2011 WEPAN National Conference

Advancing Women: Transforming Engineering Education
Seattle, WA
June 21–23

www.wepan.org
2011 WEPAN National Conference
Advancing Women: Transforming Engineering Education

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Join us for the
2012 WEPAN National Conference
June 26–28, 2012
Hyatt on Capitol Square
Columbus, Ohio
Welcome to the 2011 WEPAN National Conference! Seattle, home to many innovative companies like Starbucks, Amazon.com, Boeing, Microsoft and Nordstrom, is proud of its culture of creativity, a highly educated workforce, and a commitment to sustaining the beauty of its natural surroundings. Our theme “Advancing Women: Transforming Engineering Education” has brought together leaders from across the country to explore best practices and research on how diversity in engineering education contributes to producing engineers who reflect the Northwest spirit of innovation, transformation and sustainability.

At WEPAN’s 2011 conference we offer a compelling conference program that demonstrates WEPAN’s engagement with the most current trends in engineering education: teaching innovation, leading transformation, and ensuring sustainability. Conference highlights include:

- Dessert reception in the Bellevue Nordstrom Store
- Innovative strategies for developing a highly prepared, diverse engineering workforce
- Partnership with the Pacific Northwest Girls Collaborative
- Opportunities to network, learn and collaborate
- Tours of innovative workplaces in the Northwest

To reflect our theme, conference events and sessions are organized into four key topics that capture the momentum generated by a variety of recent studies that attempt to define how engineering education should shape itself in order to produce engineers who have achieved technical excellence and learned how to think and design innovatively. They are:

1. Advancing Women
2. Leading Transformation
3. Teaching Innovation
4. Cultivating Talent

Thank you to everyone who has helped in the planning of the 2011 conference! A special thank you to Conference Chair Betsy Homsher and the Conference Committee for their diligent work making this year’s meeting successful. Thanks to all of the WEPAN Committee Chairs, Committee Members and Corporate Partners for your generosity with time, expertise and resources.

On behalf of WEPAN, the 2011 WEPAN Board of Directors and the 2011 WEPAN Conference Committee, welcome to the Pacific Northwest!

Sheila Edwards Lange
WEPAN President 2010-2011
Vice President for Minority Affairs, and
Vice Provost for Diversity
University of Washington
Thank You to Our 2011 Corporate and University/Community Partners

Annual contributions from corporate partners enable WEPAN to build resources and lead change to develop a highly prepared, diverse engineering workforce. In addition to seeking financial support, WEPAN relies on the thoughtful leadership and creative energy of our corporate partners. To that end, WEPAN’s Corporate Advisory Council (CAC) links our efforts in the higher education arena with corporate interests in bringing more women into engineering.

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ACTIVATORS
Thank You to Our 2011 Corporate and University/Community Partners

- MOTIVATORS -

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Wine Generously underwritten by
About WEPAN

In 1990, three leaders of women in engineering (WIE) programs at nationally-recognized universities set out to mobilize universities and corporations to help meet engineering workforce demand by reaching a largely untapped resource - girls and women who traditionally have not pursued engineering.

WEPAN’s primary audience is professionals who recruit, retain, and develop female engineering talent in both university and corporate settings. WEPAN is the single provider of a professional community, network, body of knowledge, and resource hub specifically for campus and corporate-based women in engineering experts.

WEPAN’s Mission

WEPAN is the nation’s leading organization and catalyst for transforming culture in engineering education to promote the success of all women.

WEPAN...  
- mobilizes diverse, inclusive, and collaborative stakeholders  
- fosters diversity in engineering graduates, our innovators of tomorrow  
- inspires a network of advocates to empower and advance the education of women pursuing engineering and related disciplines  
- translates research into practice and develops national models to attract and retain women in engineering

Visit [www.wepan.org](http://www.wepan.org) to read more on WEPAN’s strategic plan.

The WEPAN National Conference

This flagship event is an important annual forum for ideas and a venue for conversations among women in engineering leaders, corporate advocates, researchers, academic leaders, and government officers to:

- Gain access to current research, statistics, and best practices on women in engineering.
- Build corporate-campus networks with WIE professionals from across the country.
- Recognize excellence by honoring key individuals, programs, and corporations for accomplishments aligned with WEPAN’s mission. Each year at the conference WEPAN awards serve to continuously raise the bar for extraordinary service, significant achievement, model programs, notable achievement in research, and exceptional work environments that augment the success of women engineers.

Some engineers have jobs. Some go beyond.

BP is a proud sponsor of the WEPAN 2011 Conference. 
In our quest to make an impact on the future of the fuel technology, BP places high value on diversity and innovation. To learn more about opportunities at BP, visit our web site: [www.bp.com/career/us](http://www.bp.com/career/us)
We believe that by applying the highest business ethics and visionary thinking — everything is within our reach, and yours.

Like creating systems vital to the safety and security of our nation. Like shaping the latest technological breakthroughs that redefine defense, information technology, and commercial business. Like delivering countless systems and products that reflect the best ideas of people around the globe. This is our view at Lockheed Martin. We'd like to learn yours.

Join one of the foremost systems engineering, software, and systems integration companies in the world.

We are now hiring nationwide in:
- Computer Science/Software Engineering
- Systems Engineering
- Electrical Engineering
- Mechanical Engineering
- and other technical disciplines

Visit our Web site at: www.lockheedmartin.com/careers for complete details on our college recruiting program.

An equal opportunity employer.

Voted #1 IDEAL Employer in Aerospace and Engineering Industries and #2 IDEAL Employer of undergraduate engineering students.

- Universum Undergraduate Survey, 2010

Lockheed Martin is a proud partner of the 2011 Women in Engineering ProActive Network Conference.

Best wishes on a successful event!
2011 WEPAN Conference and Awards Committees

Conference Committee

2011 Conference Committee Chair
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US Staffing Manager for Engineering and Operations
Dupont

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Professor
North Dakota State University

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Administrative Assistant, WIEP
Purdue University

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Office for the Promotion of Women in Science, Engineering, and Mathematics
Rutgers, The State University of New Jersey

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Center for Workforce Development
University of Washington

Priti Mody-Pan
Deputy Director
Center for Workforce Development
University of Washington

Rachelle Reisberg
Director of Women in Engineering
Northeastern University

Raluca Rosca
Associate Director
Girls Excelling in Mathematics and Science of Prince George’s County (GEMS)

Talina N. Knox
Assistant Director
Murray Center for Women in Technology
New Jersey Institute of Technology

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Purdue University

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Faculty
Virginia Tech

Heidi Sherick
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Women in Engineering & Science Program Director
Kansas State University

Martha Cyr
Director of K-12 Outreach
Worcester Polytechnic Institute

Mary Anderson-Rowland
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Arizona State University

Nancy Steffen-Fluhr
Director, Murray Center for Women in Tech; Assoc. Prof New Jersey Institute of Technology

Rachelle Reisberg
Director, Women In Engineering Program
Northeastern University

Sarah Rajala
Dean of Engineering, Bagley College of Engineering
Mississippi State University

Sharnnia Artis
Post Doctoral Researcher, College of Engineering
The Ohio State University

Stephanie Adams
Associate Dean for Undergraduate Studies, College of Engineering
Virginia Commonwealth University
Supporting education for women and girls is a smart use of everyone’s energy.

When women and girls get the educational and professional support they need, we all benefit. That’s why ExxonMobil backs a range of initiatives that improve educational and career opportunities for women, especially in science, technology, engineering and mathematics. Helping women reach their potential is one of the best investments anyone can make.

The story continues at exxonmobil.com

“As women represent just 10% of engineers in the U.S., encouraging girls to pursue careers in math and science is vital. Scientists and engineers are critical to the nation’s future, and we all need everyone involved.”

Gloria Montez, Engineer

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Conference Program Committee Liaison
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Senior Director of Engineering Infrastructure Development & Lean
Rockwell-Collins

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cdeno@wepan.org

Supporting education for women and girls is a smart use of everyone's energy.
Kick-off Keynote Session—Wednesday, June 22 — 8:30 –9:45AM.—Grand EFG  
**Sapna Cheryan**, University of Washington. “Does Stereotype Threat + Image = Underrepresentation of Women?”  
Dr. Sapna Cheryan is an assistant professor of psychology at the University of Washington. Her research interests include identity, stereotypes and prejudice, and she has published articles on stereotype threat and strategies of belonging to social groups in the *Journal of Personality and Social Psychology* and *Psychological Science*. Her awards include the National Science Foundation CAREER Award, the National Science Foundation Graduate Research Fellowship, and she has also received several teaching awards from the University of Washington and Stanford University. She received her Ph.D. in social psychology from Stanford University in 2007 and her undergraduate degree from Northwestern University.

Keynote Luncheon—Wednesday, June 22—12:30–1:45PM—Grand EFG  
**Leah Jamieson** is the John A. Edwardson Dean of Engineering at Purdue University. “Creating a Culture for Scholarly and Systematic Innovation in Engineering Education: The State of the Culture.”  
Ransburg Distinguished Professor of Electrical and Computer Engineering, and holds a courtesy appointment in Purdue’s School of Engineering Education. She served as 2007 President and CEO of the IEEE. She is co-founder and past director of the EPICS – Engineering Projects in Community Service – Program. She has been recognized with the NAE’s Gordon Prize for Innovation in Engineering and Technology Education, the NSF Director’s Award for Distinguished Teaching Scholars, ASEE’s Chester F. Carlson Award for Innovation in Engineering Education, the Harriet B. Rigas “Outstanding Woman Engineering Educator” Award from the IEEE Education Society, and the Anita Borg Institute’s Women of Vision Award for Social Impact. She served on the steering committee for the NAE report *Changing the Conversation: Developing Effective Messages for Improving Public Understanding of Engineering* and is co-chair of the ASEE project *Creating a Culture for Scholarly and Systematic Innovation in Engineering Education*. Jamieson is chair of the Board of Trustees of the Anita Borg Institute for Women and Technology, a member of the Board of Directors of the IEEE Foundation, and serves on the Executive Board of the ASEE’s Engineering Deans’ Council. She is a member of the National Academy of Engineering and a Fellow of the IEEE and IEC.

Keynote Luncheon—Thursday, June 23—12:30–1:45PM—Grand EFG  
Johanna Threm has a Bachelor’s Degree in Civil Engineering degree from Ohio State University and a Master’s Degree in Business from the University of Arkansas. Johanna holds a Professional Engineer’s license in several states. She has held various positions in engineering design and leadership and currently is the General Manager of Nucor Building Systems, Indiana.

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**2011 WEPAN National Conference Proceedings**

The official digital archive of the Proceedings of the WEPAN National Conference was created by WEPAN in cooperation with the Office of Digital Scholarly Publishing, a joint effort of The Pennsylvania State University Libraries and the Penn State Press. The site was developed and is maintained by the Office of Digital Scholarly Publishing.

Topics include: recruitment and retention, mentoring, science education, faculty promotion and tenure, diversity initiatives, and policy considerations.
NUCOR SUCCEEDS
WHEN OUR
PEOPLE
SUCCEED

Nucor’s success starts with our people. Together, we work hard every day to safely and efficiently recycle millions of tons of scrap into high-quality steel. Nucor teammates are rewarded for hard work and empowered to find innovative and more efficient ways to make steel. This is our model for success, and this culture makes us capable of competing with anyone, anywhere in the world.

Our people are what make us great, and when they succeed, Nucor succeeds.
Diversity. It's the Washington Way.

The University of Washington College of Engineering, Center for Workforce Development and Office of Minority Affairs & Diversity is pleased to announce the establishment of the Suzanne G. Brainard Scholarship. Honoring one of WEPAN’s founders, this scholarship was established on the 20th anniversary of the Women in Science and Engineering Program at the University of Washington. Dr. Brainard is the founding director of the UW WISE program and a tireless champion for diversity.

We invite you to go to the scholarship page to learn more about Dr. Brainard’s extraordinary service and make a contribution to the student scholarship in her honor.

www.engr.washington.edu/curr_students/studentprogs/wise/brainard.htm
...is an exciting new tool for accessing cataloged and fully cited research on topics such as:

- Recruitment
- Retention
- Gender differences in learning
- And more!

...is a WIE community-wide effort to pool our collective knowledge about available resources and make them more highly visible.

...includes a digital Professional Community that will help you expand your network, collaborate with others, find subject matters experts, and share information.

...is easy to learn and use with video tours and FAQs.

...actively seeks your participation and feedback!

www.wepan.org
# Schedule at a Glance

## TUESDAY, JUNE 21

- **Board of Directors Meeting** – 8:30AM–4:30PM (Cottonwood)
- **Registration Open** – 12:00–8:30PM (Grand Foyer)
- **Nucor Steel Tour** – 1:00–4:00PM
  (free – pre-registration is required – transportation provided
  participants will meet the bus at the Hyatt entrance outside of the Evergreen Ballroom, near NE 10th Street)
- **Newcomers Session** – 4:30–5:30 PM (Grand IJK)
- **Dinner Discussion Groups** – 6:00–7:45PM (Lobby)
  Have a lively discussion on a featured topic with other conference attendees
- **Welcome Dessert Reception** – 8:00–9:30PM (Nordstrom, Bellevue Square)

## WEDNESDAY, JUNE 22

- **Registration Open** – 8:00AM–5:00PM (Grand Foyer)
- **Conference Welcome & Keynote Session** – 8:30–9:45AM (Grand EFG)
  **Keynote Speaker:** Dr. Sapna Cheryan, University of Washington
  “Does Stereotype Threat + Image = Underrepresentation of Women”

### Wednesday Session 1: 10:00–11:00AM

<table>
<thead>
<tr>
<th>Room I: Grand I</th>
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<tbody>
<tr>
<td><strong>Theme 1:</strong> Advancing Women</td>
<td><strong>Theme 2:</strong> Leading Transformation</td>
<td><strong>Theme 3:</strong> Teaching Innovation</td>
<td><strong>Theme 4:</strong> Cultivating Talent</td>
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<tr>
<td>The Power and Peril of Transformative Communication in Enabling Progress in Diversity Understanding Women’s Persistence in Engineering Careers</td>
<td>The Use of Program Reviews to Improve Women in Engineering Programs and Create Transformation</td>
<td>Complementary Pair and Group Mentoring Programs for Undergraduate Women in Engineering Engage Woman Engineering and Science Students by Improving Their Spatial Visualization Skills Effectively Assign Student Groups by Applying Multiple User-prioritized Academic and Demographic Factors Using a New Open Source Program GroupEng</td>
<td>Talk to Me and ENGAGE: Improving Faculty Student Interaction from Both Sides of the Fence Workshop</td>
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<tr>
<td><strong>Paper Session</strong></td>
<td><strong>Panel</strong></td>
<td><strong>Paper Session</strong></td>
<td><strong>Paper Session</strong></td>
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### Wednesday Session 2: 11:15AM–12:15PM

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<tr>
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<tr>
<td>The Missing Link - Getting High School Girls Interested in Technology Workshop</td>
<td>Online Tour: Using the WEPAN Knowledge Center to Make Your Job Easier Workshop</td>
<td>Partnering with University Faculty and Students to Design Engineering Outreach Sessions for Middle School Students Effectiveness of Team-Based STEM Project Learning to Recruit Women High School Students to STEM</td>
<td>Addressing Institutional Barriers in Broadening Participation of Women and Underrepresented Groups in Engineering Higher Education Panel</td>
</tr>
<tr>
<td><strong>Workshop</strong></td>
<td><strong>Workshop</strong></td>
<td><strong>Panel</strong></td>
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**Keynote Luncheon Session** – 12:30-1:45 PM (Grand EFG)

**Keynote Speaker:** Dr. Leah Jamieson, Purdue University

“Creating a Culture for Scholarly and Systematic Innovation in Engineering Education: The State of the Culture”
## Schedule at a Glance

### Wednesday Session 3: 2:00–3:00PM

<table>
<thead>
<tr>
<th>Room I: Grand I</th>
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<th>Room IV: Auditorium</th>
<th>Room V: Grand E</th>
<th>Room VI: Grand F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme 1:</strong> Advancing Women Mentoring and Networking Workshop for Junior Women Faculty in the Big Ten The Role of Mentoring in the Careers of Women Engineering Deans Engaging Male Faculty in Creating Equity for Female STEM Faculty in Academia</td>
<td>Pacific Northwest Girls Collaborative Project Engaging Girls Through Sustaining and Enhancing Effective Team Performance Workshop</td>
<td><strong>Theme 2:</strong> Leading Transformation Leading Transformation Through Sustaining and Enhancing Effective Team Performance Workshop</td>
<td><strong>Theme 4:</strong> Cultivating Talent Mentoring Millennials: Evolving practices for guiding a new generation of women engineers to career success Panel</td>
<td>Pacific Northwest Girls Collaborative Project</td>
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*Note session starts at 2:30pm*

### Break (including refreshments) & Showcase Set-Up – 3:00–3:30PM (Foyer in front of Grand E)

### Wednesday Session 4: 3:30–4:30PM

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<tr>
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<tr>
<td><strong>Theme 1:</strong> Advancing Women Utilizing an Early Arrival Program as a Transition Vehicle for First-Year Women in Engineering Lost in Transition: Transfer Women in STEM Evaluating the Transfer Process for Engineering and Computer Science Students to a Large University Paper Session</td>
<td><strong>Theme 2:</strong> Leading Transformation Technical to Management: Insights From Two Managers Who Made the Transition Panel</td>
<td>Pacific Northwest Girls Collaborative Project Seven Steps to Getting What You Want Workshop</td>
<td><strong>Theme 4:</strong> Cultivating Talent Female and Male Engineering Students' Personality Characterization of Successful Engineering Students, Engineers, and Themselves Understanding Advice Seeking Behaviors of First Year Engineering Women Women in Nanotechnology (WIN): A Mentoring Case Study for Students in Community Colleges in the Chicago Region Paper Session</td>
<td>Pacific Northwest Girls Collaborative Project</td>
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</table>

*Note session starts at 2:30pm*

### 2011 SHOWCASE: Best and Emerging Practices – 4:45–5:45PM (Grand Foyer)

- Featuring Mini-Presentations and Discussions
- Poster Presentations, Corporate Partners and WEPAN Committee Opportunities

### Awards Reception and Banquet – 6:30–9:00PM (Grand Foyer)

continued on next page
# Schedule at a Glance

## THURSDAY, JUNE 23

### Registration Open – 8:30AM–4:00PM (Grand Foyer)
### Strategic Planning Session with Jean Frankel – 7:30-8:30AM
### Plenary Session – 8:30–9:45AM (Grand EFG)
### Committee Meetings – Open to all – 10:00–11:00AM (Grand EFG)

### Thursday Session 1: 11:15AM–12:15PM

<table>
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<tr>
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<tr>
<td><strong>Theme 1: Advancing Women</strong>&lt;br&gt;Opportunities to Serve: Important from Middle School to Retirement&lt;br&gt;Complicating Research on Gender &amp; Ethnicity: The Perceptions of Equality Score (PES)&lt;br&gt;Utilizing an NSF ADVANCE Grant as a Platform to Advance all Women Faculty and Graduate Students in STEM&lt;br&gt;&lt;br&gt;Paper Session</td>
<td><strong>Theme 2: Leading Transformation</strong>&lt;br&gt;Exploring the Evolution and Opportunities in Computing Technology&lt;br&gt;&lt;br&gt;Workshop</td>
<td><strong>Theme 3: Teaching Innovation</strong>&lt;br&gt;A Pilot Study: On Exploring Twitter as a Data Collection Method for Use in an Ethnographic Study of 40 Young Girls Who Aspire to Become Women Engineers&lt;br&gt;Transformative Outreach – The FREE (Female Recruits Explore Engineering) Project&lt;br&gt;MOTIVATION – a European project about how to change stereotypical images of SET&lt;br&gt;&lt;br&gt;Paper Session</td>
<td><strong>Theme 4: Cultivating Talent</strong>&lt;br&gt;Breaking through Barriers- Campus Action Programs Panel Session&lt;br&gt;&lt;br&gt;Panel</td>
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### Keynote Luncheon – 12:30–1:45PM (Grand EFG)<br>Keynote Speaker: Johanna Threm, Nucor Building Systems, Indiana

### Thursday Session 2: 2:00–3:00PM

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<td><strong>Theme 1: Advancing Women</strong>&lt;br&gt;Mother Daughter Technology Engineering Aptitude (T.E.A.)&lt;br&gt;Workshop</td>
<td><strong>Theme 2: Leading Transformation</strong>&lt;br&gt;Differences in Self-Efficacy: Is it Women or is it Engineering?&lt;br&gt;Measuring Gendered Attitudes: Using the IAT for Program Evaluation&lt;br&gt;&lt;br&gt;Paper Session</td>
<td><strong>Theme 3: Teaching Innovation</strong>&lt;br&gt;Why do Women Engineering and Computer Science Undergraduates Persist in their Major?&lt;br&gt;Teaching Innovation: Engineering 1000: Transforming Culture and Learning from Day One&lt;br&gt;Are Engineering and Computer Science Women Students Good Predictors of their Semester GPA?&lt;br&gt;Congruence Between Elements of the Collegiate Educational Experience and ABET Accreditation Standards&lt;br&gt;&lt;br&gt;Paper Session</td>
<td><strong>Theme 4: Cultivating Talent</strong>&lt;br&gt;Everyday Engineering: How to Run Your Own Summer Camp&lt;br&gt;Workshop</td>
<td><strong>Theme 2: Teaching Innovation</strong>&lt;br&gt;Discovering Implications of the Academic Pathways Study for Women on Your Campus: Workshop&lt;br&gt;2:30–4:30PM</td>
<td><strong>Theme 3: Teaching Innovation</strong>&lt;br&gt;Earring Engineering: A Hands-on Experience&lt;br&gt;Workshop</td>
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# Schedule at a Glance

**Break (including refreshments) – 3:00–3:30PM (Foyer in front of Grand E)**

**Thursday Session 3: 3:30–4:30PM**

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**Dinner Discussion Groups – 6:00–8:00PM (Lobby)**

*Have a lively discussion on a featured topic with other conference attendees*

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**Let’s build a Smarter Planet.**

As we move towards a globally integrated economy and society, we find ourselves at a moment of enormous challenge – and of great opportunity. The world is getting smarter. And diversity everywhere is vital to a Smarter Planet. The skills arising from individual differences are invaluable to a smarter planet. IBM celebrates and leverages diverse perspectives and, through its progressive workforce policy creates a culture of inclusion and equal opportunity. Let’s build a Smarter Planet.

IBM.com/smarterplanet

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**Big thinking. Big network. Big opportunities.**

Sure, the first astronaut on the moon told the world about it with our communications equipment. And yes, we pioneered GPS. But at Rockwell Collins, we don’t rest on past ideas, no matter how big. We’d rather cultivate new, innovative thinking by building a global workforce of men and women whose experience and viewpoints are as diverse as our opportunities.

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Presentations of Interest for Faculty and Administrators

Understanding Women’s Persistence in Engineering Careers  
Romila Singh

The Power and Peril of Transformative Communication in Enabling Progress in Diversity  
Richard Gimmett

Talk to Me and ENGAGE: Improving Faculty Student Interaction from Both Sides of the Fence  
Diane Matt

Leading Transformation Through Sustaining and Enhancing Effective Team Performance  
Denise Simmons

The Role of Mentoring in the Careers of Women Engineering Deans  
Peggy Layne

Mentoring and Networking Workshop for Junior Women Faculty in the Big Ten  
Mary Juhas, Ellen Arruda, Naomi Chesler, Dawn Tilbury

Engaging Male Faculty in Creating Equity for Female STEM Faculty in Academia  
Sharon Alestaloe

Creating a Culture for Scholarly and Systematic Innovation in Engineering Education: The State of the culture and Implications for Women  
Leah Jamieson, Jack Lohmann

If Your Body Rarely Lies, What Do Others Think You’re Saying?  
Linda Wilson

Improve Visibility, Impact and Stability of Women in Engineering Programs and Initiatives During Fiscally Stressful Times  
Susan Metz

Effectively Assign Student Groups by Applying Multiple User-prioritized Academic and Demographic Factors Using a New Open Source Program  
Thomas Dimiduk, Kathryn Dimiduk

Female and Male Engineering Students’ Personallity Characterization of Successful Engineering Students, Engineers and Themselves  
Olga Pierrakos, Kathleen Casto, Bryant Chase, Robin Anderson

Differences in Self-Efficacy: Is it Women or is it Engineering?  
Denise Wilson, Leah Freed, Jamie Shaffer

Understanding Advice Seeking Behaviors of First Year Engineering Women  
Lorie Elizabeth Groll

Engage Women Engineering and Science Students by Improving Their Spatial Visualization Skills  
Yaomin Dong

Complicating Research on Gender & Ethnicity: The Critical Vision Score (CVS)  
Mary Wyer, Jennifer Schneider

“Listen to What I Say”—What Women Engineers Say About Success  
Susan Bornsen
Valuing Diversity and Helping Women Succeed in Engineering

I AM A BOILERMAKER

REBECCA LOGSDON
WOMEN IN ENGINEERING PROGRAM
GRADUATE STUDENT

I KNOW THAT SUCCESS IS BEST ACHIEVED WITH GUIDANCE, SUPPORT, ENCOURAGEMENT, AND I BELIEVE THAT WOMEN LEADING THE WAY FOR OTHER WOMEN IS PARAMOUNT. PAYING IT FORWARD IS A BEST PRACTICE. SO I LISTEN, SHARE, LEND A HAND, ALL TO MAKE THE ENGINEERING EXPERIENCE AS RICH FOR OTHERS — AS IT WAS FOR ME. WE ARE PURDUE. WHAT WE MAKE MOVES THE WORLD FORWARD.
**WEPAN Board of Directors Meeting — 8:30AM–4:30PM**  
Located in Cottonwood

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>12:00–</td>
<td>Registration Open</td>
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<tr>
<td>8:30PM</td>
<td>Grand Foyer, Second Floor</td>
</tr>
<tr>
<td>1:00–</td>
<td>Nucor Steel Tour</td>
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<tr>
<td>4:00PM</td>
<td>Cost: Free!</td>
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**Tour Information**  
Participants will meet the bus at the Hyatt entrance outside of the Evergreen Ballroom (near NE 10th Street). Nucor Steel Seattle is one of the most efficient steel mills in the country. As the largest recycler in the state of Washington, hundreds of thousands of tons of old cars, appliances, tin cans and other obsolete steel products are made into new steel in the form of re-enforcing bar (rebar) and other construction shapes. As you tour this facility you will be able to see the entire process of producing steel, from the melting of scrap steel all the way through the milling of new products. Tour attendees must be at least 18 years of age and are required to wear long pants and sturdy shoes (no open toes, no heels) with socks and be physically able to walk up and down numerous stairs. Hard hats, safety glasses, hearing protection and over jackets will be provided for all attendees.

**Tour Requirements**  
- Must be at least 18 years of age  
- Photo ID required  
- Must be physically able to walk up and down numerous stairs.

- Required to wear long pants & sturdy shoes with socks (no open toes, no heels)  
- No Jewelry allowed (not even wedding bands)  
- No bags of any kind (bring only what you can put in your pockets)  
- Hard hats, safety glasses, hearing protection and over jackets will be provided for all attendees.

A bus will leave the Hyatt at 1:00 PM on Tuesday, June 21, 2011 and will return to the hotel by 4:00 PM. The duration of the tour will be one and a half hours.

**About Nucor**  
Headquartered in Charlotte, North Carolina, Nucor Corporation is the largest manufacturer of steel products in North America and is made up of over 22,000 teammates. Our family of approximately 200 operating facilities, including our wholly owned subsidiaries of Harris Steel and The David J. Joseph Company produce products for thousands of applications. Products include: carbon and alloy steel — in bars, beams, sheet and plate; steel joists and joist girders; steel deck; fabricated concrete reinforcing steel; cold finished steel; steel fasteners; metal building systems; light gauge steel framing; steel grating and expanded metal; and wire and wire mesh. Nucor, through The David J. Joseph Company, also brokers ferrous and nonferrous metals, pig iron and HBI/DRI; supplies ferro-alloys; and procesferrous and nonferrous scrap. Nucor is also North America’s largest recycler.
Tuesday, June 21, 2011 continued

**Newcomers Session**

4:30– 5:30PM  Grand Rooms: IJK

During this reception, Newcomers to the WEPAN conference will have the opportunity to make great connections by networking with WEPAN Board members and committee chairs, learn about the benefits of your WEPAN membership, learn about opportunities for participation in the organization, and have the chance to win one of five (5) $25.00 gift cards to attend one of the dinner discussion groups immediately following the Newcomer’s reception. In addition, one of the five dinner discussion group gift card recipients will have the opportunity to receive a discount on their 2012 WEPAN conference registration.

**Program Assessment and Evaluation**

– This group will discuss effective methods for evaluating programs and reporting results to stakeholders.

**Recruitment**

– This group will discuss best practices for recruitment of women in engineering at the high school and undergraduate level, as well as successful initiatives implemented by specialists.

**Retention**

– This group will discuss issues facing professionals in both academic and industry and best practices to increase retention.

6:15– WEPAN Corporate Advisory Council Meeting Part 1

8:15PM  Hyatt’s private dining room, the Twisted Cork

The second part of the meeting will take place during the WEPAN committee meeting time slot on Thursday June 23rd from 10–11AM, the meeting will take place in a session room in the main conference area.

**Dinner Discussion Groups**

6:00– 7:45PM  Meet in the Hyatt Main Lobby

Have a lively discussion on a featured topic with other conference attendees while experiencing Seattle’s fine dining!

**Creative Funding Sources** – This group will brainstorm creative ways of increasing program funding which can include corporate partnerships and donor solicitation.

**Mentorship Moving Forward** – This group will share best practices for establishing traditional mentoring relationships, co-mentoring groups, and peer discussion circles.

**Welcome Dessert Reception**

8:00– 9:30PM  Nordstrom Bellevue Square

Located in the Point of View department on Floor Two

Make new friends and reconnect with old ones at the conference opening reception and welcoming ceremonies at Seattle’s finest department store.
Wednesday, June 22, 2011

8:00AM– Registration Open
5:00PM  Grand Foyer, Second Floor

8:30–  Conference Welcome and Keynote Session
9:45AM  Grand Rooms: EFG

Dr. Sapna Cheryan, University of Washington
Does Stereotype Threat + Image = Underrepresentation of Women?

10:00– Session 1
11:00 AM Room I: Grand I
Paper Session

The Power and Peril of Transformative Communication in Enabling Progress in Diversity
Richard Grimmett
One of the most challenging changes an organization can attempt is an effort in the area of diversity. This paper documents the efforts of a corporate diversity network to change the quality of experience for individuals of diverse backgrounds, focusing on transformative communication as a tool to affect change.

Understanding Women’s Persistence in Engineering Careers
Romila Singh
Women leave engineering at a rate 2 ½ times that of their male colleagues. Why? Using the Social Cognitive Career Theory, we examined the social and psychological predictors of withdrawal intentions among 2,056 women engineers. Women’s decisions to leave engineering were shaped more by work-climate related factors than personal factors.

Room II: Grand J
Panel

The Use of Program Reviews to Improve Women in Engineering Programs and Create Transformation
Karen Zunkel
Program reviews are a common method of assessing progress in academia (e.g., ABET accreditation). A program review has the potential to create buy-in within institutional leadership and engage stakeholders in the mission of the WIE/WISE program. This panel will explore issues associated with using program reviews to achieve WIE objectives.

Room III: Grand K
Paper Session

Complementary Pair and Group Mentoring Programs for Undergraduate Women in Engineering
Jennifer L. Groh, Beth M. Holloway
Purdue University Women in Engineering provides an overview of the new Mentees & Mentors (M&M) Peer Program (group mentoring), discussing program goals, organization, assessment, and effective strategies for peer mentoring of undergraduate women in engineering. Appropriate comparisons will be made to the continuing M&M Pair Program (one-on-one mentoring) as we show how the Pair and Peer programs work together to meet a broad range of participant mentoring and scheduling needs.

Engage Woman Engineering and Science Students by Improving Their Spatial Visualization Skills
Yaomin Dong
Research has shown that students with enhanced spatial visualization skills are more successful in engineering, technology and science. This paper presents an approach to improve women students’ spatial visualization skills. The proposed methodology includes two steps: identifying students who should receive remediation in spatial visualization, and then providing necessary training.

Effectively Assign Student Groups by Applying Multiple User-prioritized Academic and Demographic Factors Using a New Open Source Program GroupEng
Thomas Dimiduk, Kathryn Dimiduk
We created an open-source program, GroupEng, that assigns groups according to guidelines from education research. Guidelines include avoiding isolating women or minorities and assigning multidisciplinary groups of mixed abilities. The program operates on a set of simple, flexible, faculty defined rules, keeps data local, and ensures “fairness” of group strengths.

Room IV: Auditorium
Workshop

Talk to Me and ENGAGE: Improving Faculty Student Interaction from Both Sides of the Fence
Diane Matt
WEPAN is involved in two efforts to improve faculty-student interaction as a strategy to improve student retention in engineering: Talk to Me, a student-focused initiative and ENGAGE, a faculty-focused initiative. This session will prepare you to implement both approaches and will showcase research-based resources and experience from the field.

11:15AM– Session 2
12:15PM Room I: Grand I
Workshop

The Missing Link – Partnership between Corporations and Academia
Dalene King
As interest in Computer Science careers dwindles, there is a partnership opportunity between Corporations who encourage high school girls to become interested in technology and outreach programs driven by Academia. Come join us in exploring how we can partner together to drive greater participation of girls pursuing Computer Science degrees.

Room II: Grand J
Workshop

Online Tour: Using the WEPAN Knowledge Center to Make Your Job Easier
Elizabeth Litzler, Bev Louie, Judy Cordes
This workshop will help experienced and new users explore the resources and professional community in the WEPAN Knowledge Center (WKC). We will do a short tour of the WKC, answer questions, request ideas about resources you would like to see in the WKC, and show you all that the WEPAN Knowledge Center offers.

Theme 1: Advancing Women  Theme 2: Leading Transformation  Theme 3: Teaching Innovation  Theme 4: Cultivating Talent
Wednesday, June 22, 2011 continued

Room III: Grand K
Paper Session

**Partnership with University Faculty and Students to Design Engineering Outreach Sessions for Middle School Students**
Velvet R. Fitzpatrick, Jennifer L. Groh, Beth M. Holloway
Innovation to Reality (I2R) is a free, after-school engineering program launched by the Purdue University Women in Engineering Program in an effort to provide local 6th-8th grade students an opportunity to learn about engineering through socially relevant themes (e.g., addressing global food scarcity). For practitioners, the I2R program demonstrates methods to build educational engineering programs utilizing resources on a university campus.

**Effectiveness of Team-Based STEM Project Learning to Recruit Women High School Students to STEM**
Jean-Celeste M Kampe, Douglas Oppliger, Valorie Troesch, Robert Warrington
High School Enterprise (HSE) supports secondary teachers advising student teams on long-term STEM projects. It relies on partnerships among academia, industry, and local team communities. HSE has implications for population groups underrepresented in STEM as the teams attract minority students and women in high proportions—between two and four times that of corresponding STEM participation rates in higher education.

Room IV: Auditorium
Panel

**Addressing Institutional Barriers in Broadening Participation of Women and Underrepresented Groups in Engineering Higher Education**
Liv Detrick, Sara Hernandez, Ashanti Johnson, DiOnetta Jones, Renetta Tull
This panel focuses on addressing institutional barriers to broadening the participation of women and underrepresented groups in engineering higher education. Panelists will highlight collaborative recruitment, retention, and information sharing associated with programs hosted by Cornell, the University of Maryland system, MIT, and the Institute for Broadening Participation.

12:30–1:45PM  
Keynote Luncheon Session  
Grand Rooms: EFG

Dr. Leah Jamieson, Purdue University
Creating a Culture for Scholarly and Systematic Innovation in Engineering Education: The State of the Culture

2:00–3:00PM  
Session 3  
Room I: Grand I
Paper Session

**Mentoring and Networking Workshop for Junior Women Faculty in the Big Ten**
Mary C Juhas, Ellen Arruda, Naomi Chesler, Dawn Tilbury
A mentoring and networking workshop for junior women faculty in the Big 10 was held to cultivate peer collaboration and mentoring relationships and foster interactions with senior engineering faculty role models. Post-workshop travel grants were awarded to ten of the junior women to support invited seminars and/or research discussions.

**The Role of Mentoring in the Careers of Women Engineering Deans**
Peggy Layne
The small number of women who have served as deans of engineering in the United States followed a variety of career paths. Future women leaders can benefit from their experiences. Through interviews with current and former female engineering deans, this paper explores the influence of mentors, professional society activities, and other leadership experience on their careers.

Room III: Grand K
Professional Development Session
Pacific Northwest Girls Collaborative Project

**Engaging Girls through Innovative Technology Curriculum**
Laura Enman, Program Coordinator, TechREACH, EdLab Group
TechREACH is an after-school, summer and training program that infuses supportive teaching strategies with new technology to help engage students in science and technology. This session will provide examples of curriculum, resources and best practices that will help inspire girls’ interest in STEM education and careers.

Room IV: Auditorium
Panel

**Mentoring Millennials: Evolving practices for guiding a new generation of women engineers to career success**
David Porush
Based on research into the habits, persistence and success of college women in STEM, this paper will explore ways to close the gap between how a new generation of students form positive relationships for career support through social media and the lagging practices of private and academic guidance and recruitment to reach and encourage them.
Building Inquiry Science Capacity in Youth Programs
Stephanie Lingwood, Project Director, Girl Scouts of Western Washington; Dr. Jen Sorensen, Director of General Science and Assistant Professor of Chemistry, Seattle University
For the past three years Girl Scouts of Western Washington, in partnership with Seattle University, has been engaged in a novel program to transform the way we “do science” across the organization. In this workshop session, the project leaders will share their strategies for infusing inquiry science into the way volunteers are recruited, trained, and supported. Workshop participants will have the opportunity to identify key leverage points in their own programs where these strategies could be implemented. Also, find out how this youth organization – university partnership uses the unique strengths of both organizations to create a new model for embedding science in youth programs.

Creating a Culture for Scholarly and Systematic Innovation in Engineering Education: The State of the Culture and the Implications for Women
Leah H. Jamieson, Jack R. Lohmann
Under the ASEE project “Creating a Culture for Scholarly and Systematic Innovation in Engineering Education” (www.asee.org/about-us/the-organization/advisory-committees/CCSSIE/CCSSIEE_Phase1Report_June2009.pdf), engineering programs were surveyed about current values and practice in engineering education. This interactive workshop explores how the survey results can help identify opportunities to drive educational innovation in ways that will advance women.

Technical to Management: Insights From Two Managers Who Made the Transition
Jessica Eidem, Dan Gatano
This session explains the process of, emotions related to, and factors to consider in transitioning from a technical to management role. The intent is not to convince women one way or another is correct, but to help them decide what is right for their particular case.

Utilizing an Early Arrival Program as a Transition Vehicle for First-Year Women in Engineering
Sharnnia Artis
This presentation will discuss the establishment of Ohio State’s Women in Engineering Learning Community Early Arrival Program (WIE LEAP) and how it has helped to cultivate an environment to combat social isolation. In addition, WIE LEAP program goals, objectives, programmatic activities, and evaluation plan will be presented.
Wednesday, June 22, 2011 continued

**Best and Emerging Practices**

4:45–  Showcase: Best and Emerging Practices  
5:45 PM  Grand Foyer

**Featuring Mini-Presentations & Discussions**

The Showcase features posters, hands-on activity demonstrations, and best and emerging practices in recruitment and talent development, presented by WEPAN and the Pacific Northwest Girls Collaborative Project (PNWGCP).

**Poster Presentations, Corporate Partners & WEPAN Committee Opportunities**

- **Bias Literacy: Disability, science and engineering education; what everyone needs to know**
  - **Ruta Sevo**
  - An overview of facts, issues, history, and trends in disabilities studies, written for anyone who is outside the field and wants a quick briefing. The paper addresses the numbers of people with disabilities in fields of science and engineering, and the need to recruit more students with disabilities. See http://stores.lulu.com/sevo or http://www.catea.gatech.edu/.

- **Sisters in Engineering – a Multi-generational Collaboration to Attract Middle School Girls to Engineering**
  - **Raluca Rosca, Laura Schussler**
  - This article describes the collaboration in progress between Prince George’s County Girls Excelling in Mathematics and Science and the Women in Engineering program at the University of Maryland. The two groups are working together to develop and implement hands-on activities that provide middle school girls with an introduction to engineering disciplines and applications.

- **Engineering Awareness Days**
  - **Sheila Pendse**
  - This showcase will include posters of the University of Maine’s new “Engineering Awareness Days” program, made possible through a grant from Engineering Information Foundation and National Girls Collaborative Project.

- **The Technovation Challenge: Girls Creating Mobile Apps**
  - **Jeri Countryman, AnnaLise Hoopes**
  - Iridescent’s Technovation Challenge is a program for high-school girls to learn the basics of programming and entrepreneurship by prototyping a mobile phone app, writing a business plan and “pitching” their plan to a panel of venture capitalists. We will share our program model, lessons learned, best practices and evaluation results.

- **A Leadership Program for Women: Meeting Professional and Personal Goals**
  - **Natalie Batmanian, Doreen Valentine**
  - Effective leadership skills are critical for success in academia. The OASIS program gives women in STEM fields the opportunity to hone leadership skills, build networks, and benefit from mentoring for personal and professional goals. Participants evaluate the program highly. In post-workshop interviews they report improved productivity due to active networks, better negotiation and leadership skills.

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**Understanding Advice Seeking Behaviors of First Year Engineering Women**

- **Lorie Elizabeth Groll**
- Despite understanding the importance of undergraduate engineering women doing well in first-year, first semester math classes, little is understood about the advice seeking behavior of this group. This presentation describes the advice seeking behaviors of a cohort of women receiving a C or below in this pivotal math course.

**Women in Nanotechnology (WIN): A Mentoring Case Study for Students in Community Colleges in the Chicago Region**

- **Sarah Harlow Shirk, MPH, Veronica Arreola, MPA, Manorama M. Khare, PhD**
- The UIC Women in Nanotechnology (WIN) project supports community college students interested in nanoscale science and technology careers. This presentation will present progress towards achieving the recruitment and retention short-term goals. In addition recommendations from student participants, mentors, and program coordinators are provided for future improvements or program replication.

"NOTE* This session is from 3:30PM – 4:30PM"

**Creating Partnerships to Bring Science to Diverse Communities**

- **Nancy Blanco, Acceso a la Ciencia Coordinator, Pacific Science Center**
- How can your institution create programming that reaches underserved audiences? Learn how your peers have successfully used outside partnerships to create programs that reach rural audiences, Latino populations and underserved teens and the underlying strategies and lessons learned that make these programs successful.

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**YOUR MISSION IS JUST BEGINNING.**

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For all current engineering and other opportunities, please visit our website: careers.northropgrumman.com

Best and Emerging Practices

Innovative Gender Methods of Evaluation in STEM Education Serves as Leverage for Institutional Change
Donna Milgram

Want to create support for recruiting/retaining women to STEM at your institution? Find out if your strategies are working? Learn what your female students think? Donna Milgram—NSF CalWomenTech Project PI—provides answers on data collection, creating “buy in” by sharing data, using data to inform strategies, and surveying female students.

Building Foundations for Change: The Mini-grant Mechanism
Christina Leshko, Doreen Valentine

Mini-grants provide small amounts of funding to SEM faculty in order to support and promote women and diverse groups and to enhance the visibility and reach of the NSF ADVANCE program. Many mini-grant programs overlap in their goals and seek to enhance the university climate by utilizing multiple methods, including a broad array of research-, networking-, and symposia-related projects.

WEPAN Diversity Advancement Committee
Lily Gossage

Interested in fostering alliances/partnerships that advance diversity? Please contact the WEPAN Diversity Advancement Committee. The Committee is charged with developing/implementing strategies to advance WEPAN diversity; this includes, but is not limited to, the recruitment, retention, and engagement of a diverse membership and identification of speakers who reflect the organization’s diversity. Lily Gossage, Chair, WEPAN Diversity Advancement Committee (lgossage@csulb.edu) and DiOnetta Jones, Director of WEPAN Diversity Advancement (dionetta@mit.edu).

WEPAN Knowledge Center Committee
Donna Milgram

The Elizabeth Litzler WEPAN Knowledge Center Committee (dionetta@mit.edu) will be showcasing new engineering education curriculum, materials, teaching kits, books, DVDs, posters, and more! Stop by our booth for the $1 book sale and learn about our tools for motivating students to pursue engineering.

WEPAN Educator’s Award
Presented by Shelia Edwards Lange

AWARD DESCRIPTION: The WEPAN Educator Award honors an educator for exceptional achievement in increasing the participation and advancement of women in engineering. This year, we are honoring two award recipients.

AWARD RATIONALE STATEMENT 1: First, we are pleased to honor Professor Wendy Crone from the University of Wisconsin-Madison who in addition to being an accomplished researcher has led many successful initiatives to significantly increase the participation of girls and women in science and engineering at every rank, from pre-college students through faculty.

AWARD RATIONALE STATEMENT 2: Second, we also honor Barbara Ruel, Director of the Women in Engineering Program at Rensselaer Polytechnic Institute who has devoted her career to encouraging girls and women in science and engineering.

AWARD RECIPIENTS: Professor Wendy Crone, University of Wisconsin-Madison and Barbara Ruel, Director of the Women in Engineering Program at Rensselaer Polytechnic Institute

WEPAN University Change Agent Award
Presented by Shelia Edwards Lange

AWARD DESCRIPTION: The WEPAN University Change Agent Award honors an individual who has had a positive impact on their institution with regard to the climate for women in science, technology, engineering, and math fields, with an emphasis on engineering. This year, there are two recipients for the University Change Agent Award.

AWARD RATIONALE STATEMENT: This year, we honor Chris Anderson, Special Assistant to the President for Institutional Diversity, at Michigan Tech.
Awards Reception & Banquet

with the WEPAN University Change Agent Award. Chris has a long legacy of initiating and leading efforts at Michigan Tech that have significantly improved the institutional climate for all members of their community but especially women and underrepresented minorities.

AWARD RECIPIENT: Chris Anderson, Special Assistant to the President for Institutional Diversity, Michigan Technical University founding WEPAN Board member.

WEPAN Betty Vetter Award for Research
Presented by Shelia Edwards Lange

AWARD DESCRIPTION: The WEPAN Betty Vetter Award for Research recognizes notable achievement in research related to women in engineering. The award is named in memory of Betty M. Vetter, director of the Commission on professionals in Science and Technology, who served as the first treasurer of WEPAN, Inc. and was a founding WEPAN Board member.

AWARD RATIONALE STATEMENT: This year we honor Professor Mikki Hebl with the WEPAN Betty Vetter Award for Research. Professor Hebl exerts significant impact on both institutions and individuals through her research and her teaching. Her research directly addresses inequitable systems that impede women’s participation in engineering and science. Accepting this award on behalf of Professor Hebl is Jan Rhinehart, Executive Director of the Rice ADVANCE Program.

AWARD RECIPIENT: Professor Michelle “Mikki” Hebl, Rice University

PRE-COLLEGE & WIE Initiative AWARDS

WEPAN/National Engineers Week Introduce a Girl to Engineering Day Award
Presented by Julie Martin

AWARD DESCRIPTION: WEPAN and the Introduce a Girl to Engineering Day Program, an initiative of the National Engineers Week Foundation, work together to recognize major contributions of organizations or individuals to the Introduce a Girl to Engineering Day initiative.

This year we are honoring two award recipients, the Maui Introduce a Girl to Engineering Day Program as well as Case Western Reserve University’s Women in Science and Engineering Roundtable Introduce a Girl to Engineering Day Program. Unfortunately, a representative from the Maui program was not able to join us this evening. However, accepting on behalf of the Women in Science & Engineering Roundtable’s program at Case Western Reserve University is Mary Rouse, Associate Director for Women in Science and Engineering.


WEPAN Women in Engineering Initiative Award
Presented by Julie Martin

AWARD DESCRIPTION: The WEPAN Women in Engineering Initiative Award recognizes an outstanding project or initiative that serves as a model for other institutions.

AWARD RATIONALE STATEMENT: This year’s WEPAN WIE Initiative Award goes to the Graduates Linked with Undergraduates in Engineering (GLUE) program at the University of Texas at Austin. This award recognizes GLUE efforts and success in increasing the number of female engineering students engaging in research as well as pursuing graduate studies and academic careers. Accepting this award on behalf of the GLUE Program is Ana Dison, Senior Program Coordinator for Student Success in the UT Austin Women in Engineering Program.

AWARD RECIPIENT: Graduates Linked with Undergraduates in Engineering (GLUE) Program, The University of Texas at Austin

INDUSTRY AWARDS

WEPAN Women in Engineering Champion Award
Presented by Julie Martin

AWARD DESCRIPTION: The WEPAN Women in Engineering Champion Award recognizes and honors an individual employee in industry for his or her outstanding volunteer contributions to STEM education at the primary, secondary, or collegiate levels.

AWARD RATIONALE STATEMENT: This year we honor Audrey Romonosky of the IBM Corporation with the WEPAN WIE Champion Award in recognition of her leadership in advocating and implementing K-12 outreach programs that encourage girls’ interest and pursuit of careers in STEM.

AWARD RECIPIENT: Audrey Romonosky, IBM Corporation

WEPAN Breakthrough Award
Presented by Julie Martin

AWARD DESCRIPTION: The WEPAN Breakthrough Award recognizes and honors a corporation for demonstrating best practices in their collaborative efforts with university and/or community partners to enhance engineering education for girls and/or women.

AWARD RATIONALE STATEMENT: This year we honor the Nashua, New Hampshire BAE Systems with the WEPAN Breakthrough Award for their leadership in implementing programs that increase the participation of girls and women in engineering. A representative from the Nashua site was not able to join us this evening. Therefore, accepting the award on their behalf is Duncan Craick from the Redmond, WA site of BAE Systems.

AWARD RECIPIENT: BAE Systems – Nashua, New Hampshire Site

SERVICE & RECOGNITION AWARDS

WEPAN Distinguished Service Award
Presented by Shelia Edwards Lange

AWARD DESCRIPTION: The WEPAN Distinguished Service Award recognizes a WEPAN member whose individual service has made a significant impact for the organization.

AWARD RATIONALE STATEMENT: This year, we are proud to honor past WEPAN president Tricia Berry from The University of Texas at Austin with the WEPAN Distinguished Service Award for her outstanding leadership and significant contributions to the advancement of WEPAN and our members.

AWARD RECIPIENT: Tricia Berry, Director of the Women in Engineering Program, The University of Texas at Austin

WEPAN Founders award
Presented by Shelia Edwards Lange

AWARD DESCRIPTION: The WEPAN Founder’s Award honors a WEPAN member who exemplifies the spirit of the WEPAN founders through extraordinary service. The award is named for WEPAN, Inc. founders Suzanne G. Brainard, Jane Zimmer Daniels and Susan Staffin Metz.

AWARD RATIONALE STATEMENT: This year we are excited to honor Jan Rhinehart, Executive Director of the ADVANCE Program at Rice University and past WEPAN President with the WEPAN Founders Award. We present this award to Jan in recognition of her enduring, long-term service that epitomizes the spirit of the WEPAN Founders and contributes to the continued advancement of our organization.

AWARD RECIPIENT: Jan Rhinehart, Executive Director, Rice University ADVANCE Program

A complete listing of WEPAN Awards and previous Award Recipients is available at www.wepan.org
Thursday, June 23, 2011

8:00AM – 4:00PM
Registration Open
Grand Foyer, Second Floor

7:30 – 8:30 AM
Strategic Planning Session with Jeanne Frankel
Grand Rooms: IJK
What is strategic planning all about, and why is it important to you? In this lively, engaging and informative session you will hear strategic planning consultant Jean Frankel talk about the benefits of strategic planning, both for WEPAN in its efforts to advance women in engineering by transforming engineering education, and for how it can be powerful for you too in your programs and institutions. What are the best strategic planning models and why? What makes an effective plan and planning process? What are the essential keys to successful implementation? Please come and join us for this exciting session, which will also help to ready you for participation in Thursday’s later sessions, where you will become a partner in helping WEPAN plan for its future.

8:30 – 9:45 AM
Plenary Session
Grand Rooms: EFG

10:00 – 11:00 AM
Committee Meetings – open to all
Grand Rooms: EFG

WEPAN’s strategic plan positions our organization to transform culture in engineering education to promote the success of all women. During this session, you’ll learn about the exciting ways that WEPAN’s eight fabulous committees contribute to our important work. Members of the Awards, Communications, Conference, Diversity Advancement, Finance, Knowledge Center, Membership and Professional Development committees will be on hand to share their recent accomplishments, as well as their plans for the upcoming year. Pick up a bag, and fill it with goodies from each committee as you learn about opportunities to use your talents to contribute to WEPAN’s mission!

Part two of the Corporate Advisory Council meeting will take place in a session room in the main conference area.

11:15 AM – 12:15 PM
Session 1
Room I: Grand I Paper Session

Opportunities to Serve: Important from Middle School to Retirement
Denise Wilson, Melani Plett, Jennifer VanAntwerp, Crystal Bruxvoort
This study presents persistent themes from interviewing twenty engineering women (and a control group of eight men) alumni from three different types of universities. In contrast to their male peers, many women express a preference toward leaving engineering and a majority emphasize a desire to serve people or environment.

Complicating Research on Gender & Ethnicity: The Perceptions of Equality Score (PES)
Mary Wyer, Jennifer Schneider
The Perceptions of Equality Score (PES) captures how individuals’ perceptions of equal educational and employment opportunities shape their S&E educational and career choices. It measures the difference between undergraduate students’ perceptions of ideal and actual equality. Results suggest a critical gap in perceptions of equal opportunities.

12:15 PM – 2:15 PM
Lunch at a restaurant of your choice

2:15 PM – 3:15 PM
Session II
Room II: Grand J Workshop

Utilizing an NSF ADVANCE Grant as a Platform to Advance all Women Faculty and Graduate Students in STEM
Jenna Price Carpenter
Louisiana Tech’s NSF ADVANCE grant strengthens climate; increases retention; and enhances promotion and leadership opportunities for women faculty. Utilizing the Office for Women in Science and Engineering to promote and institutionalize these efforts, the program leverages activities and resources, partnering with campus diversity efforts, to reach and advance women faculty and graduate students.

Exploring the Evolution and Opportunities in Computing Technology
Dalene King
The evolution of technology is changing how we play games, live, and work. These changes also bring opportunity. Join us for a discussion on the exciting careers available in technology. We will also provide you with tools to share with students to help them get excited about pursuing these opportunities.

A Pilot Study: On Exploring Twitter as a Data Collection Method for Use in an Ethnographic Study of 40 Young Girls Who Aspire to Become Women Engineers
Lily G. Gossage
Despite references for using Twitter to create ethnographies, there is yet no formal research on evaluating its use in formal research. This paper is a preliminary evaluation of Twitter as a comparable method to interactive journal writing in preparation for use in a proposed longitudinal study involving 40 young girls.

Transformative Outreach – The FREE (Female Recruits Explore Engineering) Project
Monica Bruning, Jill Bystydzienski, Margaret Eisenhart
The FREE project is a longitudinal intervention-oriented research study offering new perspectives through the implementation of innovative methodology focused on understanding why so few high school girls pursue engineering. The results of the study are clear—with the necessary social capital, ‘community’ support over time, and a self- and peer-guided journey into relative engineering spaces—in- terest and choice is significantly impacted.

MOTIVATION – a European project about how to change stereotypical images of SET
Felizitas Sagebiel
Results from MOTIVATION (www.motivation-project.com) show a great need for changing youth media to presenting SET issues for information role models for teenagers. Teachers’ should become gender aware for attracting girls to SET curriculum. Initiatives for SET should focus on age and interests, networking with relevant institutions and be evaluated.
Thursday, June 23, 2011 continued

Room IV: Auditorium
Panel

**Breaking through Barriers – Campus Action Programs**

**Panel Session**

Elizabeth M. Dell, Bonnie Oppenheimer, John Nicholson, Ph.D., Mark Goodman, Ph.D., Annette Eko, Christina Farnorotto, James CODLING, Thomas Robinson

This panel session will explore the impact of programs on “Breaking through Barriers in Science, Technology, Engineering, and Mathematics for Women and Girls.” This was the theme for the 2010 and 2011 American Association of University Women’s Campus Action Programs (CAP). This session will highlight CAP team projects and results.

12:30–
1:45 PM
Keynote Luncheon
Grand Rooms: EFG

Johanna Threm, Nucor Building Systems, Indiana University, *Women, Engineering and Factors for Success*

2:00–
3:00 PM
Session 2
Room I: Grand I
Workshop

**Mother Daughter Technology Engineering Aptitude (T.E.A.)**

Celeste Baine, Mary Kaye Bredeson, Ann Avary

The Mother/Daughter Technology Engineering Aptitude (T.E.A.) workshop will showcase the Mother/Daughter T.E.A event by providing examples of the hands-on activities and strategies used to encourage middle school girls to explore valuable, high-wage careers in engineering and technology. This workshop emphasizes problem solving and creative solutions.

Room II: Grand J
Paper Session

**Differences in Self-Efficacy: Is it Women or is it Engineering?**

Denise Wilson, Leah Freed, Jamie Shaffer

Differences in self-efficacy among STEM students by ethnicity, by gender, and by major are explored in a cross-sectional study of over 600 undergraduates. The importance of gender is confirmed (men express greater self-efficacy than women), but differences by ethnicity (particularly among black, white, and Asian students) are also identified.

**Measuring Gendered Attitudes: Using the IAT for Program Evaluation**

Christina Leshko

This study seeks to examine the robustness of the Implicit Association Test (Greenwald, McGhee, and Schwartz, 1998) as an alternative measure of program success. Use of the IAT for program evaluation has implications for assessing programs that seek to neutralize gendered associations with leadership and science and engineering disciplines.

Room III: Grand K
Paper Session

**Why do Women Engineering and Computer Science Undergraduates Persist in their Major?**

Kaitlyn J. Bunker, Raven R. Rebb, Laura E. Brown, Gretchen L. Hein, Nilufar Onder

Completing an undergraduate degree in engineering or computer science is challenging. Many initiatives relate to the first years of study, but when do students, and women in particular, contemplate switching majors and what influences them to persist? This paper discusses the findings of a survey that was conducted to begin to answer this complex issue.

**Teaching Innovation: Engineering 1000: Transforming Culture and Learning from Day One**

Ellen Momsen, Brett McFarlane, Mark Belson

Changing the climate and culture of a College to one that welcomes diversity and is inclusive requires modifications of the student experience from the first day on campus. Oregon State University hosts an outdoor activity orientation program for over 1000 incoming students to emphasize essential engineering skills: teamwork, communication, and respect.

**Are Engineering and Computer Science Women Students Good Predictors of their Semester GPA?**

Mary Ruth Anderson-Rowland

Academic Success Seminar engineering and computer science students’ percentage estimates of their use of the “Guaranteed 4.0 Plan” are compared with their GPA average for the semester. The predicted GPA is then compared with the actual GPA. Prediction accuracy is compared by gender and ethnicity.

**Congruence Between Elements of the Collegiate Educational Experience and ABET Accreditation Standards**

Timothy Burrows, Elizabeth Creamer

This mixed methods study identifies elements of the collegiate educational experience that student’s perceive promote an interest in engineering and evaluates the extent that the values and skills identified by students at Midwestern University fit contemporary views of engineering reflected in the ABET accreditation standards.

Room IV: Auditorium
Workshop

**Everyday Engineering: How to Run Your Own Summer Camp**

Marca J. Lam, Jodi L. Carville, Margaret B. Bailey

This one hour workshop, based on the WE@RIT day camp to address young women’s lack of understanding about the engineering field, will convey how to incorporate multiple layers of teachers and role models to inspire campers’ interest in engineering. You will learn team building activities, examples of incorporating multi-disciplinary engineering activities, and experience a hands-on design activity.
Thursday, June 23, 2011 continued

Discovering Implications of the Academic Pathways Study for Women on Your Campus

Cynthia J. Atman, Jennifer A. Turns, Ken Yasuhara, Deborah Kilgore

The Academic Pathways Study (APS) was a large study of the engineering student experience that was part of the Center for the Advancement of Engineering Education. Participants will consider the implications of APS findings with respect to the education of women engineering students, in general and on their campuses in particular.

Earring Engineering: A Hands-on Experience

Tim Carson, Jenny Becker, Katie Sarmento, Nicole Cavanah, Linda Snow-Solum

Sponsored by Rockwell Collins, this event will showcase a dynamic, hands-on learning activity, recently trialed by the company during EWeek 2011. Designed as an expansion of its traditional ‘Introduce a Girl to Engineering’ programming, Rockwell Collins engaged over 60 middle school girls and their adult role models to craft earrings out of capacitors and resistors.

Walk away from this workshop with a new understanding of creativity and a new pair of earrings!

3:00–3:30PM  Break includes coffee and refreshments

3:30–4:30PM  Session 3

Best Practices for Student Success

Ana Dison

This panel discussion is designed to focus on best practices, solutions and next steps for addressing current student persistence, student success and increasing graduation rates. We will explore creative and innovative programs, workshops, seminars, research opportunities, mentoring programs, learning communities and other ways to deliver quality experiences to our student populations.

If Your Body Rarely Lies, What Do Others Think You’re Saying?

Linda D. Wilson

Workshops often explore words as communication, sometimes the nonverbal but not the physical. This “moving” workshop will expose and re-move habits you might not even know you have. Learn how to embody strength; how to “show up” in ordinary circumstances; give directions people follow; make offers; or even receive help.
Discover the satisfaction of innovation and service to the nation

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