

Schedule-at-a-Glance

Wednesday, June 20, 2012 – Wells Pre-Function Area, and Rms 1&2

Time	Event	Location
7:30 AM – 9:00 AM	Registration and Continental Breakfast	Wells (Pre-Function Area)
8:30 – 8:45 AM	Welcoming Remarks	Wells (Room 1)
8:45 – 9:45 AM	Opening Keynote – Karen King	Wells (Room 1)
9:50– 10:50PM Sessions 1 & 2	Session 1: <i>Teacher Knowledge of Student Ideas in Physical Science</i>	Wells (Room 1)
	Session 2: <i>Community Connections in STEM Education</i>	Wells (Room 2)
10:50 – 11:00 AM	Break	Wells (Pre-function Area)
11:00 AM – 12:00 PM Sessions 3 & 4	Session 3: <i>Teaching Energy in K-12</i>	Wells (Room 1)
	Session 4: <i>STEM-Related Project-Based Learning</i>	Wells (Room 2)
12:00 – 1:30 PM	LUNCH	Memorial Union Marketplace
1:30 – 3:30 PM	Workshops (1-9 concurrent)	(see page 16)
3:30 – 4:30 PM	Poster Session Set-Up	Wells Room 2
4:30 PM – 6:00 PM	Poster Session and Reception (Hors d'oeuvres & Cash Bar)	Wells Rooms 2
6:00 PM – 7:00 PM	Dinner Banquet	Wells (Room 1 & 2)
7:00 PM – 8:00 PM	Keynote – Marianne Wiser	Wells (Room 1 & 2)

Thursday, June 21, 2012 – Donald P. Corbett Business Building (DPC)

Time	Event	Location
7:45 – 10:30 AM	Registration, Information Table and Continental Breakfast	DP Corbett Atrium
8:30 – 10:30 PM Sessions 5 & 6	Session 5: <i>Teaching and Learning in Chemistry and Engineering</i>	DP Corbett 107
	Session 6: <i>Strengthening STEM Education: Broadening Participation, and Next Generation Science Standards</i>	DP Corbett 115
10:30 – 10:45 AM	15 minute Break	DP Corbett Atrium
10:45 AM – 12:25 PM Sessions 7 & 8	Session 7: <i>Earth Science and Climate Change</i>	DP Corbett 107
	Session 8: <i>Project-Based Learning and Student Thinking in STEM</i>	DP Corbett 115
12:25– 1:45 PM	Lunch on your Own	Memorial Union Marketplace
1:45 – 3:45PM	Workshops (10-17 concurrent)	(See page 17)
4:00 – 7:00 PM	Break and Dinner on your own	
7:00 – 9:30 PM	Challenger Mission	Challenger Center
	Gathering place on campus	Great Rooms in Doris Twitchell Allen Village

Friday, June 22, 2012 – Donald P. Corbett Business Building (DPC)

Time	Event	Location
7:45 AM – 10:30 AM	Information Table & Continental Breakfast	DP Corbett Atrium
8:40 AM – 10:00 AM Sessions 9 & 10	Session 9: Teaching and Learning Evolution	DP Corbett 107
	Session 10: Teaching and Learning Physics and Mathematics	DP Corbett 115
10:00 – 10:15 AM	Break	
10:15 AM – 12:00 PM	Start of Open Space Session	DP Corbett 100
	Open Space Break-Out Conversations	DP Corbett 100, 105, 107, 109, 111, 113 and 115
	Open Space Reports and Conference Wrap-Up	DP Corbett 100
	EVALUATIONS	DP Corbett 100
12:00 PM	LUNCH	Memorial Union Marketplace

Detailed Presentation Schedule

Wednesday, June 20th · Morning Sessions Overview

Session Title	Teacher Knowledge of Student Ideas in Physical Science (S1)	Community Connections in STEM Education (S2)
<i>Session Chairs</i>	<i>MacKenzie Stetzer</i>	<i>Erik DaSilva</i>
Location	Wells Room 1	Wells Room 2
9:45-10:25 am	<p style="text-align: center;">Physics Pedagogical Content Knowledge (S1-1)</p> <p style="text-align: center;"><i>Eugenia Etkina</i></p>	<p style="text-align: center;">Connecting Community with STEM Education (S2-1)</p> <p style="text-align: center;"><i>Ruth Kermish-Allen</i></p>
10:25-10:45 am	<p style="text-align: center;">Knowledge for Assessment (K4A): How Do Teachers Use Knowledge When They Design Written Assessments for their Classrooms and Interpret Students' Responses? (S1-2)</p> <p style="text-align: center;"><i>Laura Millay</i></p>	<p style="text-align: center;">Who Do You Turn To? How Teachers Support Each Other in the Maine Physical Sciences Partnership Project (S2-2)</p> <p style="text-align: center;"><i>Bill Zoellick</i></p>
10:45-11:00 am	Break	
	Teaching Energy in K-12 (S3)	STEM-related Project-based Learning (S4)
<i>Session Chairs</i>	<i>Jonathan Shemwell</i>	<i>Daniel Capps</i>
11:00-11:40 am	<p style="text-align: center;">How Elementary Curricula on Matter and Energy Based on Learning Progressions can Prepare Students to Learn Science Effectively in Middle School (S3-1)</p> <p style="text-align: center;"><i>Marianne Wiser</i></p>	<p style="text-align: center;">Service Learning in an Undergraduate Introductory Environmental Science Course: Getting Students Involved with the Community (S4-1)</p> <p style="text-align: center;"><i>Grace Eason</i></p>
11:40am -12:00pm	<p style="text-align: center;">Student-Teacher Interactions for Bringing Out Student Ideas About Energy (S3-2)</p> <p style="text-align: center;"><i>Benedikt Harrer</i></p>	<p style="text-align: center;">The Battle of the Electric Marimba Bands – A Pilot Project-Based STEAM Project (S4-2)</p> <p style="text-align: center;"><i>Dave Harmon and Richard St. Pierre</i></p>
12:00-1:30 pm	Lunch at Memorial Union Marketplace	

Thursday, June 21st · Morning Sessions Overview

Session Title	Teaching and Learning Chemistry and Engineering (S5)	Strengthening STEM Education (S6)
<i>Session Chairs</i>	<i>Erika Allison</i>	<i>Joanna Meyer</i>
Location	DP Corbett 107	DP Corbett 100
8:30-9:10 am	Enhancing the Effectiveness of Chemistry Lectures through the Use of Guided-Discovery Activities (S5-1) <i>Dawn Rickey</i>	On the Ground with the Next Generation Science Standards: How Teachers Grapple with the Re-Prioritization (S6-1) <i>Jonathan Shemwell</i>
9:10-9:50 am	Refinement of a Learning Progression about Structure of Matter (S5-2) <i>Hannah Sevian</i>	Strategies to Build Participation in STEM (S6-2) <i>Moderator – Sharon Barker</i> <i>Panelists: Chris Cash, Shelly Chasse-Johndro, Kelly Ilseman</i>
9:50-10:30 am	US Engineering Education in the Middle East: First Year Challenges (S5-3) <i>Wilhelm Alexander Friess</i>	Science Leadership – What the Framework and Next Generation Science Standards will Demand (K-12) (S6-3) <i>Anita Bernhardt</i>
10:30-10:45 am	Break	
	Earth Science and Climate Change (S7)	Student Thinking in STEM (S8)
<i>Session Chairs</i>	<i>Elizabeth Burroughs</i>	<i>Wilhelm Alexander Friess</i>
10:45-11:25 am	Spatial Thinking in High School Earth Science (S7-1) <i>Kim Kastens</i>	De-Criminalizing High Stakes Exams Through Effective Teaching, Using Project-Based Learning Modules (S8-1) <i>Timothy Conner</i>
11:25am-12:05pm	Students’ Conceptions of the Greenhouse Effect, Global Warming, Climate Change, and the Earth’s Climate System (S7-2) <i>Dan Shepardson</i>	Which is Better: Fast and “Thoughtless”, or Slow and Reasoned? (S8-2) <i>Andrew Heckler</i>
12:05-12:25 pm	Using a NetLogo Model to Understand the Greenhouse Effect (S7-3) <i>Lisa Schultz</i>	Using Lab-Based Analogies for Meaningful Understanding (S8-3) <i>Mitchell Bruce</i>
12:25-1:45	Lunch on your own	

Friday, June 22nd • Morning Sessions Overview

Session Title	Teaching and Learning Evolution (S9)	Teaching and Learning Physics and Mathematics (S10)
<i>Session Chairs</i>	<i>Michelle Smith</i>	<i>John Thompson</i>
Location	DP Corbett 107	DP Corbett 115
8:40-9:20 am	The Impact of Avida-ED Digital Evolution Software on Student Understanding of Natural Selection (S9-1) <i>Amy Lark & Wendy Johnson</i>	Shaping the Mathematical Storyline: Leveraging Student Thinking through Rich Classroom Discussions (S10-1) <i>Michael Steele</i>
9:20-9:40 am	Good Question! Using Students' Prior Knowledge to Teach Evolution (S9-2)	Calculus Students' Understanding of Area and Volume in Non-Calculus Contexts (S10-2) <i>Allison Dorko</i>
9:40-10:00 am	 <i>Rebecca Price</i>	New Ways of Investigating the Canonical Ball Toss Problem (S10-3) <i>Michael Wittmann</i>
10:00-10:15 am	Break	
<i>Co-Moderators</i>	<i>Susan McKay & Natasha Speer</i>	
Location	DPC 100	
10:15am - 12:00pm	OPEN SPACE SESSION DP Corbett, Rm. 100	
	Open Space Break-Out Conversations DP Corbett Rms. 100, 105, 107, 109, 111, 113 & 115	
	Open Space Reports and Conference Wrap Up DP Corbett Rm. 100	
12:00 pm	Lunch at Memorial Union Marketplace	

Wednesday Afternoon Workshops (1:30-3:30pm)

*NOTE: Although workshops do not require pre-registration, we request that you sign up for Wednesday and Thursday afternoon workshops at the registration desk when picking up your registration material.

Workshop Title	Facilitator	Building & Rm.
W1: Community Projects and Involvement in STEM education	<p><i>Bill Zoellick, Moderator</i> SERC Institute</p> <p><i>Beth Bisson, Panelist</i> University of Maine</p> <p><i>Grace Eason, Panelist</i> University of Maine – Farmington</p> <p><i>Ruth Kermish-Allen, Panelist</i> Island Institute</p> <p><i>Sarah Nelson, Panelist</i> University of Maine</p>	DPC 100
W2: Looking for and Expressing Regularity in Repeated Reasoning: Math Magic Tricks as an Entry to Algebra	<p><i>Karen King</i> National Council of Teachers of Mathematics</p>	DPC 105
W3: Using a Learning Progression Framework to Investigate Thinking about Benefits, Costs and Risks in Chemical Design	<p><i>Hannah Sevian</i> University of Massachusetts - Boston</p>	DPC 109
W4: Fostering Spatial Thinking in High School Earth & Space Science Students	<p><i>Kim Kastens</i> Lamont-Doherty Earth Observatory of Columbia University</p>	DPC 113
W5: A Place-Based Project-Based Learning Unit for Rural Schools – School Yard Project-Based Learning Modules	<p><i>Timothy Conner</i> SUNY Cortland</p>	DPC 115
W6: Experimenting with Natural Selection in the Classroom Using Avida-ED Software	<p><i>Amy Lark</i> Michigan State University</p> <p><i>Wendy Johnson</i> Lansing Catholic High School</p>	DPC 111
W7: Low-Cost Electronics for STEM Education	<p><i>Dave Harmon and Richard St.-Pierre</i> Make it Science, and IBM Systems and Technology</p>	FFA Rm Memorial Union
W8: A Method for Constructing Good Questions for Use in Class, Homework and Tests: the Dissection of a Scientific Concept into its Relevant and Irrelevant Dimensions	<p><i>Andrew Heckler</i> Ohio State University</p>	Bumps Room Memorial Union
W9: Helping Your Students Learn Physics and Think Like Scientists	<p><i>Eugenia Etkina</i> Rutgers University</p>	Coe Room Memorial Union

Thursday Afternoon Workshops (1:30-3:30pm)

Workshop Title	Facilitator	Building & Rm #
W10: Crosscutting Concepts in the Next Generation Science Standards (K-12)	<i>Anita Bernhardt</i> Maine Department of Education	Bumps Room Memorial Union
W11: Designing Learning Progressions and Translating Them Into Curricula	<i>Marianne Wiser</i> Clark University	FFA Room Memorial Union
W12: Creating the Mathematical Storyline and Planning for Rich Discourse	<i>Michael Steele</i> Michigan State University	Coe Room
W13: Designing and Implementing Guided-Discovery Activities to Enhance Students' Understanding	<i>Dawn Rickey</i> Colorado State University	DPC 115
W14: Teaching and Learning about the Earth's Changing Climate System	<i>Dan Shepardson</i> Purdue University	DPC 109
W15: You've Almost Got It...Assessing and Improving How Students Understand Evolution	<i>Rebecca Price</i> University of Washington - Bothell	DPC 113
W16: Using Free-Response Questions to Probe Student Thinking	<i>MacKenzie Stetzer</i> University of Maine	MultiPurpose Rm Memorial Union
W17: Stop Sneering at Engineering: Strategies for Exciting and Engaging Your Students	<i>Erika Allison</i> University of Maine	DPC 107