6th Annual IAGI 2013 (Illinois Association of Geoscience Instructors) meeting, as a local workshop of SAGE (Supporting and Advancing Geoscience Education in Two-year colleges)

Joliet Junior College, 1 March 2013

Discussions on Best Practices (after the Skills, Knowledge and Attitudes gallery walk):

Spatial Awareness ideas:

- Map quizzes, constantly referring to maps on display, use of place-based topo maps/quads
- Increase use of 3-D teaching tools, such as play-doh, Sketchup from Google, Google Earth
- The book "How to Teach Geography" was recommended. In a Google search, I found a reference to "How to Teach Geography: A Plan for an Elementary and a Scientific Course" by Carver Elvira published in 1923. Ask the group who recommended this book (Jon Laretta?) and verify.
- Have students draw on the blackboard and exams to show spatial awareness
- Teach students spatial awareness vertically with stratigraphic sections and changes through time
- Use population pyramids from different countries and project to unknown locations

Best Practices using math:

- Need trigonometry for Quantitative Methods
- Need trigonometry and calculus for 4-year geosciences degree
- Best to work with advisors and department personnel at 4YC transfer school directly to verify math courses that will transfer
- Paper and pencil assignments for basic math units and conversions
- "Math You Need When You Need It" program available on the SERC website: http://serc.carleton.edu/mathyouneed/index.html
- Important when using "Math You Need When You Need It" activities (Kate Kramer, McHenry County College):
    - Pre-test on first day of semester
    - 90% fail pre-test; assign modules from the math website
    - Connect the labs to course material to make math relevant!
    - Using this approach, students lose the "math is scary" attitude
- Mastering Geology resources from Pearson Publishing
- SERC InTeGrate Project teaching with data: http://serc.carleton.edu/integrate/index.html
    - Developing course modules using team approach, all contributors welcome

Best Practices using reading/writing:

- Give students photos of an outcrop with identifiable features and have the students write an interpretation of the area as far back into geologic time as they can.
- Critical review paper – 2 page summary of a popular book
- Grammar counts!
- Refuse to grade a paper if grammar is poor; return to student to correct it. This develops self-responsibility and "does it make sense" approach

- Poster board project to explain concepts both visually and in writing
- Field trip portfolio writing about geology, utilizing photos, sketches, and handouts; use student tutors from college Writing Center
- NSF case studies (mostly biology)