2006 Conference Schedule

Sunday, June 25, 2006

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| Time | Event | Location |
| 4:00 PM – 6:00 PM | Registration | Stewart Dining Commons Lobby |
| 5:00 PM – 6:00 PM | Cash Bar & hors d’oeuvres | Stewart Dining Commons |
| 6:00 PM – 7:00 PM | Dinner Banquet | Stewart Dining Commons |
| 7:00 PM – 7:45 PMOpening Keynote | Dr. Joe SchwarczDirector, McGill Office for Science and SocietyHEY! THERE ARE COCKROACHES IN MY CHOCOLATE ICE CREAM! | Stewart Dining Commons |

Monday, June 26, 2006

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| Time | Event | Location |  |
| 8:30 AM – 10:30 AM | Registration | Little Hall Foyer | |
| 8:30 AM – 10:30 AM | Continental Breakfast | Little Hall Foyer | |
| 9:00 AM – 10:15 AMSessions 1 through 3 | Session 1: Science and writing | 110 Little Hall | |
| Session 2: Mathematics and science instruction | 120 Little Hall | |
| Session 3: Reformed instruction in the physical sciences | 140 Little Hall | |
| 10:15 AM – 10:30 AM | Break | Little Hall Foyer | |
| 10:30 AM – 11:30 AMSessions 4 through 6 | Session 4: Key questions in science and mathematics | 110 Little Hall | |
| Session 5: Technology in the classroom | 120 Little Hall | |
| Session 6: Earth sciences | 140 Little Hall | |
| 11:30 PM – 12:00 PM | Break |  | |
| 12:00 PM – 1:30 PM | Lunch | The Marketplace | |
| 1:30 PM – 3:30 PM | WORKSHOPS 1-9 | See page 15 | |
| 3:30 PM –  4:30 PM | Poster Session Set-Up | Stewart Dining Commons | |
| 4:30 PM – 6:00 PM | Poster Session with Reception and Cash Bar | Stewart Dining Commons | |
| 6:00 PM – | Dinner on your own |  | |

Tuesday, June 27, 2006

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| Time | Event | Location |  |
| 8:30 AM – 10:30 AM | Continental Breakfast | Little Hall Foyer | |
| 9:00 AM – 10:15 AMSessions 7 through 9 | Session 7: Student learning in mathematics I | 110 Little Hall | |
| Session 8: Alternative approaches to mathematics and science instruction | 120 Little Hall | |
| Session 9: Teacher preparation in science and mathematics | 140 Little Hall | |
| 10:15 AM – 10:30 AM | Break | Little Hall Foyer | |
| 10:30 AM – 11:30 AMSessions 10 through 12 | Session 10: Increasing student interest in mathematics and science | 110 Little Hall | |
| Session 11: Effective use of laboratory in science instruction | 120 Little Hall | |
| Session 12: Geometry and proportionality in mathematics and science | 140 Little Hall | |
| 11:30 PM – 12:00 PM | Break |  | |
| 12:00 PM – 1:30 PM | Lunch on your own |  | |
| 1:30 PM – 3:30 PM | WORKSHOPS 10-18 | See page 16 | |
| 3:30 PM – 5:00 PM | Open Space | 120 Little Hall | |
| 5:00 PM – 6:00 PM | Cash Bar | Stewart Dining Commons | |
| 6:00 PM – 7:00 PM | Dinner Banquet Lobster, Steak, and Vegetarian | Stewart Dining Commons | |
| 7:00 PM – 7:45 PMClosing Keynote | TBD | Stewart Dining Commons |  |

Wednesday, June 28, 2006

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| --- | --- | --- | --- |
| Time | Event | Location |  |
| 8:30 AM – 10:30 AM | Continental Breakfast | Little Hall Foyer | |
| 9:00 AM – 10:15 AMSessions 13 through 15 | Session 13: Conceptual change in science instruction | 110 Little Hall | |
| Session 14: Student learning in mathematics II | 120 Little Hall | |
| Session 15: Reform science instruction | 140 Little Hall | |
| 10:15 AM – 10:30 AM | Break | Little Hall Foyer | |
| 10:30 AM – 11:30 AM | Panel Discussion | 120 Little Hall | |

Detailed Schedule

Monday, June 26th · Morning Sessions Overview

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| --- | --- | --- | --- |
| Session Title | (S1) Science and writing | (S2) Mathematics and science instruction | (S3) Reformed instruction in the physical sciences |
| Chair | Mary Evans | Jon Geiger | Jim Tyson |
| Location | 110 Little Hall | 120 Little Hall | 140 Little Hall |
| 9:00-9:30 | Improvement of student scientific reasoning skills: the effect of peer review and a lab report rubric  Brianna Timmerman | College math and science performance and ethnicity: Some recent trends and ideas  Eric Hsu | Implementing and evaluating instructional reform in the urban physics classroom  Mel Sabella |
| 9:30-9:45 | How student understanding of academic language relates to achievement in high school chemistry  Peggy Labrosse | Teaching physics and mathematics using critical agency student-lead enactments   Apriel K. Hodari | A classification scheme for categorizing concept inventories  Rebecca Lindell |
| 9:45-10:15 | New integrative marine science courses at the University of Maine build skills through inquiry, writing, and critical thinking  Sara Lindsay | No Title       Megan Southworth | The physical sciences as a basis of integration: The Academy of Science model    Jayne Fonash |
| 10:15-10:30 | Break | | |
| Session Title | (S4) Key questions in science and mathematics | (S5) Technology in the classroom | (S6) Earth sciences |
| Chair |  | Molly Schaffler | Ed Galindo |
| Location | 110 Little Hall | 120 Little Hall | 140 Little Hall |
| 10:30-10:45 | Have you ever wondered…  Joe Schwarcz | Equity issues that affect mathematics teaching and learning with technology  Penelope Dunham | Crossing cultural borders for Native American students in the earth sciences  Eric Riggs |
| 10:45-11:00 | Collaborative Learning in an online community of science learners  Arlene Leighton |
| 11:00-11:30 | Gender in Science and math education   Laura McCullough | Using technology in general chemistry homework and to assess problem solving skills   Norbert Pienta | Improving learning in an undergraduate science course: a case study of course re-design  Richard Yuretich |

Tuesday, June 27th · Morning Sessions Overview

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| --- | --- | --- | --- |
| Session Title | (S7) Student learning in mathematics I | (S8) Alternative approaches to mathematics and science instruction | (S9) Teacher preparation in science and mathematics |
| Chair | John E. Donovan II | Gail Dana | John Thompson |
| Location | 110 Little Hall | 120 Little Hall | 140 Little Hall |
| 9:00-9:30 | Teaching, learning, and understanding trigonometric functions   Keith Weber | Connecting school and community as a way to improve Alaska Native students’ math performance  Jerry Lipka | What we know about preparing secondary science teachers: a few facts, many assumptions and great deal of unanswered questions  Nicole Gillespie |
| 9:30-9:45 | An investigation into the change in the Van Hiele level of understanding geometry of pre-service elementary and secondary mathematics teachers   Kathleen Knight | Mathematical methods in the natural sciences:  A self-paced, applied approach    Karin Vorwerk | In-service primary school teachers in a force and motion workshop  David Nelson |
| 9:45-10:15 | Is the derivative a function? Natural language structures that enhance and hinder student understanding   Michelle Zandieh | One step at a time: Working toward change in general chemistry  Jennifer Lewis | Overview of The Board of Science Education    Marguerite Murphy |
| 10:15-10:30 | Break | | |
| Session Title | (S10) Increasing student interest in mathematics and science | (S11) Effective use of laboratory in science instruction | (S12) Geometry and proportionality in mathematics and science |
| Chair | Amie Gellen | Mitchell Bruce | Susan McKay |
| Location | 110 Little Hall | 120 Little Hall | 140 Little Hall |
| 10:30-11:00 | Smart girls, too few choices: Why young women still steer away from science and math careers and what teachers can do about it   Stephanie Blaisdell | Development, implementation, and evaluation of an integrated lab-lecture format for undergraduate science courses   Maria T. Oliver-Hoyo | Obstacles to calculus: Difficulties with geometry and visualization    David Meel |
| 11:00-11:30 | Project Lead The Way: A solution to increasing student interest in math and science   Patrick Leaveck | Development of laboratories for introductory physics  Luanna G. Ortiz | The role of proportional reasoning in science instruction  Stephen Kanim |

Wednesday, June 28th · Morning Sessions Overview

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| --- | --- | --- | --- |
| Session Title | (S13) Conceptual change in science instruction | (S14) Student learning in mathematics II | (S15) Reform science instruction |
| Chair |  | Robert Franzosa | William Leathem |
| Location | 110 Little Hall | 120 Little Hall | 140 Little Hall |
| 9:00-9:30 | The role of “conceptual ecologies” in students’ science learning: Implications of the “warming trend” in conceptual change research   Scott Sowell | Investigations of student understanding of thermal physics in the upper division    John Thompson | Implementation of the Model-Observe-Reflect-Explain (MORE) thinking frame in multiple contexts: Effects on thinking and learning about chemistry  Dawn Rickey |
| 9:30-9:45 | Investigating the effects of teaching mathematics in a physics class   Michael Murphy | Students’ integration methods for first-order differential equations  Katrina Black | A comparative study of how students understand stem cells  Jon Moyer |
| 9:45-10:15 | The relationship of coherence of thought and conceptual change to ability   Pamela Kraus | Process object theories of learning and applications to understanding first-order differential equations  John Donovan II | Native waters    Ed Galindo |
| 10:15-10:30 | Break | | |
| Session Title | Panel Discussion | | |
|  | 120 Little Hall | | |
|  | Chaired by Susan McKay | | |
| 10:30-11:30 | Nicole Gillespie   Pamela Kraus  James Tyson | | |

Monday Afternoon Workshops

\*NOTE: Although workshops do not require pre-registration, we request that you sign up for Monday and Tuesday afternoon workshops at the registration desk (Little Hall Lobby) when picking up your registration material.

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|  | Workshop Title | Facilitator | Building & Rm. |
|  | W1:  Increasing students’ success in college        -preparatory chemistry and in college         general chemistry by remediation of         requisite basic math skills | Cary Kilner University of New Hampshire |  |
|  | W2:  Exploring ways to visualize mathematics | David Meel Bowling Green State University |  |
|  | W3:  Two eyes seeing and two eyes hearing | Ed Galindo University of Idaho |  |
|  | W4:  Playing cards and thinking about race,          class and culture in the classroom. | Eric Hsu San Francisco State University |  |
|  | W5:  Science fiction in the science classroom | Kelly McCullough Author |  |
|  | W6:  Symmetry and patterns in contemporary          Native American art | Michelle Zandieh Arizona State University |  |
| W7: Inquiry-based, hands-on in-class                  Astronomy activities | | Rebecca Lindell Southern Illinois University, Edwardsville |  |
|  | W8:  Using the Conceptual Change Model           (CCM) of learning in the science classroom:        Implications for engendering robust nature         of science (NOS) understandings | Scott Sowell Cleveland State University |  |
|  | W9:  Workshop on research-based laboratories for introductory physics | Luanna Ortiz Arizona State UniversityStephen Kanim New Mexico State University |  |
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Tuesday Afternoon Workshops

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| Workshop Title | Facilitator | Building & Rm # |
| W10:  Teaching physics and mathematics using critical agency: A hands on workshop for teachers | Apriel K. Hodari The CNA Corporation |  |
| W11: Science in Native American community | Eric Riggs Purdue University |  |
| W12: Experiencing math in a cultural context:           from everyday activities to videotape           analysis | Jerry Lipka University of Alaska, Fairbanks |  |
| W13:  A constructive approach to teaching             trigonometric functions | Keith Weber Rutgers University |  |
| W14:  Creating gender neutral problems | Laura McCullough University of Wisconsin, Stout |  |
| W15: A modified approach to lesson study for            secondary science and math teachers | Nicole Gillespie Knowles Science Teaching Foundation |  |
| W16:  Project Lead The Way: A solution to             increasing student interest in math and             science | Patrick Leaveck Project Lead the Way |  |
| W17: That ain’t no way to treat a lady:  Gender  equity in the science and math classroom | Stephanie Blaisdell Consultant |  |
| W18: AER 101: A beginners’ guide to           conducting astronomy education research | Rebecca Lindell Southern Illinois University, Edwardsville |  |