Geology at St. Thomas: building community, teaching effectively, helping students succeed

Chopping carrots and washing dishes: it's not just about geology
campfires and singing, dune wrestling
dation in the basics during J-term
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learning occurs
• prereq: one intro geo course!!
• offered every year
capitalize on interest generated in intro courses!)

What the students say:
We asked our majors: “Why did you choose this major? What are we doing that makes this department work?... they said:

• It feels like a family
• Profs know and care about students
• Good teaching
• Geology is linked to the real world

specifically, they said:
1. the outdoor, hands-on field labs in all classes
2. faculty are interested in their discipline and in the “science “ of teaching
3. facultyaccomodate a range of backgrounds among students with a focus on problem-solving and project-based courses
4. faculty incorporate into the curriculum and department activities how geology relates to the real world, what you can do with a degree and what you need to know to get a job
5. research and work opportunities during J-term and summer
6. all the full-time faculty teach intro and so you see the same professors again in the upper-division courses
7. the small size of the department, feels like a family
8. the department attitude that you don’t have to be a “genius” to be a scientist, that anyone can do it, is supportive of students
9. Faculty help with career planning and decision-making
10. Enthusiasm

More on good teaching
Our assumption: students are busy and their time spent learning needs to be effective...they agree! they appreciate it!!

• all faculty have attended NSF and PKAL workshops on teaching, course-design, and curriculum design
• our entire curriculum has been redesigned since 2000
• we continually move further and further away from lecture format and instead use more active-learning techniques
• we discuss pedagogy with students and let them know what the research on learning says
• we actively seek and use student input

Examples of building community and good teaching
J-term: a month-long introductory field methods course for major, minors, and non-majors
- similar curriculum as the first half of a traditional summer field course: mapping, measuring sections, exercises at Zion and Death Valley
- includes camping, cooking together, campfires and singing, dune wrestling
- offered every year (students say this is key to capitalize on interest generated in intro courses!)
- prereq: one intro geo course!!

It's timing in the curriculum is very intentional: get students in the field early because that's where the best learning occurs.

• upper-division courses are more success-
ful because students build a strong foun-
dation in the basics during J-Term

Students cite this course and field labs of on-campus courses as critical. They get to know the profs, get to make good friends, have fun and learn a ton.

“I learned more in J-Term than any other course I’ve had at St. Thomas. I wish every course could be taught like this one.”

“J-Term clinched it.”

“Field trips provide awesome bonding experiences, funny memories and hands-on learning.”

“After the Nevada J-Term, I’ve become pretty certain that I’ll pursue this field.”

-Nate Owens, junior, English

Northern MN
Lithosphere, Fundamentals of the Lithosphere, Northern MN

Examples of good teaching
Our curriculum dictates careful planning:
1. Most upper-division courses are offered every other year.
2. A student has to be able to complete the degree in two years. Most geology majors declare their major “in order”. We thus have to plan each other year.
3. Because of these 2 factors, most students do not take the major “in order”... We thus have to plan each course to serve a range of backgrounds.

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An example of building community, good teaching, and preparing students to succeed in the real world

• students TA for J-term and on-campus courses
  -students appreciate getting involved in the department early on and getting to improve their skills by helping with a course
  -majors said when they were intro students, the student TAs were their first link/connection to the department

• students participate in “traditional” research opportunities, with faculty on cool projects in cool places
  -students have traveled to Mongolia, Chile, and Minneapolis
  -students have presented this work at AGU and GSA national meetings

• 8 students participated in a “non-traditional” research opportunity:
  -All 3 faculty ran our optional J-Term Advanced Field Course as the data collection phase of a research project
  -The required Senior Capstone Course served as the write-up phase
  -The class presented the results at the spring AGU meeting in Montreal

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