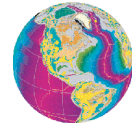


# Digital Library for Earth System Education Annual Meeting June 29 - July 2, 2002



Cornell University, Ithaca, New York



**DLESE** Digital Library for  
Earth System  
Education  
<http://www.dlese.org/>  
Supported by the  
National Science Foundation





June 29, 2002

Dear DLESE 2002 Annual Meeting participant:

Welcome to the 2002 Annual Meeting of the DLESE community. The annual meeting committee has worked hard to offer an experience that will be both fun and rewarding, and that builds the DLESE community. I am excited about this event and am looking forward to meeting you, sharing ideas, and supporting your goals for improving Earth system education.

The theme for DLESE 2002 is “Using DLESE.” DLESE now has a usable collection, a search engine, community discussion groups, and resource cataloging capability, and the library is ready to use. The focus for the meeting will be (a) the use of DLESE by educators and (b) collaborations between educators, developers and collections creators. We have strong participation from teachers, curriculum developers, materials developers, services providers, and library creators. The meeting offers a unique opportunity for these stakeholders to collaborate and participate in DLESE’s continuing development.

As an attendee, you will be assigned to a disciplinary strand as the focus of the meeting. One goal is for groups representing each strand to explore issues regarding the use of DLESE collections and services by producing a framework or plan to develop a new course, curriculum, learning activity, assessment instrument, evaluation tool, or other product (in the broadest sense), or other resource that your group perceives a need for, by the end of the meeting. A second goal is to initiate partnerships to develop tools, services, and collections that support the use of DLESE in specific disciplines. These activities will result in useful DLESE resources and provide valuable feedback to resource creators and library developers. Email discussion groups have been established to support interaction among the disciplinary strands following the meeting to foster continued collaboration and resource development. Opportunities will also be provided for specialists in collections, technology, and materials development to discuss challenges unique to their interests.

The Steering Committee and Standing Committees welcome your ideas and insights concerning DLESE at any time. Please feel free to let us know throughout the meeting how we are doing. We are your representatives. Our major purpose is to serve the needs of you, the community.

Again, welcome!

Beth Ambos  
DLESE Steering Committee Chair

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**DLESE 2002 Annual Meeting Program, June 29 – July 2**  
**Cornell University, Ithaca, New York**

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● **Friday, June 28**

2:00 pm – 6:00 pm – **Check-In** at Robert Purcell Community Center

● **Saturday, June 29**

10:00 am – 6:00 pm – **Check-In** at Robert Purcell Community Center

8:00 – 5:00 pm – Skills Workshop, Snee Hall/Carpenter Hall (workshop registrants only)

5:30 – 8:30 pm – Welcoming Reception/Dinner Along the Beebe Lake Shore (see back cover)

8:00 – 8:30 pm – Stand Leaders Meeting, Mews Hall Belvedere Lounge (first floor)

8:00 – 8:30 pm – Newcomers welcome, Beth Ambos, Steering Committee Chair, Lake Shore

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● **Sunday, June 30**

7:00 – 7:45 **Breakfast** – (Robert Purcell Marketplace Eatery)

8:00 – 9:30 **Opening Session**; Chair: Bill Prothero (Statler Ballroom)

- Welcome
  - Dogan Seber, Conference Host, Cornell University
  - Elizabeth Ambos, Steering Committee Chair,  
California State University at Long Beach
  - Mike Mayhew, National Science Foundation
- State of DLESE
  - Mary Marlino, Director, DLESE Program Center
- Meeting Overview
  - Tamara Ledley, TERC, Annual Meeting Program Committee
  - Stephanie Stockman, NASA, Annual Meeting Program Committee
- Logistics
  - Carrie Brindisi, Site Coordinator, Cornell University

9:30 – 10:30 **Strand Session I** (Statler Ballroom)

Get acquainted with strand members, discuss goals, prepare initial strand poster.

*Strands:*

- 1) Earth System Science
- 2) Geology
- 3) Oceanography
- 4) Science and Society
- 5) Global Climate Change
- 6) Atmospheric Science
- 7) Environmental Science
- 8) Space Science

10:30 – 11:00 **Break** (Ballroom Foyer)

11:00 – 12:00 **Share Fair Brief Previews (30 seconds each)** (Statler Ballroom)

Introduction of Share Fair sessions by presenters, providing an opportunity for meeting participants to begin to identify useful resources of interest  
(Setup of any equipment and posters by Share Fair participants)

**12:00 – 1:30 LUNCH** (Trillium Cafe, Kennedy Hall) – Informal Networking

**1:30 – 3:00 Strand Session II**

Refine strand goals, break into substrand groups, identify gaps in expertise or interest, make an action plan.

*Strand Meeting Rooms:*

- 1) Earth System Science (Statler Ballroom)
- 2) Geology (Statler Pennsylvania room)
- 3) Oceanography (Statler Yale room)
- 4) Science and Society (Statler Ballroom)
- 5) Global Climate Change (Statler Princeton room)
- 6) Atmospheric Science (Statler Dartmouth room)
- 7) Environmental Science (Statler Rowe room)
- 8) Space Science (Statler Columbia room)

**3:00 – 3:30 Break, Update strand posters** (Statler Ballroom Foyer)

**3:30 – 3:50 Report Out (2 min/strand)** (Statler Ballroom)

Report goals, advertise for new members representing needed expertise or focus. This is an opportunity to switch to a group that more directly reflects your interests.

**4:00 – 5:00 Strand Session III**

Outline strand project, summarize or identify needed materials, search DLESE, update web feedback/report form.

*Strand Meeting Rooms:*

- 1) Earth System Science (Statler Ballroom)
- 2) Geology (Statler Pennsylvania room)
- 3) Oceanography (Statler Yale room)
- 4) Science and Society (Statler Ballroom)
- 5) Global Climate Change (Statler Princeton room)
- 6) Atmospheric Science (Statler Dartmouth room)
- 7) Environmental Science (Statler Rowe room)
- 8) Space Science (Statler Columbia room)

**5:00 – 5:30 Break, Update Strand Posters** (Statler Ballroom Foyer)

**5:30 – 10:00 Share Fair, Working Dinner** (Statler Ballroom, Ballroom Foyer)

Strand groups identify suitable resources and update feedback/report form.

- 5:30 – 10:00 Share Fair
- 5:30 – 7:00 DLESE Community RFP Panel - (Yale/Princeton room)  
This will be an open, question and answer panel, with NSF representative Dr. Michael Mayhew and other panelists Dr. Mary Marlino (DPC) and Dr. Beth Ambos (DLESE Steering Committee). Under discussion will be the forthcoming Request for Proposals from NSF for DLESE community services.
- 5:30 – 6:30 Appetizers, Cash Bar (Ballroom Foyer)
- 6:30 – 7:30 Working Dinner (Ballroom Foyer)

## ● Monday, July 1

**7:00 – 7:45 Breakfast** – (Robert Purcell Marketplace Eatery)

**8:00 – 9:30 Strand Session IV, Cross-Cutting Challenges** (Statler Ballroom)

- Cathy Manduca – *Teaching Quantitative Skills in the Geosciences*
- Daniel Edelson – *Working with Data – A Learning Sciences Perspective*
- Susan Buhr – *This Site Under Construction: Evaluating Your Developing Digital Education Resources*

**9:30 – 10:00 Break** (Ballroom Foyer)

**10:00 – 11:50 Strand Session V**

Working session for strand groups. Develop the strand project. Update web and poster reports.

*Strand Meeting Rooms:*

- 1) Earth System Science (Statler Ballroom)
- 2) Geology (Statler Pennsylvania room)
- 3) Oceanography (Statler Yale room)
- 4) Science and Society (Statler Ballroom)
- 5) Global Climate Change (Princeton room)
- 6) Atmospheric Science (Statler Dartmouth room)
- 7) Environmental Science (Statler Rowe room)
- 8) Space Science (Statler Columbia room)

**12:00 – 1:20 LUNCH** (Memorial room, Willard Straight Hall)

**12:45** Bill Arms, Cornell University, Computer Science Department

*DLESE in Context: Educational Computing, Digital Libraries and Scientific Education*

**1:30 – 3:00 Strand Session VI (Re-group by specialty)**

Groups discuss their experiences in the strand groups. Identify common issues.

*Group Meeting Rooms:*

- 1) Educators (Statler Ballroom)
- 2) Curriculum Developers/Instructional Designers (Statler Princeton room)
- 3) Collection Builders (Statler Pennsylvania room)
- 4) Library Infrastructure Builders (Statler Rowe room)

**3:00 – 3:30 Break, Update Strand posters** (Ballroom Foyer)

**3:30 – 5:00 Strand Session VII**

Working session for strand groups. Finalize work on the strand project. Identify post-meeting goals and plans/milestones, as specifically as possible. Update web and poster reports.

*Strand Meeting Rooms:*

- 1) Earth System Science (Statler Ballroom)
- 2) Geology (Statler Pennsylvania room)
- 3) Oceanography (Statler Yale room)
- 4) Science and Society (Statler Ballroom)
- 5) Global Climate Change (Princeton room)
- 6) Atmospheric Science (Statler Dartmouth room)
- 7) Environmental Science (Statler Rowe room)
- 8) Space Science (Statler Columbia room)

**5:00 – 5:45 Break, Prepare for the evening activities**

**5:45 – 6:00 Buses Leave for the Robert H. Treman State Park**

Gather in front of the dorms at 5:40pm.

**6:00 – 8:30 Informal networking, Swimming, Hiking, and BBQ at the park**

(Bathhouse at Park; bring towels)

**8:30 – 9:00 Buses leave the Park, return to Cornell.**

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● **Tuesday, July 2**

**7:00 – 7:45 Breakfast** – (Robert Purcell Marketplace Eatery)

**8:00 – 9:00 Final Report Out – 5min per Strand** (Statler Ballroom)

Final web reports should be completed prior to this session.

**9:00 – 10:00 Closing Session** (Statler Ballroom)

Meeting Adjourn!

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**11:00 Watkins Glen Field Trip Buses Depart**

Those who registered for this field trip gather in front of the dorms at 10:50 for a timely departure.

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*Other rooms available for substrand use during the meeting:*

<b>Classrooms</b>	<b>Computer Labs</b>
Snee Hall room 1120	Snee Hall room 2161
Snee Hall room 1146	Carpenter Hall Blue room
Snee Hall room 2146	Carpenter Hall Orange room
Snee Hall room 2152	Carpenter Hall Red room

**DLESE 2002 Annual Meeting Participant List  
Cornell University, Ithaca, New York  
June 29 – July 2**

<b>Last Name</b>	<b>First Name</b>	<b>Organization</b>
Aivazian	Bryan	Natrona County School District
Allen	Jeannie	NASA Goddard Space Flight Center/Science Systems and Applications Inc. (SSAI)
Alter	Lisa	Hillhouse High School
Ambos	Elizabeth	California State University at Long Beach
Arko	Robert	Columbia University
Arms	William	Cornell University
Avery	Susan	University of Colorado at Boulder
Bartley	John	Muskegon Community College
Batista	Karen	Hunterdon Central Regional High School
Baxter	Hedi	Biological Sciences Curriculum Studies
Bell	Maggie	Lander Valley High School
Benson	Kirsten	Ilion High School
Benthien	Mark	University of Southern California



<b>Last Name</b>	<b>First Name</b>	<b>Organization</b>
Berkman	Paul	Bryd Polar Research Center
Bhushan	Sonal	University of Colorado at Boulder
Birnbaum	Stuart	University of Texas at San Antonio
Bogdanowicz	Christine	Shoals Marine Laboratory/CALS
Boyd	Thomas	DLESE Program Center UCAR
Brandt	Leslie Jane	Rochester Public Schools, University of Minnesota
Bridgan	Marilyn	University of Washington
Brindisi	Carrie	Cornell University
Brovey	Daniel	Queens College
Buhr	Susan	University of Colorado, CIRES
Burrows	Howard	Autonomous Systems
Carlson	Steve	Hermiston Schools
Caron	Bruce	The New Media Studio
Carter	Bryan	Central Missouri State University

<b>Last Name</b>	<b>First Name</b>	<b>Organization</b>
Cassis	Larry	Camden Hills Regional High School
Chalk	Stuart	University of North Florida
Chayes	Dale	Lamont-Doherty Earth Observatory
Cockerill	Kristan	Dowbiggin Limited
Condit	Christopher	University of Massachusetts Amherst
Conway	Michael	Arizona Western College
Cook	Susan	National Science Foundation
Coulter	Bob	Missouri Botanical Garden
Dahlman	LuAnn	TERC
Danowski	Daniel	Cornell University
Davis	Lynne	DLESE Program Center UCAR
de Groot	Robert	Southern California Earthquake Center
deCharon	Annette	Bigelow Laboratory for Ocean Sciences
DeFelice	Barbara	Dartmouth College
Dempsey	Ronan	University of Arizona

<b>Last Name</b>	<b>First Name</b>	<b>Organization</b>
Devaul	Holly	DLESE Program Center UCAR
DiLeonardo	Christopher	Foothill College
Dodson	Holly	University of California Santa Barbara
Domenico	Ben	Unidata Program Center, UCAR
Downs	Robert	Columbia University
Duggan-Haas	Don	Cornell University
Edelson	Daniel	Northwestern University
Elvin	David	University of Vermont
Estey	Lou	UNAVCO Facility, UCAR
Evans	Matthew	Cornell University
Fellows	Jack	UCAR Office of Programs
Fox	Sean	Carleton College
Francek	Mark	Central Michigan University
Fryar	Mary Alice	DWEL
Fulker	Dave	NSDL Central Office, UCAR
Furitsch	Anastasia	Paul Revere Middle School

<b>Last Name</b>	<b>First Name</b>	<b>Organization</b>
Geary	Edward	Colorado State University
Ginger	Katy	DLESE Program Center UCAR
Greco	Ralph	Whitesboro High School
Grove	Karen	San Francisco State University
Guertin	Laura	Pennsylvania State Univ Delaware County
Hall	Bruce	National Endowment for Science, Technology, and the Arts (NESTA)
Hammon	Virgil	Jet Propulsion Laboratory
Harnik	Paul	Paleontological Research Institution
Hays	Jim	Columbia University
Horning	Ned	NASA Goddard Space Flight Center
Horrell	Mark	Illinois Mathematics and Science Academy
Howell	Paul	University of Kentucky
Hylton	Alisa	Central Piedmont Community College

<b>Last Name</b>	<b>First Name</b>	<b>Organization</b>
Ireton	Shirley	NSTA / JASON
Jiang	Ruilian	Jackson State University
Johnson	Mark	Ithaca High School
Kastens	Kim	Columbia University
Katsu	Carl	Fairfield Area School District
Kelly	Karon	DLESE Program Center UCAR
Kelly	Gregory	University of California, Santa Barbara
Khoo	Michael	University of Colorado
Klaus	Christopher	Argonne National Lab
Kochevar	Randy	Monterey Bay Aquarium
Kruger- Knuepfer	Joyce	Seton Catholic Central High School
LaDue	Nicole	Hendrick Hudson High School
Ledley	Tamara	TERC
Lenell	Elizabeth	University of Colorado at Boulder
Leveson	David	Brooklyn College
Lightsom	Frances	US Geological Survey (USGS)

<b>Last Name</b>	<b>First Name</b>	<b>Organization</b>
Lincoln	Bruce	Columbia University
Locke	Sharon	University of Southern Maine
Lorenzen	Amy	Consortium for Oceanographic Research & Education (CORE)
Low	Russanne	University of Minnesota
Macdonald	Heather	College of William and Mary
Mahootian	Farzad	TERC
Malmquist	David	Virginia Institute of Marine Science
Manduca	Cathy	Carleton College
Mangan	Jennifer	DLESE Program Center UCAR
Marlino	Mary	DLESE Program Center UCAR
Marquis	John	Southern California Earthquake Center
Matsumoto	George	Monterey Bay Aquarium Research Institute (MBARI)
Mayhew	Michael	National Science Foundation

<b>Last Name</b>	<b>First Name</b>	<b>Organization</b>
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McGuire	Thomas	Cave Creek Digital
McIlvain	Eileen	DLESE Program Center UCAR
Meyer	Robert	Schreiber High School
Miguez	Katrina	Aldine Independent School District, Aldine, TX
Milton	Jeff	Carnegie-Mellon University
Moore	Alexandra	Cornell University
Moore	Reagan	University of California, San Diego
Mora-Klepeis	Gabriela	University of Vermont
Morgan	Susan	Vermont Institute of Natural Science, Manchester
Mott	Charles	Central Florida Community College
Musick	Susanna	Virginia Institute of Marine Science
Niepold	Frank	NASA Goddard Space Flight Center
Oesleby	Thomas	Northwest College

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Olds	Shelley	NASA Goddard Space Flight Center / Science Systems and Applications Inc. (SSAI)
Palmer	Anita	GIS ETC
Palmer	Roger	Bishop Dunne Catholic High School
Pandya	Rajul	West Chester University
Piestrak	Jeff	Albert R. Mann Library, Cornell University
Piper	Will	DLESE Program Center UCAR
Porter	Kate	Cornell University
Prothero	William	University of California, Santa Barbara
Pyrtle	Ashanti	Georgia Institute of Technology
Ramamurthy	Mohan	University of Illinois at Urbana-Champaign
Richard	Glenn	Stony Brook University
Robedee	Kevin	Rice University / Hartman M.S. Houston I.S.D.
Rodgers	Larry	Chaparral Middle School



<b>Last Name</b>	<b>First Name</b>	<b>Organization</b>
Ross	Robert	Paleontological Research Institution
Ruzek	Martin	Universities Space Research Association (USRA) / ESSE
Sachter	Randy	Nederland Elementary
Sarnoff	Herschel	Jordan High School
Saylor	John	Cornell University
Schweizer	Diane	University of California, Santa Barbara
Seber	Dogan	Cornell University
Sepulveda	Yolanda	Tillamook Coastal Watershed Resource Center/RARE
Shroba	Cynthia	Umpqua Community College
Sills	Alan	PANTHER Academy
Singer	Jill	National Science Foundation
Smith	Michael	American Geological Institute
Smith	Elizabeth	Old Dominion University
Snow	John	University of Oklahoma
Songer	Nancy	University of Michigan

<b>Last Name</b>	<b>First Name</b>	<b>Organization</b>
Steer	David	The University of Akron
Stockman	Stephanie	NASA Goddard Space Flight Center / Science Systems and Applications Inc. (SSAI)
Sumner	Tammy	University of Colorado at Boulder
Taber	John	Incorporated Research Institutions for Seismology (IRIS)
Templeton	Jeffrey	Western Oregon Univ
Terrizzi	Carol	Cornell University
Thomas	Ray	University of Florida
Thomas	Sabine	Baldwin-Wallace College
Tierney	Tim	University of California, Santa Barbara
Uhlinger	Eleanor	Marine Biological Laboratory/ Woods Hole Oceanographic Institution Library
Wayne	Powell	Brooklyn College
Weatherley	John	DLESE Program Center UCAR
Weingroff	Marianne	DLESE Program Center UCAR
West	Nancy	Thomas Nelson Community College

<b>Last Name</b>	<b>First Name</b>	<b>Organization</b>
Winter	Richard	Tompkins Cortland Community College
Wright	Michael	DLESE Program Center UCAR
Yaron	Dave	Carnegie-Mellon University

(159 total)

## **DLESE Steering Committee**

The formation of a DLESE Steering Committee was a result of the *Portal to the Future* conference held at the Coolfont Conference Center in Berkeley Springs, WV, in August of 1999. Funded by the National Science Foundation, the *Portal* conference brought together national leaders in Earth and space science to engage in discussion and develop an action plan for the establishment of a national digital library for Earth system education. The current Steering Committee members (12) hold their positions for three years, and are elected from the Earth system science education community. The Steering Committee is informed and supported by four Standing Committees for Collections, Services, Technology, and Users.

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## Standing Committee Chairs

### *Collections:*

#### **Kim A. Kastens**

Senior Research Scientist & Adjunct Professor  
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### *Technology:*

#### **Tom Boyd**

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### *Users:*

#### **William Prothero**

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Educational Technology  
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## **Overview of Strand/Substrand Sessions DLESE 2002 Annual Meeting**

The theme of the DLESE 2002 Annual Meeting is “Using DLESE.” The purpose of the strand program structure described below is to facilitate participants at the meeting working with each other to begin to develop a new course, curriculum, learning activity, assessment instrument, evaluation tool, or other product (in the broadest sense) using DLESE as it currently is, and to suggest ways of improving DLESE to facilitate future development. It is hoped that the substrand groups that form will continue to work with each other after the meeting to plan and complete the development of the product they have begun at the meeting.

The Program Committee has identified eight (8) Earth system science content topics, called strands, which will serve to focus the efforts of the attendees of the meeting. Each meeting attendee is assigned to one of these strands, in which they have expressed interest when they completed the “Call for Interest” form in February. Strand participants will be made up of a distribution of teachers, college instructors, curriculum developers, visual tools developers, evaluators, instructional designers, librarians, scientists, students, and software developers. We have also identified strand leaders who will help facilitate organizing their particular strand and moving the efforts of their group forward.

Strands and Strand Leaders	
Earth System Science	Farzad Mahootian and Ray Thomas
Geology	Lisa Alter and Shelley Olds
Oceanography	Annette deCharon
Science and Society	Bruce Caron and Howard Burrows
Global Climate Change	Mark Johnson
Atmospheric Science	Rajul Pandya
Environmental Science	Mark Francek
Space Science	Art Hammon

It is expected that, during the first session of the meeting, each strand will divide into two substrands with about 10 members each, depending on their content interest or audience interests. The number of substrands is constrained by the facilities available; it is recommended that no more than three substrand groups develop from any one overarching strand. Substrand participants will then develop a planning document for the development of their product, using DLESE, their own expertise and resources, and their collective understanding and experience of what is required.

### **Development of planning document:**

Prior to the meeting an email discussion list will have been set up that will include all participants in the strand (the first method of facilitating development). The strand leader(s) will facilitate the discussion on the email list prior to the meeting. The goals are to:

1. Enable the strand members getting to know each other
2. Begin to identify the substrands they might form
3. Encourage, as an option, that any resources identified during this period be cataloged in DLESE prior to the meeting and that participants become familiar with the cataloging tool before the meeting (<http://www.dlese.org>)
4. Begin the process of identifying individual strand participants who will lead each substrand
5. By the end of the first session at the meeting the initial identification sections of the Strand Workspaces and Reports Form (the second method of facilitating development) will be completed.

**Reporting:**

The Strand Workspaces and Reports Form (<http://www.dlese.org:3080/ReportOut2002>) will be used by each substrand for the planning of the development of the product the strand members have identified. The main part of this online workspace and form includes sections:

1. to identify all the resources, whether currently in DLESE or not, that are planned for use in the development of this new product
2. to identify the steps needed to be taken during the course of the development of the new product
3. to map out any steps that are completed during the course of the meeting or later
4. to map out the plans and assignments for further development of the product once the meeting is over.

The information collected in the Strand Workspaces and Reports Form will then be available to the participants in the substrand for future use in the development of the new product. This information will also be summarized in a poster (the third method of facilitating development) that will be developed and displayed by the strand participants throughout the meeting, on which participants in other strands can comment and provide input.

The last part of the Strand Workspaces and Reports Form is evaluation information for the DLESE Program Center (DPC) for the future development of the DLESE discovery system and website and for the DLESE Annual Meeting Program Committee on the effectiveness of the meeting in facilitating networking of the DLESE community and the development of new products using DLESE.

## **Strand Workspaces and Reports Form**

We have developed an online reporting form that also serves as a workspace and planning document for the development of the new product that the strand members have identified. Resources, images, ideas, and steps for development can all be put into this form before, and during the course of the meeting. After the meeting this information will be available to the strand members to continue the development of the product they have identified.

We expect that some or all of the strands will divide into at least two substrands that could pursue different kinds of products or similar products for different age levels. This is completely up to the strand members. Each substrand will have a Strand Workspace and Reports Form with which to work before, during the course of the meeting, and after the meeting.

The Strand Workspaces and Reports Form is broken into several parts that include an area for identifying the substrand and describing the goals, a list of resources developed by and for use by the participants, steps to reach the goal of the substrand, a description of the results of completing each step, the plan and assignments for continuing the work beyond the annual meeting, and finally, feedback on working with DLESE. The following page lists the content of the Strand Workspaces and Reports Form for your information.

The report form is housed in an open, flexible, editable environment, and the DPC has constructed page templates to assist and simplify the reporting-out process. The underlying environment that provides the editable report workspaces and the navigation between the reports is a web server called a Swiki. This environment is quite flexible by nature, and to exploit its flexibility requires an understanding of some basic Swiki rules. While we encourage anyone who is so inclined to explore this intriguing and quite useful environment, we have attempted to reduce the need for everyone to know a great deal about those rules by using report page templates. However, as you begin creating and editing the pages, you may want/need to review some of those rules. Having some familiarity with HTML is helpful. The Help and Guidelines page that is linked from the Strand Workspaces and Reports Form will describe this in more detail.

The Help and Guidelines link also contains fundamental information about adding and editing information on the report form. The Swiki makes available a robust editing environment that might prove to be beyond the comfort levels of all the meeting participants. We strongly suggest, therefore, that strand leaders identify a Strand Reports editor who might enjoy delving into this aspect of the report forms/Swiki environment somewhat before the annual meeting. Help information is available.

The logistics of using the form are open. However, we suggest that a numbering system be developed to keep in order any steps that are identified, and so that comments on particular steps can reliably be associated with those steps. Your Strand Reports editor should help keep the content ordered correctly. We also suggest that when someone adds a comment, that they precede it with their initials (or other notation indicated in the members section of the form) so as to easily identify the source of each comment.

## Strand Workspaces and Reports Form Content

1. Strand name
2. Substrand name
3. Substrand Leader
4. Participants in Session (names and email addresses)
5. Description of the session goal, i.e. develop course, develop learning activities, develop particular tool, develop curriculum, develop assessment tools, evaluation instruments, etc.
6. Age/grade level or audience being addressed
7. Resources identified:
  - a. Resource name
    - Resource URL
    - Description of resource
    - check box (Resource found through DLESE Discovery System or Other method)
    - Initial ideas on how to use this resource
  - b. Resource name
    - Resource URL
    - Description of resource
    - check box (Resource found through DLESE Discovery System or Other method)
    - Initial ideas on how to use this resource
  - c. Resource name
    - Resource URL
    - Description of resource
    - check box (Resource found through DLESE Discovery System or Other method)
    - Initial ideas on how to use this resource
8. Steps for Development (During the course of your discussions identify the steps needed to be taken to fully reach your goal. Enter problems and possible approaches)
  - a. Step 1 text box
  - b. Step 2 text box
  - c. Step 3 text box
9. Description of Developed Steps (Describe the results of completing each step in #8)
  - a. Step 1. text box (have capability of including text and pictures)
  - b. Step 2. text box (have capability of including text and pictures)
  - c. Step 3. text box (have capability of including text and pictures)
10. Plans and Assignments for after the DLESE meeting
11. Additional questions on feedback from the community about using the Swiki form.



## Help & Guidelines for Strand Workspaces and Reports Form



This page offers additional help for editing report pages:



- Fundamentals of adding and editing information
- Instructions to the substrand editor/leader (for the Start page)
- Resources identified page
- Steps for development page
- Feedback on working with DLESE page
- Basic editing rules



**Close this window when you are done to avoid confusion.**



### Fundamentals of adding and editing information

Anytime you add information to a page, please prepend your initials in parenthesis so everyone can follow the thread of comments better. You need not do this on the Feedback page.



There are two ways to add information to a page:



1. The templates we have created for you provide text input boxes and have an "Add to this page" button. After you have entered your comments into this box, click that button and those comments are added to the page.

2. If you want to restructure or edit *existing* information on the page, you may do so by clicking the Edit icon in the left menu. This redisplay the page's information in a large text box where you can edit it. When you are done, click the Save button. **NOTE:** Since this mode of editing can require knowledge of some basic editing rules for this environment, it might be advisable to assign one person in your substrand to learn these basic rules and assist with editing of this nature.

When creating new pages from within a substrand, please use the prefix that has been associated with that substrand in the name of the page, in order to avoid naming conflicts with pages created under other substrands.

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### Instructions to the substrand editor/leader (for the Start page):

Initially, this substrand name is just a placeholder. To change its name follow the procedure below. The name you choose will replace the name of the link on the home page menu automatically.

To edit a page, click the Edit button in the left menu of the page you wish to edit (not this Help page!) This begins an edit session and displays an edit box with the page's content in it. Make your changes. Since the page is password protected (locked), you will see a place at the top of the page in Edit mode that asks for the password. To record the changes you make, you must first carefully

enter the password into the box indicated at the top *before* you click Save.

**Changes you make will not take effect until you enter the correct password!**

After you click Save, the Edit session ends and your changes will be displayed in the View mode.

1. Enter the password. If you do not have the password to save changes to this page, please contact a DPC representative or your strand leader.
2. Change the substrand name in the Title box. When you click Save, this name will automatically become your link on the home page menu.
3. Complete the next 3 sections on the page, ending with the Age/grade level area. In the Strand Leader and Participants section, *starting with the leader*, add each participant's name preceded by their initials in parenthesis. The participants should be instructed to use these initials when making comments anywhere in the report.
4. When you are done, be sure you've entered the password at the top, and then click Save. This will end the Edit session and display your changes in View mode.
5. Finally, (in View mode) go to each of the 3 pages linked at the bottom. On each page, click the Edit icon from the left menu, insert the name of your substrand into the place indicated, then click Save. (You will not need a password.) This process will update the links on your substrand's Start page.

**To add and link a page of your own design:**

1. On the Start page of your substrand, scroll to the empty text box with the caption "Use the box above to add text or create new page links."
2. Into that box (you do not need to enter Edit mode), type the name of the page you want to create, using the prefix that has been associated with your substrand, surrounded by asterisks, for example:  
\*ESS 1 - An additional page in this substrand\*
3. Click the 'Add to the page' button.
4. Above the text box, you will see the page name you have created followed by a Create button and a dropdown list. Select 'blankTEXT' from the list, then click the Create button. This will display a new blank page with the title you gave to it.
5. Edit that page as you like (using the Edit mode). (You might wish to review the Basic editing rules in this help document.) When you are done, click Save. The link you created to that new page from the substrand's Start page will now be active.

**Uploading images or documents**

It is possible to upload files to the workspace (swiki server). **However, there are space limitations, so we ask you to please refrain from uploading more than 10MB per substrand.** To upload a file, click the Upload icon in the left menu and follow the instructions.

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### **Resources identified**

Since there are several parts to each resource, we recommend that you adopt a numbering scheme, such as the one shown. When providing the site URL, always include the protocol prefix (http://), for example: <http://www.dlese.org>. Separate each resource with a horizontal line by putting a single underscore on its own line. Also, for the benefit of following up later, it would be helpful to identify who contributed each resource. After each resource name, include your initials in parenthesis.

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### **Steps for development**

Since there are three sections to this page and some number of steps to your activity, it is particularly important that you identify yourself as you make your additions. Preface each comment with your initials in parenthesis. In order to distinguish the several parts to this section, you might want to agree on a numbering format to associate a Step with its Result and with the Plan to accomplish that step.

For example:

STEP 1.0 (LD)Is the first step written by LD

STEP 2.0 (LD)Is the second step and was written by LD

STEP 1.1 (RD)RD comes along later and suggests that there is a step required after step 1 but before 2.

As you add to the Results and Plans text areas, refer to the numbers in the Steps area. (And add your initials to identify your comments.)

A numbering scheme will help the substrand editor to sort these into order using the Edit mode.

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### **Feedback on working with DLESE**

Complete each question and after each question click the 'Add to the page' button.

In this section you need NOT preface your comments with your initials if you wish to remain anonymous.

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### **Basic editing rules in the Swiki environment**

The underlying environment that provides the editable workspaces and the navigation between the reports is called a Swiki (an implementation of a Wiki.)



This environment is quite flexible by nature, and to exploit its flexibility requires an understanding of some basic Swiki rules. While we encourage any of you who are so inclined to explore this intriguing environment, we have attempted to reduce the need for everyone to know a great deal about those rules by using report templates. However, as you begin creating and editing your pages you may want/need to review some of them. Having some familiarity with HTML is helpful.

If you want a more complete reference on using all of the Swiki commands, you can also access the Swiki Help Guide by clicking the help icon in the menu at the lefthand side of every page.

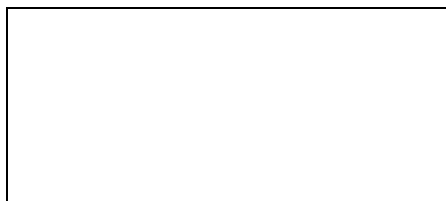
You can apply these rules either as you type into the text boxes of the pages or when using the Edit feature of the Swiki (Enter the Edit mode using the Edit icon in the left menu). To complete the edit, click the 'Add to this page' button or the 'Save' button, whichever one is visible.

- To make a link, begin by navigating to the page where you want to make a link and type the link in an available text box, or click Edit and type the link where you want the link to appear. Links must be enclosed by \*s (for example \*new link name\*)
  - To create a link to a page that exists in this site, type \*Existing Page's Name\*.
  - To create a new page on this site and a link to it, type \*SUBSTRAND PREFIX - New page name\*. The new link appears on the page with a 'Create' button next to it; click on that button to create the new page. The new page will appear.
  - To create a link to an existing page on an external site, type: \*http://www.dlese.org\*.
  - If the link is to an image (URL ends in '.gif', '.jpeg', '.jpg', or '.png'), the image will be placed on the page.
  - You can link to a file that exists in this site's Uploads area. To view a list of those filenames, click the Uploads icon in the left menu. Note the filename you want to link to. To create a link to it, go to the page where you want to make the link. Use either a blank text box if it is available on that page or click Edit from the left menu. To add the link, put the filename between \*+ and +\*. For example, \*+myUpload.html+\* will create a link to the uploaded file 'myUpload.html'. *Hint: To move the image on the page, enter the Edit mode, find the filename between asterisks, copy it (including the asterisks) and paste it where you want the image to appear.*
  - To create a link to send email, type \*self@mail.me.com\*.
- To create a horizontal line, start a new line and type an underscore. Make

this the only thing on that line. This can be used to separate topics.

- To create a bullet, use a - (hyphen) at the beginning of the line. Use two for second-level bullets.
- To add a blank text box where users can enter information and append it to a page, begin a line with +. This will turn into a text area in the view mode, so users can add to the page without editing. Here are a couple options you can add to append areas (just add the character of each feature you want after the initial +). For example, type:
  - +^ The input text box stays at the top and appended information displays under it, with the most recent appearing first.
  - +\_ (underscore) Blank text boxes are separated by horizontal lines.
- Add any HTML tags you want. Here are some useful HTML tags:
  - To make text bold, surround it by <b> and </b>.
  - To make text italicized, surround it by <i> and </i>.
  - To make text underlined, surround it by <u> and </u>.
- To add a block of existing HTML code, simply copy it and paste it in and enclose it within <html> and </html> tags and the Swiki formatting rules will not apply.
- There are three characters (&, <, >) that have special meaning in HTML. Also, Swiki adds two characters (\*, @) to that list. In order to use these characters in regular text, you will have to type the following (don't forget the final semi-colon):
  - instead of & type &amp;
  - instead of < type &lt;
  - instead of > type &gt;
  - instead of \* type &star;
  - instead of @ type &at;

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## **DLESE 2002 Annual Meeting Strand Assignments**

### **Earth System Science - Strand 1**

1. **Farzad Mahootian**, *Co-Lead*
2. **Ray Thomas**, *Co-Lead*
3. Jeannie Allen
4. Robert Arko
5. Mark Benthien
6. Paul Berkman
7. Sonal Bhushan
8. Bruce Hall
9. Elisa Hylton
10. Russanne Low
11. Mary Marlino
12. Mike Mayhew
13. Eileen McIlvain
14. Katrina Miguez
15. Roger Palmer
16. David Steer
17. Eleanor Uhlinger
18. Jeffrey Templeton
19. Nancy West
20. Mike Wright
21. Dave Yaron

### **Geology - Strand 2**

1. **Lisa Alter**, *Co-Lead*
2. **Shelley Olds**, *Co-lead*
3. John Bartley
4. Marilyn Bridgan
5. Steve Carlson
6. Christopher Condit
7. Christopher DiLeonardo
8. David Elvin
9. Laura Guertin
10. Paul Harnik
11. Paul Howell
12. Heather MacDonald
13. Jennifer Mangan
14. John Marquis
15. Thomas McGuire
16. Alexandra Moore
17. Gabriella Mora-Klepeis
18. Randy Sachter
19. Cynthia Shroba
20. Alan Sills

### **Geology (cont)**

21. Jill Singer
22. Barbara Tewksbury

### **Oceanography - Strand 3**

1. **Annette deCharon**, *Lead*
2. Beth Ambos
3. Christine Bogdanowitz
4. Susan Cook
5. Robert de Groot
6. Holly Devaul
7. Holly Dodson
8. Karen Grove
9. Kim Kastens
10. Carl Katsu
11. Gregory Kelly
12. Randy Kochevar
13. Amy Lorenzen
14. Susanna Musick
15. Katherine Porter
16. Bill Prothero
17. Elizabeth Smith
18. Sabine Thomas

### **Science and Society – Strand 4**

1. **Bruce Caron**, *Co-Lead*
2. **Howard Burrows**, *Co-Lead*
3. Hedi Baxter
4. Tom Boyd
5. Susan Buhr
6. Kristan Cockerill
7. LuAnn Dahlman
8. Lynne Davis
9. Ben Domenico
10. Bob Downs
11. Mathew Evans
12. Jack Fellows
13. Mary Alice Fryar
14. Ed Geary
15. Karon Kelly
16. David Leveson
17. Sharon Locke
18. Cathy Manduca
19. Hershel Sarnoff

### **Global Climate Change – Strand 5**

1. **Mark Johnson**, *Lead*
2. Stuart Birnbaum
3. Dale Chayes
4. Daniel Edelson
5. Ralph Greco
6. Jim Hays
7. Mark Horrell
8. Tamara Ledley
9. Frances Lightsom
10. David Malmquist
11. David Mayo
12. Charles Mott
13. Thomas Oesleby
14. Wayne Powell
15. Robert Ross
16. Martin Ruzek
17. Diane Schweizer
18. Michael Smith
19. Marianne Weingroff

### **Atmospheric Science – Strand 6**

1. **Rajul Pandya**, *Lead*
2. Bryan Aivazian
3. Susan Avery
4. Kirsten Benson
5. Lesley Jane Brandt
6. Sean Fox
7. Dave Fulker
8. Katy Ginger
9. Shirley Ireton
10. Ruilian Jiang
11. Christopher Klaus
12. Elizabeth Lenell
13. Robert Meyer
14. Reagan Moore
15. Susan Morgan
16. Mohan Ramamurthy
17. John Snow

### **Environmental Science – Strand 7**

1. **Mark Francek**, *Lead*
2. Daniel Brovey
3. Larry Cassis
4. Michael Conway
5. Bob Coulter
6. Barbara DeFelice
7. Ronon Dempsey
8. Don Duggan-Haas
9. Ned Horning
10. George Matsumoto
11. Jeff Milton
12. Anita Palmer
13. Jeff Piestrak
14. Ashanti Pyrtle
15. Glenn Richard
16. Larry Rodgers
17. Yolanda Sepulveda
18. John Saylor
19. John Taber
20. Tim Tierney
21. John Weatherley

### **Space Science – Strand 8**

1. **Art Hammon**, *Lead*
2. Karen Batista
3. Maggie Bell
4. Bryan Carter
5. Stuart Chalk
6. Lou Estey
7. Anastasia Furitsch
8. Mick Khoo
9. Joyce Kruger-Knuepfer
10. Nicole LaDue
11. Bruce Lincoln
12. Frank Neipold
13. Kevin Nigey
14. Kevin Robedee
15. Nancy Songer
16. Stephanie Stockman
17. Richard Winter

### **Floaters**

Carrie Brindisi  
Daniel Danowski  
Mary Marlino  
Will Piper  
Dogan Seber  
Tammy Sumner

## **DLESE 2002 Annual Meeting Share Fair Overview**

The Share Fair will provide an opportunity for participants to share resources, collections or services they have created with the DLESE community. Participants will be able to informally talk with the various developers, try out various resources and make new friends. It is also hoped that participants will use this time to identify potential resources that may be used in the development of the product that their strand hopes to develop.

The Share Fair will be offered in two parts: (1) a one hour morning session and (2) a longer evening session. During the morning Share Fair session, each Share Fair presenter will offer a 30-second introduction to his/her resource or service. For the remainder of that period, meeting attendees will be free to talk with developers at their stations and work with them on an informal basis. This is also the best time for Share Fair presenters to set up any equipment they require for the evening session. The evening session, which will run concurrently with a working dinner and cash bar, will offer additional opportunities to sample the available resources, talk with developers, and make new friends.

As is true of the meeting as a whole, the Share Fair is a wonderful opportunity to form collaborations among educators, materials and services developers, researchers and collections builders.



**DLESE 2002 Annual Meeting Share Fair Abstracts**  
**Sunday, June 30**  
**Statler Ballroom 5:30 – 10:00pm**

**The DLESE Catalog System Tool**

*Holly Devaul, Katy Ginger, and Karon Kelly*  
*DLESE Program Center, UCAR, Boulder, CO*

The DLESE Catalog System is a tool that allows collection builders to develop, manage, search and share their collections. The system creates metadata records in the DLESE-IMS framework, which has been developed specifically to support the description and discovery of digital educational objects. It allows collection developers to view and edit their collection, and to share their records with other libraries, such as DLESE and NSDL. This session will introduce participants to the tool and provide opportunities to play with the public tool and create records for DLESE. Information on how to download and install the tool will be available.

**Using and Contributing to the NSDL: Atmospheric Visualization Collection**

*Christopher Klaus*  
*Argonne National Laboratory*

The Atmospheric Visualization Collection is a National Science Digital Library project, which also intends to be a DLESE collection. This collection has two main components. The first is an archive of data images based on data from the Atmospheric Radiation Measurement program's Southern Great Plains site. The second is a set of collaborative tools for the development of educational material and production of visualization scripts. This poster will demonstrate the various uses possible with this collection by both the educational and research communities.

**The Dynamic Digital Map Project 2002-2005**

*Christopher D. Condit*  
*University of Massachusetts - Amherst*

Maps that locate and display images, movies, descriptions or analytical data sets are difficult to publish in a format that facilitates their easy access, distribution and use. The need for them is clear: most professional geologic meetings start and end with map-based field trips, students are taught on them, and most high quality color thesis maps cannot be published due to cost.

The Dynamic Digital Map provides one solution. DDMs display data, images, and movies using several methods, including point-and-click at icons pinpointing locations on maps, from lists of samples or sites, and from linked text, such as field trip guides. The data displayed by a DDM come from spreadsheets, or files created in CAD or GIS programs by any author who inserts or links it into a DDM Template, following instructions in a "DDM Cookbook." The DDM Template is a framework or skeleton program, used with the Revolution authoring tool (based on the MetaCard engine) that provides the organization and built in programming to most efficiently publish the data in digital format. The finished DDM becomes a freely distributable "stand alone" program, running with no additional software.



This NSF-CCLI funded three-year project (2002-2005) continues the Macintosh-only DDM conversion to a cross-platform program (Win32, Macintosh, Linux) that is web enabled and allows information to be expressed at different user levels (e.g. from the professional to the junior high earth-science class) in one DDM, thus encompassing a wide audience.

Dissemination is by WWW (see <http://ddm.geo.umass.edu/> for the latest cross-platform version of the DDM.NE) and CD, with reviews and testing in several institutions, including DLESE.

### **Virtual Earthquake - the Next Generation**

*Dave Mayo, and Gary Novak*

*Dept. of Geological Sciences, California State University at Los Angeles*

Virtual Earthquake is a popular interactive exercise that is being widely accessed via the Internet by instructors and students of earth science. An alternative version, simply called Earthquake, is now being field-tested, and offers several features that are unavailable in Virtual Earthquake.

The new Earthquake is designed to be more inquiry-based and more closely mimic the scientific process. Various tools are used to control the placement of seismic stations, select and view seismograms, measure amplitudes and S-P lag times, measure distances on maps, plot and fit lines to data, read seismic wave travel time graphs, determine magnitudes with a Richter nomogram, and identify epicenter locations. Measurements are recorded in a Journal, which can be printed along with maps, seismograms, and background information. Users can save sessions at any time and return to them later. Upon successful completion of Earthquake, users must take an interactive assessment quiz before being issued a Certificate of Completion. Each question on the quiz is linked to one or more specific learning objectives. Scores are revealed to users and detailed results are stored on our server.

The new Earthquake assists instructors in the assessment of student learning. To use this feature, instructors register one or more of their classes in a password-protected account. After a class has completed the exercise, instructors can log on to Earthquake and easily generate detailed reports of learning outcomes related to specific learning objectives, or view quiz scores for entire classes or individual students.

### ***Our Dynamic Planet and EarthEd-Online Software***

*William Prothero*

*University of California, Santa Barbara*

I will demonstrate the *Our Dynamic Planet*" CDROM, which provides all of the tools needed for students to investigate the theory of plate tectonics using elevation, quake, age, heat flow, and volcano data. Learners capture data representations to use in writing assignments or lab reports that require students to make scientific arguments and draw conclusions from their data.

The *EarthEd-Online* project is an ongoing project to create an online environment to support live or online courses. It emphasizes support for online collaboration, writing activities, auto-graded homework assignments, and on-demand grade calculation. Special consideration is made for making the instructor's job as efficient as possible. A number of grade entry and analysis options are available. Specific capabilities that exist now are: auto graded homework assignments, threaded discussions, online guided writing activities (with online feedback and

rubric scoring), online thought questions (and feedback and grade management), and live chat. Under development are an online avatar-based multi-user community center, group project tool, Earth Summit coordination software, and a class online newspaper (plus whatever inspirations come to me as I observe my students' experiences with this software). Course configurations are set externally and I hope for wide dissemination of the project. Bleeding edge early adopters are invited to collaborate. I use the software in my Oceanography classes with good results.

### **A New NASA Freeware Image and Analysis Package**

*Ned Horning*

*NASA Goddard Space Flight Center*

Image2000 is an image processing program developed by NASA Goddard Space Flight Center that supports the display, annotation, and analysis of scientific computer images on standard desktop computers. Image2000 was developed using Java v.2 and Java Advanced Imaging (JAI) and can be run on a wide variety of platforms.

Image2000 is designed to meet the image processing needs of a wide user community by providing both basic and advanced versions. The software is suitable for classroom educators and students, image processing researchers, medical professionals, and NASA scientists, particularly those involved in remote sensing and earth science disciplines.

### **Discover Our Earth**

*Dogan Seber, Alexandra Moore, Carrie Brindisi, and Daniel Danowski*

*Cornell University, Department of Earth and Atmospheric Sciences*

In an effort to build a content-rich Earth science education information system, we have started building a system module called "Discover Our Earth," (<http://atlas.geo.cornell.edu/education/>). Discover our Earth is a fully web-based module containing a variety of interactive tools and virtual experiments, including QUEST ,an interactive web mapping applet. It is accompanied by curricular materials designed to help teachers quickly see which data sets may be of interest and how to best use them. At the entry point the system is split into two sections: one for students and the other for educators. While the educator entry has internal links to the entire system, the student entry only provides links to student material. After a user chooses his/her system entry point, a menu-based system guides the user through available tools and information.

The student guide provides background information, then presents students with a series of exercises designed to encourage exploration. The teacher guide is coordinated with the student guide, and provides answers to the questions as well as giving teachers more information about the data sets and how they might be further utilized. The final component of Discover Our Earth consists of a series of interactive experiments designed to support the QUEST applet and a series of evaluation questions. The experiments cover topics such as:

- isostasy (<http://atlas.geo.cornell.edu/education/student/isostasy.html>)
- viscosity (<http://atlas.geo.cornell.edu/education/student/viscosity.html>)
- sea level change (<http://atlas.geo.cornell.edu/education/quest/>)
- and continental drift  
([http://atlas.geo.cornell.edu/education/student/continental\\_puzzle.html](http://atlas.geo.cornell.edu/education/student/continental_puzzle.html)).

## **WorldWatcher and My World: Tools for Geospatial Data Visualization and Analysis**

*Daniel Edelson*

*Northwestern University*

While geoscience educators recognize the benefits of having students conduct authentic investigations of data, they often find that the tools that scientists use for data visualization and analysis are inaccessible for students. Researchers in education and technology at Northwestern University have engaged in an extended research project to develop visualization and analysis tools that are appropriate for learners. The products of this research effort are WorldWatcher, a tool for analyzing gridded (raster) data, and My World, a tool for analyzing GIS (vector) data. They each provide students access to data libraries through a learner-appropriate interface and provide students with powerful analytical tools through a supportive interface. Both tools have been integrated into Earth and environmental science curricula for middle school through college. Additional information is available at: <http://www.worldwatcher.northwestern.edu> (WorldWatcher) and <http://www.worldwatcher.northwestern.edu/myworld> (My World).

## **EarthView - A Tool For Earth Science Investigations**

*Alan Sills*

*Teacher & Teacher Developer for EarthView*

EarthView is a scientific visualization and data sampling tool developed by teachers and researchers affiliated with the Lamont-Doherty Earth Observatory. EarthView, originally a project funded by the NSF, is now being marketed by The Learning Team, Inc.

As a teacher who has been integrally involved in the development, field testing, and subsequent use of this tool, I would like to share it with other educators & interested professionals. EarthView is designed to support Earth and Environmental Science studies for middle and high school students.

## **Ease of Sharing as a Primary Design Principle for Brooklyn College Geowebs**

*Wayne Powell, and David Leveson*

*Brooklyn College*

Flexibility and sharability have been primary design features of the virtual geology modules produced by the Department of Geology at Brooklyn College. A modular design with simple, linear hierarchical structure is the basis for each module. Going forward in the website can only be done through specific menu pages. To navigate backward in the website can only be done by means of a "Go Back" button that exploits the "history object". This not only makes navigation easy for students using the site, but also allows other instructors to link to specific pages or segments of the website that they wish to use. Furthermore, users can easily return to the referral page after completion. This structure eliminates the potentially frustrating experience of becoming lost in external links. A great deal of thought and effort went into developing the share-friendly design of our webcourses. Please, by all means use them and let us know what you think.

## **Earth System Science IdeaBook: Developing a collection of resources for teaching students with disabilities**

*Sharon Locke*

*University of Southern Maine*

The Earth System Science IdeaBook is a web-based collection of classroom activities that feature adaptations and teaching strategies that increase the accessibility of the lessons for all students, including students with disabilities. The developer's creation wizard, which is currently in Beta testing, will ultimately allow any educator to submit to the database classroom lessons that have been successfully used in inclusive classrooms. A team of scientists, high school science teachers, and special education faculty are currently refining a set of 25 model activities to comprise the initial collection. Participants at the Share Fair will have an opportunity to test the creation wizard and see examples of activities in development for the ESS IdeaBook collection.

## **Supporting Professional Development for the Earth System Community**

*Cathryn A. Manduca and Sean Fox*

*Science Education Resource Center, Carleton College*

This demonstration will include a variety of professional development resources under development at the Science Education Resource Center (Carleton College) including:

- NSDL Using Data in the Classroom site and prototype specialized portal ([usingdata.com.nsdlib.org](http://usingdata.com.nsdlib.org)). This site supports interdisciplinary discussion of how and why we use data in our classrooms. The goals are to foster effective use of data in the classroom, to support inquiry and discovery based learning, and to inform the design of on-line data delivery tools.
- DLESE Community Issues and Groups site ([dlesecommunity.carleton.edu](http://dlesecommunity.carleton.edu)). This site provides an entry point for learning about various parts of our community and the issues that are currently of high interest. At the present time, the site contains initial prototype sites with information about activities supporting K-12 education, and resources pertaining to issues including: Integrating Research and Education, Biocomplexity, Teaching Quantitative Skills, Diversity.
- Teaching Quantitative Skills in the Geosciences ([dlesecommunity.carleton.edu/quantskills](http://dlesecommunity.carleton.edu/quantskills)). This site demonstrates how a website can link resources, teaching methods, and community discussion to support improvements in a particular aspect of Earth system education.
- NAGT/DLESE Cutting Edge Site ([dlesecommunity.carleton.edu/NAGTworkshops](http://dlesecommunity.carleton.edu/NAGTworkshops)). This site will help geoscience faculty stay up-to-date with both geoscience research and teaching methods by supporting a workshop series and disseminating resources developed from the workshop content. Current content is focused primarily on faculty looking for workshop opportunities in the next year.

## **Resources for Earth Science and Geography Instruction**

*Mark Francek*

*Department of Geography and Earth Science, Central Michigan University*

For the past six years I have compiled over 700 web resources at "Resources for Earth Science and Geography Instruction" <http://personal.cmich.edu/~franc1m/homepage.htm> .

These sites are organized around the sequence of topics typically taught in an introductory earth science, physical geography, or environmental science class. Links are also available for earth science/geography education, career opportunities, and journals. The advantage of this organizational approach is that it often matches the progression of subject matter taught in many textbooks and curricula, allowing students or instructors to easily find reputable links as the semester progresses. Sites are reviewed on the basis of content, authenticity, organization, scope, image quality, and ease with which lesson plans can be developed. The sites most frequently appearing are sponsored by the USGS, NOAA, NASA, and EPA. These sites are shared with the wider earth science community through a weekly listserv "Earth Science Sites of the Week" which reaches over 1200 K-16 earth science educators and through a web site column I write for the "Journal of Geoscience Education."

### **The VGEE: An Inquiry-based Environment for Visualizing and Understanding Geophysical Phenomena**

*Rajul Pandya, Mary Marlino, Marianne Weingroff, and Mohan Ramamurthy  
West Chester University, DLESE Program Center, University of Illinois*

The Visual Geophysical Exploration Environment (VGEE) is a suite of computer-based tools designed to help learners connect observable, large-scale geophysical phenomena to underlying physical principles. Technologically, this connection is mediated by tools including a java-based, multi-dimensional visualization environment, authentic scientific data sets, concept models that illustrate fundamental physical principles, and an interactive web-based work management system for archiving and evaluating learners' progress. These tools are organized into an undergraduate, general education curriculum that models the inquiry process as a sequence of first finding and relating patterns in visualizations of real data and then using the concept models to learn the physical principles that explain the patterns. In the final step of the curriculum, students embed the concept models into their visualizations to integrate the physical explanation and the data and connect theoretical knowledge to real-world phenomenon.

For the Share Fair, we would ask people to use and comment on the VGEE. Our initial curriculum investigates El Nino and begins at a level that doesn't require a strong atmospheric science background, so we hope to get feedback from a variety of DLESE conference attendees. One of our goals is to adapt the curriculum to K-12 settings; we would particularly benefit from discussions with K-12 teachers. We have implemented the VGEE in a University classroom, and collected considerable data about student use of and attitudes towards the VGEE. We would be happy to discuss this as well at the Share Fair.

### **Website Knowledge Discovery**

*Paul Arthur Berkman  
Byrd Polar Research Center, The Ohio State University*

Technology already has advanced to the point when information access is effectively infinite and instantaneous. Our principal challenge now—in all sectors of our society—is with organizing vast growing repositories of electronic information independent of scale to discover knowledge. In this context, knowledge discovery is related to the ability to uncover relationships within and between documents, files or other information sources.

In contrast to conventional search-engine technologies that generate long lists of ranked information—which require individuals to scroll and then read through endless pages of documents—expandable-collapsible hierarchies can be constructed that enable all elements in

a database to be comprehensively identified in relational contexts. This new information technology also allows digital libraries to be created automatically with higher levels of 'granularity' than conventional databases that are limited by the labor-intensive generation of metadata tags for each parent document. Website applications of the information management, retrieval and display system will be demonstrated with the "Antarctic Treaty Searchable Database" (<http://webhost.nvi.net/aspire>), which has quickly become a standard for the Antarctic Treaty System as well as national agencies, non-governmental organizations, commercial associations and universities around the world.

### **Creating a Learning Resource from Digitized Geology Collections**

*Dave Elvin and Gaby Mora-Klepeis*  
*Perkins Geology Museum, Univ. of Vermont*

The Perkins Geology Museum's Digitization Project is archiving images from its collections. These images encompass the entire range of observations including maps, slides of field sites, specimens, specimen preparations, photographs, and drawings. The images are archived as uncompressed TIFF files on CD-R media and working copies are stored in PNG and JPEG formats on the University's server. The data is stored as a MySQL database and as a Voyager database with the University's library server. Web routines are being authored in HTML/php to offer Internet access to the collections, to support interactive displays in the public museum, and as both directed and user controlled learning environments.

### **Building Data Collections**

*Reagan W. Moore*  
*San Diego Supercomputer Center*

The ability to assign attributes, manage associated digital entities, and support attribute-based discovery is fundamental to the creation of collections. Technology developed at the San Diego Supercomputer Center greatly simplifies this task. The MySRB.shtml web interface to the Storage Resource Broker will be demonstrated for supporting the dynamic creation of collection hierarchies, the management of digital entities across distributed storage systems, and integrated browsing and querying. The Storage Resource Broker is being used to create digital libraries, data grids, and persistent archives. The capabilities required by each of these environments will be demonstrated.

### **ESIP Federation Learning Resources**

*Tamara Ledley (TERC), Howard Burrows (AUSI), Bruce Caron (New Media Studio), Robert Downs (CIESIN/Columbia)*

The Federation of Earth Science Information Partners (ESIP) is a community representing education, government, non-profit, and business organizations that facilitate the preservation, discovery, and use of Earth science data. ESIP Federation representatives committed to providing the educational community with access to Earth science information will present web-based, CD, and printed learning resources for teachers and students to study Earth system science in classrooms, laboratories, and homes. The representatives also want to hear your suggestions for developing and using Earth science data and information products in education.

## **Mapping Our World: GIS Lessons for Educators**

*Anita M. Palmer*

*GIS ETC: Educational Technology Consultants*

This share fair session will provide a brief introduction to the new curriculum book *Mapping Our World: GIS Lessons for Educators*. This is the first in a series of books designed for teachers interested in integrating GIS technology throughout their curricula. Visitors to this station will sample segments of just a few of the nineteen GIS investigations provided in the book. Although this book was written for middle and high school teachers and students, both primary school teachers as well as university professors have given the book a thumbs up! The book has received very favorable reviews in teacher training events around the country. Come to the station and experience the freedom from having to be a GIS “ninja” to use spatial technologies in the classroom!

## **Communications and Inquiry for Secondary Geoscience**

*Thomas McGuire*

*DLESE/Cave Creek Digital*

The DLESE K-12 email discussion list functions as an avenue to share news, ideas and teaching strategies among educators. As the email list moderator, I will be providing my own insights and teaching activities and I invite others to join the exchange.

A few other email discussion lists have shown the power of this method of nearly real-time communication in providing a community and support for science educators. We hope the DLESE K-12 email discussion list can fulfill this potential.

## **AGI's Web-based Teacher Enhancement Programs**

*Michael J. Smith*

*American Geological Institute*

In 2002 the American Geological Institute (AGI) completed two inquiry-based Earth science curriculum programs that help teachers to offer students the opportunity to learn Earth science through inquiry. AGI's EarthComm curriculum for high school and Investigating Earth Systems (IES) curriculum for middle school are modular programs that work well in year-long Earth science courses and as units within integrated and coordinated science programs. As integrated science offerings continue to grow (typically taught "out of field") and the supply of certified Earth science teachers grows more slowly than demand, it is critical that teachers have access to a variety of services that can support their teaching of Earth science. AGI, through the support of its Foundation, has outlined a three-year plan for developing web-based programs and services to support implementation of EarthComm and IES. These programs will include: 1) collections of "best practice" in science assessment, 2) streaming video of how to set up experiments and activities, 3) searchable captioned image collections, 4) PowerPoint presentations on key Earth science concepts, 5) newsletters, 6) case studies of effective teaching, and 7) a publication for the general public called "Why Learn Earth Science?"

## **NASA Student Research and Design Opportunities: NSIP**

*Farzad Mahootian*

*TERC*

The NASA Student Involvement Program (NSIP) is NASA's national competition for students in grades K-12. NSIP rewards student research on NASA's missions of exploration and

discovery, and supports national science, math, technology and geography standards. Each competition features Resource Guides and rubrics designed to help teachers and students conduct research and prepare their projects for submission. The NSIP Website also features access to NASA and NOAA earth and space science data through a simple data graphing web interface. Students can try their hand at research and join the NASA team!  
<http://education.nasa.gov/nsip>

### **Earth Research Partnerships: Engaging K-12 Students in Paleontology Research in the Lab and Online**

*Paul Harnik<sup>1</sup>, Robert Ross<sup>1</sup>, Peter Nester<sup>1</sup>, Faraz Khan<sup>2</sup>, and Alex Kim<sup>2</sup>*  
*<sup>1</sup>Paleontological Research Institution, <sup>2</sup>Cornell University*

Engaging students directly in scientific research may be one of the most effective ways to teach scientific processes and content in an inquiry-based manner. The Paleontological Research Institution has developed a classroom-based program that engages K-12 students, teachers, and scientists in collaborative study of New York's geologic past. The Earth Research Partnerships (ERP) program currently consists of two projects: the Devonian Seas Project and the Mastodon Matrix Project. Designed for grades 4-9, the Devonian Seas Project involves students in gathering paleoecological data on changing Devonian marine invertebrate assemblages in the Northern Appalachian Basin. The Mastodon Matrix Project involves participants of all ages in a biological inventory of the flora and fauna preserved in Pleistocene sediments associated with mastodon excavations in Upstate New York. While these projects differ in certain ways, both involve students in hands-on study of fossil faunas preserved in bulk samples. To facilitate data transmission and analysis by all partners, project staff are working with Cornell University undergraduate students to create the ERP homepage: [www.erp.priweb.org](http://www.erp.priweb.org). The homepage currently provides access to project background content and associated publications and proceedings. Project participants will soon be able to register online to contribute, and analyze data. While participants may use the site to transmit their results, and put their findings within a larger context, other site visitors may benefit from having access to real world paleontological data. With this in mind, we are developing a user interface to guide informal site visitors through each project and subsequent data analysis.

### **Integrating the Several Faces of DLESE**

*Lynne Davis, and Marianne Weingroff*  
*DLESE Program Center*

It is an exciting time in the development of DLESE. The community is engaged and growing, funding is available for the development of tools, services, and collections, and with this growth, the boundaries of DLESE are expanding and becoming distributed in accordance with the library's original vision. Collections of resources are under development and the ability to search across them is materializing as we speak. It is time to address the question of how best to present such a multifaceted, distributed association as an integrated entity.

Many questions arise in this pursuit from different perspectives: social, technical, political, and legal. How best to address these issues while maintaining library usability and effectiveness is a key issue.

As part of the Share Fair, we will expose some of the issues in light of these perspectives and in light of the services requested by our users. We will explore how these integration issues have been handled by other organizations and, possibly, how DLESE might handle them. The



library needs your unique perspective and we encourage you to stop by this Share Fair session and write your impressions on the displayed posters or talk to us.

### **Why Every Digital Science Collection Builder Should Contribute Catalog Information to the National Science Digital Library**

*Carol Terrizzi*

*Cornell University, NSDL Collections Working Group*

Why should you participate in the NSDL? Carol Terrizzi of the NSDL Collections Working Group, will present some reasons and recommendations for getting involved. Those benefits include taking advantage of the leverage that NSDL offers to provide valuable science education resources in a low-cost, scalable, digital library system, its opportunity for closing the digital divide, and to participate in an effort that ultimately plans to aggregate about 10 percent of Web resources relating to science, technology, engineering, and mathematics (STEM) education. The NSDL provides connections to collaborators, ways to take advantage of branding and management strategies for your collection, but most importantly, NSDL will contribute to the transformation of STEM education in the new century, and ultimately, help to inspire young people everywhere to become scientists, engineers, or mathematicians.

### **The Community Review System: A Pathway to the DLESE Reviewed Collection**

*Kim Kastens, Robert Arko, and Dale Chayes*

*Columbia University*

The Community Review System is aimed at selecting the “best” resources from the DLESE Broad Collection for inclusion in the DLESE Reviewed Collection. The criteria for admission to the Reviewed Collection are: scientific accuracy, pedagogical effectiveness, ease of use for teacher and learner, quality of documentation, importance or significance of content, ability to motivate or inspire learners, and robustness as a digital resource. The Community Review System combines two types of reviews: reviews delivered via a Web-based recommendation engine from educators in the DLESE community who have used the resource in their classroom, and specialist reviews mediated by an Editorial Review Board. The testbed for the Community Review System is at: <http://dlese.ideo.columbia.edu>

At the Share Fair, participants will be able to walk through the process of reviewing a resource through the Community Review System, and to view examples of the kinds of reports that the CRS provides to the resource creator, to the Reviewed Collection editors, and to the public. The developers are actively seeking feedback on the usability of the web-based recommendation engine, the kinds of information provided to the resource creator and the public, and the ways in which the DLESE Discovery System interacts with the Community Review System.

### **The CreateStudio Learning Object Assembly Environment**

*David Yaron, and D. Jeff Milton*

*Department of Chemistry, Carnegie Mellon University*

CreateStudio (<http://ir.chem.cmu.edu/create/>) enables instructors and curriculum designers to easily assemble digital library learning objects into interactive online assignments. It leverages the open standards of Java and XML to (1) allow programmers to easily integrate domain-specific simulations and software tools into the environment and (2) allow non-programmers to combine these domain-specific tools with general multimedia tools to create motivating and contextualized online learning activities. The approach separates educational

content from software in a manner that makes it easy to modify the content to repurpose it to different educational settings. CreateStudio is being coupled to the metapps visualization tools (<http://www.unidata.ucar.edu>), to support visualization of earth science data.



**Crosscutting Issues**  
**Monday, July 1<sup>st</sup>**  
**8:00 – 9:30 Statler Ballroom**

Discipline strands, substrands, action plans, and products. What are some of the key education issues that can inform all of us as we address "Using DLESE" from a wide range of perspectives? In this session we have invited three community members to focus on topics that cut across discipline and target audience boundaries:

- Cathy Manduca will present *Teaching Quantitative Skills in the Geosciences*
- Danny Edelson will present *Working with Data: A Learning Sciences Perspective on Goals and Challenges*
- Susan Buhr will present *This Site Under Construction: Evaluating Your Developing Digital Education Resources*



## **Crosscutting Issues: *Teaching Quantitative Skills in the Geosciences***

*Cathy Manduca*

*DLESE Community Issues and Groups, Carleton College*

Quantitative skills play an important role in all aspects of our society (Steen, 1997, 2001), form an essential foundation for understanding the Earth, and are a fundamental part of preparation for careers in all aspects of Earth science and education. Thus, quantitative skills are a critical part of Earth system education at all levels, from elementary school through high school, in undergraduate courses for all students, future teachers, and future Earth scientists, and in the graduate training of Earth system professionals. While much work has been done in defining the quantitative skills needed to produce a scientifically literate public (AMATYC, 1995; Sons, 1996, NCTM, 2000), relatively little thinking has gone into the role that Earth system education plays in meeting these goals. To support the incorporation of quantitative learning in DLESE resources, this presentation will outline the existing skill guidelines, the results of recent workshops focused on teaching quantitative skills in the geosciences (PKAL, 1998; NAGT, 2000), and the insights gained from on-line DLESE-sponsored discussion ([dlesecommunity.carleton.edu/quantskills](http://dlesecommunity.carleton.edu/quantskills)).

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Additional references are available at [dlesecommunity.carleton.edu/quantskills/issues/issues.html](http://dlesecommunity.carleton.edu/quantskills/issues/issues.html).

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## **Crosscutting Issues: *Working with Data—A Learning Sciences Perspective on Goals and Challenges***

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*Daniel C. Edelson*

*School of Education and Social Policy and Department of Computer Science  
Northwestern University*

There is no question that the geosciences data that the research community has collected represent a tremendous resource for the educational community. These data offer the opportunity for students to learn both Earth system science content and geoscience practices through inquiry activities. However, there are critical questions that remain about how to make those resources useful for the educational community. There are questions about how to make the data accessible, how to provide students with tools that enable them to work productively with that data, and how to design learning activities that enable students to learn through inquiry. In this talk, I will highlight findings from a decade-long research effort on the design of software and learning activities to enable students to learn from inquiry with geoscience data. I will present guidelines for the design of scientific visualization and analysis tools for learners and for the design of authentic inquiry-based learning activities.

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## **Crosscutting Issues: *This Site Under Construction—Evaluating Your Developing Digital Education Resources***

*Susan Buhr*

*Cooperative Institute for Research in Environmental Sciences (CIRES)  
University of Colorado, Boulder*

Robust evaluation is key to understanding how and why we do or don't meet our goals within our education projects. For a digital resource some questions to ask might be: is it easily navigable, does it help students learn what you want them to learn, how do people use the resource in practice? This talk will describe the basic process of evaluation, give example protocols for evaluation of a digital education resource under development, and introduce the DLESE Evaluation Toolkit. The DLESE Evaluation Toolkit and Community project is a new effort designed to raise awareness of project evaluation within the geoscience education community, and to enable principal investigators, teachers, and evaluators to implement project evaluation more readily. DLESE community input, description of individual evaluation needs and involvement in the Evaluation Toolkit community is needed and welcomed.

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## **DLESE 2002 Annual Meeting Skills Workshop Overview Saturday, June 29<sup>th</sup>**

The DLESE Skills Workshops are designed to provide educators and researchers with opportunities to work with resources, collections, authoring tools and services that are effective for use in the development and facilitation of inquiry and discovery-based learning activities. These sessions will also foster a community building process as educators, researchers, developers, and service providers work together for a common goal. During each workshop and throughout the Annual Meeting, participants are strongly encouraged to become actively engaged and to contribute their own creativity.

The Skills Workshop sessions will offer first-hand experience with a wide range of material, including the Virtual Harlem immersive environment, geographic information systems, the building and evaluation of collections of resources, cataloguing systems for collections, working with metadata, authoring tools for Web page development, and the design of effective inquiry based activities. Several of the sessions are devoted specifically to tools and techniques for using real data in the classroom. Collectively, this diverse selection of resources includes material appropriate for Earth system education at all levels.

In the morning, a plenary session will be held for those who plan to attend some of the workshops that will focus on using real data in the classroom. Subsequently, a series of short exercises will offer an introduction to the array of resources that will serve as a basis for the activities in these workshops later in the day. Each of the short exercises will be repeated several times during the morning, which will enable the participants to decide which longer workshops they would like to attend. Concurrent with the using data plenary session and short exercises, several workshops will be offered on other topics, as indicated in the schedule. Sessions are scheduled throughout the late morning and the afternoon.

Since several Skills Workshop events will be running in parallel at any given time on Saturday, it will not be possible for anyone to participate in all of the sessions. However, many of the same resources will be presented again on an informal basis, along with additional material, at the Share Fair, and will serve a role in the strand sessions that will take place on the following days.

Each of the Skills Workshops is a brief introduction to a resource that can help empower us to become more effective as educators. Recognizing that it is not possible to become thoroughly adept at using a new resource within the span of a few hours, facilitators will provide the participants with strategies for continuing to develop their new skills as they integrate them into their work as Earth system educators.





**DLESE 2002 Skills Workshop, Saturday, June 29**  
**Cornell University, Ithaca, New York**

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**7:00 – 7:45 Breakfast**

*(Robert Purcell Marketplace Eatery)*

**8:00 – 10:00 Morning Workshop Sessions:**

- 1) Using Data in the Classroom  
8:00 – 8:50 Plenary Session ..... *(Snee Hall, room 2146)*  
9:00 – 10:00 20-Minute Short Exercises *(Carpenter Hall, Red and Green rooms)*
  - 2) Virtual Harlem ..... *(Carpenter Hall, Yellow room)*
  - 3) Collections Building ..... *(Carpenter Hall, Orange room)*
  - 4) Introduction to ArcView GIS ..... *(Carpenter Hall, Blue room)*
  - 5) Library Interoperability Using Open Archives Initiative ..... *(Snee Hall, room 2161)*
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**10:00 – 10:30 Break** ..... *(Carpenter Lobby)*

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**10:30 – 12:00 Morning Workshop Sessions:**

- 1) Using Data in the Classroom  
10:30 – 12:00 Using Data to Teach Plate Tectonics in an  
Undergraduate Oceanography Course ..... *(Carpenter Hall, Red room)*  
10:30 – 12:00 Visual Geophysical Exploration  
Environment (VGEE) ..... *(Carpenter Hall, Green room)*
  - 2) Virtual Harlem ..... *(Carpenter Hall, Yellow room)*
  - 3) Collections Building ..... *(Carpenter Hall, Orange room)*
  - 4) Introduction to ArcView GIS ..... *(Carpenter Hall, Blue room)*
  - 5) Library Interoperability Using Open Archives Initiative ..... *(Snee Hall, room 2161)*
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**12:00 – 1:30 LUNCH** Informal Networking ..... *(Pick up Box Lunches in the Snee Hall Atrium)*

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**1:30 – 3:00 Afternoon Workshop Sessions**

- 1) Using Data in the Classroom  
1:30 – 3:00 Using GLOBE Data for Student Research – Introduction to GLOBE  
and Landsat Data and Classroom Applications *(Carpenter Hall, Red room)*  
1:30 – 3:00 Incorporating Data Into the Curriculum:  
New Ideas Using Palm Pilots ..... *(Carpenter Hall, Green room)*
- 2) DLESE Cataloging System ..... *(Snee Hall, room 1120)*
- 3) Collections Building: Project, Resource and Collections Evaluation  
Tools and Methods ..... *(Carpenter Hall, Orange room)*

- 4) Arcview GIS for K-12 Education .....(*Carpenter Hall, Blue room*)
- 5) Arcview GIS for College Education ..... (*Carpenter Hall, Blue room*)
- 6) Using Writing and Argumentation in Inquiry .....(*Carpenter Hall, Yellow room*)
- 7) Web Page Development.....(*Snee Hall room 2161*)

**3:00 – 3:30 Break** .....(*Carpenter Lobby*)

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**3:30 – 5:00 Afternoon Workshop Sessions**

- 1) Using Data in the Classroom
    - 3:30 –5:00 Using a New NASA Freeware Image and Analysis Package with Earth and Space Satellite Data: NASA Image2000 (*Carpenter Hall, Red room*)
    - 3:30 – 5:00 Jules Verne Voyager and VoyagerJr: Interactive Web Map Tools for Science, Education and Outreach .....(*Carpenter Hall, Green room*)
  - 2) DLESE Cataloging System .....(*Snee Hall, room 1120*)
  - 3) Collections Building: Project, Resource and Collections Evaluation Tools and Methods .....(*Carpenter Hall, Orange room*)
  - 4) Arcview GIS for K-12 Education .....(*Carpenter Hall, Blue room*)
  - 5) Arcview GIS for College Education .....(*Carpenter Hall, Blue room*)
  - 6) Web Page Development.....(*Snee Hall room 2161*)
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**5:30 - Welcome Reception / Dinner along the Beebe Lakeshore**

**DLESE 2002 Annual Meeting**  
**Skills Workshop Abstracts**  
**Saturday June 29**

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**Using Data in the Classroom – Plenary Session**

*Cathryn A. Manduca*

8:00 – 8:50 (*Snee Hall room 2146*)

Engaging students with data is a powerful tool for helping them learn both scientific content and principles and the processes of inquiry that are at the heart of science. Working with real-world data can place learning in a context that is exciting and relevant by providing connections to a student's experience with their local environment, major global events (e.g. major earthquakes, global warming), or high profile scientific missions or experiments (e.g. data from space). Educators use data-enhanced learning experiences to meet a wide variety of goals including:

- teaching quantitative skills, technical methods and scientific concepts
- preparing students to address real world complex problems
- developing students ability to use scientific methods
- teaching students to critically evaluate the robustness of data or evidence and their consequent interpretations or conclusions
- increasing verbal, written and graphical communication skills
- providing training in the values and ethics of working with data

Depending on the specific learning goals and outcomes that are desired, a wide variety of approaches can be very successful in engaging students with data. Student experiences with "real" data fall into at least two broad categories:

- Activities in which students collect and interpret their own data, often in the context of a larger data set that has been developed by the scientific community over time.
- Activities that engage students in using existing data sets to answer questions, often their own, new questions.

While these techniques can be successfully used with no technological support, modern information technology and data-dissemination provide exciting new opportunities in both areas. This presentation will look at the range of approaches that can be taken to using data in the classroom in the context of learning goals, and the role that DLESE can play in enhancing and supporting these activities.

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**Virtual Harlem**

*Bryan Carter and Bruce Lincoln*

8:00 – 12:00 (*Carpenter Hall, Yellow room*)

This session focuses on the Virtual Harlem project. During this interactive presentation, Bruce Lincoln and Bryan Carter will outline our objectives and inspiration behind working with this project. After we describe the project details, we will then discuss projects that have spun out of the Virtual Harlem concept as well as the communication technologies necessary for any large project. Topics for discussion during this session include:

- a relationship with the Abyssinian Development Corp
- Commerce Department Grant
- a kiosk game that was created for the Children's Museum of Manhattan
- discussion of several demonstrations using Internet II

- discussing several collaborative courses that have made use of the existing Virtual Harlem dataset
- the structure under which we are working and information about a digital communications group called ASCEND (Arts and Science Collaborative Educational Networking Dream) that is using Virtual Harlem as a platform for various communication technologies being evaluated for educators interested in incorporating a higher level of technology into the humanities
- a sampling of the type of collaborators necessary for successful projects
- a model for groups of faculty members to follow when writing grants for technology in the classroom
- various roadblocks, concerns and challenges to consider when constructing higher levels of technology in the classroom (these will be particularly interesting for administrators, department chairs, project managers, or faculty members considering the use of technology)
- a demonstration of various technologies that are already in place with ASCEND (desktop videoconferencing, synchronous communications software and possibly higher-end videoconferencing) with members of the group located in Chicago, Sweden, and possibly Arizona

For this presentation, we will need the following:

- A high-resolution data projector
- A network connection
- A large screen
- Speakers that we can use with laptop computers

### **Building Collections for the Digital Library for Earth System Education (DLESE)**

*Bryan Aivazian, Ed Geary,  
and Chris DiLeonardo*

*8:00 – 12:00 (Carpenter Hall, Orange room)*

There are various perspectives in the collection building process for DLESE. At one end of the scale there is the NSDL funded project to develop the DLESE broad and deep collection. The goal of this project is to continually assess the DLESE collection building process to ensure that the library is balanced in its holdings (has something for everyone).

On the other end of the spectrum are projects that seek to identify resources related to a specific topic or theme. This perspective is represented by the Digital Water Education Library project (DWEL), the first major collection building effort to systematically bring K-12 resources into DLESE. Efforts are currently underway to provide teachers, students and informal educators with access to over 500 exemplary digital resources related to the science, policy and economics of water by the end of 2003. The DLESE discovery tool will allow users to search the library catalogue by content area, grade level, resource type and the national science standards to obtain the resources they desire.

Developing a collection for DLESE is a process that takes many steps and one that presents many challenges. Although the project is still in its early stages, there are a lot of lessons learned that will be shared. Topics to be addressed include the following:

- Developing a collection scope document (what goes into the collection)
- Conducting regular collection assessment (analyzing the library for gaps)

- The need for creating user scenarios (how will the collection be used)
- Managing and directing volunteer efforts that are spread out over a wide geographic area
- The importance of Quality Assurance in cataloging (maintaining high standards)
- Evaluation as both a formative and summative tool

Special collections will certainly be a big part of the growing DLESE library. Growing a well-balanced collection is one of the prime objectives of DLESE. This session is designed to share experiences from various collection building projects to provide guidance for future collection building efforts.

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**An Introduction to ArcView by using Geographic Information Systems as a Problem Solving Tool for Environmental Issues.**

*Mark Johnson*

*8:00 – 12:00 (Carpenter Hall, Blue room)*

Participants in this presentation will receive an introduction to Geographic Information Systems and ArcView software. This skills workshop will also involve three lessons using GIS to solve environmental problems. Each of these lessons has been field tested in high school classrooms utilizing students at both the basic and advanced levels. The first lesson involves a comparison of several map types to introduce the student to using ArcView. The other two lessons utilize canned data sets to solve two environmental problems. Get involved and help solve land use problems by "Using GIS to Site a Landfill" and grapple with water quality issues by solving "The Case of the Mutated Bullhead". All data sets and teacher's notes for these lessons are available to participants on CD upon request.

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**Collection Building and Library Interoperability Using OAI**

*John Weatherley and Katy Ginger*

*8:00 – 12:00 (Snee Hall, room 2161)*

This workshop will provide an overview of the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH), a primary means of library interoperability being used at both DLESE and the NSDL. Participants will walk through the installation of a freely available 'out of the box' OAI software package developed at the DLESE Program Center (DPC). The workshop will touch upon two areas of library interoperability, including the sharing and harvesting of library collections via OAI and a look at the metadata formats being used at DLESE and the NSDL. Participants will get a hands-on view of OAI and be able to try harvesting and sharing metadata records with others using the software provided. At the conclusion of this workshop, participants will have the resources necessary to be able to begin sharing metadata collections with DLESE, the NSDL, and other OAI-enabled digital libraries.

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## **Using Data in the Classroom:**

### **Using Data to Teach Plate Tectonics in an Undergraduate Oceanography Course**

*Holly Dodson*

*10:30 – 12:00 (Carpenter Hall, Red room)*

The CD-ROM, *Our Dynamic Planet*, developed by Dr. Bill Prothero, is a formidable tool enabling students to investigate the theory of plate tectonics using Earth data. This CD includes video animations created by Dr. Tanya Atwater that help students familiarize themselves with the theory of plate tectonics. The learning forums include the profile game that helps students use data to visualize three-dimensional geologic structures. The profile game is the ideal introduction to the map data module where students access Earth data to investigate evidence of plate interactions. The map data module gives students an opportunity to use data to make observations that they can interpret and use as evidence for their tectonic models. Students create profiles across subduction zones that show deep ocean trenches. They add the earthquake data to create earthquake profiles; and they can add the volcano data to show long linear chains of volcanoes that run parallel to the oceanic trenches. Profiles drawn across mid-ocean ridges display underwater mountain chains. Then when the seafloor age database is added it shows that new oceanic crust is formed at mid ocean ridges and gets progressively older as one moves away from the ridge. Finally, when the earthquake data is added, it outlines transform faults between spreading ridges in shallow earthquakes. *Our Dynamic Planet* gives students a friendly introduction to dealing with data, teaches them basic principles that they can apply to new situations, and stimulates their imagination.

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## **Using Data in the Classroom:**

### **Visual Geophysical Exploration Environment (VGEE) <http://www.dlese.org/vgee>**

*Rajul Pandya*

*10:30 – 12:00 (Carpenter Hall, Green room)*

#### **Overview**

The goal of the session is to explore some of the hurdles students experience in using real data in the classroom and to articulate some strategies for overcoming these hurdles. We will do this through hands-on use and discussion of the Visual Geophysical Exploration Environment (VGEE). The VGEE is an electronic environment in which learners construct and analyze their own visualizations of geophysical data. It includes a specially designed visualization tool and data sets for student investigation, a curriculum to organize the investigation, a web-based forum for collecting and grading student work, simple concept models that illustrate physical principles, and the ability to embed these concept models into visualizations to illustrate how the physical principles are part of real geophysical phenomena.

#### **Session Activities**

For the session, we will begin in the role of a student in a general science classroom. We will zoom in data from a convective storm. The data includes Temperature, Winds, Pressure, as well as water vapor variables. Your overall goal will be to use the visualization environment and the probes to explain how the precipitation forms. The curriculum that accompanies the VGEE divides the investigation into four general steps: identify, relate, explain, integrate. For the session, please use the VGEE Learner Guide to guide the investigation. We will be doing Topic 2. Have fun.

After about 45 minutes, we will break away from the activity guide and discuss some of the issues that come up in using data in the classroom. Some questions I would like to consider are:

- What makes data usable by instructors?
  - What makes data usable by students?
  - What makes data usable in the geosciences?
  - How does data use in the geosciences differ from other sciences? How do we mediate that difference?
  - What is DLESE's ideal role for data? Potential roles include:
    - data discovery
    - modeling effective use
    - quality control and review
    - proceeding tools to use data
    - supporting data creation
    - supporting instructors in creating educational applications of data
    - creating educational applications of data
    - promoting data interoperability
- 

**Using Data in the Classroom:**

**Using GLOBE Data for Student Research - Introduction to GLOBE and Landsat Data and Classroom Applications**

*Frank Niepold*

*1:30 – 3:00 (Carpenter Hall, Red room)*

The GLOBE database provides abundant opportunities to initiate student research and inquiry learning. The session will focus on the use of the GLOBE data archives of student-collected data and GLOBE -provided Landsat sub-scenes to facilitate student inquiry and research. We will explore the GLOBE ([www.globe.gov](http://www.globe.gov)) database and visualization tools that help facilitate data gathering, comparison, and interpretation. Participants will also learn to use MultiSpec image processing software to characterize land use and land cover via Landsat data.

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**Using Data in the Classroom:**

**Incorporating Data Into the Curriculum: New Ideas Using Palm Pilots**

**Nancy B. Songer**

*1:30 - 3:00 (Carpenter Hall, Green room)*

Participants will be introduced to new PDA software called CyberTracker for quick and powerful data collection, display and analysis. Sample activities that use these data for sixth and third graders' scientific inquiry will be available to try out as well in order to best illustrate the educational potential of these tools. Target audience is any K-12 science teacher or any researcher interested in students' collection of and use of PDA data. Previous groups have really liked this software and activities. Come participate in this really fun, cool workshop!

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**DLESE Cataloging System**

*Katy Ginger, Holly Devaul*

*1:30 – 5:00 (Snee Hall, room 1120)*

The DLESE Catalog System (DCS) is a tool that allows collection builders to develop, manage, search and share the metadata of their collections. The system creates metadata records in the DLESE-IMS framework and allows collection developers to view, edit and search their records. The tool can also be used to share metadata records with other libraries, such as DLESE and NSDL.

During this session, participants will use the DCS to perform cataloging and management tasks essential to collection development. The focus will be on cataloging, emphasizing the use of and



definitions for controlled vocabularies. Suggested workflows for quality assurance procedures will also be covered. Information on how to download and install the tool will be available.

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**Collections Building: Project, Resource and Collections Evaluation Tools and Methods**

*Susan Buhr, Barbara DeFelice,  
and Kim Kastens*

*1:30 – 5:00 (Carpenter Hall, Orange room)*

A high quality, relevant, useful collection of earth system science educational materials has been a highly desired characteristic of DLESE from its inception. For a collection which is community driven like DLESE, it is critical to have a variety of methods of evaluating and assessing the collection as a whole and the resources within it, to ensure the desired high quality.

This session will introduce participants to three different approaches to the evaluation and assessment of DLESE content:

1. The DLESE Evaluation Toolkit is concerned with providing a broad array of tools to evaluate earth system education learning resources and projects.
2. The DLESE Community Review project provides a mechanism for formal review of individual resources in the DLESE collections.
3. The DLESE Collections Assessment project considers the DLESE collections as a whole, and through comparing the collection content to collection use, provides ideas about areas of the collection that need to be developed.

This session will be useful for people concerned about developing high quality learning resources and collections.

*The DLESE Collections Assessment Project:*

"Collections Assessment" provides a comparison of the scope and balance of an existing library collection with the scope and balance of the collection desired by the users and builders of the collection. It can help show where there are gaps between the content of the actual collection and what people expect and seek in the collection. In DLESE's case, the definition of the desired collection began with the crafting of the Scope Statement ([http://www.dlese.org/documents/policy/collection\\_policy.html](http://www.dlese.org/documents/policy/collection_policy.html)). The Collections Assessment team is now developing techniques for capturing a more nuanced view of the "desired" collection by looking at user requests for resources via the search and browse capabilities of the DLESE Discovery System. Recommendations for metrics for describing the scope and balance of the actual collection are also being developed, based on the parameters included in the DLESE required and recommended metadata. The audience for the DLESE Collections Assessment session are collection builders deciding what to gather, resource developers deciding what to develop, and funders deciding what development efforts to fund. DLESE's Collections Assessment effort is lead by Barbara DeFelice ([Barbara.DeFelice@dartmouth.edu](mailto:Barbara.DeFelice@dartmouth.edu)) of Dartmouth College.

The participants will have an opportunity to share ideas about the kinds of materials they need in the DLESE collection, to learn more about the DLESE collection content, and to learn about the kinds of use and collection data that are most helpful in collection project evaluation. At the workshop, DeFelice will first lead a brief review of the collection scope statement, and will show data concerning the actual DLESE Collection and its growth over the last several months. The participants will brainstorm about the most important learning resource types, learning contexts and topics to them. How well does the DLESE actual collection depth map to their top concerns?

Then, participants will disperse to individual computers, and try searches that are important to them. How well did the collections support these requests? Were you able to discover a substantial gap or thin spot in the collection, a spot at which the actual DLESE collection does not match your personal desired collection? Then the group will reassemble, and look at data about the DLESE community's desired collection, based on several months of requests in the search and browse functions of the Discovery System. How does this data compare to what participants just did in the preceding exercises? The participants will help develop a list of the most important use and content data elements for DLESE collections as a whole or for their collections projects.

*The DLESE Community Review System:*

The Community Review System is aimed at selecting the "best" resources from the DLESE Broad Collection for inclusion in the DLESE Reviewed Collection. The criteria for admission to the Reviewed Collection are scientific accuracy, pedagogical effectiveness, ease of use for teacher and learner, quality of documentation, importance or significance of content, ability to motivate or inspire learners, and robustness as a digital resource. The Community Review System combines two types of reviews: reviews delivered via a Web-based recommendation engine from educators in the DLESE community who have used the resource in their classroom, and specialist reviews mediated by an Editorial Review Board. Development of the Community Review System is lead by Kim Kastens (kastens@ldeo.columbia.edu) of Lamont-Doherty Earth Observatory, Columbia University. The testbed for the Community Review System is at: <http://dlese.ldeo.columbia.edu>

At the workshop, Kastens will present an overview of how the Community Review System works, the premises on which it was designed, and how it interfaces with the DLESE Discovery System. Participants will then disperse to individual computers to try reviewing a resource through the Community Review System, and to view examples of the kinds of reports that the CRS provides to the resource creator, to the Reviewed Collection editors, and to the public. The group will then reconvene to critique what they have seen. The developers are actively seeking feedback on the usability of the web-based recommendation engine, the kinds of information provided to the resource creator and the public, and the ways in which the DLESE Discovery System interacts with the Community Review System.

*The DLESE Evaluation Toolkit:*

The DLESE Evaluation Toolkit project seeks to develop an Earth system education evaluation resource for geoscience educators. The resource will be grounded in the needs of Earth system educators, and will provide a virtual home for a geoscience education evaluation community. The goals for the project are to: Establish a forum and community for evaluation dialogue within DLESE, provide a robust collection of evaluation resources useful for Earth system educators, and to disseminate the resources through the DLESE infrastructure and through professional society workshops and proceedings. The DLESE Evaluation Toolkit project is lead by Susan Buhr (sbuhr@cires.colorado.edu), Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado, Boulder. The beta test site for the Evaluation Toolkit is at: <http://beta1.dpc.ucar.edu/evaltoolkit/overview.html>

Participants are invited to come to the workshop with a project idea (either planned or existing) that they would like to evaluate. Buhr will give an overview of the purposes and process of project evaluation. Then participants will disperse to individual computers and use the Evaluation Toolkit to begin designing an evaluation plan and to find the resources they would need to actually implement an evaluation. The group will reconvene to discuss their challenges in project

evaluation, and provide feedback about additional features or resources they would like to see included in the Evaluation Toolbook.

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### **ArcView GIS for K-12 Education**

*Karon Batista and Herschel Sarnoff*

*1:30 – 5:00 (Carpenter Hall, Blue room)*

GIS (Geographic Information Systems) is a powerful software mapping program that has the potential of revolutionizing education. With GIS, teachers have a dynamic mapping tool allowing them to create almost any required map. But the software does much more—empowering students to create, query and detect patterns involving demographic, historical and scientific data. The presentation will explore the uses of this revolutionary software in K12 classrooms.

This workshop will introduce the use of ArcView 3.2 incorporating a classroom project entitled, "My neighborhood." Participants will download and analyze GIS data about their own neighborhood using TIGER files.

If time permits, a second project involving visualizing data located with a handheld GPS receiver (the Magellan 2000) will be presented.

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### **GIS Techniques for Undergraduate Earth Science**

*Alexandra Moore*

*1:30 – 5:00 (Carpenter Hall, Blue room)*

This is a hands-on workshop for those who would like to bring the power of geospatial analysis to an undergraduate Earth science classroom. It is assumed that participants will have some familiarity with ArcView 3.2, either through previous experience, or through participation in the morning workshop. We will focus on quantifying spatial relations using ArcView's Spatial Analyst and 3D Analyst functions, and on importing data from the web and other external sources. Topics include plate tectonic processes, watershed studies, and landform analysis. We will pay special attention to avoiding common GIS pitfalls. Data sets and lab activities will be available for participants to take back to their classrooms following the workshop.

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### **Using Writing and Argumentation in Inquiry Activities**

*William Prothero, Greg Kelly  
and Holly Dodson*

*1:30 – 5:00 (Carpenter Yellow room)*

One of the goals of using data in the classroom is to increase learners' understanding of science process. This can be accomplished by embedding the use of data into a pedagogy that includes scientific writing. Scientists formulate problems for investigation, plan data acquisition strategies, choose or acquire data, interpret their data in relation to a theory, present preliminary findings at science meetings, write their findings for publications, and review others' publications. This workshop will address a range of science process issues and focus on scientific argumentation in both oral and written learning activities.

For more information, please see:

<http://oceanography.geol.ucsb.edu/Support/ODP/TeachersMan.html>

or: <http://oceanography.geol.ucsb.edu/>

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**Designing & Developing Web-Based Learning Environments**

*Sean Fox, Bill Prothero, and Robert Downs*

*1:30 – 5:00 (Snee Hall, room 2161)*

Workshop participants will be introduced to concepts, techniques, and software tools for designing and developing web-based learning environments. After a brief introduction to web-based design, usability issues, and html, participants will work hands-on with Dreamweaver and Fireworks. Participants will walk away with the confidence to create simple, usable web pages and gain knowledge of more advanced web technologies, such as Javascript, Director/Shockwave, and Flash to enrich existing educational sites.

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**Using Data in the Classroom:****Using a New NASA Freeware Image and Analysis Package with Earth and Space Satellite Data: NASA Image2000**

*Ned Horning*

*3:30 - 5:00 (Carpenter Hall, Red room)*

Image2000 is an image processing program developed by NASA Goddard Space Flight Center that supports the display, annotation, and analysis of scientific computer images on standard desktop computers. Image2000 was developed using Java v.2 and Java Advanced Imaging (JAI) and can be run on a wide variety of platforms.

Image2000 is designed to meet the image processing needs of a wide user community by providing both basic and advanced versions. The software is suitable for classroom educators and students, image processing researchers, medical professionals, and NASA scientists, particularly those involved in remote sensing and earth science disciplines.

In this session we will explore a new image-processing package created at NASA for the display and analysis of satellite and other type of imagery. An overview of the software will be presented as well as a few examples of how it can be used in the classroom.

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**Using Data in the Classroom:****Jules Verne Voyager and Voyager Jr:  
Interactive Web Map Tools for Science, Education and Outreach**

*Lou Estey*

*3:30 - 5:00 (Carpenter Hall, Green room)*

Our goal has been to develop user-friendly Web tools to make scientific data and results accessible to a large number and variety of users. The top layer provides the user with scientific context, and is targeted to be usable by students and teachers grades 8-12, and introductory college courses. The underlying layers include interactive map tools which can be used in conjunction with the top layer context or by themselves. The 'Jules Verne Voyager' interactive map tool provides simple virtual exploration of Earth and other worlds (<http://jules.unavco.ucar.edu>).

The Voyager tools runs on common Web browsers and gives the user easy access to gigabytes of scientific and other data available in map form. The operation of the tool is simple enough for 8th graders, though it generally assumes a knowledgeable user to put the displayed information into a

proper scientific context. The engine for creating the map images at the server is based on Paul Wessel's and Walter Smith's 'Generic Mapping Tools' or GMT, which is widely used by the scientific community. One of the unique aspects of the Voyager maps, because they are produced with GMT, is that the map images can be made available to the advanced user in PostScript form.

The Jules Verne Voyager tool was selected by William Holt and Corne Kreemer (SUNY Stony Brook) to display the data and results of the International Lithosphere Project (ILP) Global Strain Rate Map (GSRM) Project ([http://jules.unavco.ucar.edu/Voyager/ILP\\_GSRM](http://jules.unavco.ucar.edu/Voyager/ILP_GSRM) and see the GSRM homepage at [http://archive.unavco.ucar.edu/ilp\\_gsrn](http://archive.unavco.ucar.edu/ilp_gsrn)). The ILP GSRM is currently the most advanced global model of Earth surface deformation incorporating GPS measurements, seismic data, and geologic constraints. The Voyager tool is used to create images for a "canned" image tool called 'Voyager Junior', currently prototyped for Earth, and including the ILP GSRM results (see <http://jules.unavco.ucar.edu/VoyagerJr/Earth>). Using about 3000 pre-computed Earth map images and overlays VoyagerJr can rapidly serve and display maps to a large number of users simultaneously, and is therefore more amenable to a mass education and outreach use. A limited form of scientific context is provided by automatic pop-up legends. To provide a better framework for understanding the wealth of information in the Voyager data, a prototype Web site 'Exploring Our Dynamic Planet' (<http://www.dpc.ucar.edu/VoyagerJr>) has been developed. This is a model outline site showing how one might introduce the necessary science background for students and explain the various tools. An outline of possible earth science curriculum activities is under development.

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**Skills Workshop Participants**  
**Saturday, June 29<sup>th</sup>**

**Morning Sessions 8:00 – 10:00 and 10:30 – 12:00**

**1. Using Data in the Classroom**

*1a. Plenary Session and 20-minute short exercises (8:00 – 10:00), Cathryn A. Manduca, Leader*

*1b. Using Data to Teach Plate Tectonics in an Undergraduate Oceanography Course (10:30 – 12:00), Holly Dodson, Leader*

*1c. Visual Geophysical Exploration Environment (10:30 – 12:00), Rajul Pandya, Leader*

Jeanne Allen  
Karen Batista  
Stuart Birnbaum  
Leslie Jane Brandt  
Chris Condit  
Lynne Davis  
Ben Domenico  
Lou Estey  
Virgil Hammon  
Alisa Hylton  
Randy Kochevar  
Elizabeth Lenell  
Russanne Low

George Matsumoto  
Thomas McGuire  
Gabriela Mora-Klepeis  
Thomas Oesleby  
Bill Prothero  
Kevin Robedee  
Yolanda Sepulveda  
Cynthia Shroba  
Alan Sills  
Elizabeth Smith  
David Steer  
John Taber  
Nancy West

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**2. Virtual Harlem**

Bryan Carter, *Leader*

Nicole Ladue  
Glenn Richard  
Frances Lightsom

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**3. Building Collections for DLESE**

Bryan Aivazian, *Leader*  
Chris DiLeonardo, *Leader*  
Ed Geary, *Leader*  
Marilyn Bridgan  
Holly Devaul  
Paul Harnik  
Paul Howell  
Kim Kastens  
Karon Kelly

Mick Khoo  
Mary Marlino  
John Marquis  
Jeff Piestrak  
Robert Ross  
Randy Sachter  
John Saylor  
Tammy Sumner

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#### **4. Introduction to ArcView: Using GIS as a Problem-Solving Tool for Environmental Issues**

Mark Johnson, *Leader*  
Kirsten Benson  
Paul Berkman  
Bruce Caron  
Larry Cassis  
Robert de Groot  
Don Duggan-Haas  
Bruce Hall  
Anastasia Furitsch  
Laura Guertin  
Bruce Hall  
Joyce Kruger-Knuepfer  
David Leveson

Sharon Locke  
David Malmquist  
Dave Mayo  
Robert Meyer  
Susanna Musick  
Wayne Powell  
Herschel Sarnoff  
Diane Schweizer  
Michael Smith  
Jeffrey Templeton  
Sabine Thomas  
Richard Winter

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#### **5. Collection Building and Library Interoperability Using OAI**

Katy Ginger, *Leader*  
John Weatherley, *Leader*  
Hedi Baxter  
Stuart Chalk  
Dale Chayes  
Robert Downs  
David Elvin  
Eleanor Uhlinger

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### **Afternoon Workshop Sessions 1:30 – 3:00 and 3:30 – 5:00**

#### **1. Using Data in the Classroom**

- 1a. *Using GLOBE Data for Student Research – Intro to GLOBE and Landsat Data and Classroom Applications, (1:30 – 3:00), Frank Niepold, Leader*
- 1b. *Incorporating Data into the Curriculum: New Ideas Using Palm Pilots, (1:30 – 3:00), Nancy Songer, Leader*
- 1c. *Using New NASA Freeware Image and Analysis Package with Earth and Space Satellite Data: NASA Image 2000, (3:30 – 5:00), Ned Horning, Leader*
- 1d. *Jules Vern Voyager and Voyager Jr.: Interactive Web Map Tools for Science, Education and Outreach, (3:30 – 5:00), Lou Esty, Leader*

Jeanne Allen  
Paul Berkman  
Bruce Caron  
Chris Condit  
Holly Dodson  
Mark Horrell  
Carl Katsu

Joyce Krueger-Knuepfer  
Frances Lightsom  
George Matsumoto  
Rajul Pandya  
Martin Ruzek  
John Taber  
Nancy West

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**2. DLESE Cataloging System**

Katy Ginger, *Leader*  
Holly Devaul, *Leader*  
Hedi Baxter  
Stuart Chalk  
Ben Domenico  
David Elvin  
Virgil Hammon  
Paul Harnik  
John Saylor  
Eleanor Uhlinger

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**3. Collections Building: Project, Resource, and Collections Evaluation Tools and Methods**

Kim Kastens, <i>Leader</i>	Karon Kelly
Susan Buhr, <i>Leader</i>	Mick Khoo
Barb DeFelice, <i>Leader</i>	Jennifer Mangan
Robert Arko	Mary Marlino
Marilyn Bridgan	John Marquis
Howard Burrows	Jeff Piestrak
Dale Chayes	Robert Ross
Lynne Davis	Randy Sachter
Paul Howell	Tammy Sumner

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**4. Arcview GIS for K-12 Education**

Karen Batista, <i>Leader</i>	Elizabeth Lenell
Bryan Aivazian	Russanne Low
Kirsten Benson	David Malmquist
Larry Cassis	Thomas McGuire
Don Duggan-Haas	Diane Schweizer
Anastasia Furitsch	Yolanda Sepulveda
Ralph Greco	Alan Sills
Nicole LaDue	Michael Smith

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**5. GIS Techniques for Undergraduate Earth Science**

Alexandra Moore, <i>Leader</i>	Thomas Oesleby
Laura Guertin	Wayne Powell
David Leveson	Glenn Richard
Dave Mayo	Cynthia Shroba
Gabriela Mora-Klepeis	Richard Winter

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**6. Using Writing and Augmentation in Inquiry**

Bill Prothero, *Leader*  
Holly Dodson, *Leader*  
Greg Kelly, *Leader*  
Alisa Hylton  
Robert Meyer

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**7. Designing and Developing Web-based Learning Environments**

Sean Fox, *Leader*  
Dan Danowski, *Leader*  
Stuart Birnbaum  
Robert de Groot  
Bruce Hall  
Elizabeth Smith  
Jeffrey Templeton  
Sabine Thomas

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## **IMPORTANT LOCAL CONTACT INFORMATION**

The help desk, located in the Statler Ballroom Foyer is open during meeting hours on Sunday, Monday and Tuesday. If at any time you have a problem you should contact the help desk. Representatives at the desk can answer a range of questions from addressing your technical and logistical needs to answering questions about the local area.

**1) Cornell Police**

G2 Barton Hall  
Emergency 911 (from a campus phone)  
Non Emergency 607-255-1111

**2) Department of Earth and Atmospheric Sciences**

Main Office  
2122 Snee Hall  
Phone 607-255-5267  
Fax 607-254-4780

Office Hours:

Saturday, June 29<sup>th</sup> 8:00 – 5:00

Sunday, June 30<sup>th</sup> 12:00 – 5:00

Monday and Tuesday 8:00 – 5:00

**3) Cornell University Conference Services**

Robert Purcell Community Center  
Phone 607-255-6290

**4) Statler Hotel**

General Information 607-257-2500

**5) Ithaca Airline Limousine**

607-273-3030  
1-800-273-9197

# ROBERT H. TREMAN STATE PARK

Trails for pedestrian use only.  
No bikes allowed on trails.

map not to scale  
distance from lower park  
to upper park - 2 1/4 miles

## HIKING

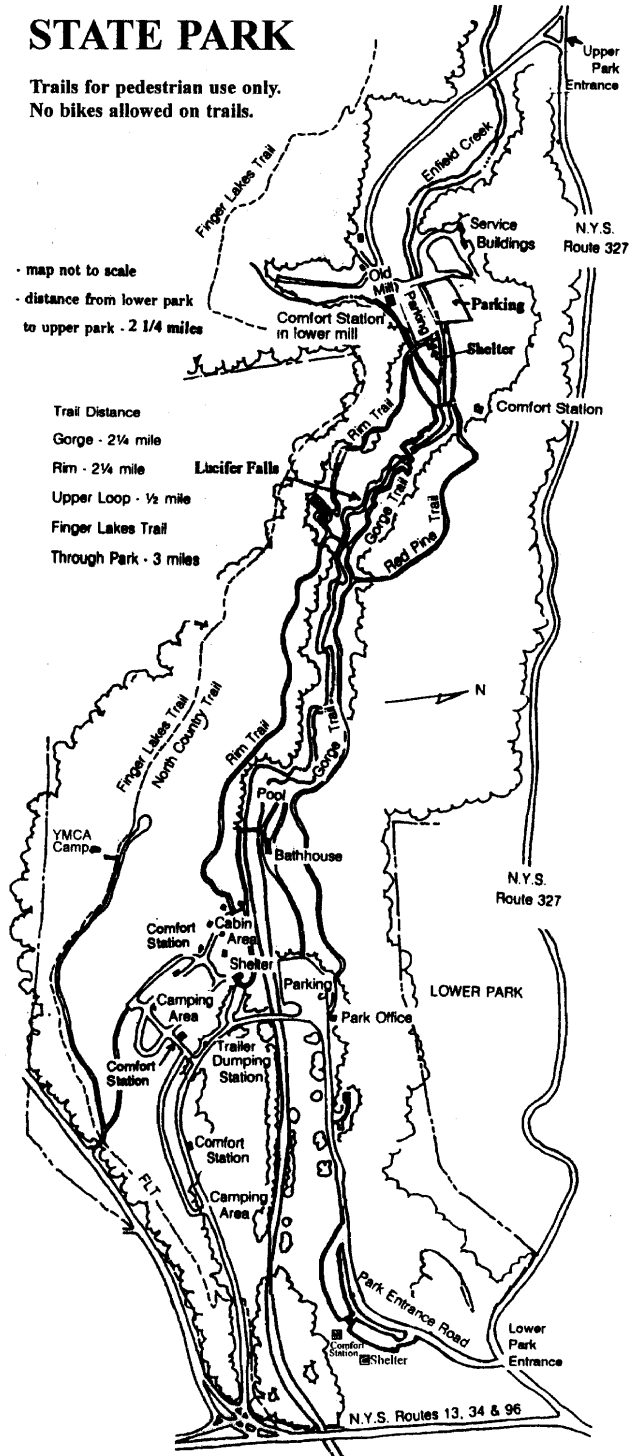
To hike through the entire gorge you should arrange to be dropped off at the Upper Treman parking lot. Take the Gorge Trail to the lower parking lot (a 2 mile hike, mostly downhill). There are nice waterfalls and pools for splashing along the way. You can cross to the picnic area either by backtracking up to the swimming pool and crossing Enfield Creek at the spillway, or by using the bridge at the ford at the east end of the lower parking lot.

## SWIMMING

Lifeguarded swimming is usually available at the Pool, just up the trail from the lower parking lot. The pool can be reached from the picnic area by walking along the south bank of the creek and crossing at the spillway.

## DINNER

The picnic is at the area labeled Shelter, across the creek (south) from the lower parking lot.



## NOTES









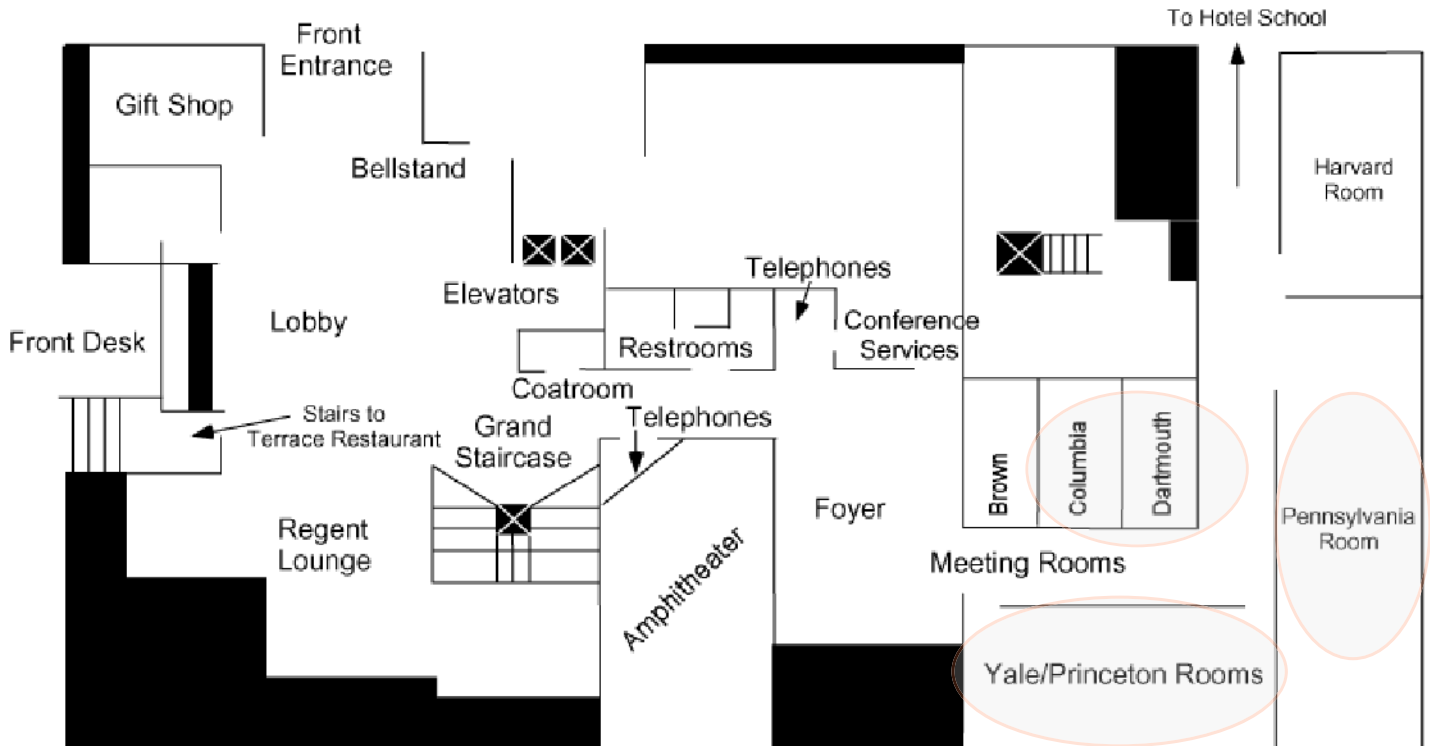




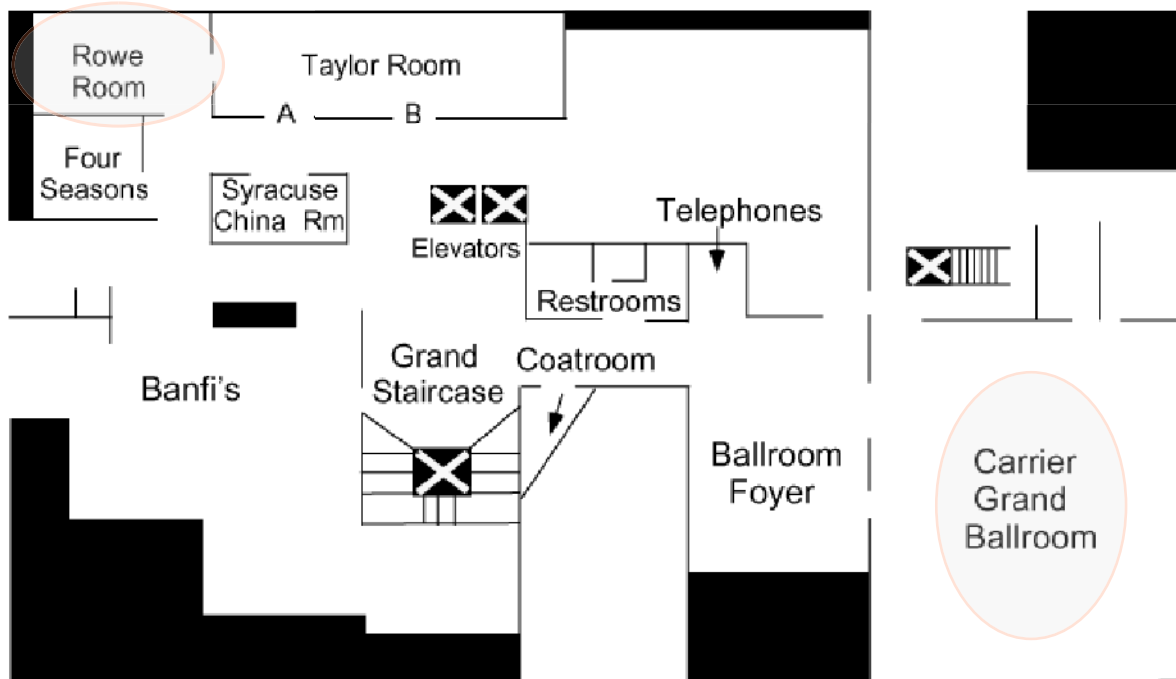




# Statler Floor Plan

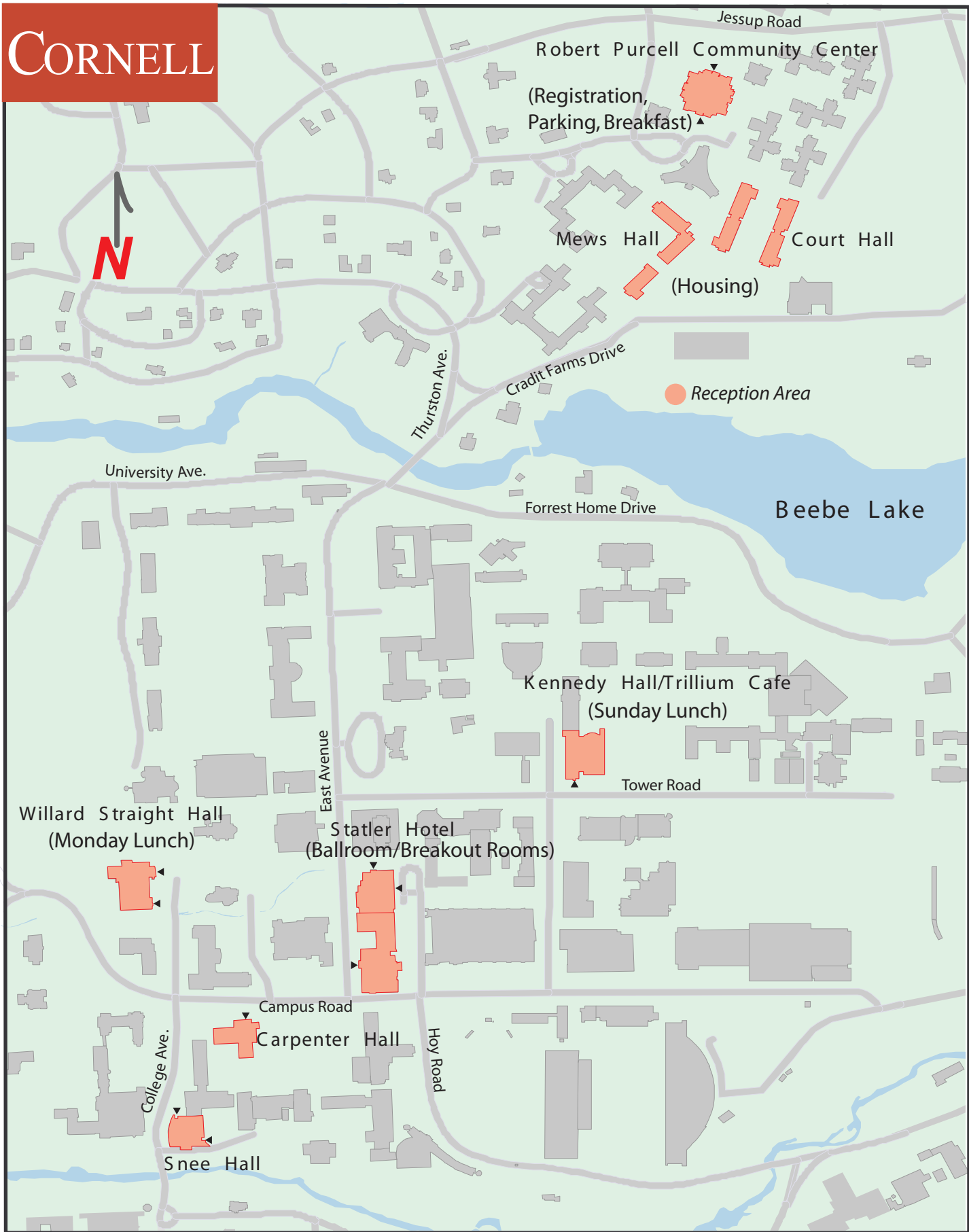


First Floor



Second Floor

# 2002 DLESE Conference Map and Event Listing



**CORNELL**

**N**

● Reception Area

↓ College Town  
(Restaurants, Bars, Shops)

100 Yards (Approximate)  
100 Meters