expertise development, it can be perceived and used as a step toward shifting from Knowing-in-action to Reflection-on and Reflection in-action (Schön, 1983). For research, the Explicitation Interview offers a promising way to deeply explore cognitive actions involved in complex cognitive tasks like clinical reasoning and to explore building reflective capacity in the context of medical expertise development.

Confirmation Bias in Medical Decision Making

Kees van den van den Berge (Erasmus University Rotterdam, Netherlands), Silvia Mamede (Erasmus University Rotterdam, Netherlands), Henk G. Schmidt (Erasmus University Rotterdam, Netherlands), Remy M. Rikers (Erasmus University Rotterdam, Netherlands)

Cognitive diagnostic errors are an important cause of high costs, morbidity and mortality in medicine. Graber and colleagues investigated 100 cases of diagnostic errors in internal medicine in five American academic hospitals and found that cognitive factors contributed to mistakes in 74% of the cases (Graber et al., 2005). The majority of these mistakes derived from flaws in the doctors' reasoning processes. Diagnostic errors have been associated with bias in non-analytical clinical reasoning but the subject is still controversial (Norman 2009). Confirmation bias, the tendency to confirm rather than refute a hypothesis, is considered an important cause of cognitive error and could play a major role in clinical decision making (Evans 1989; Klein 2005). The objective of the current experimental study is to assess the role of confirmation bias in clinical decision-making. We hypothesize that i) physicians find it harder to disconfirm an incorrect suggested diagnosis than to confirm a correct suggested diagnosis. ii) Physicians will report more case characteristics supportive of their preferred diagnosis than they will report characteristics unsupportive of their hypothesis. Thirty-eight internal medicine residents from the Radboud University Medical Centre, volunteered to participate in this study. Participants evaluated diagnoses of 4 written clinical cases through non-analytical reasoning. The cases had either incorrect or correct suggested diagnoses. Subsequently, they wrote down the case characteristics they would report to their supervisor when discussing the patient and reported their experience on the diagnoses on a 7-point scoring scale. Results showed a significant difference between cases with a correct suggested diagnoses and an incorrect suggested diagnoses $t(37) = 2.26, p < .05$. Interestingly, mean experience on correct suggested diagnoses proved to be significantly lower than the incorrect diagnoses $t(37) = 3.91, p < .05$. Forty-two correct diagnoses were confirmed. Most of the reported features were supportive of these diagnoses in comparison with features that supported the alternative (incorrect) diagnosis ($t(82) = 5.68, p < .001$). Participants confirmed forty-three incorrect diagnoses. Interestingly, the majority of the reported features supported the chosen, but incorrect, alternative ($t(84) = 3.22, p < .01$). Twenty-six incorrect

diagnoses were disconfirmed. In this group, the number of reported features supportive of the correct diagnosis was higher than the mean number of reported features that supported the incorrect diagnosis ($t(50) = 2.04, p < .05$). In line with our hypothesis, residents in internal medicine found it harder to disconfirm an incorrect diagnosis than to confirm a correct diagnosis. When a diagnostic conclusion was drawn, the reported features supported this conclusion. This study provides evidence for a role of confirmation bias in medical decision-making and provides additional evidence for the association of cognitive bias with non-analytical clinical reasoning. This first study on confirmation bias in medicine offers interesting perspectives for future research. First, the factors that lead to bias have to be explored. Second, if the phenomenon of bias proves to be as powerful as suspected, cognitive coping strategies have to be studied.

Wikipedia Causes Doctors to Misdiagnose Clinical Cases

Henk G. Schmidt (Erasmus University Rotterdam, Netherlands), Silvia Mamede (Erasmus University Rotterdam, Netherlands), Tamara Van Gog (Erasmus University Rotterdam, Netherlands), Kees van den van den Berge (Erasmus University Rotterdam, Netherlands), Remy M. Rikers (Erasmus University Rotterdam, Netherlands)

If a doctor's diagnosis is influenced by information from an unrelated source leading to a diagnostic mistake, the doctor is said to be the victim of a cognitive error called availability bias. The medical literature is rife with suggestions that cognitive biases play an important role in errors of judgment in medical diagnosis. According to Graber and Franklin (2005), this kind of bias is present in almost 75% of the diagnostic errors in internal medicine, contributing to a large fraction of the as many as 98,000 avoidable deaths estimated to derive from medical errors in the US every year. However, there is surprisingly little direct evidence that cognitive bias actually plays a role in medical practice: the evidence is either indirect or anecdotal. The purpose of the present study was therefore to investigate whether mere exposure to media-distributed disease information would bias doctors into using that information in an unrelated context leading to diagnostic mistakes. The second purpose of our study was to investigate whether a remedy for such cognitive bias exists. In previous studies, we have demonstrated that being encouraged to reflect upon an earlier diagnosis produced dramatic improvements in diagnostic accuracy with complex cases. We conducted a three-step experiment with 38 residents in internal medicine. Step 1 aimed at exposing them to disease information reported by the Internet Wikipedia encyclopedia. Half of the doctors were asked to evaluate the accuracy of the Wikipedia entry for Legionnaires' disease, the other half for Q-fever. Six hours later, as part of a seemingly different study, all physicians were requested to diagnose the 8 clinical cases (4 test cases and 4 fillers). All cases had a diagnosis different from the disease seen in Step 1, but 2 of them had signs and symptoms similar to Legionnaires' disease and 2 resembled Q fever. If the bias occurred, the participant would tend to misdiagnose those similar looking cases as Legionnaire's disease or Q fever, reducing diagnostic accuracy for those cases. In Step 3, participants were asked to diagnose the cases again. Moreover, they were given instructions aimed at inducing an elaborate analysis of case information: they were asked to indicate for each of the signs and symptoms whether it corroborated or refuted their initial diagnosis. After completing this analysis, they were asked for a final diagnosis. The findings strongly suggest that an availability bias has emerged from pre-exposure of seemingly related disease information in Wikipedia encyclopedia, making physicians prone to use that information while diagnosing patients' problems in another context and consequently to make mistakes. However, being induced to reflect upon their initial diagnosis has counteracted the bias and improved their diagnostic accuracy.

Sat, Apr 9 - 10:35am to 12:05pm

Division I Poster Session

Building: Sheraton, **Room:** Grand Ballroom C

Creating a Sustainable Professional Network of K-16 Science Faculty

David May (University System of Maryland), Nancy S. Shapiro (University of Maryland)

Social network analysis (SNA) was employed to describe professional collaboration among participants of a large-scale K-16 partnership program in science, primarily high-school teachers and higher-education faculty. The study focused on three qualitative measures by which to examine the program's evolving collaborative structure—the emergence of new professional connections, the extent to which the network was sustained after the program ended, and leadership roles in integrating network participants. Networks were examined in four core program-related areas—*inquiry-based teaching and learning, mentoring relationships, exposing undergraduates to science teaching as a career option, and planning and managing program activities.* The findings provide evidence for the creation of a professional network of teachers that was substantially sustained beyond the end of funded grant activities.

Enhancing the Capability of Professional Skills Assessment in Engineering Education: An Application of Generalizability Theory

Mo Zhang (Washington State University), Ashley Ater Kranov (Washington State University)

As an integrated part of an on-going large scale research, this empirical study is intended to refine and further validate an innovative, direct method for teaching and measuring engineering professional skills called the curricular debrief method. The goal of the study is to improve the validity and reliability of Engineering Profession Skills Rubric – the accompanying rubric used in curricular debrief method. This study was conducted under the framework of Generalizability theory by estimating different sources of variance associated with the students' scores. The major results of this study include the human rater training quality needs to be improved and the tasks presented to students in different engineering programs need to be equated. Future research directions are also discussed.

Mapping the Development Trajectory of Evidence-Based Practice Behaviors: A Cross-Sectional Study of Occupational Therapy Students and Experienced Clinicians

Aliki Thomas (McGill University), Alenoush Saroyan (McGill University)

Occupational therapists are expected to work within an evidence-based practice (EBP) context. To successfully apply EBP principles, clinicians must develop EBP competencies at the pre-licensure level. Designing EBP curricula that support the integration of EBP competencies, requires a solid grasp of the nature of the competencies and the points in time across the professional education when these must be acquired. This study examined students' and clinicians' EBP behaviors on a simulated case and compared these behaviors to an expert EBP model. Identified gaps in EBP knowledge can support faculty in monitoring and updating the curriculum. EBP knowledge gained in academic contexts must be systematically reinforced in clinical practice to ensure greater conceptual and procedural integration.

Oral Assessments: Opening Science, Technology, Engineering, and Mathematics (STEM) Majors to More Students

Mary A. Nelson (University of Colorado - Boulder), Monica R. Geist (Front Range Community College)

This paper examines the importance of a constructivist approach to teaching Calculus. Teachers often agree that they didn't really understand certain concepts until they had to teach them. This study shows that the process of articulating one's thinking leads to greater understanding and forces students to negotiate meaning and defend their thinking. The primary intervention of this study was the addition of formative oral assessments. Oral assessments are optional, small group conceptual reviews conducted outside of class that occur prior to written exams. Students are asked to articulate their thinking and make mathematical connections. Data suggests these assessments helped students overcome poor mathematical preparation and succeed in both Calculus I.

Evolving Simulation in a Fundamentals of Nursing Course: The Nursing Education Simulation Framework

Maura C. Schlairet (Valdosta State University)

This paper describes integration and evolution of simulation in a first semester nursing course. A series of research projects were used to develop, implement, and refine simulation pedagogy to address beginning students' learning needs. The Nursing Education Simulation Framework was used in interpreting results across projects and evolving simulation pedagogy. Implementing a series of research projects led to successful integration and evolution of simulation. Findings suggested positive simulation-related outcomes and highlighted students' perceptions of active learning, interest in performance and on satisfaction with learning, and desire for support and objectives and information during simulation. The Simulation Framework promoted trend identification in response to simulation across a series of studies allowing systematic thinking about learning goals and simulation related course-level improvements.

Potholes, Bridges, and Skyscrapers: Examining a Civil and Environmental Engineering Program During Curricular Reform

Maureen M. Doyle-Neumann (The University of Vermont), Sandra Ann Lathem (The University of Vermont), Nancy Hayden (The University of Vermont), Maureen Fitzgerald-Riker (UVM)

A case study method was employed to examine civil and environmental engineering faculty and student experiences in the curricular reform. We began our analysis to first understand the CEE programs' learning environment and found several "potholes and ruts." Based on our findings, the DLR faculty then began to brainstorm ideas and take purposeful action to respond to those concerns. These changes created some detours from the initial project plans but also lead to new thinking and energy around engineering education.

Reducing Turnover: Results and Analysis From 10 Years of Registered Nurse (RN) Residency Data

Sean Francis Early (Versant LLC), Beth Ulrich (Versant, LLC)

This paper described a meaningful reduction in turnover across all facilities implement an immersive RN residency. In addition, statistically significant predictors of both employment status and intention to leave were identified. Taken together, this information suggests that immersive residencies have the potential to decrease turnover and churn among new grad RNs and that by collecting relevant information from the residents in the form of standardized assessment instruments, individual residents' likelihood to leave can be understood with greater accuracy. The implication of this finding is that intervention could be designed to address the needs of new nurses in order to improve retention.

To What Extent Is Response Speed a Factor on the American Board of Family Medicine In-Training Examination?

Kenneth Royal (American Board of Family Medicine), Thomas R. O'Neill (American Board of Family Medicine), Kathryn Shirley Akers (University of Kentucky)

The ABFM offers the In-Training Examination (ITE) once a year to familiarize future candidates with the examination while they are still in residency and to provide feedback to residency program directors regarding their residents' progress. The content of the ITE is designed to be very similar to the core portion of the Certification Exam. The ABFM asserts that its tests are predominantly "power tests" and that there is adequate time to answer all questions. This study examines the extent to which the ABFM's assertion is true.

Toward and Integrated Model of Case-Based Learning in Health Education

Genevieve Gauthier (McGill University), Jeannine Conway (University of Minnesota), Richard William Brown (University of Minnesota), Susanne P. Lajoie (McGill University), Solange Richard (McGill University), Jeffrey Wiseman (McGill University)

This poster present the rationale using technology as a mean to support the design and testing of a shared pedagogical model for case based learning in health education. The past years of the development for a computer based learning environment has led to design and pedagogical discussions on how best to support learning and teaching practices in medical education but as we establish a partnership with a team in pharmacy school, it brings new questions and forces the articulation of design perspective and decisions to a more abstract level. We present data and conclusion of the initial pilot study in pharmacy to discuss how data and feedback inform the ongoing discussion and design.

How do you pronounce 'New Orleans'?

- First off, *New Or-leeens* is generally a no-no. It's like putting a big, neon sign on your head that says, "I'm not from around here." When you come across locals and pronounce it *New Orleens*, they may correct you
- NOLA natives generally say it *Na-awllins* or *New'awllins*
- People in the south generally say *NewOr'-lins*, with emphasis on the first syllable "or"

Sat, Apr 9 - 12:25pm to 1:55pm

Increasing Inclusion in the Professions

Building: Astor Crowne Plaza, **Room:** Bourbon

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

Chair: Ara Tekian (University of Illinois - Chicago)

Impact of a Short Course on Transitioning of Disadvantaged and Underrepresented Minority Students to Medical School

Sally Krasne (University of California - Los Angeles)

David Geffen School of Medicine offers a four-day course, "Prologue", on molecular-genetic techniques prior to the beginning of medical school for students who consider their background weak in this area. Prologue was designed to ease the transition to medical school by presenting background material targeted to the first week's curriculum. Two-thirds of students who took Prologue between 2004 and 2009 were under-represent minorities (URM) and/or students from disadvantaged backgrounds. Students rated Prologue highly both in terms of the didactic experience and the effect in easing their transition to medical school. There was no significant difference, however, in assessment scores for underrepresented minority and disadvantaged students who had participated as compared to matched controls.

College-Bound Students' Interest in Engineering: Pathways and Characteristics of the Precollege Pipeline

Kelcey Edwards (The College Board), Ellen A. Sawtell (The College Board)

While a considerable amount of attention has been devoted to understanding the post-secondary engineering pipeline, little is known about the evolution of students' engineering interests during high school or the characteristics of those who express an early interest in the field. This study summarizes a longitudinal analysis of engineering interest among a national sample of recent high school graduates (N = 166,873). Several paths emerged, including students who demonstrated stable interest across time, students who became interested in engineering, and students who turned toward other majors by the end of high school. Groups differed with regard to demographic characteristics, test scores, academic background, and self-efficacy.

Gender Differences in Performance on the Step 2 Clinical Skills Data Gathering (DG) and Patient Note (PN) Components

Kimberly A. Swygert (National Board of Medical Examiners), Eric S. Muller (National Board of Medical Examiners), Marta van Zanten (Foundation for Advancement of International Medical Education and Research), Ann Jobe (Clinical Skills Evaluation Collaboration), Steven Arthur Haist (National Board of Medical Examiners)

Multiple studies examining the impact of physician gender on performance on examinations and with observational studies have found fairly consistent significant gender differences. Data from the most recent complete year (2009) of the United States Medical Licensing Examination (USMLE®) Step 2 Clinical Skills® examination were analyzed to examine the impact of examinee gender on performance on the Data Gathering (DG) and Patient Note (PN) components of the exam. Results from the DG component show although women have higher average scores on this component, women do not perform significantly better than men when other examinee and encounter variables are taken into account. Results from the PN component and a general discussion will be forthcoming with the full paper.

Academic Performance Among Diverse Groups of Medical Students

Ming Lee (University of California - Los Angeles), Cha-Chi Fung (University of California - Los Angeles)

This study compared academic performance among racial/ethnic and gender groups of medical students. We collected data from 819 students from the classes of 2006 to 2010 on MCAT, USMLE, NBME subject examination, inpatient clerkship evaluation, and Clinical Performance Examination (CPX). Two-way analyses of variance and multivariate analysis of covariance using MCAT as a covariate were conducted. The racial/ethnic groups significantly differed in all measures except CPX. Men outperformed women on MCAT science subscales and USMLE Step 1, but scored lower on the other measures. After controlling for MCAT, significant differences persisted in NBME and clerkship evaluation among racial/ethnic groups and between genders in Step 1, Step 2 CK and CPX. Findings may shed light on the improvement of educational environments.

Maintaining Initial Interests: Developing Science, Technology, Engineering, and Mathematics (STEM) Career Aspirations Among Underrepresented Racial Minority Students

Felisha Herrera (University of California - Los Angeles), Sylvia Hurtado (University of California - Los Angeles)

National interests to increase underrepresented racial minorities' (URM) participation in the STEM workforce hinges on developing URM students' STEM career aspirations and interests. This study focuses on what influences URM students' interests in STEM careers and how they distinctly experience and interpret the collegiate environment to advance their educational and career trajectories. A national longitudinal sample is examined to measure college seniors' retained STEM career interests as departure from the STEM career plans can occur at different points, including during college and after or nearing the completion of a bachelor degree.

Why Are There So Few of Us? Counterstories From Women of Color in Faculty Governance Roles

Noni Mendoza-Reis (San Jose State University), Mei-Yan Lu (San Jose State University), Maria Eugenia Matute-Bianchi (San Jose State University)

Since women of color are still underrepresented in tenure-track positions on college and university campuses, it is no surprise that they are underrepresented in faculty governance positions in post-secondary institutions, also referred to as institutions of higher education (IHEs) settings. This initial descriptive study described the successes and challenges faced by eight (n=8) women of color in current or former governance roles in California universities. A semi-structured interview schedule was administered to the participants that focused on their perceptions in three areas: competence, confidence and credibility. The findings were analyzed and implications as well as recommendations for further research were reported.

Did You Know?

Canal Street, once the widest street in the world, was named for a canal that was planned for, but never built, in the median. For decades, the only use for the median was public transportation, mostly by the Canal St. Streetcars.

Sat, Apr 9 - 2:15pm to 3:45pm

Becoming Scientists: Practices in Undergraduate Education that Contribute to Degree Completion and Advanced Study in STEM Disciplines
(Invited Address)

Building: Astor Crowne Plaza, **Room:** Astor Ballroom I
Chair: LuAnn Wilkerson (University of California - Los Angeles)

Invited Speaker: Mitchell J. Chang
(University of California - Los Angeles)



This presentation will highlight a longitudinal study with the overarching purpose of identifying general principles for good practice in undergraduate science education. This study, funded by both NIH and NSF, was launched in the summer of 2004 through the Higher Education Research Institute at UCLA and includes both quantitative and qualitative data from a national sample of 241 four-year colleges and universities in the U.S. So far, findings from the study have identified key conditions and practices within colleges and universities that increase retention in science and better prepare students for graduate study. Those and other findings concerning the individual and institutional factors that increase the likelihood that students will work in STEM fields immediately after college will be discussed.

Sat, Apr 9 - 4:05pm to 6:05pm

Using Simulation to Achieve Standardized, Competency-Based Curricula and Assessments

Building: Doubletree, **Room:** Crescent Ballroom

Discussant: Rebecca S. Lipner (American Board of Internal Medicine)

Discussant: Peggy A. Ertmer (Purdue University)

Chair: Sheila W. Chauvin (Louisiana State University - Health Sciences Center)

This symposium will include a simulation demonstration and an interactive panel discussion targeting educational research issues in simulation, based on a nine-year experience at LSUHSC School of Medicine in New Orleans. The following perspectives will be highlighted: 1) core medical student curricula using simulation and results of effectiveness research; 2) research and development of the "Clinical Model™" for standardized, operator-independent simulation scenarios; 3) models and effectiveness research results for simulation-based training in technical and non-technical surgical skills for undergraduate, graduate, and continuing medical education, and inter-professional teamwork training in simulated and actual surgical settings; 4) effectiveness of unannounced mock code pediatric resident training in neonatal resuscitation, and 5) research experiences that illuminate measurement opportunities and real-life assessment challenges related to simulation. Participants will enhance knowledge and insights regarding the following: 1. Benefits and challenges of simulation technologies for education, training, evaluation, and research; 2. Opportunities and challenges related to design and implementation of standardized, simulation-based education and appropriate assessments.

Curricular Overview: The Role of Simulation in Integrating Knowledge, Skills, and Professionalism Development in Medical School

Richard DiCarlo (Louisiana State University Health Sciences Center – LSU HSC), Charles Hilton (LSU HSC), Daryl Lofaso (LSU HSC), Peter DeBlieux (LSU HSC), Robin English (LSU HSC), Tong Yang (LSU HSC), Sheila W. Chauvin (LSU HSC)

Purpose In 2001, the LSUHSC-NO School of Medicine revised its curriculum to reflect a standardized, simulation-based approach to clinical training throughout the continuum of medical education. The use of simulation technologies played a significant role as we increased our emphasis on knowledge application, learner centered formative feedback, and criterion referenced evaluation. This paper will focus on the following: 1) scientific rationale for revisions; 2) major curricular changes; 3) educational outcomes; 4) overall conclusions; and 5) insights guiding future directions in education research and curriculum development. Major curriculum changes and outcomes Clinical skills laboratory: All freshman and sophomore students complete 15 standardized, simulation based clinical skills laboratories designed for initial learning and increased self-efficacy for future performance in clinical clerkships and with actual patients. Students learn and practice manual/procedural skills and professionalism (e.g., respect for patients) in a simulated practice environment. Feedback is based on established performance criteria. Course evaluations reveal high student satisfaction. Longitudinal study revealed statistically significant gains in self-efficacy and performing procedures during subsequent clinical training. Computer-based cases: All freshman and sophomore students learn a systematic model of clinical reasoning that they apply with their basic science learning to weekly, standardized patient cases using DxR Clinician™ software. Pre-established performance criteria for each case (e.g., history, physical, and lab studies) and a standardized format are used for providing feedback to students. Weekly case discussions led by basic science and clinical faculty follow a standard format and

emphasize knowledge application, clinical reasoning, and common diagnostic errors. Evaluation results reveal improvement in clinical reasoning proficiency. Clinical forums: Lectures in Years 1 and 2 were significantly reduced and small group sessions using various types of simulation were introduced. These learner-centered small groups target skills such as basic interviewing techniques, handling difficult interview situations, preventive counseling, and critical evaluation of the literature. This model has extended into the third year Pediatrics clerkship. Student and faculty responses have been consistently positive. Research results revealed increased time for teaching clinical reasoning and no decline in NBME pediatrics subject exam results as result of replacing lectures with clinical forums. Junior simulation curriculum: A core curriculum grounded in high fidelity human patient simulation extends the Year 1 and 2 clinical skills laboratories. Coordinated with core clerkships, students rotate through the simulation center as teams to manage critical care scenarios (e.g., in emergency, surgical, and ICU settings). Faculty-developed cases, standardized scenarios, critical performance indicators, and a standardized approach for after-action debriefing, practice, and feedback characterize this curriculum. Early evaluation studies revealed statistically significant pre-post gains for objectives-based knowledge. Delayed post-assessment revealed that knowledge gains were not sustained. The full paper will include details and implications of these and other findings. Conclusions and future directions The above-mentioned innovations have been applied to GME and CME (e.g. "resident skills fairs" for advanced procedures; center-based and in-situ teamwork training). Standardized simulation-based curricula have been effective. Better coordination between simulated and real-life experiences can facilitate learning. Finally, standardized, simulation-based curricula were instrumental in the rapid resumption of medical education following Hurricane Katrina.

The Clinical Model: A Method for Delivering Standardized High-Fidelity Simulation Experiences

Valeriy Kozmenko (Louisiana State University Health Sciences Center), Charles Hilton (Louisiana State University Health Sciences Center)

This paper will describe the conceptual framework and features of the Clinical Model™ for enhancing simulator capabilities and facilitating standardized high-fidelity human patient simulation scenarios (i.e., operator-independent implementation). The final paper will include an example patient scenario to demonstrate how the model works. While a wide variety of simulation technologies are available, models for assuring standardized use for teaching, learning and assessment are still limited, especially for high-fidelity, human patient simulators. Faculty members at the LSUHSC-New Orleans have developed and implemented the Clinical Model™ that advances significantly the ability to assure standardized patient encounters using high-fidelity patient simulation scenarios. In contrast to simple synchronous scripting principles of the Sim Man™ and METI™ scenario players, the Clinical Model™ is a complex mechanism of multiple asynchronous processes that run simultaneously and can mutually affect each other. Conceptually, the Clinical Model™ maximizes the authenticity of immersive, high-fidelity patient scenarios, emphasizes learner-driven patient outcomes, and minimizes external influence of teacher/operator interventions. The simultaneously running processes monitor constantly the patient's condition and interventions that learners perform, and generate realistic reactions (e.g., physiologic, verbal) via interaction with the human patient simulator software. These processes are transparent and hidden underneath a user-friendly interface that makes controlling the simulator extremely easy. Presently, the Clinical Model™ is used in conjunction with a standard METI HPS (human patient simulator) 6.4 software and can be used with the HPS/ECS/iStan simulators. The Clinical Model™ simulates clinical behaviors of three main partici-

pants in the simulation-based learning or assessment environment: (1) patient, (2) learner(s), and (3) teacher/assessor/operator. The patient component consists of several modalities: physiologic, pharmacologic, and behavioral. Physiologic responses represent complex mechanisms that go beyond basic functionality of the METI models. For example, the Clinical Model is capable of simulating a response to carotid massage of vagal maneuver, emotional stress as a result of defibrillating a patient while awake, verbal and physiological response to painful procedures. The learner component analyzes learners' achievement of learning objectives. When learning objectives are reached, learners receive appropriate feedback that facilitates self-assessment of performance. When learning objectives are not achieved, clinical feedback helps learners recognize mistakes. The learner component works with the patient component and has potential for developing an automated scoring system. The teacher component consists of the context-sensitive help and hints and arranges tools based on the probability of their use in a particular period of session administration. Thus, teachers have quick and easy-to-use access to all necessary instruments. Thus, the Clinical Model™ facilitates easy operation of the commercially available METI™ simulators and expands its capacity to generate complex clinical behaviors and facilitate learners' achievement of case-specific learning objectives. The Clinical Model™ has been a fundamental component of multiple center-based and in situ research, development, and training. The model has potential for advancing the field of simulation-based approaches for teaching, learning, and assessment of competency-based technical and non-technical knowledge, skills, and affective characteristics.

Surgical Simulations: Technical Knowledge and Skills, Teamwork, and Interprofessional Learning

John Paige (Louisiana State University Health Sciences Center – LSU HSC), Tong Yang (LSU HSC), Ramnarayan Guraraja Paragi (LSU HSC), Deborah Garbee (LSU HSC), Valeriy Kozmenko (LSU HSC), Vadym Rusnak (LSU HSC), Lyubov Kozmenko (LSU HSC), Laura Bonanno (LSU HSC), Sheila W. Chauvin (LSU HSC)

This paper will stimulate participants' discussion of the critical features and organizational characteristics for creating a comprehensive surgical skills training program targeting technical and non-technical skills at all levels of professional development. The paper will also highlight key concepts and design features that are applicable to simulation-based training in other professions. Surgical education and training has undergone a paradigm shift over the last decade, led largely by the incorporation of simulation in undergraduate, graduate, and continuing education. The Halstedian model of apprenticeship (i.e., "See one, do one, teach one") is being superseded by an expertise-driven, objectives-based educational model employing Ericsson's concept of deliberate practice. The introduction of inter-professional teaching of non-technical skills (e.g., teamwork competencies) has expanded the scope of curricula well beyond the traditional focus on specialty-specific technical knowledge and skills. This paper will focus on key components and innovative approaches for simulation-based, standardized teaching of technical and non-technical skills in general surgery at all levels of professional development. Examples will emphasize learner-centered, simulation-based teaching for technical skills in basic minimally invasive surgery using established proficiency-based criteria and an innovative high fidelity simulation inter-professional surgical team training program for use with undergraduate, graduate, and professional surgical teams both in situ and within a simulation center environment. Strategic and logistical challenges of inter-professional team training and approaches to overcoming them will be addressed. Several measures have been developed and used for evaluation, informed by the

Kirkpatrick model of training effectiveness, mastery learning, and relevant competency sets derived from the literature. Among these are the Operating Room Teamwork Assessment Scales (ORTAS) (Chauvin, Paige, & Yang, 2006), the Debriefing Environment Inventory (Chauvin, Paragi, & Yang, 2007), a visual analog scale for assessing basic minimal invasive skills (Chauvin, Paige, Yang & Hoxsey, 2007), and self-efficacy scales for both basic skills and teamwork competencies. Some of these receive further attention regarding measurement issues in the Yang, et al. paper. Other published scales have been used, including one targeting learning preferences (i.e., the VARK, Fleming, 2001-2010). Important sources of data include observation-based assessments of live and video-taped performances for basic skills and teamwork interaction. Today's surgeon must possess more than technical prowess in the today's complex clinical environment. Surgeons must also have expert teamwork skills to lead surgical teams in caring for patients. Research results and experiential evidence support the feasibility and effectiveness of comprehensive, standardized, simulation-based educational models for undergraduate, graduate, and continuing education in technical (e.g., basic skills) and non-technical (e.g., inter-professional teamwork) competencies. Scholarly significance We have developed standardized curriculum and assessment models that are applicable to various simulation-based training environments targeting technical and non-technical competencies for learners and teams across the health professions education continuum. These models and insights gained from such research and development experiences suggest potential for application beyond the contexts in which they have been used, including perhaps other professions.

Enhancing Residents' Competency for Neonatal Resuscitation Using a Mock Code Simulation-Based Training Program

Jeffrey Surcouf (Louisiana State University Health Sciences Center – LSU HSC), Brian Barkemeyer (LSU HSC), Jenelle Ferry (LSU HSC), Lynn Tran (LSU HSC), Raegan Wetzell (LSU HSC), Tong Yang (LSU HSC), Sheila W. Chauvin (LSU HSC)

This paper will report the results of a mock code simulation-based resident training program for enhancing self-efficacy and performance of practice standards for neonatal resuscitation. Approximately 10% of the four million babies born annually in the United States require some level of resuscitation. Results of a 2000 study revealed that 44% of responding third-year pediatric residents had never led a resuscitation event. With increasing restrictions on residency work hours and decline in patient volume in some geographic areas, there is potential for even less opportunities for training. Simulated neonatal resuscitation scenario-based training, based on established practice standards of the Neonatal Resuscitation Program (NRP), seemed well-suited for providing standardized, hands-on technical and non-technical training to fill this education gap and facilitate safe, high-quality patient care. All Pediatric and Medicine-Pediatric residents at LSUHSC-New Orleans were invited to participate in the study involving unannounced mock code NRP training using high-fidelity human simulation and team-based scenarios. Upon arrival at an unannounced mock code, participants were given a brief standard scenario to which they responded and performed resuscitation of a high fidelity mannequin-based pediatric simulator. A standardized debriefing format was used to structure reflection, critique, and training of critical knowledge, technical skills, and non-technical/teamwork skills. Participants responded to a second resuscitation scenario and culminated the session with a final debriefing to reinforce critical knowledge and performance indicators. Training effectiveness evaluation was guided by Kirkpatrick's four levels (reaction, learning, behavior, results). Data sources, materials Measures included a pre and post-program self-efficacy questionnaire for NRP skills, trained observer assessments of live and videotaped pre-post training perform-

ances in simulation scenarios based on NPR critical performance indicators, and a post-training session effectiveness questionnaire. Results Thirty-two residents completed the mock code NPR simulation session (11 PGY-1, 11 PGY-2, 10 PGY-3). Statistically significant pre-post gains for self-efficacy ($n = 27$, matched, Wilcoxon signed rank test) were observed for explaining the NPR algorithm ($p = 0.30$), four of 10 NPR critical performance indicators ($p = 0.00 - 0.02$), and all three teamwork global judgments ($p = 0.00 - 0.01$). The pre-post gain in overall self-efficacy score was also statistically significant ($p = 0.00$). With a maximum possible total score of 41, the average pre-post gain was 8.28 and statistically significant (paired t-test, $n = 32$, $p < 0.0001$). Results of the second observation-based assessments using videotapes also revealed statistically significant performance gains ($p < 0.0001$). Correlation between the live and video-based observations were strong for both pre- and post-training scenario performances (Pre: $r = 0.64$, $p < 0.0001$; Post: $r = 0.75$, $p < 0.0001$). A full report of results will be included in the final paper. Scholarly significance The training and study design were built upon a standardized model for curriculum/training and assessment. Results revealed high receptivity to immersive, team scenario-based training and significant and positive gains in self-efficacy and actual demonstration of critical knowledge, technical and non-technical skills.

Assessment Opportunities and Challenges in Simulation

Tong Yang (Louisiana State University Health Sciences Center – LSU HSC), Bin Li (Louisiana State University), Ramnarayan Guraraja Paragi (LSU HSC), John Paige (LSU HSC), Richard DiCarlo (LSU HSC), Sheila W. Chauvin (LSU HSC)

This paper/perspective will stimulate discussion of assessment opportunities and challenges in simulation-based curricula and research. Licensure, certification, and accreditation agencies are increasingly specifying performance, competency-based evaluation for curricula, training, and practice. At a fundamental level, learner evaluation represents three domains: knowledge (e.g., facts/declarative knowledge, application of concepts and principles), technical skills (e.g., history taking, procedures, clinical reasoning), and non-technical skills (e.g., teamwork, professionalism, cultural competence). Traditional knowledge tests address accumulation of declarative or factual knowledge. However, assessing clinical competency reflects increased performance complexity (e.g., applied knowledge, technical skills) that requires different assessment features (e.g., observation, performance criteria, checklists, models, rubrics). Latent constructs must be identified, defined, and used to develop measurement instruments and processes to adequately assess learners' clinical skill performances. Assessment of teamwork competencies is more complex, influenced by the dynamic interactions among members and context. Simulation offers opportunities for authentic and simultaneous assessments of all three domain. Such assessments can produce overwhelming amounts of data. Similarly, the complexity identifying assessors, defining roles, and assuring assessor quality can also be challenging. This paper/perspective will focus on specific research examples in how we have addressed both opportunities and challenges afforded by simulation: 1) dealing with overwhelmingly large amounts of data, and 2) addressing assessor factors in the assessment of non-technical skills (e.g., teamwork). Data and Methods: 1. Clinical Reasoning Cases: Classification and Regression Tree (CART) analysis is a plausible solution to deal with large amounts of data. CART is inherently nonparametric and can handle mixed-type of input variables naturally. Also, it is adept at capturing non-additive behavior. We use CART in the evaluation of student's performance on computer-based clinical reasoning patient cases (i.e., DxR Clinician™ cases). 2. Multi-source/360-degree assessment: We developed a 360-degree assessment instrument OR Team-

work Assessment Scales (ORTAS) to assess individuals' teamwork behaviors. OR team members assess themselves and each other. Data were collected in multiple simulation center and real operating room settings (rural hospital in Alaska, large teaching hospital in Louisiana). Results: 1. Clinical Reasoning Cases: The CART approach shows promise and data analysis will be completed by December 2010. Complete results and discussion of CART approach for huge data sets will be included in the final paper and presentation. 2. Multi-source/360-degree assessment (ORTAS): Results from the study at a small rural Alaskan hospital supported instrument validity, reliability, and implementation feasibility and effectiveness. Five team members and five cases were sufficient to achieve reliable assessments. At the large, teaching hospital, high patient volume and staff turnover made 360-degree assessments too complex for obtaining useable data. However, use of the ORTAS in the simulation center is effective, given the controlled environment, opportunity for training of teachers and learners, and time for completing assessment and feedback. Scholarly significance: Considerable work has been accomplished in evaluation research involving simulation-based education over the past nine years at LSUHSC-New Orleans. Standardized methods, new instruments (ORTAS), and innovative analysis methods (CART) and practical insights about implementation across multiple settings offer valuable contributions to education in the professions.

Sat Apr 9 - 6:15pm to 8:15pm

Division I - Education in the Professions

Business Meeting and Reception:

**Celebrating Division I's
40th Anniversary**

Building: Astor Crowne Plaza,

Room: Astor Ballroom I

Sun, Apr 10 7:00am to 8:00 am

Division I Breakfast Meeting: Mentoring Committee

Division I VP Suite, Sheraton

Sun Apr 10 - 8:15am to 9:45am

**An Introduction to Research Methods for
Education in the Professions**

Building: Astor Crowne Plaza, **Room:** Astor Ballroom III

Invited Presenters: Danette W. McKinley (Foundation for Advancement of International Medical Education and Research) and John R. Boulet (Educational Commission for Foreign Medical Graduates)

The purpose of this workshop is to provide the participants with a basic overview of research methods that can be applied to questions concerning education in the profession. The target audience is indi-

viduals who are interested in research and want to know how to structure their activities and to avoid common pitfalls. With the aid of numerous examples, including descriptive overviews of some potential research activities, the following topics will be covered: Developing a research question/ generating a testable hypothesis; Choosing an appropriate research design; Defining measurable outcome variables, Analyzing the data; and Synthesizing the results/ generating follow-up studies.

Sun Apr 10 - 10:35am to 12:05pm

Learning From the Professions: Innovative Designs in Teacher Education That Draw on Preparation for Practice in Other Professions

Building: Astor Crowne Plaza, **Room:** Grand Ballroom A

Discussant: Joshua L. Glazer (The Rothschild Foundation)

Chair: Jennifer M. Lewis (Wayne State University)

Abstract:

This symposium brings together teacher educators from a number of teacher education efforts, across subject matter areas and grade levels, that have appropriated signature pedagogies from other professional preparation programs including medicine, clinical psychology, physical therapy, and pastoral education for use in teacher education methods courses. The turn to the professions for innovative instruction in teacher education is in part a response to a persistent problem in teacher education: the failure to adequately prepare teachers for clinical practice. Despite repeated calls for the teacher education curriculum to direct its attention to clinical preparation, clinical practice has often been seen as a secondary role of coursework in higher education.

Overview: A persistent problem in teacher education is the failure to adequately prepare teachers for clinical practice at the level that other professional preparation programs do (Grossman, Compton, Igra, Ronfeldt, Shahan, & Williamson, 2009). Despite repeated calls for the teacher education curriculum to turn its attention to clinical preparation, clinical practice has often been seen as a secondary role of coursework in higher education. Grossman et al. (2009) note, "Even as higher education has embraced professional education as part of its mission, or in some cases, built universities on the foundations of teachers colleges, universities have been ambivalent about the status and content of the more practical coursework that is part and parcel of most professional programs" (p. 2056).

This symposium presents an array of teacher education pedagogies across subject matter areas and grade levels that have drawn explicitly from models of "training" or preparation for practice found in other professions. A number of teacher educators have turned to preparation in other professions as a source for curricular and instructional innovation in teacher education (Ericsson, Krampe, & Tesch-Roemer, 1993; Grossman, et al., 2009; Rose, 1999; Shulman, 1998, 2005a, 2005b; Shulman & Elstein, 1975). The papers in this symposium showcase research efforts in teacher education settings that have built on these innovations.

Significance: This symposium is concerned with the improvement of teacher education as a lever for improving teaching and learning in schools for all children, in keeping with the theme of this year's AERA annual conference, "Education for the Public Good." The reform of teacher education is frequently highlighted as one key route through which the quality of teaching, and student learning, might be improved in U.S. schools (Darling-Hammond, 2006); if we are to improve learning

for all students, we must consider teacher education, and the work of developing pedagogies that link conceptual tools with ways of acting for practitioners, as a key linchpin for improving the quality of instruction available to all children. Unfortunately, robust signature pedagogies – especially pedagogies that specify the interactive aspects of teaching work – are largely absent from teacher education. In this symposium we argue that other professions provide robust models from which we can learn.

Learning and Teaching the Disciplines Through Clinical Rounds

*Bob Bain (University of Michigan), *Elizabeth B. Moje (University of Michigan)

In this paper, we present findings from our teacher education research and development project on learning and teaching the disciplines through clinical rounds. Typically, secondary teacher education involves prospective teachers learning content knowledge in one space (subject-matter courses), pedagogy in another (SOE courses), and application in a third (the 7-12 classroom). Although individual course experiences are strongly conceived, typically there is too little coordination within and across these three spaces. Thus, those who are least prepared to build coherence and develop programmatic meaning – the prospective teachers – are charged with the task of making connections among subject courses, professional courses, and the field. Our work began as an attempt to intervene on that fragmentation and to integrate literacy teaching and learning into subject areas. Specifically, we hoped to sharpen prospective teachers' understanding of and capacity to help youth become successful readers and writers of the complex texts they must read and write in secondary school. To that end, the project involves (1) developing of assessments to document thinking, knowledge development, and practice over time; (2) cohorting students in education courses by disciplinary major; (3) establishing spiraling curricular coherence across two core courses and field sites; (4) developing instructional capacity; and (5) introducing and managing a new system of field work we call "rounds." In this paper we will focus explicitly on the rounds experience. The rounds are modeled on the medical rounds of physicians in training. Unlike medical schools and teaching hospitals, teacher education programs face the challenge of developing strong, ongoing relationships with practicing teachers and area schools. Meeting quantity demands often takes precedence over the quality of placements. Consequently, two years ago we began to experiment by rotating groups of teaching interns across three to four field sites field sites, working with veteran teachers selected as "attending teachers" who model particular aspects of the practice of teaching. Interns then complete assignments as "modules" focused on key features of teaching: (a) selecting and using texts of instruction, (b) planning for instruction, (c) assessing and learning from students, and (d) developing student writing. In the second semester rounds, we integrate these components around (e) teaching concepts using multiple texts and (f) assessing secondary students' learning. For this session, we will describe the work and present findings drawn from analyses of surveys, written assessments, and interviews with a subsample of teaching interns and attending teachers. Statistical and constant comparative analyses indicate growth in understanding of core disciplinary literacy and history knowledge for teaching among the teaching interns and high levels of satisfaction among both interns and attendings. We have also documented our own increasing ability to gain insight on the interns' success in enacting practice in the field. The project suggests promising practices for teacher education, but much remains to be learned about effects on interns as they move into their first years of teaching and on their adolescent students. We conclude our paper with a report on initial attempts to gather and make sense of data in these areas.

The Role of Rehearsal in Learning to Teach Mathematics: Learning From Clinical Psychology and Pastoral Education

Jennifer M. Lewis (Wayne State University)

In this paper, we share how "approximations" of professional practice in preparing clergy and clinical psychologists (Grossman et al., 2009) have been repurposed for teacher education through the use of rehearsal with feedback in an elementary mathematics methods course. The mathematics methods course that is the focus of this study made regular use of public rehearsals in the university classroom. The idea to use rehearsals came about as response to the critique that while teacher education efforts are successful at preparing preservice teachers to think about, plan for, and analyze the work of teaching, less attention has been given to preparing novice teachers to do the work of teaching (Grossman & McDonald, 2008). Grossman et al. (2009) suggested that rehearsals with feedback would be one way to address this persistent challenge. In the mathematics methods class a rehearsal involved one novice playing the role of teacher and publicly enacting a common lesson while all the other novices looked on. The teacher educator coached the novice through the performance, stopping to highlight strengths, offer suggestions or corrections, or invite deliberation about key elements of the instruction for this lesson. Though it was just one step of a complex course design, public rehearsal of the day's lesson, with feedback from the teacher educator, was a central feature of the course design because it enabled novices to try out the teaching practices with expert feedback before enacting them with students (Grossman et al., 2009). In this paper, we analyze video records of four focal preservice teachers as they are rehearsing daily lessons in the university classroom and then compare them to video records of the preservice teachers teaching the same lessons to students in field placement classrooms. Using the Mathematical Quality of Instruction instrument (Learning Mathematics for Teaching Project, in press), we examine the mathematical quality of instruction as it plays out first in the teacher education classroom and then in the schoolroom. The questions guiding our analysis are: What is the quality of mathematical instruction that can be attributed to rehearsal with feedback? What aspects of these pedagogies drawn from professions outside of teacher education are relevant to developing the mathematical quality of instruction? What do these innovations in teacher education have to offer back to the professions from which they were originally adopted? Analyses indicate particular domains where the mathematical quality of instruction was consistently high: for example, prompting students to explain mathematical ideas, and making productive use of students' mathematical errors. Other domains of mathematical quality were virtually absent in their instruction: for example, making mathematical generalizing statements or eliciting links between multiple representations of content. The paper concludes by reexamining the pedagogies of coaching and rehearsal in connection with these qualities of mathematical instruction, and the interplay of assigned instructional activities and teacher education pedagogies that originate in other professions.

Specifying Practice With Protocols and Narration in a Literacy Methods Course: Taking a Stance on Instruction

Sarah E. Scott (University of Pittsburgh)

For the past four years we have designed and implemented a literacy methods course that is responsive to contemporary calls for teacher education coursework to be focused on what teachers do in their daily work, in ways that honor the demands of teaching work as it relates to knowledge of content, students, and the social context (e.g., Ball & Forzani, 2009; Ball, Sleep, Boerst, & Bass, 2009; Grossman & McDonald, 2008; Lampert, 2010). In this paper we investigate the use of dem-

onstration, narration and protocols to specify instructional practice in the literacy methods course. While a full description of the course design is beyond the scope of this proposal, it is important to note that students had daily opportunities to enact lessons with children in field placement classrooms, and that these enactments were videotaped. Videotaped enactments and video records of the literacy methods course class meetings from the 2009 class, which took place at a large rust belt research university, form the data corpus. Mike Rose's investigation of the clinical preparation of physical therapy students highlights the use of demonstration and narration to learn core therapeutic practices in a precise way. The teacher has very clear ideas about what counts as "right" and directs students' approximations through demonstration and narration (Rose, 1999). In this paper we describe a pedagogy in which the instructor provides students with a "skeletal lesson plan" and preservice teachers participate in a "lesson plan walk-through". In these pedagogies the instructor uses demonstration and narration to help preservice teachers understand precisely what they should do in interaction with students and why. This is not unlike the narration provided to physical therapists or the protocols and checklists that guide the work of doctors (Gwande, 2009). Specifying teaching practice in teacher education confronts the trend that literacy instruction is idiosyncratic and amenable to a teacher's "style." A 2006 study of reading methods courses found that how someone will teach reading is "repeatedly cast as a personal decision to be decided by the aspiring teacher. All methods are presented as being equally valid and how one teaches reading is merely a decision of what works best for the individual teacher. These assertions contradict widespread, compelling evidence to the contrary" (Walsh, Glaser, & Wilcox, 2006, p. 30). We begin the paper by describing the pedagogy then present discourse analyses of students enacted lessons compared with the models and narration that were provided in class and describe trends across ratings of students enacted lessons using a rubric (Bryk et al. 2008). Discourse analyses and rubric scores indicate growth in teaching skill from the first day of class until the last and an appropriation of language from the instructor's narration to the enacted lesson. These analyses suggest that taking a stance on instruction through protocols and narration result in enacted lessons that look and sound like the demonstrated lesson. We conclude the paper with a description of limitations, including our limited understanding of preservice teachers' teaching skills beyond the teacher education setting.

An Analysis of the Technological Underpinnings of a Teacher Preparation Innovation

Orrin T. Murray (The Pennsylvania State University)

This paper focuses on the technological underpinnings that enable teacher educators to help their students learn complex instructional practices. The basis for this analysis is a multi-year effort aimed at reforming teacher education in a research university, and this paper draws primarily from the coursework of an elementary literacy methods course. This course is the first of two literacy courses that students take in a year-long master's of arts with teaching certification program and the use of video records of novice teachers teaching enactments was a core element of the course design. Missing from much of the research on teacher education is an explicit analysis of the technologies that enable the preparation of novices. Following Lampert and Ball's (1998) pioneering use of video as a reflective tool in teacher education, video enabled technologies became a reflexive technology of choice for teacher educators seeking to develop analysis or reflective capacity in beginning teachers (e.g., Rosaen, Degnan, VanStratt, & Zietlow, 2004). Moreover, as Sherin notes, "despite its extensiveness, the use of video in teacher education does not always reflect an understanding of precisely what it is about video that might provide sup-

port for teacher learning” (Sherin, 2004, p. 10). Examining this problem through the lens of other professions suggests that professions noted for training novices in fields that focus on supporting human development (e.g., medicine, social work, physical therapy and) use technological innovations (e.g., video) to:

- complement and extend the work that trainees have in direct contact with patients/clients;
- cultivate a culture of making practice public, in the context of training novices (e.g., social work),
- question the moment-to-moment decision making required in professions of human development (e.g., clinical psychology), and
- recognize that mistakes are natural and vital to learning from practice (e.g., morbidity & mortality reviews)

What is notable about how these professions train novices is the emphasis placed on learning in the context of practice. To date much of the work of preparing teachers in the context of practice is left to field work, an aspect of teacher training over which teacher preparation programs have very little control (Grossman & McDonald, 2008). While the field of teacher education is cognizant of the value of novices having direct contact with students and practitioners in learning environments, an arrangement that is both educative for novices and supportive of teaching and learning in K-12 classrooms though theorized (e.g., Ball & Cohen, 1999), has been elusive. This paper details the innovations and provides an analysis of the technological framework drawn from ethnographic field notes, interviews (course instructor and participating teacher education students). Analyses suggest that instructional uses of technologies align well with the use of these technologies in other professions and support the long term retention of conceptual ideas introduced that are core to the methods course. In particular, exit interviews demonstrate both integration and identification of these ideas, which leads us to conclude that these conceptual ideas have a measure of “stickiness” (Heath & Heath, 2007).

Why is New Orleans called the Big Easy?

The term “Big Easy” is believed to come from a dance hall by that name which existed in the early 1900s. Some say that it might have been the dance hall, an actual dance, or possibly even a person who could do the dance. At the turn of the century, jazz musicians were fond of nicknames, and might have used the “Big Easy” for an Uptown dance hall. Eventually the nickname transferred to the city as a whole, referring to the gentle pace of life and somewhat lax morals for which New Orleans is known.

Source: Times Picayune - August 27,

Sun Apr 10 - 10:35am to 12:05pm

GSC Division I Fireside Chat:

**Making the Most of Mentoring in
Doctoral Education and Life Beyond**

Building: Astor Crowne Plaza, **Room:** St. Charles Ballroom

Carol A. Mullen, PhD

Professor and Chair, Department of Educational Leadership
& Cultural Foundations, School of Education
The University of North Carolina at Greensboro



The Division I graduate student fireside chat is delighted to have Dr. Carol Mullen as the esteemed speaker for AERA 2011. Dr. Mullen holds a PhD from The Ontario Institute for Studies in Education, University of Toronto, in the areas of Educational Curriculum and Leadership. She specializes in social justice approaches to mentoring and leadership in education, with a focus on the development of graduate students and junior faculty. She serves as Editor of the refereed international journal *Mentoring & Tutoring: Partnership in Learning*, and has published over 130 scholarly works including multiple books related to education and mentoring such as: *The Handbook of Formal Mentoring in Higher Education*; *The Handbook of Doctoral Programs in Educational Leadership*; *Write to the Top!*; *Curriculum Leadership Development*; *A Graduate Student Guide*; *The Mentorship Primer*; *Fire and Ice*; *Climbing the Himalayas of School Leadership*; *Breaking the Circle of One*; *The Postmodern Educator*; *New Directions for Mentoring*, and *Imprisoned Selves*. Dr. Mullen is the founder and past co-chair of the AERA's Mentorship and Mentoring Practices Special Interest Group and a former mentoring program coordinator and divisional section chair (Division C, Learning and Instruction). This workshop will focus on self-initiated forms of mentoring in higher education with particular emphasis on the doctoral experience. Studies show that proactive mentoring interventions can make a positive difference in the success of graduate students. The presentation addresses primary and secondary types of support as well as informal and formal approaches to mentoring. The main question that informs this session is, *what mentoring ideas, practices, and strategies are effective for cultivating students' academic development and success?* Following a presentation on these concepts, there will be an interactive roundtable discussion.

Sun Apr 10 - 12:25pm to 1:55pm

Improving Quality of Care: Measures And Methods

Building: Astor Crowne Plaza, **Room:** Astor Ballroom II

Discussant: Stanley John Hamstra (University of Ottawa)

Chair: Carol R. Thrush (University of Arkansas for Medical Sciences)

Improving Patient Care: A National Interdisciplinary Study of Educational Scholarship in Medical Imaging Departments Across Canada

Kathryn M. Hibbert (University of Western Ontario), Teresa L. Van Deven (University of Western Ontario), Rethy K. Chhem (University of Western Ontario), Lisa Y. Faden (University of Western Ontario), Lisa Boyko (University of Western Ontario), Monica Caldeira (University of Western Ontario)

Medical schools bear a social responsibility to ensure that physicians develop the increasingly diverse and complex skills required to serve their community in a participatory culture of 'civic professionalism'. Building upon earlier research conducted within a single medical imaging department, this study assesses the state of the scholarship of teaching and learning in the medical imaging departments at major medical institutions across Canada. This case study documents the process as educationalists come to understand the 'clinical context', offer a differential diagnosis, and recommendations for follow-up 'care'. Three critical issues emerged: mentoring, assessment and evaluation; and, the hidden curriculum. Engaging radiology residents as clinicians, researchers, educators and leaders can be best achieved through national collaboration efforts and sharing resources.

Measuring the Effect of Professional Education on Patient Outcomes: A Meta-Analysis

Regina Richter (University of California - Los Angeles)

Though many educational interventions aim to improve healthcare professionals' patient care skills, few studies have evaluated the relationship between curriculum and patient outcomes. This meta-analysis aims to estimate the true effect size of healthcare professional training on patient outcomes and whether or not the kind of patient outcome collected—be it health, behavioral, or mental—impacts the magnitude of that estimate. Ten studies were identified based on searches using PubMed and the Cochrane Library. Results from a mixed-effects maximum likelihood analysis indicate the effect of clinical skills training on patient health outcomes is small and non-significant. This study highlights the need for further research to better understand the relationship between provider and patient in terms of physician training.

Improving the Quality of Clinical Care Through Practice-Based Learning and Improvement

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

Substantial deficiencies exist in the quality of United States healthcare. One professional response to improving care is through Maintenance of Certification (MOC). Physicians enrolled in MOC must periodically evaluate their practices with quality measurement tools and use these data to improve care. Using data from 855 physicians who completed the ABIM Osteoporosis Practice Improvement Module, we examined physicians' performance on important quality indicators of osteoporosis care by subspecialty, relationships between elements of physi-

cians' practice systems and performance measures, and performance improvement on targeted measures. Our study showed that physicians' performance did improve, and consequently emphasizes the need to engage physicians to formally assess their clinical performance, apply quality improvement principles, and invest in specific structural capabilities to improve patient care.

Integration of Simulation in an Undergraduate Nursing Curriculum: Implementation and Impact Evaluation

Maura C. Schlairet (Valdosta State University)

Evidence suggests simulation in healthcare education facilitates learning under certain conditions. Although endorsed by professional bodies and widely incorporated into undergraduate nursing, there has been little evaluation of simulation at curricular levels. A program evaluation was undertaken to explore the influence of simulation across a BSN curriculum. The focus was on program activities accomplished (implementation) and the extent to which program objectives and outcomes were met (impact). The Nursing Education Simulation Framework provided a format for arranging the multiple variables to be explored and supported the use of diverse simulation-related data sources. Although we identified possible areas of concern for particular groups of students related to the use of simulation, overall findings support continued integration of simulation through the curriculum.

Sun Apr 10 - 2:15pm to 3:45pm

Institutional Culture: Social and Environmental Factors

Building: Astor Crowne Plaza, **Room:** Grand Ballroom A

Discussant: Patricia S. O'Sullivan (University of California - San Francisco)

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

Cultivating a Culture of Constructive Feedback Between Medical Students and Faculty Members: A Survey Study of Problem-Based Learning Facilitators' and First-Year Medical Students' Feedback Experiences

Maria Alejandra Blanco (Tufts University), Ann Maderer (Tufts University), Ralph Aarons (Tufts University), Yung-Chi Sung (Tufts University), Scott K. Epstein (Tufts University)

Our mixed-method survey study examined first-year medical students' and Problem-Based Learning (PBL) facilitators' experiences with face-to-face constructive feedback in the context of PBL. A framework for giving constructive feedback was introduced to facilitators and students before the start of the PBL course. 199 students and 46 facilitators completed the post-course survey. Students felt somewhat comfortable providing face-to-face feedback to faculty before and after the course. Their comfort level increased significantly after the course. Students and facilitators did not find the feedback they received highly useful. At the same time, students indicated the need for more practice throughout training. Areas for faculty development, as well as approaches to cultivating a culture of constructive feedback among students and faculty, were identified.

Evaluating The Multifactorial Aspects of a Workplace as a Learning Environment

Ann Deketelaere (University of Leuven), Sofie Kuppens (Katholieke Universiteit Leuven), Eva Ceulemans (University of Leuven), Lisa De Jonghe (University of Leuven), Paul De Leyn (University of Leuven)

Undergraduate students complete their clinical clerkships at different regional departments. After each period, they report their experiences regarding these clinical workplaces as a learning environment using the Activities Coaching Context (ACC)-questionnaire. Aim To describe the rationale and development of the ACC-questionnaire and the evaluation of its factorial validity and internal consistency. Method For two cohorts of students (N: 531, N: 402) confirmatory factor analysis was run and corrected item-total correlations were computed. Results Analyses supported a hierarchical factor structure, with one second-order factor (named the overall ACC-score) and seven first-order factors. The internal consistency of the seven subscales was adequate. Conclusion The factorial validity and internal consistency of the ACC-questionnaire were supported.

Preparing Professionals to Be Effective Change-Agents: The Role of Entrepreneurial Mindsets and Practices

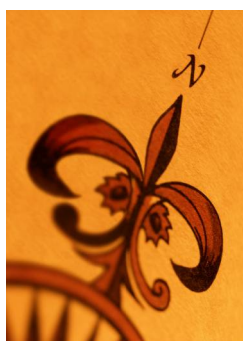
Raffaella Borasi (University of Rochester), Constance Flahive Smith (University of Rochester)

In the midst of relentless technological advances and persisting social inequities, professionals across fields who want to contribute to the public good need to be effective change-agents – yet few are prepared to do so. To better understand what it takes to be an effective change-agent, we conducted case studies of 8 individuals known for their innovations, yet working in different contexts and positions – including a business owner, CEO of a not-for-profit organization, community leader, teacher, principal, assistant superintendent for instruction, academic dean, and head of libraries. The study identified a rich set of mindset and practices connected with entrepreneurship that professionals in a variety of fields would benefit from learning and using.

The Medical School Learning Environment May Influence Academic Performance

Sharon Wayne (University of New Mexico), Judith Kitzes (University of New Mexico), Craig Timm (University of New Mexico), Summers G. Kalishman (University of New Mexico)

A school's learning environment is believed to influence academic performance yet few studies have actually evaluated this association. We measured perception of the learning environment after the first year of medical school in 166 students whose Medical College Admission Test (MCAT) scores were in the lowest quartile. Two outcome categories were created based on United States Medical Licensing Examination Step 1 score: scoring in the lowest quartile of Step 1 and scoring above the lowest quartile (i.e. scoring better than expected based on MCAT). Logistic regression results showed mean scores for the emotional climate subscale were significantly higher in students who scored better than expected on Step 1. A positive learning environment may contribute to better academic performance.



Sun Apr 10 - 6:30 pm
Division I Social Dinner

Palace Café
605 Canal Street

Fleur de lis room, accessible via elevator
RSVP see page 3 this issue

Mon Apr 11 - 8:15am to 9:45am

Enhancing Learning Through Peer Interaction

Building: Astor Crowne Plaza, **Room:** Astor Ballroom I

Discussant: Trudie Roberts (University of Leeds)

Chair: Hugh A. Stoddard (University of Nebraska - Medical Center)

Peer Observation Increases Performance While Learning Complex Psychomotor Skills

Christina St-Onge (Université de Sherbrooke), Bernard Martineau Martineau (Université de Sherbrooke), Anne Harvey (Université de Sherbrooke), Linda Bergeron (Université de Sherbrooke), Silvia Mamede (Erasmus University Rotterdam, Netherlands), Remy M. Rikers (Erasmus University Rotterdam, Netherlands)

Physical examination (PE) is a core element in physician's decision making process. Learning and mastering the skills required to execute PE is therefore of great importance and should be fostered early during medical training. Literature has shown that group-based learning, and more specifically, the opportunity to observe peers, positively influences the acquisition of psychomotor skills. To favour PE skills acquisition, we introduced the observation of a video at the beginning of a PE pedagogical activity. It was shown that students did not benefit from observing a video as much as they benefited from observing a peer. These results suggest that group learning activities giving the opportunity to observe peers while they are learning should be favoured.

Perceptions of a Peer Assessment/Feedback Training Program in an Undergraduate Pre-Allied Health Course

Melissa Catherine Marty (Ashland University), Jolene Henning (University of North Carolina - Greensboro)

Peer assessment/feedback occurs in many professional programs including allied health education programs. However, it remains unclear whether students would improve their ability to assess and provide corrective feedback if they received formal training in how to do so. The purpose of this study was to determine if students' perceptions of PAF changed over time and as a result of a PAF training program. Two sections of an introductory sports medicine/pre-allied health class served as subjects. Surveys were completed at the beginning of the semester and the end of the semester to examine perceptions and preferences of all subjects. The subjects, regardless of group, overwhelmingly had positive perceptions of the benefits of peer learning, benefits of PAF and the PAF process.

The Effectiveness of Small Group Learning in Health Science College Classrooms

Sema A. Kalaian (Eastern Michigan University), Rafa M. Kasim (Kent State University)

For the last two decades, the national and federal agencies (e.g., the National Academy of Sciences) have consistently called for the need to improve undergraduate health education in the U.S. The objectives of this meta-analytic study are to: (1) Conduct a comprehensive literature review to locate the primary research studies examining the effectiveness of small group learning compared to lecture-based instruction in health undergraduate classes; and (2) Use multilevel methods for meta-analysis to a) estimate both the weighted average effect size and its associated variance from the experimental and quasi-experimental research studies, and (b) model the heterogeneity in these effect sizes by including the coded predictor variables (e.g., publication year, institution type, research quality, study duration) in the multilevel model.

Factors Influencing Ratings of Physicians by Their Peers and Patients

Rebecca S. Lipner (American Board of Internal Medicine), Carola N. Jacobs (American Board of Internal Medicine), Gregory S. Fortna (American Board of Internal Medicine)

Physician communication skills and professional qualities are important competencies for providing quality patient care. We evaluated factors that influence ratings of these competencies by patients and peers for 3,859 physicians who completed a patient and physician-peer exercise to fulfill a requirement to maintain certification. Each physician was rated by 25 patients on communication skills and by 10 peers on clinical performance and professionalism. Data were analyzed using descriptive statistics, t-tests, chi-squared tests, and linear multiple regression. After accounting for patient, peer, and practice characteristics, subspecialists received higher mean ratings than general internists by both patients and peers. Since many factors influence ratings, the most compelling feedback for physicians is their performance relative to physicians with similar practices and patients.

Mon Apr 11 - 10:35am to 12:05pm

Examining Cross-Professional Studies

Building: Astor Crowne Plaza, **Room:** Astor Ballroom III

Discussant: Marcia Mentkowski (Alverno College)

Chair: Bridget Colleen OBrien (University of California - San Francisco)

An Innovative Method for Exploring Professional Identity Across Disciplines

Sharon K. McDonough (Auburn University), Maryanna D. Klatt (The Ohio State University), Kristen Lehman Helms (Auburn University)

An innovative method of exploring professional identity construction previously utilized with first-year medical students was conducted with a larger (N = 130) group of first-year pharmacy students. Objectives were to utilize the method with a student population within a different field of healthcare, assess its effectiveness as an educational activity yielding data relevant to inform the curriculum, and assess its versatility across professions. Qualitative data collected and analyzed included student drawings and reflections on the activity. Faculty members who facilitated small group discussions during the activity were surveyed regarding their perspectives on the nature of discussions and on the method itself. The study verified that the method can be effectively used across disciplines in the healthcare professions.

Current Trends in Interprofessional Education of Health Sciences Students: A Literature Review

Erin Abu-Rish (University of Washington), Lapio Choe (University of Washington), Lara Varpio (American Invitational Mathematics Examination), Brenda Zierler (University of Washington)

Interprofessional education (IPE) among health professions promotes patient safety. Most IPE training programs target practicing clinicians rather than students. We conducted a literature review to identify: 1) IPE teaching strategies or training opportunities involving health professions students; 2) IPE faculty recruitment and development approaches, and 3) strategies to overcome administrative barriers for integrating IPE into curricula. The majority of studies we reviewed (n=41) reported a one time trial of educational programs that were predominantly implemented in academic settings. Little description was offered regarding availability of IPE faculty development or the incentives utilized for recruiting and retaining IPE faculty. With few randomized studies, it was difficult to assess the effectiveness of specific IPE educational features that contributed to students' IPE compe-

tencies.

Regulation of Five Health Professions: A World View

Marta van Zanten (Foundation for Advancement of International Medical Education and Research), Luc J.R. Besançon (International Pharmaceutical Federation), Paul Rockey (American Medical Association)

Systems of regulation attempt to assure competence of health professionals. To better inform global discussion of this issue, we developed an online survey on regulatory environments of five health-care professions in 78 countries. The aggregated data includes 22 systems of regulation for dentists, 45 systems for nurses, 37 for pharmacists, 38 for physicians, and 36 for physiotherapists. More variation in systems of regulation exists across countries than between these five health professions within countries. Variations include the type of regulatory bodies, complexity of systems, the entities that set rules, and scope of regulation. This data may help inform a global movement toward harmonization of regulatory systems.

Incivility in Nursing Classrooms: An Ethical Crisis

Jennifer L. Beck (Our Lady of the Lake College), Kim D. Macgregor (Louisiana State University)

This triangulated mixed methods study used a modified Incivility in Nursing Education survey (Clark, 2007) to determine behaviors students identify as uncivil among students, faculty, and nurses. Nine factors were isolated as a result of exploratory factor analysis: avoidance; student, faculty, and nurse disregard for others; integrity compromised; aggressive antagonism; faculty abuse of position; faculty and nurse aggressive actions. Programs with high and low levels of student perceived incivility to determine differences. Programs with high perceived levels of incivility have no student representation on grievance committees with resolution focusing on punishment. Programs with low perceived levels of incivility had student representation on grievance committees and focused on dialoguing to remedy conflict. Implications for nursing educators are discussed.

Mon Apr 11 - 12:25pm to 1:55pm

The Scholarship of Writing for Publication Workshop

Building: New Orleans Marriott, **Room:** Balconies MN

Invited Presenters: M Brownell Anderson (Association of American Medical Colleges) and Ara Tekian (University of Illinois - Chicago)

In this interactive workshop the skills of scholarly writing will be explored through the lens of analyzing a manuscript that was not accepted for publication and one that was accepted for publication. The participants will examine review criteria that are used by medical education journals and apply them to a sample manuscript. In discussing scholarly writing the participants will make a decision about the type of feedback they would give to the authors of the sample paper. Specific Objectives and outcomes: At the end of the workshop, participants will be able to:

- * Identify the components of a scholarly publication
- * Identify an effective Research Question
- * Discuss reasons for rejection of manuscripts
- * Apply evaluation criteria for reviewing a paper
- * Explain helpful tips for preparing papers

Mon Apr 11 - 2:00pm to 4:00pm

Tour of LSU Health Sciences Center, Simulation Centers

Pre-registration with Sara Kim required, see page 4

Mon Apr 11 - 2:15pm to 3:45pm**Roundtable Session 45 - Methodologies in Professions Education****Building:** Sheraton, **Room:** Grand Ballroom A**Chair:** Brian J. Hess (American Board of Internal Medicine)**Experiential Learning Theory Versus Guided Experiential Learning: Comparing Instructional Design Methodologies in****Medical Simulations**

Christopher Craft (University of South Carolina - Columbia)

Simulations are prominent in medical education yet there is a paucity of research as to the most effective instructional design methodologies for teaching and learning in this new environment. This study compares two ID models (ELT and GEL) to determine which leads to the highest score on a checklist measuring competence on a complex skill (central venous catheterization). The results indicate GEL to be a more efficient ID model with participants practicing longer and failing less frequently due to critical action violations. The study is informed by Cognitive Load Theory.

Text Work as Identity Work in Legal Writing

Erika J. Abner (Educational Consultant), Shelley Kierstead (Osgoode Hall Law School)

The authors have conducted a content analysis of a number of first year and practitioner legal writing texts in order to examine whether and how these texts focus on the development of a legal identity through creation of a personal, professional, or discursive voice. The question of creation of a legal identity is significant, in part, because of the increased focus on teaching and learning professionalism and professional behaviors, both within law schools and in practice. The authors conclude that there is a limited focus within the texts on the identity work inherent in learning to write with authority under conditions of uncertainty. The social practice of writing is largely overlooked or ignored.

The Use of Concept Mapping to Assess Medical Students' Knowledge of and Attitudes Toward Social and Behavioral Sciences in Medicine

Arienne Teherani (University of California - San Francisco), Shelley Adler (University of California - San Francisco), Jason Wang (University of California - San Francisco), H. Carrie Chen (University of California - San Francisco)

Purpose To determine if a concept mapping could be used as an assessment tool for measuring medical students' knowledge and attitudes of social and behavioral sciences (SBS). Methods Student concept maps completed at the start of the first and again at the start of the second year in response to a patient case were compared. Results In year 2, students included a significantly higher number of nodes related to social history, medical sources of treatment, and inclusion of diagnostic tests when approaching the patient case. Discussion Concept maps captured changes in knowledge generally and SBS-related knowledge and attitudes and are a useful as tool for assessing students' SBS knowledge and attitudes in their approach to patient care.

Mon Apr 11 - 4:05pm to 5:35pm**Roundtable Session 48 -****Professional Activity, Professional Education****Building:** Sheraton, **Room:** Grand Ballroom A**Chair:** Arienne Teherani (University of California - San Francisco)**Ethnographic Research on Professional Communities: Contributions to Theory and Practice**

Jan K. Armstrong (University of New Mexico)

This paper examines ethnographic approaches to the study of professional communities as cultures. The aim of this work was to 1) provide an integrative review of ethnographic work on professionals 2) expand the theoretical terrain available to professional studies scholars and researchers, and 3) identify new directions in ethnographic research on teaching, learning, and knowledge transmission in the professions. The work reported in this paper is part of a larger project on professional communities as cultures. As such, it focuses on ethnographies that illustrate the range of theoretical frameworks employed by ethnographers who have examined professional lives in context.

How Do Physicians Learn to Diagnose? A Study of Clinical Reasoning in Morning Report

Julianna E. Kershen (Harvard University)

The American medical education model is widely hailed as successfully creating effective physicians. We presume excellence in a physician's ability to clinically reason: to diagnose a patient's condition and provide ensuing treatment, alone, or in concert with colleagues, and often with limited information. However, what kinds of instructional techniques are used by clinical teachers responsible for teaching the art and science of clinical reasoning to learners? This qualitative study analyzed learning and teaching discourse during routine Morning Report sessions. Morning Report is a key component of education during medical residency. Results from this descriptive study highlight two instructional methods favored by the observed physicians, and juxtapose those methods against research on the development of clinical reasoning.

The Era of Accountability in Business Education: A Theoretical Model to Explicate Professionalization of Business

Nicole Christine Jackson (University of California - Berkeley)

Market failures increasingly place harm on the public good by calling into question both the integrity and competence of business practice and the free-market system. A central explanatory factor may include the failed professionalization of US business education and practice. Historically, professionalization has been defined as a field's creation of acceptable standards that also provides an effective monitoring capability for both individual competency and conduct. To-date, US business education has failed to provide both credible standards and effective forms of governance that can be mediated by appropriate institutionalization of organizational pressures and moderated by individual felt accountability. These four theoretical antecedents, which are necessary for greater accountability and professionalization of business education, are explored in this theoretical and conceptual paper.

Tue Apr 12 - 8:15am to 10:15am**Cognitive and Affective Domains****in Professions Education****Building:** Sheraton, **Room:** Napoleon Ballroom C1**Discussant:** Elliot P. Douglas (University of Florida)**Chair:** Majka B. Woods (University of Minnesota)**Building Fundamental Engineering Knowledge: Identification and Classification of Engineering Students' Preconceptions in Mechanics of**

Materials

Devlin B. Montfort (Washington State University), Shane A. Brown (Washington State University)

Education research in engineering and science has found that student preconceptions can prevent learning and limit students' abilities to solve problems in unfamiliar contexts. This study investigates student preconceptions in a course foundational to much of the engineering curriculum: mechanics of materials. Approximately 120 students were interviewed about mechanics of materials concepts. Students were found to consistently oversimplify the process of how a load creates stresses in an object. These preconceptions interfered with student reasoning in contexts ranging from basic physical descriptions of a single characteristic to complex analyses of interacting phenomena. These findings support existing research that suggests that instead of addressing the problematic content of preconceptions, interventions should help students understand the nature and source of the preconceptions.

Teaching Difficult Engineering Concepts in the Language of Emergent Processes

Dazhi Yang (Boise State University), Natalie Barrett (Purdue University), Alejandra de Jesus Magana de Leon (Purdue University), Ruth A. Streveler (Purdue University), Ronald L. Miller (Colorado School of Mines), Aidsa Ivette Santiago Romn (University of Puerto Rico - Mayagüez)

A previous study showed that teaching difficult engineering concepts in the language of emergent processes helped students repair their misconceptions of those concepts. We further conducted an experimental study with 60 undergraduate engineering students. We were mainly interested in whether describing some difficult concepts of diffusion helped students learn those difficult concepts and improved their performance on the assessment tests on such concepts. Results show that the experimental group did significantly better on the assessment test. Implications of this study calls for further research on how to design instruction and teach difficult concept in the emergent processes. It also calls for the needs on teaching and describing difficult concepts in the language of emergent processes.

Thinking Like a 21st-Century Nurse: Theories, Instruments, and Methodologies for Measuring Thinking

Lily Fountain (University of Maryland)

This paper reports a descriptive cross-sectional pilot study targeting conceptualization, measurement, and instrument development, along with differences between basic and advanced nursing students in clinical thinking. Objectives were to determine if the Model of Domain Learning (MDL), a developmental model of expertise examining changes in knowledge, interest, and strategic processing, could be extended to a clinical domain such as nursing, and to determine if clinical thinking could be measured in a written case scenario. The instrument measuring these constructs in maternity nursing was adapted from MDL-based measures tested in other domains. Results indicated the presence of the MDL-predicted changes in knowledge, interest, and critical thinking/strategic processing, and the expected changes in higher order critical thinking were partially confirmed.

Beliefs, Emotions, and Behaviors in Medical School: A Comparative Analysis of Low Versus High Performers

Anthony R. Artino (Uniformed Services University of the Health Sciences), Steven J. Durning (Uniformed Services University of the Health Sciences)

We explored whether motivational, emotional, and behavioral as-

pects of self-regulated learning (SRL) are associated with academic performance in a medical school course. We collected survey data from 248 second-year students; the surveys assessed 10 constructs associated with SRL. We operationalized performance as students' average grade on three course exams, and we performed a tercile split to compare those in the lowest and highest third of achievement. We found differences in the beliefs and emotions of the two extreme groups, $F(10,136)=2.08$, $p<.05$. When compared to high-performing students, low performers reported lower task value ($d=-0.33$) and self-efficacy beliefs ($d=-0.33$), as well as greater anxiety ($d=0.63$), frustration ($d=0.54$), and boredom ($d=0.44$). Implications for theory, research, and practice in medical education are discussed.

Motivation and Studying Strategies in Competitive Grading Contexts Like Medical School

Mark J. Graham (Columbia University), Aubrie Swan Sein (Columbia University)

Individuals differ in their motivational orientations for reaching desired end-states, or goals. Regulatory focus theory distinguishes between two broad motivational orientations: promotion and prevention. We investigated the extent to which there are differences in studying tactics as a function of medical students' motivational orientations. Students with higher promotion scores were less likely to shift their study tactics in response to a change in the grading system than students with higher prevention scores. Our findings help to understand the different approaches students use to succeed in intense learning environments like medical school.

Updating Lecturers' Knowledge and Practical Skills in Ghana's Polytechnics: The Role of Teacher Design Teams in Professional Development

Marie A.B. Bakah (University of Twente), Joke M. Voogt (University of Twente), Jules M. Pieters (University of Twente, The Netherlands)

While there is a growing need for competent teaching staff in polytechnics in Ghana, there is little evidence of professional development activities to enable lecturers update their knowledge and practical skills in their subject areas through industrial visits. This study reports a professional development programme in which 16 lecturers, split into three Teacher Design Teams (TDT), planned and undertook industrial attachments based in their learning needs. This was followed by the redesigning of their courses and teaching tryouts. Data were collected through interviews, questionnaires, industry reports and observations on lecturers' experiences. Results indicate that lecturers acquired relevant knowledge and practical skills during the industrial attachment. Furthermore, TDT enabled active learning and collaboration among lecturers and was useful for professional development.

Tue Apr 12 - 10:35am to 12:05pm

Roundtable Session 52 -

Cultural Issues in Professional Education

Building: Sheraton, **Room:** Grand Ballroom A

Chair: Anne McKee (Anglia Ruskin University)

Exploring Culture and Cross-Culture Competence Through the Opinions of Primary Care Faculty and Resident Physicians

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

Culture is becoming salient for health care in the U.S., as the population grows more diverse and global. Medical education requires medical students and residents to learn about culture and its impact

on clinical encounter and health care. Medical educators have defined what the profession means by cross-cultural competence; however, medicine's beliefs about the nature and meaning of culture are unknown. This study explored how primary care faculty at an Academic Health Center understand culture and whether or not medical residents, whom they mentor, share similar beliefs about the construct. Primary care faculty and medical residents share a number of similar beliefs about culture, but diverge with respect to how nuanced they perceive the construct.

From the Classroom to the Work Setting: The Development of Cultural Competence Among Community College Nurses in the New York Metropolitan Area

Korto L. Scott (La Guardia Community College - CUNY), Stephanie L. Tatum (Dowling College)

Because of the changing demographic landscape in the United States, providing quality healthcare for a diverse patient population is critical. A survey that included an open-ended question measured the development of cultural competence attitudes of 156 registered nurses who graduated from associate degree programs. The study also examined the development of cultural competence as it related to their institutional preparations: classroom, laboratory, clinical setting, and community, and their cultural care practices at the work setting. Results indicate that their institutional learning experiences in cultural care insufficiently prepared them to provide culturally diverse competent nursing care to patients in the work setting. Using multicultural education curriculum and instruction while in nursing degree programs can possibly assist nurses in the work setting.

The Role of Illness Scripts in Medical Diagnostic Expertise: Findings From Traditional Chinese Medicine

Meilin Yao (Beijing Normal University), Wenfan Yan (University of Massachusetts - Boston)

Medical educators agree that medical diagnostic skill is a central component of physician competence. An experimental study was conducted to describe characteristics of medical diagnostic expertise in traditional Chinese medicine and compare the medical diagnostic performance between traditional Chinese medical experts and novices. The results of this study confirmed the role of encapsulated knowledge and illness scripts in the development of Chinese medical diagnostic expertise. Experienced traditional Chinese doctors' biomedical knowledge becomes encapsulated and eventually integrated into "illness scripts" through their clinical experiences. They could quickly activate their "illness scripts" to diagnose the disease name and prescribe the corresponding prescription. Implications for current medical education reform in China were discussed.

Tue Apr 12 - 12:25pm to 1:55pm

Teaching to Learn, Learning to Teach

Building: Sheraton, **Room:** Oakley

Discussant: Steven J. Durning (Uniformed Services University of the Health Sciences)

Chair: Maria Alejandra Blanco (Tufts University)

Evaluating Outcomes of Professional Development Programs: A Review of Self-Report Methods

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

Assessing the efficacy of professional development programs can be challenging. While the use of post-intervention measures is common,

there is debate regarding the validity of appraisals made on the basis of self-reported improvement. The purpose of the current investigation was to provide a systematic review of literature where change in knowledge, behavior or attitude based on a variety of interventions was assessed. The results of the current review show that self-report can be useful when implemented as part of an evaluation framework that employs other measures to collect additional evidence of the validity of the reported gains, minimizing the potential biases associated with a single group pretest-posttest design.

A Novel Program for First-Year Medical Students to Prepare for Clinical Training by Shadowing Residents

Simon Turner (University of Alberta), Cheryl-Anne Nadine Poth (University of Alberta), Jonathan White (University of Alberta)

The transition from preclinical to clinical education can be a difficult one for medical students, as the shift from theoretical to practical learning often is in professional education. To prepare students for clinical training, a program was developed for first-year students to job-shadow first-year residents. Participant interviews examined the program's effects. Students reported gaining practical knowledge and skills and appreciated the chance to apply them in a real setting. Their relationship with their resident, fostered by similar ages and educational levels, facilitated students' understanding of the lifestyles and stresses associated with clinical training. Similar programs could be employed at low cost in other medical schools or professional training programs to help prepare trainees for learning in a practical setting.

Literature Review of Residents as Teachers From an Adult Learning Perspective

Rebecca D. Blanchard (Baystate Medical Center and Tufts University), Kevin T. Hinchey (Baystate Medical Center and Tufts University), Elisabeth E. Bennett (Baystate Medical Center and Tufts University)

Academic medical centers represent the intersection of higher education and workforce development. However residents often utilize traditional pedagogical approaches learned from higher education settings that do not translate effectively with adult learners. The purpose of this study is to synthesize literature on resident teachers from the perspective of adult learning – particularly the concept of andragogy – to provide insight for improving medical education. This integrative literature review identifies skills and characteristics of resident teachers and presents them as mechanisms for achieving the five tenets of Knowles' (1984) model of adult learning. This study connects andragogy with medical education and posits that teaching skills be more clearly conceptualized for faculty and residents and incorporated into their respective curricula.

The Experiences of Nursing Faculty Transitioning From Live to Online Teaching

Denise Passmore (University of South Florida)

To address the nursing shortage and need for professional nurses, nursing schools throughout the country are turning to online programs to educate working adults. However, the transition that nursing faculty must make to new instructional roles is often overlooked. In this qualitative study, nursing faculty from four public universities described their experiences transitioning from classroom to online teaching. Participants frequently mentioned as issues the time required to design and teach, the need for mentors, and student-teacher relationships. Analyzing results through transformative learning showed that many had transitioned from authoritative teacher to facilitator of learning. Results support the need for institutions to provide faculty preparation and support, as well as recognition of time and effort required to teach online.

Professional Licensure and Certification SIG Sessions

Sunday, April 10, 10:35am-12:05 pm

Division and SIG Roundtables

Roundtable Session 31; Barriers to and Trends in Professional Certification Throughout the Career

Sheraton, Grand Ballroom E.

Chair: *Jason Rinaldo, American Board of Family Medicine*

Participants:

Poverty Effects on Teacher Achievement of Advanced Certification.
Rita Pin Ahrens, The George Washington University.

A Longitudinal Analysis of Certification Trend and Performance on Dual Certification in Hematology and Medical Oncology. *Yanling Zhang, American Board of Internal Medicine; Robin A. Guille, American Board of Internal Medicine.*

Extended Time Accommodations and Their Impact on High-Stakes Licensure Examinations Differential Item Functioning. *Ada Woo, National Council of State Boards of Nursing; Casimer M. Marks, National Council of State Boards of Nursing; Weiwei Liu, National Council of State Boards of Nursing; Philip Dickison, National Council of State Boards of Nursing; Sarah L. Hagge, National Council of State Boards of Nursing.*

Monday, April 11, 12:25pm – 1:55pm

SIG Sessions

Fun With Test Items: Subgroup Construct Stability, Common and Repeated Items, and Item Relevance Factors.

SIG-Professional Licensure and Certification; Paper Session
Astor Crowne Plaza, Bienville.

Chair: *Jason Rinaldo, American Board of Family Medicine*

Discussant: *Andrew Jones, American Board of Surgery.*

Participants:

Construct Stability Across Subgroups: An Evaluation Using Differential Item Functioning. *Mikaela Marie Raddatz, University of Kentucky; Thomas R. O'Neill, American Board of Family Medicine.*

Evaluating the Performance of Common Items Using Item Parameter Drift, Model-Data Misfit, and Response Time. *Brian J. Hess, American Board of Internal Medicine; Renbang Zhu, American Board of Internal Medicine; Louis J. Grosso, American Board of Internal Medicine; Gregory S. Fortna, American Board of Internal Medicine; Rebecca S. Lipner, American Board of Internal Medicine.*

The Effect of Different Question Presentation Modes on Relevance Ratings. *Louis J. Grosso, American Board of Internal Medicine; Hao Song, American Board of Internal Medicine; Rebecca A. Baranowski, American Board of Internal Medicine; Rebecca S. Lipner, American Board of Internal Medicine; Paul A. Poniatowski, American Board of Internal Medicine.*

The Impact of Repeated Exposure to Items. *AThomas R. O'Neill, American Board of Family Medicine; Kenneth Royal, American Board of Family Medicine.*

Monday, April 11, 6:15 pm – 7:45pm

SIG Sessions

Test Validity Research and Evaluation SIG and Professional Licensure and Certification SIG Joint Business Meeting.

Doubletree, Madewood A.

Abstract: *The Test Validity Research and Evaluation SIG and the Professional Licensure and Certification SIG welcome Professor Gregory Cizek from University of North Carolina who will give a talk on Validity Issues in Professional Licensure and Certification Tests. After the invited talk, officers from both SIGs will introduce themselves and give updates on SIG activities. Refreshments will be provided.*

Session Organizer:

Jennifer L. Kobrin, The College Board

Speaker:

Andrew Gregory J. Cizek, University of North Carolina – Chapel Hill.

Participants:

Jennifer L. Kobrin, The College Board

John Young, ETS

Timothy A. Sares, American Board of Internal Medicine

Hao Song, American Board of Internal Medicine

Barbara M. Foster, American Board of Obstetrics and Gynecology

Jason Rinaldo, American Board of Family Medicine

Who was 'Satchmo'?

- A) John Coltrane
- B) Al Hirt
- C) Louie Armstrong
- D) Professor Longhair

C. Louie Armstrong

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 (2012-2014):

TBD

Past Vice President:

Patricia O'Sullivan, University of California San Francisco

Secretary (2010-2012):

Katherine Edmondson, Cornell University

Members-at-Large:

Janet Hafler, Tufts University

Paul Wimmers, University of California, Los Angeles

Chair, 2011 Program Committee:

Sara Kim, University of California, Los Angeles

Chair, 2012 Program Committee:

John (Jack) Boulet, FAIMER

Chair, Affirmative Action Committee:

Hugh Stoddard, University of Nebraska College of Medicine

Co-Chairs, Awards Committee:

Carol Kamin, University of Illinois at Chicago

Arianne Teherani, University of California, San Francisco

Membership Committee:

Summers Kalishman, University of New Mexico, Chair

Kimberly A. Swygert, National Board of Medical Examiners

Chair, Nominating Committee:

Linda Perkowski, University of Minnesota Medical School

Co-Chairs, Publications Mentoring Committee:

Maria Blanco, Tufts University

Bridget O'Brien, University of California, San Francisco

Co-Chairs, Ad Hoc Strategic Planning Committee:

Ruth Streveler, Purdue University

Louis Grosso, American Board of Internal Medicine

PERQ Editor:

Carol Thrush, University of Arkansas for Medical Sciences

Web Liaison:

Majka Woods, University of Minnesota Medical School

Graduate Student Representatives:

Christina Cestone, University of Texas, Austin

Robert Ellis, University of Texas, Austin

Member Liaison to Graduate Student Committee:

Dorthea Juul, American Board of Psychiatry and Neurology, Inc.


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:

Carol Thrush, PERQ Editor

University of Arkansas for Medical Sciences

4301 W. Markham St., Slot 595

Little Rock, AR 72205

thrushcarolr@uams.edu

PERQ is archived on the Web at:

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