

Maintaining a Strong 2YC Geoscience Program

Past Successes – Future Challenges



*"I need someone well versed in the art of
torture—do you know PowerPoint?"*

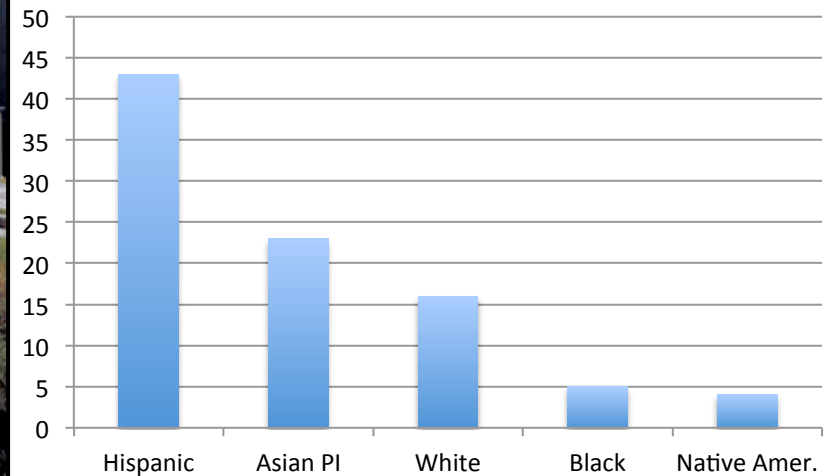
Pasadena City College

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



ETHNICITY





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 **P**EOPLE

SOUND **P**EDAGOGY

SOLID **P**ROGRAM

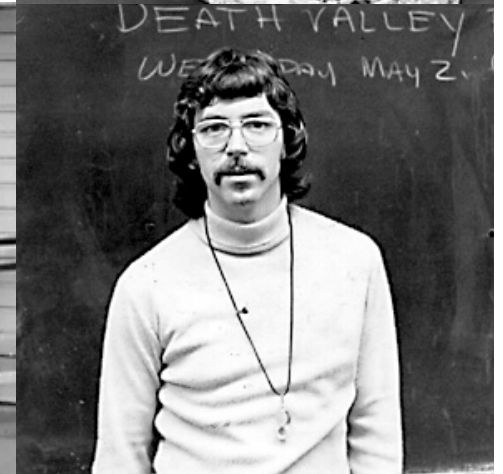
CAMPUS **P**RESENCE

- 4-5 full-time faculty in geology
- Tight knit, offices together
- Common student study area

People of the 70's

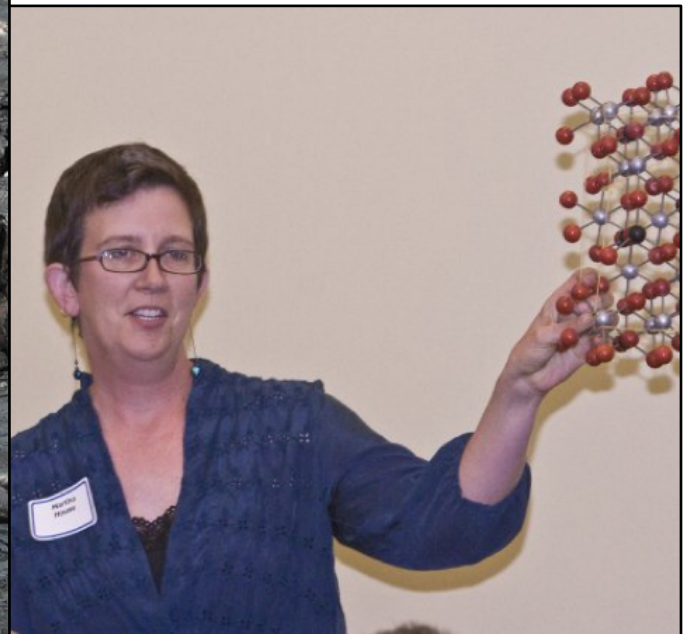


- Taught with Doors open
- Welcome in classrooms
- Joint field trips
- Focused on Teaching!



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...



Active Learning



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.

Transfer
to four year
university.

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

GEO 30*

INTERSESSION

GEO 30*

INTERSESSION

START

GED, High School
Diploma, Basic Skills

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

** Math: Students must either 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

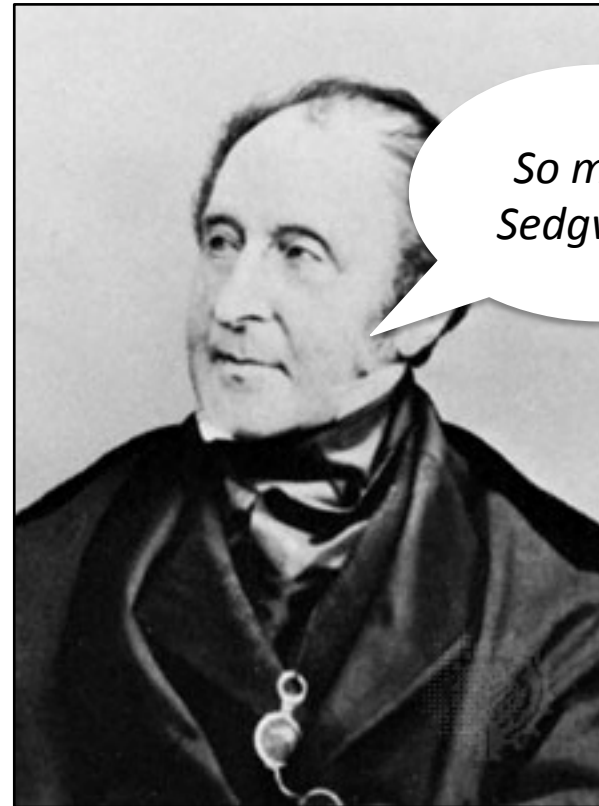
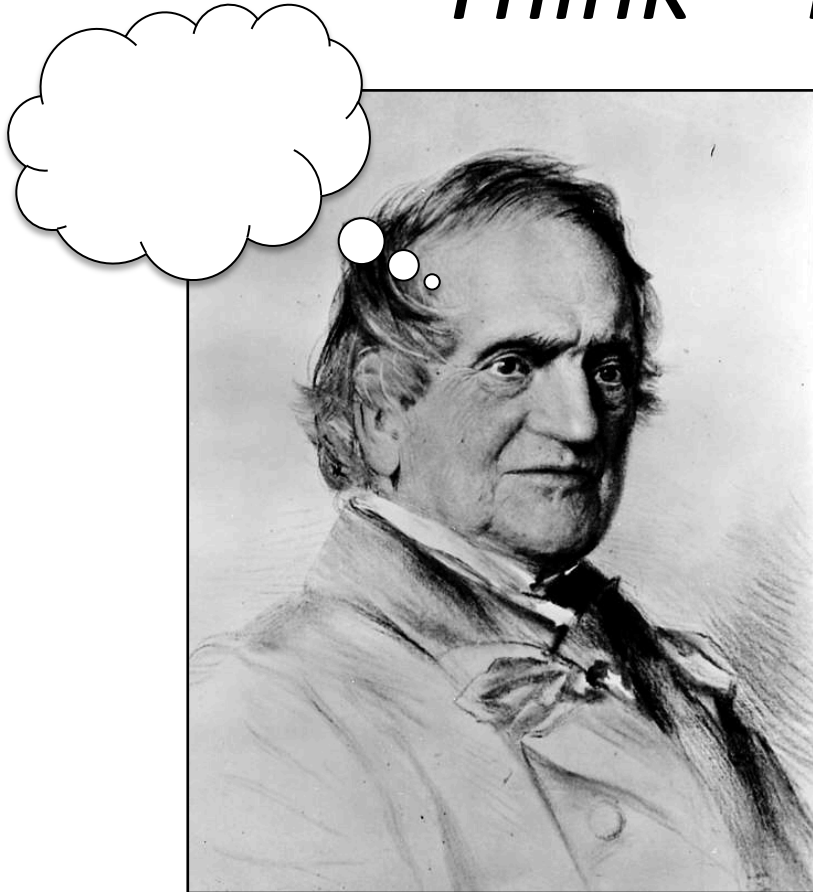




Establish a Reputation as a Vital Part of the College Culture



Think – Pair - Share



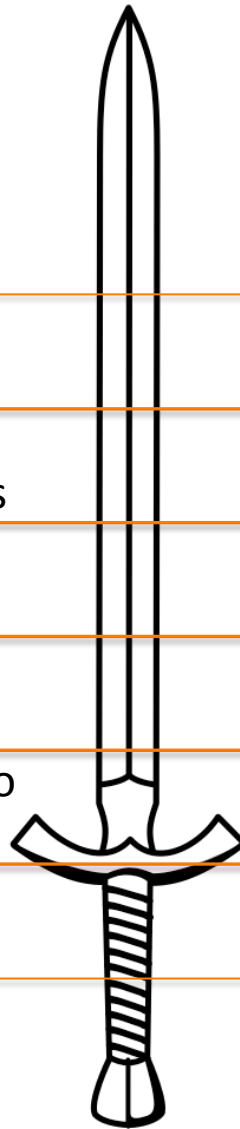
Think to yourself for a minute... then turn to your partner to briefly describe some skill or content knowledge that you learned in your introductory geology class that is no longer generally taught at the Introductory Level.

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



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

Thank You!

