Technological Literacy of Undergraduates: Identifying Standard Models

National Academy of Engineering
2101 Constitution Ave
Washington DC, March 26-27, 2007

Day One: Monday March 26, 2007.

8:00-8:30 Breakfast at NAE.
location: Lecture Room

8:30 – 9:00 *Welcome / Introduction*: **William Wulf, President NAE**.
location: Lecture Room

9:00-10:30 *Session 1: Candidate Standard Models*
Review of results from pre-conference survey
Description and discussion of standard models
location: Lecture Room

10:30 –10:45 Break

10:45 –12:00 *Session 2: Model Learning Outcomes*
Working groups meet to outline major learning outcomes expected from the models. *Technically Speaking*, *Tech Tally*, and ITEA standards help to define outcomes.
locations: Lecture Room, EDR, Members Room, NAS 148.

12:00-1:15 Lunch
location: Lecture Room

(12:15-1:00) *Plenary Address*
"Scholarship Assessed," Mary Taylor Huber,
Carnegie Foundation for Advancement of Teaching.
location: Lecture Room

1:15 – 3:15 *Session 3: Assessment and Evaluation.*
"Introduction to Assessment," Ron Miller, Colorado School of Mines.

Groups meet to identify means to assess outcomes. Also identify existing example methods and materials that need to be developed.
locations: Lecture Room, EDR, Members Room, NAS 148.

3:15 – 3:30 Break

3:30 – 4:30 *Reporting from Sessions 2 and 3.*
Reporting of group discussions of outcomes, assessment, and evaluation.
location: Lecture Room

4:30 – 5:30 *Session 4: Open Forum and Cross Cutting Issues.*
All – Review issues of course formats and methods of pedagogy that cut across the standard models: lecture/demo format, lecture/lab format, integrative format, mechanical dissection, design projects, STS collaborations. Open Forum and Summary.
location: Lecture Room

5:30 Reception/informal discussions
location: Members Room

6:15 – 8:00 Buffet Dinner
location: Members Room

Day Two: Tuesday March 27, 2007

8:00 – 8:30 Breakfast at NAE
location: Lecture Room

8:30-10:15 *Session 5: Proposals for Areas Needing Future Work.*
"Overview of revised NSF CCLI Program," Russ Pimmel, NSF.
locations: Lecture Room

Groups meet to define and prioritize research and development needs for each course model. Groups develop an outline(s) for possible CCLI proposal(s)
locations: Lecture Room, EDR, Members Room, NAS 148.

10:15-10:30 Break

10:30 – 12:00 *Session 6: Next Steps for Core Groups.*

Groups report research and development needs for each course model. Describe outline(s) of potential proposals. Individuals or collaborations may suggest proposal ideas to group for comments and suggestions.
location: Lecture Room

12:00 – 1:00 Lunch
location: Lecture Room

1:00 – 2:00 *Session 7: Summary and Final Discussion, NSF comments*
location: Lecture Room

2:00 Workshop Adjourn

Workshop Groups
Candidates Models for Standardized Technological Literacy Courses.

1. The Technology Survey Course (Broad overview)
2. The Technology Focus or Topics Course (Focus on one well-defined topic)
3. The Technology Creation Course (Engineering design)
4. The Technology Critique, Assess, Reflect, or Connect Course (Technology in context)

1. Technology Survey Course
(Location: Lecture Room)

- Bertsch
- Disney
- Garmire
- Krupczak*,+
- Oakley
- Rose*,+
- Simpson

2. Technology Focus Course
(Location: Rm 148)

- Dahleh
- George+
- Lerche
- Norton
- Ollis*
- Shraibati

3. Engineering Design Course
(Location: EDR)

- DeGoode+
- Devon
- Kasarda*
- Nocito-Gobel
- Sanders
- Whitman
- Young

4. Technological Impacts and Assessment Courses
(Location: Member's Room)

- Broome
- Carlson*,+
- Klein
- Miller
- Neeley*,+
- Pfatteicher
- Seeley

Visiting Any/All Groups

- Brawner
- Huber
- Wulf
- NSF/NAE Participants

* = Moderator
+ = Scribe

Workshop Participants

Participants from Academic Institutions

Vince Bertsch	Santa Rosa Junior College
Cathy Brawner	Research Triangle Educational Consultants
Taft Broome	Howard University
Bernie Carlson	University of Virginia
Stephen Cutcliffe	Lehigh University
Marie Dahleh	Harvard University
Kurt DeGoede	Elizabethtown College
Richard F. Devon	Penn State University
Katy Disney	Mission College
Elsa Garmire	Dartmouth University
Camille George	Univ. of St. Thomas
Mary Taylor Huber	Carnegie Foundation for Advancement of Teaching
Mary Kasarda	Virginia Tech
J. Doug Klein	Union College
John Krupczak	Hope College
Renee Lerche	University of Michigan
Deborah Mechtel	United States Naval Academy
Ron Miller	Colorado School of Mines
Kay Neeley	University of Virginia
Jean Nocito-Gobel	University of New Haven
M. Grant Norton	Washington State University
Barbara Oakley	Oakland University
David Ollis	North Carolina State University
Sarah Pfatteicher	University of Wisconsin
Mary Annette Rose	Ball State University
Mark Sanders	Virginia Tech
Bruce Seely	Michigan Technological Univ.
Tarek Shraibati	California State University, Northridge
Tim Simpson	Penn State University
Larry Whitman	Wichita State University
James F. Young	Rice University

NAE Participants

William Wulf	President, National Academy of Engineering
Catherine Didion	National Academy of Engineering
Greg Pearson	National Academy of Engineering
Richard Taber	National Academy of Engineering

National Science Foundation Participants

Barbara N. Anderegg	Program Director, Division of Undergraduate Education
Diana Burley	Program Director, Division of Undergraduate Education
Dan Litynski	Program Director, Division of Undergraduate Education
Daniel P. Maki	Program Director, Division of Undergraduate Education
Nancy J. Pelaez	Program Director, Division of Undergraduate Education
Russ Pimmel	Program Director, Division of Undergraduate Education
Linda Slakey	Division Director, Division of Undergraduate Education
Sheryl A. Sorby	Program Director, Division of Undergraduate Education
Allen Soyster	Division Director, Division of Engineering Education & Centers
Keith A. Sverdrup	Program Director, Division of Undergraduate Education
Elizabeteh J. Teles	Program Director, Division of Undergraduate Education
Wanda Ward	Deputy Assistant Director, Directorate for Education & Human Resources
Bevelee A. Watford	Program Director, Division of Undergraduate Education