Building Strong Geoscience Departments Through the Visiting Workshop Program

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Building Strong Geoscience Departments Project Goals

• Help geoscience departments adapt and prosper in a changing and challenging environment
  ▫ Institutional changes responding to economic pressures
  ▫ Growing student interest in environment, sustainability

• 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
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)

Geoscience Departments:
Developing Pathways to Strong Programs for the Future
Building Strong Geoscience Departments 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
Building Strong Geoscience Departments
Visiting Workshop Program

- 18 workshops, from 2009-2011
- 1-2 day programs
- Geoscience departments at 7 research universities, 5 comprehensive universities, 6 four-year colleges (total of 201 participants)
- Departments were chosen by application, and it was a highly competitive process (47 applications)
- 2 visiting workshop leaders sent to each department
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

Geoscience Departments:
Developing Pathways to Strong Programs for the Future
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

Geoscience Departments:
Developing Pathways to Strong Programs for the Future
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

Geoscience Departments: Developing Pathways to Strong Programs for the Future
Visiting Workshop Structure

• Bookend: introduction
• Presentations on the chosen topics, including descriptions of successful strategies other departments are using as well as examples drawn from the leaders’ experiences
• Exercises to facilitate active discussions, such as SWOT analysis, “Ideal student” letter of recommendation, curriculum matrix
• Bookend: action planning
Visiting Workshop Bookends

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

End: From plans to action (next steps)
Successful Strategies from Other Departments

Building Strong Geoscience Departments

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.

Geoscience Departments:
Developing Pathways to Strong Programs for the Future
SWOT Analysis

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

Geoscience Departments: Developing Pathways to Strong Programs for the Future
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)
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

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* From the Geology departments at Carleton and at William and Mary
Action (and Assessment) Planning

PLANNING
Research Plan

ACTION
Experiment, field work, …

ASSESSMENT
Analysis (what worked)

Geoscience Departments: Developing Pathways to Strong Programs for the Future
Measuring the Impacts of the Visiting Workshop Program

- Participant evaluations (open-ended and Likert scale questions) (70% response rate)
- Departmental action plans
- Follow-up interviews of department chairs by our external evaluator, Sabra Lee
Impacts: Attitudes and Programming

• Bringing the workshop to the department worked
  ▫ Whole departments engaged in constructive conversations with the workshop leaders and each other, fostering a sense of shared ownership and vision
  ▫ Generated ideas and 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
Impacts: Attitudinal Shifts

• Changes in attitudes toward their curricula
  ▫ New feeling of ownership of the curricula
  ▫ The importance of general education courses
  ▫ 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.
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 geoscience programs on campus
- Sending news of departmental accomplishments to the provost and dean
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
Workshops were most successful when

• They were longer than a single day
• The faculty cancelled all other departmental activities
• The department had a clear sense of what they wanted/needed to accomplish
• They prepared in advance
• There was a strong commitment/interest from all faculty
• Leaders were able to adapt the program to address emerging (previously unrecognized) needs
Conclusions

- The Building Strong Geoscience Departments Visiting Workshop Program is highly successful.
- 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 (departments can evolve).
- The format is a key element of the program’s success (evolution requires effort).
Resources on the website

• 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