



Thinking Evolutionarily: Evolution Education Across the Life Sciences¹

**Organized by:
Board on Life Sciences, National Research Council
National Academy of Sciences
Co-hosted by Carnegie Institution for Science**

**1530 P St., NW, Washington, DC
October 25-26, 2011**

Tentative Topics and Agenda

DAY 1: EXPLORING THE OPPORTUNITIES AND SETTING THE STAGE FOR FUTURE ACTION

Tuesday, October 25

11:15 AM	Registration , First Floor Foyer Lunch Available beginning at 11:30, Rotunda (2nd floor)
12:00 PM Auditorium	Welcome and Introductions - Jay Labov, National Research Council and National Academy of Sciences - Maxine Singer, President Emerita, Carnegie Institution for Science - Susan Kassouf, Program Officer, Christian A. Johnson Endeavor Foundation (sponsor) - Cynthia Beall, Chair of the Convocation's Organizing Committee and Moderator
12:15 Auditorium	The Case for Thinking Evolutionarily Across the Life Sciences - Introductory Undergraduate Biology Courses: Gordon Uno, University of Oklahoma and PI for the NSF's Research Coordination Network for Undergraduate Biology Education (special advisor to the Committee and PI of the NSF/RCN-UBE grant that is sponsoring this convocation). - Judy Scotchmoor, Museum of Paleontology, University of California, Berkeley

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	Questions and Discussion
1:15 Auditorium	<p>Can This Approach Improve Student Learning of Evolution? The Evidence Base</p> <ul style="list-style-type: none"> - Ross Nehm, Ohio State University <p>Questions and Discussion</p>
2:00 Rotunda	Break and opportunity for further networking
2:15 Auditorium	<p>Expanding Curricular Opportunities to Introduce Evolutionary Thinking Across the Grade Spans - Brief Presentations and Panel Discussion</p> <ul style="list-style-type: none"> - Spencer Benson, University of Maryland: The Role of Evolution in the Restructured Advanced Placement Biology Course - Celeste Carter, National Science Foundation: <i>Vision and Change in Undergraduate Education</i> - William Galey, Howard Hughes Medical Institute: <i>Scientific Foundations for Future Physicians</i> - Kristin Jenkins, National Evolutionary Synthesis Center and Member of the Organizing Committee: NESCENT Programs Promoting Evolutionary Thinking - Mark Schwartz, New York University: Evolutionary Medicine in Biology and Pre-Med Courses <p>Discussion and Questions</p>
3:15 Auditorium	<p>Who Are the Audiences We Are Trying to Reach with this Initiative?</p> <ul style="list-style-type: none"> - Cynthia Beall, moderator
3:45 Auditorium	<p>How Can Evolutionary Thinking Help Address the Controversies Surrounding the Teaching of Evolution?: A Faculty Forum</p> <ul style="list-style-type: none"> - Betty Carvellas, National Academies Teacher Advisory Council - David Hillis, University of Texas, Austin - Paul Strode, Fairview High School (Boulder, CO) - Brad Williamson, University of Kansas - Marlene Zuk, University of California, Riverside
4:30 Breakout Rooms	<p>First Breakout Sessions: Exploring the Issues In Greater Depth</p> <p>The colored dot on your name badge indicates the breakout session to which you have been assigned. Each of these breakout sessions will contain a mix of people with different kinds of expertise. The goal of each session will be to explore in depth one of the issues raised in earlier sessions and report back ideas for next steps to all participants.</p> <p>Each group will be facilitated by a member of the organizing committee. Each group will appoint one person to present an overview of the group's ideas and suggestions at the end of the morning. Each group will decide when to call a break.</p>

	<p>Group 1 (yellow dot, Ballroom): What constitutes evolutionary thinking? What approaches are needed to educate faculty and departments about the value of evolutionary thinking in their own courses and programs? Facilitated by Nancy Moran, Yale University</p> <p>Group 2 (blue dot, Board Room): What additional evidence is needed to convince biologists of the value of evolutionary thinking? How can that evidence best be gathered through an organized program of research? Who should undertake and sponsor such research? Facilitated by Ida Chow, Society for Developmental Biology, and Paul Beardsley, California Polytechnic University</p> <p>Group 3 (green dot, Mayor Room): How can evolutionary thinking become more firmly connected with other emerging efforts to improve life sciences education? In what ways should these efforts be influenced by different target audiences? Facilitated by Gordon Uno, University of Oklahoma, and Kristin Jenkins, National Evolutionary Synthesis Center</p>
5:30 Auditorium	Reports from Breakout Groups (10 minutes each plus discussion)
6:15 Auditorium	Closing Remarks, Announcements, and Charge for Day 2 - Cynthia Beall
6:30 Auditorium	Adjourn for the Day
Evening	Dinner on Your Own for Participants (see accompanying list of suggested restaurants in the Dupont Circle area)

DAY 2: PLANNING FOR FUTURE ACTIONS TO INFUSE EVOLUTIONARY THINKING ACROSS LIFE SCIENCES EDUCATION

Wednesday, October 26

7:30 AM	Breakfast Available in the Rotunda
8:00 AM Auditorium	Synthesis, Reflections on Day 1 and on Moving Forward - Robert Pennock, BEACON Center for the Study of Evolution in Action, Michigan State University
8:45 Auditorium	Reactions and Further Discussion - Panel of Committee Members - Open microphone for participants
9:15 Auditorium	Expanding Resources for Teaching Evolutionary Thinking - Paul Beardsley (member of the organizing committee), California Polytechnic Institute - Joseph Levine, Pearson Education and Co-Author (with Kenneth Miller) of <i>Biology</i> - Judy Scotchmoor, Director, Understanding Evolution and Understanding Science Websites, Museum of Paleontology, University of California, Berkeley - John Jungck (Beloit College, <i>BioQuest</i>) Discussion and Questions
10:00 Auditorium	Moderated Panel Discussion: Next Steps: Potential Roles of Key Players - James Collins (Arizona State University and member of the organizing committee), President of American Institute of Biological Sciences - Jaclyn Reeves-Pepin, Executive Director, National Association of Biology Teachers - Joseph LaManna, President, Federation of American Societies for Experimental Biology - Amy Chang, Director of Education Programs, American Society for Microbiology
10:30 Rotunda	Break and opportunity for further networking
11:00 Auditorium	Moving Evolution Education Forward: Why Evolution and Evolutionary Thinking are Integral Components of <i>Molecular Biology of the Cell</i> - Bruce Alberts, University of California San Francisco, Editor-in-Chief, <i>Science</i> Questions and Discussion with Participants
12:00 Breakout Rooms – Lunch is available in the Rotunda	Second Breakout Sessions: Moving from Vision to Action (Working Lunch) These sessions are designed to have people with similar interests and expertise meet with each other to craft action items that can be carried forward. Your group should: - develop up to three action items that can be undertaken by colleagues in the sector your group represents in the next six months. - how your action items might connect with at least one of the other sectors

	<p>represented in breakout groups</p> <p>- how the National Research Council and National Academy of Sciences might assist your efforts</p> <p>Group 1 (Board Room): Faculty who teach courses in biology and evolution. Facilitated by Irene Eckstrand, National Institutes of Health, and Nancy Moran, Yale University</p> <p>Group 2 (Mayor Room): Funders of programs in life sciences education. Facilitated by James Collins, Arizona State University and Kristin Jenkins, National Evolutionary Synthesis Center</p> <p>Group 3 (Ballroom): Representatives from Professional Societies. Facilitated by Ida Chow, Society for Developmental Biology</p> <p>Group 4 (Auditorium): Curriculum Developers and Education Researchers. Facilitated by Gordon Uno, University of Oklahoma, and Paul Beardsley, California Polytechnic Institute.</p>
1:30	Reports from Breakout Groups (10 minutes each plus discussion)
2:30	<p>Closing Thoughts and Reflections</p> <p>- Members of the Organizing Committee</p> <p>- Other Participants</p>
3:00	Adjourn