# EVALUATION OF INCORPORATING ELIXR VIDEOS INTO SERC MODULES

## Submitted June 19, 2009

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INTRODUCTION

This report presents the findings of an evaluation of incorporating MERLOT ELIXR videos into existing SERC modules in the Starting Point collection for teaching entry level geosciences. Links to ELIXR videos were added and made live on November 8, 2008, within the “First Day of Class” and the “Just in Time Teaching” modules. The “First Day of Class” module has been part of the SERC online collection since April 17, 2008. The “Just in Time Teaching” module has been part of the collection since June 7, 2006.

The purpose of the evaluation was to assess the value and utility of incorporating the videos into existing web-based pedagogic modules for geosciences faculty and get an early indication of the use of the videos by visitors to the modules.

METHODS

The evaluation consisted of three parts:

1) a survey of eleven geoscience faculty members who were experienced SERC users after they spent at least 20 minutes viewing the modules with the video links,

2) an examination of the web statistics that describe the extent that visitors to the modules were following the MERLOT ELIXR links, and

3) an in-person walk-through of one of the modules and videos with an experienced user of the SERC collections who had not yet viewed the videos.

The survey questions used for the “First Day of Class” module are in Appendix A. The same questions were used for the “Just in Time Teaching” module. They were developed based upon questions used by ELIXR to evaluate the use of the videos in workshops and questions that SERC had used previously for evaluating web-based modules. Two surveys were completed online. Nine surveys were conducted as interviews over the phone; for those surveys, the questions and the scale range were read aloud to the participants and their responses were recorded manually on paper and on an audio recorder.

Potential survey participants for the survey were identified based upon previous participation in a SERC evaluation activity to ensure that they were already familiar with the SERC collections and would be able to provide feedback based on what the videos added to the existing modules. Thirty-eight individuals were recruited via email and sent one reminder. They were divided evenly in being asked to view either the “First Day of Class” module or the “Just in Time Teaching” module and to include viewing the videos as part of their visit to the module. Eleven completed a survey (6 for “First Day of Class” and 5 for “Just in Time Teaching”).

Google Analytics was used to collect descriptive web site use statistics. Statistics on the referral sources to MERLOT ELIXR were acquired from the MERLOT staff. Statistics on the visits and exits from SERC module home pages were collected by SERC staff.

The qualitative information collected from the walk-through was incorporated into the reported findings from the open-ended survey questions. Additionally, transcripts from interviews...
conducted of users of the modules prior to the addition of the videos were reviewed for comments regarding the value they felt that videos would add to the modules.

**SUMMARY OF FINDINGS**

The findings of this evaluation indicate that adding links to MERLOT ELIXR videos to SERC pedagogic modules has enhanced the modules by providing additional examples and media to illustrate and make the case for the teaching methods presented. In the interviews conducted prior to adding the videos, people said that they would value videos that presented examples of the techniques and activities. The interviews conducted for this evaluation support that the videos added this value by providing another medium for communicating how-to implement the techniques. The demonstration of the techniques by real faculty members in real classroom settings may add validity to the techniques and help with viewer confidence in implementing them because the viewer can relate to the faculty member in the video and see that the techniques apply across disciplines. Following are the primary findings.

- Early data suggests that 10 percent of the visitors to the SERC modules were also going to the MERLOT ELIXR video sites via the links on the module pages.
- Survey participants reported that the links to the videos were easy to find.
- Participants reported that the module either contributed to their knowledge of the topic or affirmed their existing knowledge.
- Participants gave a high rating to the value that the videos added to the modules. Specifically, they reported:
  - The videos were a useful component of the module that complemented the content of the module.
  - The videos provided additional information by demonstrating the techniques in realistic settings via an audio-visual medium.
  - The videos effectively made the case for trying the teaching methods presented.
- The survey participants felt the videos would be a valuable resource for other less experienced faculty and reported that they were likely to tell colleagues about the videos to help them with their teaching.
- While, participants were less likely to view the videos again for their own teaching practice citing their several years of teaching experience, they reported that the videos reinforced what they felt they already knew and had learned from years of experience. Thus, they placed a high value on the videos as an effective mechanism for promoting and demonstrating teaching methods they believed worked.
- One of the strengths of the videos cited was the illustration of examples for implementing the teaching methods. The participants would be drawn back to the module for more examples in diverse settings.
- Upgrading the navigation functionality of the videos, such as adding the ability to fast-forward and mark progress in the video and providing an easier way back to the module, would also be a welcome improvement to the user experience.

**LIMITATIONS**

The survey interviews were of individuals who were experienced with SERC and had many years of teaching experience. It is also important to note that they were responding to a request to view the modules and videos as opposed to going to the modules and videos on their own. Therefore, this evaluation was not designed to answer the following questions.

*How do users going to the modules on their own initiative (undirected to the videos) experience and use the videos?*

*How have the videos changed the user experience of these modules?*

*What impact do the videos have on the user’s understanding of the teaching methods and how to implement them?*

To answer these questions, users will need to be identified and questioned in the natural process of going to the modules specifically looking for the content within the modules and addressed by the videos.
SURVEY RESULTS

Six participants viewed the “First Day of Class” module and five participants viewed the “Just in Time Teaching” module. The same questions were used for both modules. A copy of the questions is in Appendix A. The amount time the participants reported viewing their respective module prior to the survey ranged from 20 minutes to 3 hours.

ABOUT THE PARTICIPANTS

Faculty classification of participants:

- Three full professors.
- Two associate professors.
- Four assistant professors.
- Two lecturers.

Years of teaching:

- Nine participants had seven or more years of teaching experience.
- Two participants had 3 – 6 years of teaching experience.

*Question 13 of the survey asked the participants what they typically look for when they go to a SERC-based module.*

- All of the participants reported that they typically looked for teaching activities.
- All but one typically looked for teaching materials.
- All but three typically looked for teaching methods.
- Five of the participants reported that they typically looked for visualizations.
- Other items reported by seven of the participants of what they typically looked for were:
  - testimonials by others,
  - links to information on assessment,
  - ideas from what others are doing,
  - potential contacts who are doing similar things,
  - references and resources,
  - workshops, and
  - department strategies and management oriented information.
FINDING AND NAVIGATING THE VIDEOS

PRIMARY FINDINGS:

PARTICIPANTS FOUND IT EASY TO GET TO THE VIDEOS. HOWEVER, THEY ALSO FOUND SOME ASPECTS OF NAVIGATING THE VIDEOS THAT WERE PROBLEMATIC.

Appendices B and C of the home pages for the two modules show where the links to the videos and the MERLOT ELIXR pages are located. There also is an anchor at the top of each page that moves the page view to those links.

Question 8 asked participants how easy was it to find the links to the set of videos using a scale of 1 (“Not at all easy”) to 5 (“Very easy”), with 3 being “somewhat easy.”

Average = 4.45  
Range = 3 to 5

The average score was 4.45, with six participants reporting that it was “very easy” to find the link.

A common comment that was made during the interviews in general was about the participants’ difficulty in navigating the videos. The specific aspects of navigation that were difficult or frustrating were the following.

- No play button on the first screen.
- The inability to fast-forward through a video.
- The lack of a time clock to show progress in the video.
- The lack of a mechanism to mark a place in the video for returning.
- The lack of an obvious route back to the SERC module after browsing around the MERLOT ELIXR site.

KNOWLEDGE OF THE TOPIC

PRIMARY FINDINGS:

SURVEY PARTICIPANTS REPORTED HAVING AT LEAST SOME LEVEL OF KNOWLEDGE OF THE MODULE TOPIC. MOST OF THE PARTICIPANTS REPORTED THAT THE MODULE CONTRIBUTED TO THEIR CURRENT KNOWLEDGE. IN A FEW CASES, THE PARTICIPANTS FELT THAT THEIR YEARS OF TEACHING EXPERIENCE HAD ALREADY GIVEN THEM THE KNOWLEDGE AND, WHILE THE MODULE DID NOT CONTRIBUTE TO THEIR KNOWLEDGE, IT AFFIRMED WHAT THEY ALREADY KNEW.

Question 4 asked participants the extent that they currently felt knowledgeable about the topic of the module using a scale of 1 (“little or none”) to 5 (“a great deal”), with 3 being “some.”

Average = 3.91  
Range = 3 to 5
All the participants reported that they currently felt they had “some” to “a great deal” of knowledge of the topic (average of 3.91).

*Question 5 asked participants the extent that the module contributed to what they now know about the topic, using the same scale as for question 4.*

\[
\text{Average} = 3.30 \\
\text{Range} = 1 \text{ to } 5
\]

Eight of the participants reported the module contributed “some” to “a great deal” to what they now know and three reported it contributed less than “some” (average of 3.30).

The six participants who visited the “First Day of Class” module reported greater average knowledge of the topic than did the five participants who visited the “Just in Time Teaching” module (4.25 vs. 3.50). However, the “Just in Time Teaching” participants reported that the module was a greater contributor to their knowledge (3.90) than did the “First Day of Class” participants (2.79). This discrepancy between the two modules may be due to a different perception of the content relative to the participant’s experience, rather than a measure of the module’s ability to increase knowledge of the topic. These were experienced teachers who felt they already had a grasp of how to teach the first day, whereas, the techniques of teaching something just in time, may be viewed as potentially new, even to an experienced teacher.

For example, two of the participants that viewed the “First Day of Class” module reported that the module contributed “little or none” to what they now know about the topic. They stated in the interviews that their experience of many years of teaching provided them with most of what they knew about teaching on the first day. As one participant put a positive spin on a low score:

“I HAVE SPENT 20 SOMETHING YEARS WALKING INTO THE FIRST DAY OF CLASS, RIGHT, EVERY SEMESTER, ALL DIFFERENT KINDS OF SETTINGS, AND WHAT I HAVE LEARNED ON THE FLY IS THROUGH SHEAR YEARS OF EXPERIENCE IS CAPTURED HERE IN THIS WEB SITE. SO, IN A WAY, IT’S COMPLETELY REINFORCING OF KNOWLEDGE I HAVE ACQUIRED THE HARD WAY.”

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**VIDEO CONTRIBUTION TO THE MODULE**

**PRIMARY FINDINGS:**

**Participants gave a high rating to the value that the videos added to the modules. They reported that the videos were a useful component of the module that complemented the content of the module and effectively made the case for trying the teaching methods presented. The videos complemented the other information in the module by providing another medium for presenting the techniques. What the videos provided, that the text in the module did not, was an audio-visual demonstration of the techniques using real faculty members in real classroom settings.**

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When asked what information or links that they found most useful (Question 6), seven participants specifically mentioned the videos. In the interviews they stated that the videos provided new ideas and helped to explain the topic and approach. They liked that the videos showed the techniques in action. One participant put it this way:

“BY ACTUALLY DEMONSTRATING THE IDEAS, THE VIDEOS PROVIDED CONCRETE EXAMPLES.”

Another participant indicated that as a result of watching the videos for First Day of Class, they might change their approach to surveying students. One of the participants who had administrative duties said that the videos provided really good ideas for new faculty development.

When asked what information or links that they found least useful (Question 7), only two mentioned the videos. One participant thought the information in the video was interesting, but that viewing the video was not interesting because it was long to get started and the information was basic. The other participant, who cited the videos as least useful, said that it was because of difficulty getting the videos to play.

Questions 9 through 12 were used to assess the contribution and value that the videos added to the modules using a scale of 1 (“Little or None”) to 5 (“A Great Deal”), with 3 being “Some.”

Question 9 asked how well the content of the videos complemented the content of the module.

Average = 4.40
Range = 2 to 5

Nine participants gave a score of 4 or 5. One participant gave a score of 2, and one participant could not answer the question. The participant that gave a score of 2, cited technical difficulties with the videos as the reason. The average score was 4.40.

Question 10 asked to what extent the videos made the case for trying the teaching method(s) presented.

Average = 4.27
Range = 3 to 5

All the participants reported that it made the case “some” to “a great deal,” with six participants scoring this question with a 5 (average of 4.27).

Question 11 asked to what extent the videos provided additional information that was not elsewhere in the module.

Average = 3.70
Range = 2 to 5

One participant could not answer the question. Six participants gave a score of 4, two participants gave a score of 3, one gave a score of 5, and one gave a score of 2 (average of 3.70).
Question 12 asked participants to rate the value that they believed the videos added to the module.

Average = 4.05  
Range = 2 to 5

The overall rating was 4.05, with four participants giving it the highest rating of 5, indicating that the videos added “a great deal” of value to the modules. Participant comments would indicate that the value added is largely due to being able to see the techniques in action. The videos allowed them to actually see and hear step by step how to implement the techniques. As one participant stated:

“IT WOULD BE DIFFICULT TO CONCEPTUALIZE THE TECHNIQUES WITHOUT THE VIDEOS.”

FUTURE USE OF THE VIDEOS

PRIMARY FINDINGS:

PARTICIPANTS WERE LIKELY TO RECOMMEND THE VIDEO TO A COLLEAGUE AS A RESOURCE TO HELP WITH TEACHING. THEY FELT THAT IT WOULD BE ESPECIALLY HELPFUL FOR NEWER FACULTY TO BE ABLE TO SEE OTHER FACULTY MEMBERS USING THE TECHNIQUES. THEY WERE LESS LIKELY TO REPORT THAT THEY WOULD VIEW THE VIDEOS AGAIN THEMSELVES, PRIMARILY BECAUSE THEY ALREADY KNEW ENOUGH ABOUT THE TOPIC.

Question 14 asked participants how likely they are to view the videos again to help with their teaching practice, using a scale of 1 (“Not at all likely”) to 5 (“Very likely”), with 3 being “Somewhat likely.”

Average = 2.82  
Range = 1 to 5

The average score was 2.82, indicating that participants felt they were less than “somewhat likely” to view the videos again. Six participants gave a score of 2 and one participant gave a score of 1. While these participants were not likely to view the video again, it was not because they did not feel the videos were not worth viewing. The reasons cited for not viewing again were that they were not in need of the information or they already had a grasp of the topic. Three participants did give a score of 5, indicating that they were “very likely” to view the videos again.

Question 15 asked participants how likely they are to let colleagues know about the videos as a resource to help them with their teaching.

Average = 4.30  
Range = 3 to 5

All the participants reported that they are at least “somewhat likely” to let colleagues know about the videos with six participants reporting they are “very likely” to do so (average of 4.30), thus, confirming that they saw value in viewing the videos, even if they did not intend to view the video again themselves. Two participants had already let a colleague know about the videos.
OTHER COMMENTS

When asked what would draw them back to the module (Question 16), three participants specifically mentioned the videos. They were the same three participants who indicated in question 14, that they were very likely to view the videos again. Specifically, one participant plans to use the videos as a resource for new faculty development. One participant added that the videos were more compelling than the other information on the site. One participant specifically mentioned that the videos would not be a reason for returning.

The examples were cited by seven of the participants as draws to return to the module. In some cases it was to come back to the existing examples, in other cases it was to suggest that they would be drawn back if there were a greater number and more diversity in the examples.

Additional comments were noted during the phone surveys.

- Some participants felt the videos provided them with ideas.
- A couple of participants indicated that seeing the videos once was enough.
- A common comment from this seasoned group was that they could see how the videos would be more helpful to others (i.e., less experienced faculty) than to them.
- One participant liked seeing that the time invested in the techniques is worth it.
- One participant commented that it was good to have non-geoscience faculty members in the videos and that using a first year faculty member in one of the videos was good to illustrate the techniques.
- Another noted that they look for geologists and like to see the position and discipline of the faculty member in the video.
WEB STATISTICS

At the time that this evaluation began, the links to the videos had only been active for six months. The web use statistics were recent and small in magnitude; therefore an assessment of impact or identification of trends in web use traffic would be difficult to do. Descriptive statistics were examined for the 31 day period beginning March 23, 2009, and ending April 22, 2009, which was 4½ months after the links were added. This data suggests that approximately 10% of the visitors to the two SERC modules that contained links to ELIXR videos went directly to MERLOT ELIXR from the SERC modules.

During that 31 day time period, there were 91 referral visits to the MERLOT ELIXR pages that came from 23 different pages within the SERC collections. Thirty-eight (41.8%) of those referrals came from the two pages that contained links to ELIXR videos: the “Just in Time Teaching” home page (serc.carleton.edu/introgeo/justintime/index.html) with 27 referrals to MERLOT ELIXR and the “First Day of Class” home page (serc.carleton.edu/introgeo/firstday/index.html) with 11 referrals to MERLOT ELIXR. Screen shots of the two home pages are in Appendices B and C.

GOING FROM “JUST IN TIME TEACHING” TO MERLOT ELIXR

Twenty-seven of the referral visits were from the “Just in Time Teaching” home page, which contains a link to the set of videos entitled, “Just-in-Time Teaching,” by Karen Grove (pachyderm.cdl.edu/elixr-stories/serc-geoscience/) and a link to the MERLOT ELIXR home page (elixr.merlot.org). These 27 visits represented 9.8% of the 275 visitors to the “Just in Time Teaching” home page during this time. The 27 referral visits also represented 20.0% of the 135 exits from the “Just in Time Teaching” home page. The following chart shows the breakdown of where visitors to the “Just in Time Teaching” home page went to next.
GOING FROM “FIRST DAY OF CLASS” TO MERLOT ELIXR

Eleven of the referral visits were from the “First Day of Class” home page, which contains a link to the set of videos entitled, “Making your 1st class session really first class,” by Joe Grimes and Cynthia Desrochers (pachyderm.cdl.edu/elixr-stories/1stday-slo/) and a link to the MERLOT ELIXR case stories page (elixr.merlot.org/case-stories/case-stories-grid/). These 11 visits represented 9.9% of the 111 visitors to the “First Day of Class” home page during this time. The 11 referral visits also represented 30.6% of the 36 exits from the “First Day of Class” home page. The following chart shows the breakdown of where visitors to the “First Day of Class” home page went to next.

![Chart showing the breakdown of where visitors went next from the “First Day of Class” home page.]

- **111 visitors to “First Day of Class” home page.**
- **75 went to other SERC pages.**
- **36 exited from the SERC collections.**
- **11 exited to MERLOT ELIXR**
- **25 exited to elsewhere.**
APPENDIX A: SURVEY QUESTIONS

SERC First Day of Class Module Survey

3. How much time would you estimate you spent on the First Day of Class module?
   - Less than 10 minutes
   - 10 to 15 minutes
   - 15 to 20 minutes
   - More than 20 minutes

4. To what extent do you currently feel knowledgeable about the topic of the First Day of Class module that you visited?
   - Little or None
   - Some
   - A Great Deal
   - Don't Know/NA

5. To what extent did the First Day of Class module contribute to what you now know about the topic?
   - Little or None
   - Some
   - A Great Deal
   - Don't Know/NA

6. What information or links did you find that were most useful?

7. What information or links were least useful?
SERC First Day of Class Module Survey

On the home page of the First Day of Class module was a link to an off-site (non-SERC) set of videos.

8. How easy was it to find the link to the set of videos?

<table>
<thead>
<tr>
<th>Not at all easy</th>
<th>Somewhat easy</th>
<th>Very easy</th>
<th>Don't Know/NA</th>
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<tbody>
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<td>1</td>
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9. How well did the content of the videos complement the content in the First Day of Class module?

<table>
<thead>
<tr>
<th>Little or None</th>
<th>Some</th>
<th>A Great Deal</th>
<th>Don't Know/NA</th>
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10. To what extent did the videos make the case for trying the teaching method(s) presented?

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<tr>
<th>Little or None</th>
<th>Some</th>
<th>A Great Deal</th>
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11. To what extent did the videos provide additional information that was not elsewhere in the First Day of Class module?

<table>
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<tr>
<th>Little or None</th>
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<th>Don't Know/NA</th>
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12. Please rate the value that you believe the videos add to the First Day of Class module.

<table>
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<tr>
<th>Little or None</th>
<th>Some</th>
<th>A Great Deal</th>
<th>Don't Know/NA</th>
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SERC First Day of Class Module Survey

13 What do you typically look for when you go to a SERC-based module? (check all that apply)
- teaching activities
- teaching materials
- teaching methods
- visualizations
- Other, please specify

14 How likely are you to view these videos again to help with your teaching practice?

<table>
<thead>
<tr>
<th>Not at all likely</th>
<th>Somewhat likely</th>
<th>Very likely</th>
<th>Don't know/NA</th>
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15 How likely are you to let colleagues know about these videos as a resource to help them with their teaching?

<table>
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<th>Very likely</th>
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16 What content and/or services would draw you to the First Day of Class module again?

17 If you would be willing to provide us with additional feedback regarding the First Day of Class module, please provide us your name and a number at which we can contact you.

Name: 
Phone: 
APPENDIX B: “JUST IN TIME TEACHING” HOME PAGE

Check out video about how Karen Grove of San Francisco State University has implemented Just-in-Time Teaching in her geology classroom.

What is Just-in-Time Teaching (JITT)

Just-in-Time Teaching focuses on improving learning by the use of web-based assignments that are delivered before a class meeting. The instructor can quickly gather information about student performance and understanding immediately prior to the class meeting so that the day’s lesson can be tailored to actual student needs. This type of activity meets several goals:

- Creating a student-centered environment in the classroom
- Improving faculty-student interaction (individually and in groups)
- Improving content mastery (by rapid clarification of misconceptions)
- Developing group interaction skills (through on-line group activity)
- Encouraging students to monitor their own progress.

Why use Just-in-Time Teaching

Benefits for Students: Students are engaged with course content outside of class and before coming to class, which leads to increased learning and motivation to learn. They come to class prepared for the lesson, which leads to better use of classroom time.

Benefits for Faculty: The pre-class assignments (“Warmups,” “Pre-flight checks,” ...) allow instructors to assess student understanding of the course material. They come to class with a better understanding of their students’ state of knowledge, beliefs, misconceptions, frustrations, etc. Instructors who use JITT can more easily establish rapport with their students, and create an interactive environment in the classroom.

How to use Just-in-Time Teaching

The first step in implementing JITT is to develop a set of questions which will be posted online for students to answer before class. They may be posted using a course management system, or a basic web site. For a small class, they may even be disseminated and returned via e-mail. The questions should be open-ended, requiring text response. They should explore students’ prior knowledge and beliefs about the material to be covered in a single lesson. During the semester, the instructor posts the questions and the students respond online some hours before each class session. Just before class, the instructor selects excerpts from the student responses and brings these to class. These responses form a basis for the interactive class session. Thus students become active participants in constructing the subject matter content.

Examples of Just-in-Time Teaching

Search a collection of example warmup questions, student responses, and classroom tips.

References on Just-in-Time Teaching

Consult the references used to construct this website, as well as additional resources for further reading on JITT.

JITT in Action

San Francisco State University has developed a variety of video clips about the use of Just-in-Time Teaching in Dr. Karen Grove’s geology courses. Use the video image at the left to check out this great resource on the ELIXR platform.
APPENDIX C: “FIRST DAY OF CLASS” HOME PAGE

The First Day of Class
Compiled by Carol Orman, SERC, Carleton College

Check out a list of videos by what faculty in several disciplines do on their first day of class.

Why is the first day important?
It's the first day of class, and the room is buzzing with excitement and expectation, novelty and nerves, curiosity and uncertainty. In spite of how distracted they may seem, students are paying attention. They want to find out as much as possible about the course and they are curious about the instructor - will you be fair, interesting, easy to learn from?

The first day of a geoscience course or lab sets the tone for the entire term. This is your opportunity to stimulate excitement about the course, give students a sense of classroom dynamics, and establish course expectations.

What can you do the first day?
- Engage students with the course content in a substantive activity that stimulates their interest in the course and demonstrates your expectations for their class work. Involve the students in making observations, asking questions, testing hypotheses, solving problems - in short: doing science, even on the first day.
- Motivate your students to want to learn more. Make explicit connections between course content and students' lives, present information about careers in geoscience, preview “foming attractions” or stimulate their interest with a challenging task.
- Establish a positive classroom climate. Easing students' anxiety facilitates their learning, and it's never too soon to begin.
- Icebreaker activities can be very effective in fostering rapport and a comfortable learning environment.
- Survey your students. Finding out what your students want to learn in the course, surveying them about their current attitudes/beliefs toward geoscience, assessing their current knowledge (and misconceptions) about the subject matter, or having them complete a learning styles inventory can provide you with valuable information for your teaching.

Search for Examples
Search the collection of examples for first day of class activities that engage students with course content. You can narrow your search by course topic or level, as well.

References and Resources
References and Resources is an annotated bibliography of additional resources.

First Day of Class is a chapter in Tools for Teaching by Barbara Gross Davis that was used extensively in making the First Day of Class pages and provides many useful ideas and suggestions.

This list of videos on the ELIXR site highlights faculty from a number of different disciplines and what they do during their first class session to set the tone for the rest of the course. Click on the image at the right to watch the video clips and see these faculty members in action.

Link to case stories.
Link to videos