



Geoscience Departments:

Developing Pathways to Strong Programs for the Future

Impacts of the Building Strong Geoscience Departments Visiting Workshop Program

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Building Strong Geoscience Departments Project

- Help geoscience departments adapt and prosper in a changing and challenging environment
- Disseminate community expertise on topics such as developing and revising curricula, retaining and recruiting top faculty and students, and maintaining the department as a valued institutional partner



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Building Strong Geoscience Departments

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[Collections and Case Studies](#)

These examples show what geoscience departments across the country are doing.

[Curricula and Programs](#)

Curricula and programs form the core of a department; developing and reviewing curricula and programs are some of the most important activities a department undertakes. While every department is unique, we can learn a lot from each other's successes, and from our colleagues in other STEM disciplines.

[Defining Strong Departments](#)

Many researchers have studied what makes a department "strong." Read about their findings.

[Future of Geoscience](#)

The fields of science are constantly changing, in response to societal needs and scientists' curiosity. These changes have profound implications for future workforce needs and therefore for today's curricula and programs.

[Heads and Chairs](#)

Department Heads and Chairs are expected to lead their departments through strategic planning processes, recruit and retain top-notch faculty, and advocate for their departments in a world of finite resources. Learn successful strategies for doing all of that.

[Making a Case for Your Department](#)

When budgets are tight, college and university administrators may wonder whether geoscience departments are really essential. Here are some suggestions for making it clear that your department is indispensable.

[Professional Preparation](#)

To prepare your students for their future careers, you'll want to know what those careers are most likely to be and what knowledge, skills, and attributes those careers will require.

[Program Assessment and Review](#)

With so many demands on your time and energy, you want to be sure that the time and energy you put into your program is achieving your departmental goals. Assess your program elements, so that you can maximize the return on your investments.

[Student Recruitment](#)

Recruiting a critical mass of high quality students is essential to building a successful geoscience program. These pages present tried-and-true strategies for doing that, along with examples of how various departments have implemented those strategies.

[Workshops and Meeting Sessions](#)

Find out about workshops and conference sessions focusing on strengthening geoscience departments and ensuring the future of quality geoscience education at colleges and universities.

[About this Project](#)

Building Strong Geoscience Departments is a project focused on helping geoscience departments adapt and prosper in a changing and



[Pillsbury Hall](#), home of the
Department of Geology & Geophysics
at the University of Minnesota

Building Strong Geoscience Departments Visiting Workshop Program



- Disseminate the best ideas, lessons learned from national workshops that brought together leaders in various areas (curricula & programs, program assessment, student recruitment, workforce development)



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Visiting Workshop Program

- Goal: to enhance impact on a few departments by supporting the ability of the whole department to engage with the leaders, hear about successful strategies, and discuss their own approaches
- Departments selected for visits had to show why they were in a position to benefit from this kind of workshop and how it was going to be integrated into their ongoing efforts



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Visiting Workshop Program

- 2009-2010 (continuing in 2010-2011)
- 1-, 1.5-, or 2-day workshops
- Geoscience departments at 3 research universities, 4 comprehensive universities, 3 four-year colleges
- 2 visiting workshop leaders sent to each dept.
- On or off campus, at the host department's choosing



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Building Strong Geoscience Departments Visiting Workshop Program Leaders



Diane Doser, Mary Savina, Dallas Rhodes, Geoff Feiss, Diane Clemens-Knott, Randy Richardson; not pictured: Tim Bralower



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Visiting Workshop Topics

- Curriculum and Program Design
- Beyond the Curriculum
 - Alumni relations
 - Advising / mentoring
 - Internships & other experiences
- Recruiting Students
- Preparing Students for the Workforce
- Program Assessment



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Building Strong Geoscience Departments Visiting Workshop Program



- Team of two leaders worked with each department to develop an agenda addressing their selected topics of interest
- A bit like building a modular home



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Visiting Workshop Bookends



Front: Introduction to the workshop, its goals, and the shared characteristics of strong departments

End: From plans to action (next steps)



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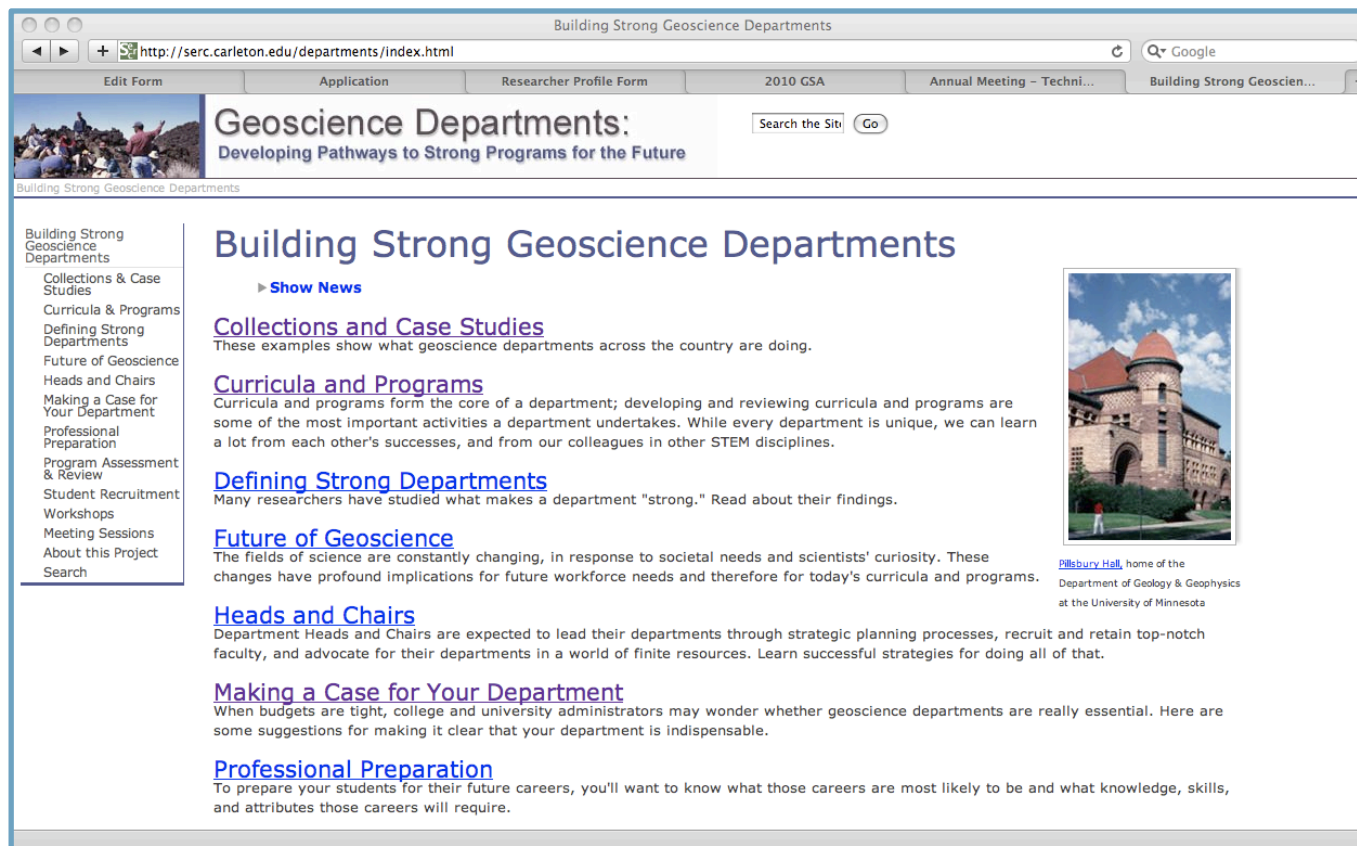
Examples of Visiting Workshop Activities

- Presentations on the chosen topics, including descriptions of successful strategies other departments are using
- SWOT analysis
- “Ideal student” letter of recommendation
- Curriculum matrix



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Successful Strategies from Other Departments



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SWOT Analysis

- Faculty members brainstorm the departments' strengths, weaknesses, opportunities and threats
- Builds a snapshot of how the department sees itself and its situation



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Ideal Student Recommendation Letter*

- Each faculty member writes a recommendation letter for an ideal student in their program who is a new graduate, applying for graduate school or a job. The letter describes the student's skills, knowledge, abilities, behaviors, and values.
- Sharing these letters helps departments articulate their program-level goals for students

* Exercise developed for use at Carleton College by Mary Savina (Geology), Deborah Gross (Chemistry), and Cherry Danielson (Institutional Research and Assessment)



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Matrix Approach to Curriculum Design*

- A mechanism for developing faculty consensus on what skills a graduate of your program should have, and making sure that your students have sufficient opportunities to practice those skills

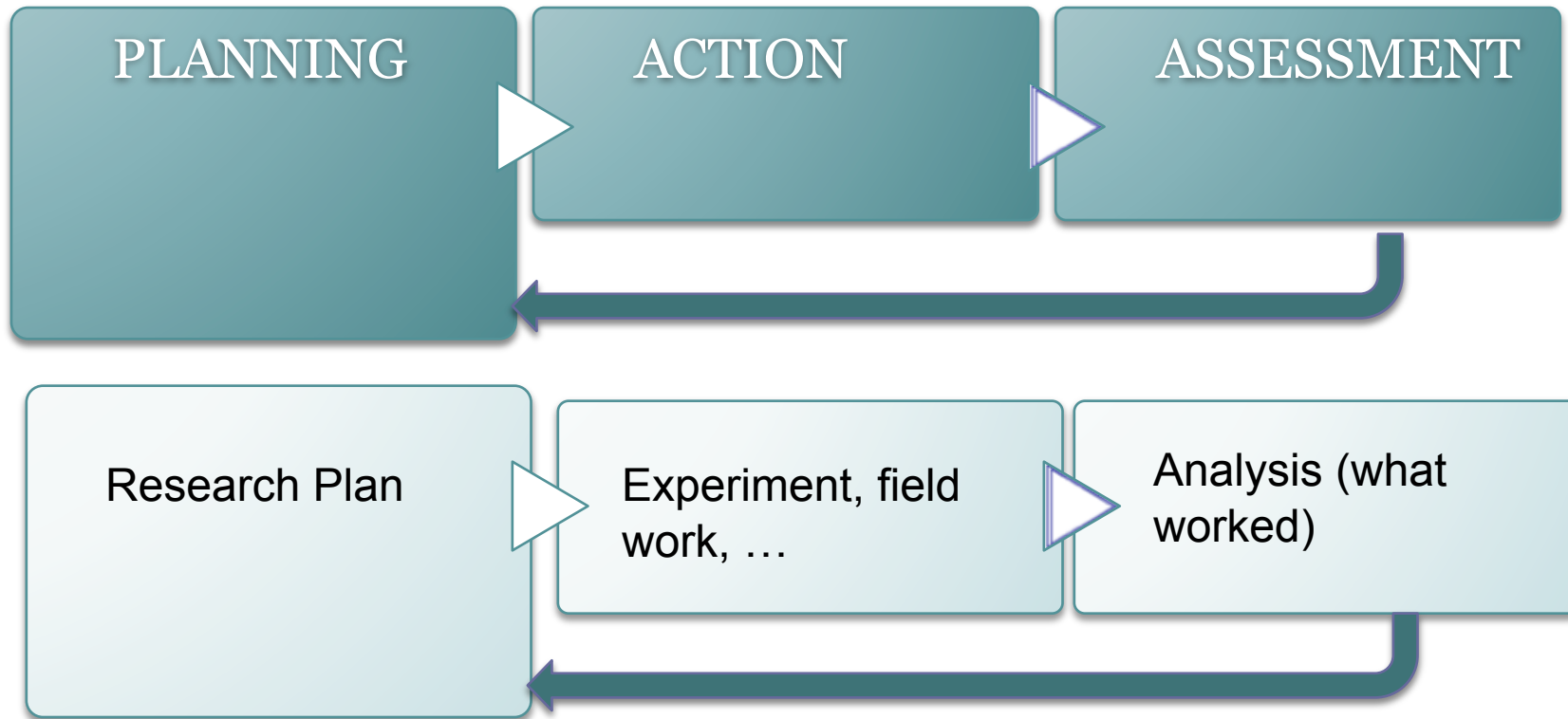
Courses → Skills ↓	110 intro	120 intro	210 geomorph	220 tect	230 paleo	240 Italy	250 min	255 pet	
Essay		a	a		a				
Poster	s	s	a	a	a				
Field report	a		a		a	a		a	
Library research	s	s	s	a			a	a	
Research proposal					s	s	s		

* From the Geology departments at Carleton and at William and Mary



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Action (and Assessment) Planning



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Measuring the Impacts of the Visiting Workshop Program

- Participant evaluations (open-ended and Likert scale questions)
- Interviews of department chairs by our external evaluator, Sabra Lee
- Departmental action plans



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Impacts: Attitudes and Programming

- Bringing the workshop to the department worked: they did, in fact, capitalize on having the whole department engaged with the workshop leaders, ideas, materials to move forward in ways they wouldn't have without this activity
- Impacts on two levels
 - Changes in attitudes
 - Changes in programming & departmental activities



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Impacts: Attitudinal Shifts

- Changes in attitudes toward their curricula, including the importance of general education courses
- New feeling of ownership of their curricula
- Recognized a need for improvement (and got ideas about what kinds of changes to make)
- Take-home message: It is no longer sufficient to do good research, get grants, publish, and teach well. We have to find ways to make ourselves valuable to the university, and to make that value clear.



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Impacts: Programmatic Changes

- Renaming/reinventing introductory courses
- Updating course descriptions
- Developing new courses
- Soliciting programmatic feedback from alumni
- Changing degree program requirements
- Implementing student recruitment strategies
- Promoting their programs on campus
- Sending news of departmental accomplishments to the provost and dean



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Participants attribute these impacts to

- Meeting as a department, for an extended time, focusing on the breadth of what we do and how best to do it
- Having external facilitators guide the discussions and activities
- The workshop exercises (especially SWOT, ideal student, curriculum matrix)
- Learning how other departments respond to similar situations



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Conclusions

- Individual department members report attitudinal shifts and greater knowledge of what other departments are doing
- Departments are making significant, positive changes in curricula, student recruitment, program assessment, and self-promotion
- The format of the Visiting Workshop Program is a key element of the program's success



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Opportunities and Resources

- Visiting workshop program continues in 2010-2011; applications are due November 15.
- Web resources
 - Exercises from the workshops (SWOT analysis, ideal student, curriculum matrix)
 - Making a Case for Your Department
 - Case Studies and Collections
 - And much, much more....
 - Google “strong departments” to find us



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