

National Science Foundation Engineering Research Centers

**ERC 2009 Annual Meeting**

December 2-4, 2009

**Hyatt Regency Bethesda**

One Bethesda Metro Center (7400 Wisconsin Ave)

Bethesda, MD Tel: 301-657-1234

**DRAFT AGENDA**

As of November 20, 2009

**WEDNESDAY, December 2, 2009**

**Annual Meeting – Day One**

8:30am – 11:30am **Plenary Session I: Opening Session**

*Moderator: Lynn Preston*

8:30 – 8:40	Welcome & Meeting Plan – <b>Lynn Preston</b> and <b>Court Lewis</b>
8:40 – 9:05	Remarks by the AD for Engineering – <b>Dr. Thomas Peterson</b> – includes ~5 min Q&A
9:10 – 9:40	NSF & ERC Program Update – <b>Lynn Preston</b>
9:40 – 10:00	<b>Break</b>
10:00 – 10:45	<b>Mr. Aneesh Chopra</b> , Chief Technology Officer, White House Office of Science and Technology – “Yes We Can!--Stimulating US Leadership in Innovation” – introduction by <b>Dr. Thomas Peterson</b>
10:50 – 11:10	Major Impacts of the Gordon-CenSSIS ERC & Lessons Learned – <b>Michael Silevitch</b> , Director ( <b>Lynn Preston</b> intro)
11:15 – 11:30	Play Colbert-Keasling interview (with commentary by <b>Jay Keasling</b> )

11:30am – 12:00pm **Break and Self-serve Buffet Lunch**

**Student Retreat and Closed Sessions**

12:00pm – 5:00pm **Student Retreat –**

*Organizers: Colorado State U. EUV ERC SLC (**Kaarin Goncz**, Education Director and **Scott Domingue**, EUV SLC President)*

12:00 – 1:00	Working Lunch
12:00 – 2:30	Open Session (NSF & ERC staff invited)
12:10 – 12:30	Welcome and remarks by <b>Lynn Preston</b> , including NSF’s expectations for the SLCs
12:30 – 12:40	Round of introductions
12:40 – 1:40	Technical Presentations on ERCs by SLC representatives: MIRTHE– <b>Tracy Tsai</b> ; CASA– <b>Anthony Hopf</b> ; CIAN– <b>Adam Jones</b> ; RMB– <b>Matt Fisher</b>
1:40 – 2:00	Open/flexible time
2:00 – 3:00	How-to-SWOT – <b>Garrett Grindle</b> (CMU QoLT SLC)
3:00 – 4:00	<b>Dr. Bryan Willson</b> (Colorado State University) – The role of engineers and scientists in today’s world
4:00 – 5:00	Roundtable breakouts – <i>Topics:</i> (1) Student/Adviser Interaction; (2) Student/Industrial Interaction; (3) Student Communication between

	Institutions; (4) SLC Organizational Structures; (5) Student Outreach (two tables)
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12:00pm – 5:00pm **Center Directors' & Deputy Directors' Closed Meeting –**

	<i>Co-moderators:</i> <b>Brent Shanks</b> (Director, CBiRC) and <b>David Castañon</b> (Deputy Director, Gordon-CenSSIS)
12:00 – 1:00	Working Lunch - Topics raised by Directors/Deputy Directors for discussion with NSF
1:00 – 2:00	Further discussion on topics raised
2:00 – 3:00	<b>Fernando Muzzio</b> (C-SOPS): Coordination of Inter-center Activities
3:00 – 4:00	Strategic planning 3:00-3:20 <b>Alex Huang</b> (FREEDM) – ERC strategic planning 3:20-3:40 <b>Dr. Richard Albright</b> , The Albright Strategy Group: Connecting ERC strategic plan to industry-led roadmapping (CCEFP example) 3:40-4:00 Open discussion on strategic planning
4:00 – 5:00	Time with <b>Lynn Preston</b> and <b>Allen Soyster</b>

12:00pm – 5:00pm **Administrative Directors' Closed Meeting –**

	<i>Moderator:</i> <b>Doris Lee</b> (BMES)
12:00 – 1:00	Working Lunch
12:00 – 12:30	Conversation with NSF's <b>Jamie French</b> and <b>Kimberly Crabb</b> (DGA)
12:30 – 1:00	ENG's <b>Jo Culbertson</b> and <b>Cecile Gonzalez</b> briefing on GPRA highlights
1:00 – 2:00	Time with <b>Lynn Preston</b> , <b>Barbara Kenny</b> , <b>Shalika Walton</b> , and <b>LaTanya Brooks</b>
2:00 – 3:00	Report-out from working group on managing the data gathering exercise and engaging all center participants more actively in the ERC data collection exercise (includes integrating strategic planning with the data collection system)
3:00 – 4:00	Report-out from working group on money tables
4:00 – 5:00	Planning for summer retreat

12:00pm – 5:00pm **Industrial Liaison Officers' Closed Meeting –**

	<i>Co-moderators:</i> <b>Brenda Philips</b> (CASA) and <b>Robert Norwood</b> (CIAN)
	<i>Overall Topic:</i> Industrial Partner Relations & Issues
12:00 – 12:45	Open Discussion: What are your greatest challenges and how could the ERC Program help? (Develop issues for visit by NSF program staff)
12:45 – 2:45	Panel Discussion and Presentation - Technology Transfer Models Panelists: <b>Dr. Fred Lee</b> (Va Tech CPES); <b>Dr. Anthony Boccanfuso</b> (Executive Director, National Academies University-Industry Demonstration Partnership); <b>Dr. Charles Concannon</b> (Manager, University R&D Collaboration, Boeing Research & Technology)
2:45 – 3:00	Break
3:00 – 4:00	Time with <b>Lynn Preston</b> and <b>Deborah Jackson</b>
4:00 – 5:00	<b>Eric Erenrich</b> (C-SOPS ILO) with industrial partner <b>Dr. Richard LaRoche</b> , VP for Engineering & US General Mgr., DEM Solutions, on

	how to improve university/industry interactions, including industry members' "teaming" interactions with each other as a group
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12:00pm – 5:00pm      **Education/Outreach Directors' Closed Meeting –**

	<i>Co-moderators:</i> <b>Kate Spohr</b> (SynBERC) and <b>Leda Lunardi</b> (FREEDM)
12:00 – 12:30	Working Lunch – O Welcome & Overview of the session (Leda and Kate) O Who are we? (overview of 15 ERCs: brief PPTs)
12:30 – 1:45	12:30-1:15: <b>Leslie Goodyear</b> (NSF EHR/DRL Div.) O How to design and manage a high-quality evaluation program O Hiring and working with outside consultants 1:15-1:45: Q&A/Discussion
1:45 – 2:30	Time with <b>Mary Poats &amp; Esther Bolding</b> (NSF EEC Div.) 1:45-2:05: How to propose a stronger RET and REU program 2:05-2:30: Q&A/discussion
2:30 – 2:45	Break
2:45 – 3:30	<b>Dr. Barbara Bogue</b> , American Women in Engineering (AWE) 2:45-3:15: Research to Practice: AWE Research, Assessment Tools, and Resources 3:15-3:30: Q&A
3:30 – 4:40	"Burning E&O Issues" - structured discussion groups: 1. Expanding funding for education with an eye to sustaining Centers after graduation 2. Building an effective SLC 3. Mobilizing outreach volunteerism among Center staff, faculty, students
4:40 – 5:00	<b>Victoria Kwasiborski</b> (EEC Division Science Assistant), summarizing results of an NSF survey of ERC education program expenditures

12:00pm – 5:00pm      **Research Thrust Leaders' Workshop –**

	<i>Co-moderators:</i> <b>Wendell Lim</b> (SynBERC) and <b>Henry Kapteyn</b> (EUV)
12:00 – 1:00	Working Lunch: Review/revise outline of Research Management Best Practices chapter ( <b>Court Lewis</b> to provide background/introduction)
1:00 – 2:00	Continue work on Research Management Best Practices chapter – subsection review & revision
2:00 – 2:15	Break
2:15 – 3:00	Time with <b>Barb Kenny &amp; Lynn Preston</b>
3:00 – 3:15	Break with snacks
3:15 – 5:00	Continue work on Research Management Best Practices chapter – subgroups and full group discussion

5:00pm – 7:00pm      **Welcome Reception for All**

**THURSDAY, December 3, 2009**

**Annual Meeting – Day Two**

**THEME FOR THE DAY: Structuring ERCs and the ERC Program for Maximum Innovation**

7:00am – 5:45pm Registration and Attendee Services

7:00am – 8:00am Breakfast and Networking –

8:00am – 10:10am **Plenary Session II: Growing Sustainable ERCs and Innovative Engineers**  
*Moderator: Court Lewis*

8:00 – 8:05	Welcome & Plan for the Day and introduce speakers – <b>Court Lewis</b>
8:05 – 8:30	Results of a Survey of Graduated ERCs on Sustainability Experiences – <b>Mr. James Williams</b> , former Executive Director, Carnegie Mellon Data Storage Systems Center
8:35 – 9:25	Students With Startups – <i>Panel:</i> (1) <b>Allan Evans</b> (graduate student, WIMS); (2) <b>Brian Ziebart</b> (CEO, NavPrescience—a QoLT startup) ; (3) <b>Dr. Michael McCorquodale</b> (Founder & CTO, Mobius Microsystems), panel moderator – includes 15 minutes Q&A
9:30 – 10:00	iGEM: The International Genetically Engineered Machine competition – <b>Dr. Randy Rettberg</b> , MIT
10:00 – 10:10	<i>Nano song</i> video – Presented by <b>Brittany McClinton</b> , EUV ERC SLC member, UC-Berkeley

10:10am – 10:30am **Break**

10:30am – 12:00pm **Breakout Session I – Operational Best Practices**

International Partners: Issues and Opportunities (e.g., getting the foreign funding in place; ITAR, export control, operational issues such as personnel exchanges—esp. student exchanges, since US tuitions are usually higher; communication challenges—e.g., using webcasts)  <i>Co-moderators:</i> <b>Abhaya Datye</b> (International Program Director, CBiRC) & <b>Frank Witte</b> (Global Site Coordinator, RMB)	CD/DDs, INTILOs, EDs, F/TLs, SLCs, IND, NSF PD	<i>Speakers:</i> <b>Abhaya Datye &amp; Frank Witte; Dan Mirota</b> (JHU CISST PhD student who did an international exchange); <b>Edward Murdy</b> (NSF, OISE) on NSF’s Partnerships for International Research & Education (PIRE) program
Sustaining the ERC After Graduation (Successful approaches to sustainability. How to keep system-level work alive on soft money when staff are needed? The education mission of the ERCs should appeal to corporate foundations. Have a speaker from a corporate foundation?)  <i>Moderator:</i> <b>Jim Williams</b> (former Executive Officer, DSSC)	CD/DDs, ILOs, EDs, ADs, F/TLs, NSF PD	<i>Panelists:</i> <b>John Baras</b> (founding Director, University of Maryland ISR); <b>Bob Lewis</b> (Director of Tech Transfer, UMinnc iPrime); <b>William Michalerya</b> (former ILO, Lehigh University ATLSS)
Conveying the ERC’s Value to Prospective (and Current) Industry	CD/DDs, ILOs, IND, NSF PD	<i>Panelists:</i> <b>Mike Gust; Mark Johnson</b> (ILO, FREEDM)

Partners (e.g., How to keep the consortium alive in a recession economy)  <i>Moderator: Mike Gust</i> (ILO, CCEFP)		Systems ERC); <b>Fernando Muzzio</b> (Director, C-SOPS) with <b>Eric Erenrich</b> (ILO, C-SOPS)
Precollege Outreach: Effectiveness of Center K-12 Programs in Addressing STEM Needs (best practices, lessons learned, etc.)  <i>Moderator: Paula Sturdevant-Rees</i> (Director of Education & Outreach, CASA)	EDs, F/TLs, SLC, CD/DDs ADs, NSF PD	<i>Speaker: Margaret Blanchard</i> (NCSU College Of Education) “Effectiveness of Inquiry Experience for Reforming Science Teaching and Learning” <i>Panel: Margaret Blanchard</i> (STEM Ed Expert); <b>Meredith Whitaker</b> (CIAN) “The NASEP Experience–Summer Camps”; <b>Joe Coccozza</b> (BMES) “High School Curricula Partnering”; <b>Linda Western</b> (CCEFP) “Hands-On Workshops”; <b>Claire Duggan</b> (Gordon-CenSSIS) “Young Scholars”

12:15pm – 1:50pm      **Lunch** – Unassigned seating

1:00pm – 1:50pm      *Speaker: Nicholas Donofrio*, Executive Vice President for Innovation & Technology, IBM

- The state of innovation in advanced technology-based industries in the US vs. abroad)
- Introduction by Al Soyster
- Allotted time includes 15 minutes Q&A

2:00pm – 3:45pm      **Breakout Session II** – Cross-center Issues by Tech Cluster

Biotechnology & Health Care Centers Discussion Section – <i>Topic: Bio-Innovation and Synergy Opportunities Among Bio-ERCs</i>  <i>Co-moderators: Mark Humayun</i> (Center Director, BMES) & <b>Lynn Preston</b> , NSF	All staff, students, industry	Panelists: Directors of SynBERC <b>Jay Keasling</b> , QoLT ( <b>Takeo Kanade</b> ), C-SOPS <b>Fernando Muzzio</b> , BMES ( <b>Mark Humayun</b> ) on: 1) CULTURE - How is innovation happening in Bio ERCs; what is the culture? 2) TOMORROW’S INNOVATORS - Are we training the students to be innovators of tomorrow where they will work? Would highly innovative companies (e.g., Apple?) think we are innovators? 3) SYNERGY OPPORTUNITIES - What is at the intersection among most of BioERCs? How to break down silos and develop Future Hybrid Systems. Future opportunity to combine?
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		4) PATIENT/USER INTERFACE WITH ENGINEERS IN THE DESIGN PROCESS 5) CLINICAL RESEARCH PARTNER (INDUSTRY AND FOREIGN PARTNERS)
Energy, Sustainability & Infrastructure Centers Discussion Section (includes SynBERC DD) – <i>Topic:</i> Emerging Opportunities in Sustainable Energy  <i>Co-moderators:</i> <b>Alex Huang</b> (Center Director, FREEDM) & <b>Barb Kenny</b> , NSF PD	All staff, students, industry	<i>Speakers:</i> <b>Mr. Robert Church</b> , President, Management Consulting Services; <b>Dr. Michael Casassa</b> , Office of Basic Energy Sciences, DOE; <b>Capt. (USN Ret.) Arthur “Chip” Cotton</b> , Program Manager for Energy R&D, Global Research, General Electric Company
Micro/Optoelectronics, Sensing & IT Centers Discussion Section – <i>Topic:</i> Mid-life ERCs: Impacts and Lessons Learned  <i>Co-moderators:</i> <b>Dave McLaughlin</b> (Center Director, CASA) & <b>Deborah Jackson</b> , NSF PD	All staff, students, industry	<i>Panelists:</i> EUV Impacts ( <b>Jorge Rocca</b> ); MIRTHER Impacts ( <b>Claire Gmachl</b> ); CASA Impacts ( <b>David McLaughlin</b> ); Panel Discussion/Q&A

3:45pm – 4:15pm      **Break** [show *Lab Safety Song* video]

4:15pm – 5:45pm      **Breakout Session III** – Facilitating Innovation

Translational Research Strategies <i>Topics:</i> - Focus on translational research awards - Explore the differences between fundamental research & applied R&D  <i>Moderator:</i> <b>Mark Johnson</b> (ILO, FREEDM)	CD/DDs, ILOs, F/TLs, NSF PD	<i>Speakers:</i> <b>Peter Kazanzides</b> , Director of Engineering, CISST, on the collaborative project between the CISST ERC and Intuitive Surgical to create a prototype Surgical Assistant Workstation for Teleoperated Surgical Robots (SAWTSR); <b>Dr. Angus Kingon</b> , Professor of Engineering, Entrepreneurship and Organizational Studies, Brown University; <b>Michael Zink</b> , Deputy Director, & <b>Brenda Phillips</b> , Director of Industry, Government, & End User Partnerships, CASA, “A System Development Case Study”
Educating Creative and Entrepreneurial Engineers <i>Topics:</i> General principles and case studies of best practices in education for innovation, creativity, and entrepreneurship	EDs, CD/DDs, SLCs, F/TLs, NSF PD	<i>Speakers:</i> <b>Dr. Pedro Arce</b> , Chair, Chemical Engineering, Tennessee Technological University; <b>Dr. Wil Clouse</b> , Director, Center for Entrepreneurship & Innovation, Western Kentucky University

<i>Co-moderators: <b>Devdas Pai</b> (RMB) and <b>Henrik Pedersen</b> (C-SOPS)</i>		
Strategic Risk Mitigation with Startups as Partners <i>Topics:</i> What are the different issues for Gen-2 and Gen-3 ERCs in engaging startups in the research program using core funds? Are the membership agreements and industrial member structure adequate? What are some lessons learned in Gen-2 that can apply to Gen-3?  <i>Moderator: <b>Joe Montemarano</b> (Exec. Director, MIRTHE)</i>	CD/DDs, ILOs, NSF PD	<i>Panelists: <b>Joe Montemarano</b> (overview of Gen-2/Gen-3 difference w/ respect to startups); <b>Mr. Thomas Melzer</b>, Managing Director, RiverVest Venture Partners (what VCs look for in a startup, issues in dealing with a university-based startup); <b>Curt Stone</b> on QoLT's Foundry (issues encountered, lessons learned)</i>
The AD's Role in Preparing for Graduation: Transitioning the ERC and Transitioning Yourself  <i>Moderator: <b>Kevin Costa</b> (AD, SynBERC)</i>	ADs	<i>Panel: How ADs can assist in the transition to self-sufficiency, and career planning for post-ERC life – <b>Beth Tranter</b> (former AD, Va Tech CPES; now Chief of Staff Office of the Vice President for Research), <b>Nichole Phillips</b> (former AD, USC IMSC; now Director of Research Administration, USC Viterbi School of Engineering); <b>Sheila Davis</b> (AD, EUV ERC)</i>

**Dinner on your own**

**FRIDAY, December 4, 2009**

**Annual Meeting – Day Three**

7:00am – 8:00am      Breakfast and Networking

8:00am – 9:45am      **Plenary Session III: Surviving and Thriving as an ERC**  
*Moderator: **Lynn Preston***

8:00 – 8:05	Welcome & Plan for Day – <b>Lynn Preston &amp; Court Lewis</b>
8:05 – 8:25	Major Impacts of WIMS & Lessons Learned – <b>Ken Wise</b> , Director ( <b>Lynn Preston</b> intro)
8:30 – 9:45	Impact of Past ERCs: Some Case Studies – <i>Panel with Q&amp;A:</i> <b>Rao Tummala</b> (GaTech PRC); <b>Brij Moudgil</b> (UFla PERC); <b>David Marcum</b> (Mississippi State CCFS)

9:45am – 10:15am      **Break** [show *Lab Safety Song* video]

10:15am – 11:45am      **Breakout Session IV** – Cross-staff Group Discussion Sections

<p>Discussion Section for Center Directors, ILOs, and IABs <i>Topics:</i> Small Companies &amp; startups vs. Large Companies: Partnership Issues</p> <p><i>Co-moderators:</i> <b>Claire Gmachl</b> (MIRTHE) and <b>Erik Sander</b>, former UFla PERC ILO</p>	<p>CD/DD, ILOs, IND, NSF PD</p>	<p><i>Speakers:</i> <b>Kim Stelson</b> (Director, CCEFP); <b>Eric Erenrich</b> (ILO, C-SOPS); <b>Bernadeta Wysocka</b> (ILO, MIRTHE); <b>Phil Cheney</b> (Sr. Consultant for Corporate &amp; Govt. Partnerships, Gordon-CenSSIS)</p>
<p>Achieving More Effective Outreach <i>Topic:</i> Developing a common instrument to measure impact on student attitudes towards STEM</p> <p><i>Co-moderators:</i> <b>Joe Cocozza</b> (BMES) and <b>Alyssa Burger</b> (CCEFP)</p>	<p>EDs, SLC, ADs, NSF PD</p>	<p><i>Panelists:</i> <b>Joe Cocozza</b> on BMES surveys; <b>Alyssa Burger</b>; <b>Adah Leshem-Ackerman</b> (CBiRC); <b>Meredith Whitaker</b> (CIAN)</p>
<p>Bridging the “Valley of the Shadow of Death” <i>Topic:</i> Are we spending enough R&amp;D money in the infamous Valley of the Shadow of Death (or will other nations eat our lunch?)</p> <p><i>Moderator:</i> <b>Curt Stone</b> (ILO, QoLT)</p>	<p>CD, ILOs, IND, NSF PD</p>	<p><i>Speakers:</i> <b>Curt Stone</b> on QoLT’s Foundry; <b>Fernando Muzzio</b> (CSOPS); <b>Mr. Aca Gacic</b>, Project Manager, Robert Bosch GMBH</p>
<p>Implementing a Strategic Plan in “Product-oriented” vs. “Process-oriented” Centers <i>Topic:</i> Strategic planning and research management challenges for both Center Directors and Thrust Leaders in different types of centers</p> <p><i>Co-moderators:</i> <b>Michael Silevitch</b> (Director, Gordon-CenSSIS) and <b>Dan Siewiorek</b> (Thrust Leader, QoLT)</p>	<p>CD/DDs, F/TLs, ADs, NSF PD</p>	<p><i>Panelists:</i> Case studies of research management in product- and process-focused centers: <b>Miguel Velez-Reyes</b> (Associate Director and Site/Thrust Leader, Gordon-CenSSIS); <b>Margaret Murnane</b> (Deputy Director and Thrust Leader, EUV ERC); <b>Chandra Chandrasekar</b> (Deputy Director and Thrust Leader, CASA)</p>

11:45am – 12:00pm     **Break**

12:00pm – 12:15pm     **Plenary Session IV: Wrap-up**

12:00 – 12:15	Meeting Feedback & Action Items – <b>Lynn Preston</b> and <b>Court Lewis</b>
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12:15pm                    **Adjourn**

12:15pm                    **Lunch** (self-serve box lunch, available “to go”)