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 classroomMel Sabella |
| 9:30-9:45 | How student understanding of academic language relates to achievement in high school chemistryPeggy Labrosse | Teaching physics and mathematics using critical agency student-lead enactments Apriel K. Hodari | A classification scheme for categorizing concept inventoriesRebecca Lindell |
| 9:45-10:15 | New integrative marine science courses at the University of Maine build skills through inquiry, writing, and critical thinkingSara 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 technologyPenelope 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 learnersArlene 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-designRichard 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 workshopDavid 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 chemistryJennifer 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 physicsLuanna G. Ortiz | The role of proportional reasoning in science instructionStephen 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 chemistryDawn Rickey |
| 9:30-9:45 | Investigating the effects of teaching mathematics in a physics class Michael Murphy | Students’ integration methods for first-order differential equationsKatrina Black | A comparative study of how students understand stem cellsJon 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 KrausJames 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 KilnerUniversity of New Hampshire |  |
|  | W2:  Exploring ways to visualize mathematics | David MeelBowling Green State University |  |
|  | W3:  Two eyes seeing and two eyes hearing | Ed GalindoUniversity of Idaho |  |
|  | W4:  Playing cards and thinking about race,          class and culture in the classroom. | Eric HsuSan Francisco State University |  |
|  | W5:  Science fiction in the science classroom | Kelly McCulloughAuthor |  |
|  | W6:  Symmetry and patterns in contemporary          Native American art | Michelle ZandiehArizona State University |  |
| W7: Inquiry-based, hands-on in-class                  Astronomy activities | Rebecca LindellSouthern 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 SowellCleveland State University |  |
|  | W9:  Workshop on research-based laboratories for introductory physics | Luanna OrtizArizona State UniversityStephen KanimNew 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. HodariThe CNA Corporation |  |
| W11: Science in Native American community | Eric RiggsPurdue University |  |
| W12: Experiencing math in a cultural context:           from everyday activities to videotape           analysis | Jerry LipkaUniversity of Alaska, Fairbanks |  |
| W13:  A constructive approach to teaching             trigonometric functions | Keith WeberRutgers University |  |
| W14:  Creating gender neutral problems | Laura McCulloughUniversity of Wisconsin, Stout |  |
| W15: A modified approach to lesson study for            secondary science and math teachers | Nicole GillespieKnowles Science Teaching Foundation |  |
| W16:  Project Lead The Way: A solution to             increasing student interest in math and             science | Patrick LeaveckProject Lead the Way |  |
| W17: That ain’t no way to treat a lady:  Gender  equity in the science and math classroom | Stephanie BlaisdellConsultant |  |
| W18: AER 101: A beginners’ guide to           conducting astronomy education research  | Rebecca LindellSouthern Illinois University, Edwardsville |  |