Maintaining a Strong 2YC Geoscience Program

Past Successes – Future Challenges

“I need someone well versed in the art of torture—do you know PowerPoint?”
Pasadena City College
One of 112 California Community Colleges
• ~28,000 Credit Students
• 53 acre urban campus
• ~1800 students per year transfer to the University of California (UC) or the California State University System (CSU)
• ~25/year take 2nd semester Geology
Past Successes!
(A couple of Examples...)

- In existence as a department for 87 years
- A long line of successful career geoscientists

2013 Women Scientist of the Year
Associate Professor Univ. Texas

President-Elect of AGI
Assistant Dean, Professor of Geoscience Education, Texas A&M
What We Might Have Done Right...

LUCKY?

GREAT PEOPLE

SOUND PEDAGOGY

SOLID PROGRAM

CAMPUS PRESENCE
People of the 70’s

- 4-5 full-time faculty in geology
- Tight knit, offices together
- Common student study area
- Taught with Doors open
- Welcome in classrooms
- Joint field trips
- Focused on Teaching!
TODAY
What is Different?
Pedagogy – Teaching Methodology

• Lecture / Lab - “studio” style classrooms
• Materials – Rich teaching environment

Big Rock Samples for Teaching... NICE!

Fixed desks not so good for group work..
Past Emphasis on Earth Materials
Both Inside & Outside the Classroom
Scaffolded Learning

Pedagogy

• Minerals – the building blocks of rocks...
• Rocks – The building blocks of the earth’s crust...
Early Emphasis on Fieldwork

• See Rocks in their Native Habitat
• Life-long relationship with geology
• Take notes for your future return to the area...
Localize!
Hydrology of the LA river...
Physical Oceanography students measuring beach profiles and analyzing beach sediment grain size. Acquiring data as a researcher might.
Helping Out Our Local Schools

Earth Science Students delivering class lessons
Group Activities

Build Learning Communities
Geology Roadmap
A suggested roadmap to navigate a degree in Geology.

**TERM 1.**
- GEOL 1: Physical Geology
- MATH 9 or 7B**: Pre-Calculus
- CHEM 1A: General Chemistry
- GEOL 1F: Field Geology

**TERM 2.**
- GEOL 2: Historical Geology
- GEOL 2F: Phys. Geol. Field Studies
- MATH 5A: Calculus
- CHEM 1B: General Chemistry

**TERM 3.**
- GEOL 6: Mineralogy
- MATH 5B: Calculus
- PHYS 31A: General Physics

**TERM 4.**
- PHYS 31B: General Physics
- BIO 14: Field Biology
- OR
- BIO 11: General Biology

* Most students do GEO 30 (field) at least 1 time, many 2 times.

** Math: Students must either be have taken MATH 7A or test into MATH 9. If you are unsure see your counselor or visit the Math Department.

- Pre-requisite(s)

This is only a suggested roadmap. Depending on courses previously completed and current enrollment, this roadmap may differ.

For information about Geology and more, visit www.pccstem.org
Establish a Reputation as a Vital Part of the College Culture
Think – Pair - Share

Think to yourself for a minute… then turn to your partner to briefly describe some skill or content knowledge that you learned in your introductory geology class that is no longer generally taught at the Introductory Level.

So mister Sedgwick...
### Geology Department
*Last Century*

- Chalkboard drawings, slides...
- Doors open, light on!
- Emphasis on scaffolded processes. e.g. minerals -> Rocks
- Discipline specific
- “Just in case” content coverage
- Active learning lab/fieldwork (minimal arm waiving)
- Using the introductory course to “hook majors” (*best students*)
- Great Teaching directed at the best and brightest students

### Geosciences Department
*This Century*

- Powerpoint, clickers etc..
- Doors closed lights off
- E-Memory vs. O-memory? What should happen where?
- Interdisciplinary to transdisciplinary
- “Just in time” learning..
- Working towards early “research” experiences
- Creating an geoscience-educated citizenry (*all students*)
- Deep Student Learning for all – closing the achievement gap

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*What part of this past success should be kept in order to be successful 20 years from now?*
Thank You!