Ohlone College
Program Review Report

- Program Description and Scope:
  1. Program Review Title: Geology
  3. Review Type: Instructional Disciplines
  4. Program/Departments: Geology (22002)
  5. Authority Code: -
  6. External Regulations: Yes _ No X
  7. Provide a brief narrative that describes the instructional program/discipline.

The Geology program at the Ohlone College is designed to provide the lower division transfer requirements for geology, earth science, and environmental science majors, general science education to other potential transfer students (both science and non-science majors), and personal growth toward improved scientific literacy to all other Ohlone students and the community at large. It involves the efforts of one full-time faculty member (Paul Belasky, Ph.D., Professor of Geology) and several part-time faculty members. It is a multi-faceted, interdisciplinary program that offers core classes in geology (GEOL 101), as well as oceanography (GEOL 102), paleontology and dinosaurs (GEOL 103), global change (GEOL 105, new course), California geology (GEOL 104, new course in development), and the associated laboratory courses (101L, 102L, 103L/105L). The program offers the Associate of Science Transfer Degree in Geology as well as certificates of completion in Geology, Earth & Environmental Sciences, and Paleobiology.

The Associate of Science Transfer Degree in Geology offered by Ohlone College is designed to prepare students for studying Geology at most universities. The core courses required in the A.S. Degree in Geology fulfill the lower division requirements for most campuses of the CSU and UC systems. The program will enable students to develop a strong foundation in the physical sciences.

The general scope of the Geology program at the Ohlone College is to provide an understanding of the processes that shape the Earth and to develop a view of the Earth from the physical, historical, and cultural perspective. Special attention is given to the global geological phenomena (moving plates, volcanoes, earthquakes, mountain-building, landslides, glaciers, etc.), “deep” time, and the interaction between humans and their environment. This program also explores examines the history of life from its beginnings to the dawn of civilization and provides a basic understanding of the prehistoric life in terms of the changing Earth and its climate, evolution, mass extinctions, and the fossil record.

8. Describe how the program specifically serves students, faculty and staff.

Each year the program typically offers four sections of GEOL 101 (with labs), up to three sections of GEOL 102, one section of 102L, and one section of
GEOL 103 and 103L. The ultimate goal of the Geology program is to provide students with a sense of informed fascination with the Earth, its character, its history, and a perspective on their place in it.

9. Describe how the program addresses current needs and applies current technologies.

In the past 12 years, the Geology programs employed the traditional methods of teaching the earth sciences, such as formal, structured lectures, more informal, specimen-based hands-on labs, emphasis on classroom instruction, attendance, note-taking, etc. These techniques are still being used and are quite effective. At the same time, new technologies such as the computer-based learning, in-class links to the Web, on-line instruction, and other innovative methods of teaching have been introduced. The current goal of the Geology program is to incorporate both of the approaches (traditional and the one utilizing web resources) into the teaching. To that end, the digital image data base has been (and is being assembled), new media were added (new videos, animation sequences, DVD’s, PowerPoint presentations with web links) were added to aid student learning and better utilize the “smart” classroom in 8109. In addition, two new hybrid (online and in-class) courses (GEOL 104 The Changing Earth and GEOL 101 Introduction to Geology) have been developed. Both of these courses utilize the innovative, web-enhanced teaching techniques. In the near future, a coordinating department website will be developed. The resources of the Ohlone Museum of Paleontology and the recently-acquired seismograph with a digital interface should further enhance the hands-on, interactive aspect of the teaching within the program. It is the combination of the traditional and innovative teaching methods that is believed to be the key to student success in the program.

10. Discuss the impact of the program on the college and/or other programs.

In the current climate of high enrollment and high number of students competing for dwindling numbers of transfer spots at universities, the Geology program serves an essential role in providing physical science literacy for a great variety of students, many of whom are non-science majors working toward transfer. In addition to enabling such students to receive quality general education in science, the program prepares other students, who are majors in earth science, marine science, environmental science for transfer into the earth science programs at 4-year institutions. It also provides life-long learning opportunities to interested members of Ohlone staff and community at large.

11. Discuss the impact of the program on the community and the impact of the community on the program.

The program shares facilities and regularly cooperates with faculty and staff in the geography, environmental science, biology, and anthropology departments. Its Museum of Paleontology and seismographic station (in development) are designed to share the earth science with the community. There has been a fruitful interaction between the Geology program and the Math/Science Nucleus of Fremont, CA and its Director Dr. Joyce Bluford, as well as with the
Fremont Montessori High School and Northern California Geological Society. All of these groups have visited the department and the museum, and Dr. Belasky of the Ohlone Geology program reciprocated by giving talks and volunteer work at those institution. Community members have also consulted the program on a variety of issues including bringing in the rock and fossil specimens they found for identification.

- **College Mission**
  1. **Mission Statement**
     The mission of Ohlone College is to serve the community by offering instruction for basic skills, career entry, university transfer, economic development, and personal enrichment for all who can benefit from our instruction in an environment where student learning success is highly valued, supported and continually assessed.
  2. **Vision Statement**
     Ohlone College will be known throughout California for our inclusiveness, innovation and superior rates of student success.
  3. **Core Values, Goals & Objectives:**
     - **College Core Values**
       - We provide life-long learning opportunities for students, college personnel and the community.
       - We open access to higher education and actively reach out to under-served populations.
       - We promote diversity and inclusiveness.
       - We maintain high standards in our constant pursuit of excellence.
       - We value trust, respect and integrity.
       - We promotes team work and open communication.
       - We demonstrate stewardship for our human, financial, physical and environmental resources.

- **College Goals/Objectives**
  1. **Through innovative programs and services, improve student learning and achievement.**
     1. By 2013, have in place an ongoing system for identifying and assessing student learning outcomes at the program and course levels, which includes faculty dialogue and appropriate improvement plans.
     2. By spring 2013, increase the college average course retention to a rate at or above the statewide average.
     4. By fall 2014, increase the improvement rate in Basic Skills and ESL courses to a rate at or above the statewide average.
     5. By spring 2013, increase to 600 the number of students transferring to UC and CSU.
     9. By 2011, achieve 100% competion of professional development in online instructional methods and online course management for faculty who teach fully online or hybrid courses.
     10. By 2015, expand the appropriate Student Services available to evening students, part time students, students on the Newark Campus, and students taking courses online.
4. Use human, fiscal, technological, and physical resources responsibly, effectively, and efficiently to maximize student learning and achievement.

5. Lead and educate the community in environmental sustainability.
   1. By 2013 employ sustainability principles in all college facilities and operations using the President Climate Commitment as a guideline.
   2. By 2015 educate students, staff and community about the value of sustainability using the framework of the California Smart Growth Initiative as a model and having 75% of the Ohlone employees annually sign the college’s green pledge.

6. Enhance college-wide interaction with, and acceptance of, diverse peoples, cultures, arts, and perspectives.
   2. By 2015, increase the number of opportunities for study abroad for faculty, staff, and students.

7. Increase access to higher education of under-served and under-represented demographic groups in the District and local communities.
   3. By 2015, increase the percentage of under-represented groups among faculty and staff to approximate the demographic percentages of the district population.

8. Engage all members of the college community in active, continual institutional improvement.
   3. By 2011, pursue potential areas for partnership and collaboration with the community.

4. Briefly describe how the program supports the college mission, vision selected college values.

   The Geology program directly supports the mission of the Ohlone College in offering university transfer, career entry, basic skills, and personal enrichment to all participating students in a supportive environment. The overwhelming majority of students taking geology courses are working toward a university transfer, many of them – non-science majors. In the process of studying geology (and especially working in geology labs), they acquire basic skills and scientific literacy that will aid university transfer and career entry.

5. Briefly describe how the program supports selected college goals.

   The earth sciences, in general, and geology, in particular, are highly visual, hands-on sciences that require the best visual and teaching aids, field experiences, and innovative approaches in science learning. The Geology program supports College Goals in utilizing methods and technologies that hold the most promise for improving student course and program completion success rates, as well as offering enhanced facilities and improved course availability.

6. Briefly describe how the program supports selected college objectives.
A number of students participate in the geology for personal development and enrichment, and the program aims to provide a number of field trips and hands on experiences to suit the needs and interests of these students.

**Program SLOs & Assessment**

1. **Program SLO -**

   List and explain the geological hazards (earthquakes, volcanoes, seismic sea waves) and natural resources (earth materials, precious metals, fossil fuels) in North America and local area and their relationship to the theory of plate tectonics.

   a. *Indicate program assessment strategies used.*
      i. Department Testing
      ii. Other

      Field Trip Report at the end of the semester.

   b. *Describe the criteria and standards used to appraise student work.*

      A. A questionnaire was developed and passed around to all for GEOL 102 (Oceanography) students within the first 6 weeks of the semester 2012. It was attached to but not be counted as part of the first quiz students have to take. The questionnaire assesses the student knowledge of the topics pertaining to this student learning outcome. It will contain objective, specific questions (matching, lists, multiple choice) on that general topic. To insure objectivity, the students will be able to use Scantron sheets for most of the questions.

      The students will be asked multiple choice questions testing students’ familiarity with concepts of plate tectonics, continental drift, seafloor spreading, Pangea, and types of geological phenomena (e.g., earthquakes, volcanoes, mountain ranges) associated with different plate boundaries. The students will be asked to choose from the list of geological hazards that can affect the Fremont area. The students will also be asked to match several common natural resources with their general origin, geographic distribution, and uses.

      The same questionnaire will be given to students at the end of class (attached to the final exam, but not be counted as part of it). The results will then be compared.

      B. The questionnaire given at the end of the semester will also ask if student interest in the subject has increased through the course and by how much (expressed on a scale from 1 to 10).

   c. *Enter assessment results and analyze student success in achieving this program SLO.*

      Results will be entered Fall of 2013 after post-test is given at the end of
d. *Describe revisions in curriculum or teaching strategies implemented to promote student success.*

e. *Future Action (Improvements)*

Describe changes you will make to promote improved student learning.

Revise and update course SLOs and outlines.

A pre and post-test will be developed for GEOL 101 (Geology) and implemented Spring 2013.

**Implementation Plan**

**Timeline:**

Revisions will be made during the course review process.

**Key/Responsible Personnel:**

Paul Belasky

2. **Program SLO -**

Demonstrate the scientific and geographic literacy by identifying major geographic and tectonic features on the map and applying unit conversions to the metric system of measurement.

a. *Indicate program assessment strategies used.*

   i. Department Testing

b. *Describe the criteria and standards used to appraise student work.*

   A. This SLO relates mostly to lab courses. (GEOL 102L, 103L) which are taught by both full-time and Adjunct Faculty. A before-and-after questionnaire will be developed and passed around to all students within the first 6 weeks of the semester. It will be attached to (but not be counted as part of the first quiz they have to take). The questionnaire will assess the student knowledge of the topics as pertaining to global geographic literacy, and applying unit conversions to the metric system of measurement. It will contain objective, specific questions (matching lists, multiple choice) on those topics. In addition, the students will be given a copy of a large-scale map of the world. They will be asked to locating continents, major physical and tectonic features, and water bodies on the map of the world. They will also be asked to determine latitude and longitude of a specific features on the map. To insure objectivity, the students will be able to use Scantron sheets for most of the questions.

The same questionnaire will be given to students at the end of class (attached to the final exam, but not be counted as part of it). The results will then be compared.
B. The questionnaire given at the end of the semester will also ask students if their interest in the subject has increased through the course and by how much (expressed on a scale from 1 to 10).

c. *Enter assessment results and analyze student success in achieving this program SLO.*

Results will be entered Fall of 2013 after post-test is given at the end of Spring 2013.

d. *Describe revisions in curriculum or teaching strategies implemented to promote student success.*

Lab specimens and visual aids such as additional, up-to-date videos and web components have been acquired and incorporated into the curriculum. Lecture material has been further revised into uploaded onto the Powerpoint platform.

e. *Future Action (Improvements)*

Describe changes you will make to promote improved student learning

Full-time faculty will work with Adjunct faculty to initiate SLO assessment

3. **Program SLO -**

*Use the geologic time scale and list major events in earth history as related to that scale.*

a. *Indicate program assessment strategies used.*

   i. Department Testing

b. *Describe the criteria and standards used to appraise student work.*

   A. This SLO relates mostly to GEOL 103 and GEOL 104 courses and centers on historical and paleontological aspect of geology. A before-and-after questionnaire will be developed and passed around to all students within the first 6 weeks of the semester. It will be attached to (but not be counted as part of the first quiz they have to take). The questionnaire will assess the student knowledge of the topics as pertaining to knowledge of the geologic time scale and the timing of major events in the history of the earth and life on earth. It will contain objective, specific questions (matching lists, multiple choice) on those topics. The students will be given a copy of the geologic time scale. They will be asked to match the scale to the major events in the history of the earth and life on earth.

   The same questionnaire will be given to students at the end of class (attached to the final exam, but not be counted as part of it). The results will then be compared.

B. The questionnaire given at the end of the semester will also ask students if their interest in the subject has increased through the course and by how much (expressed on a scale from 1 to 10).
much (expressed on a scale from 1 to 10).

c. Enter assessment results and analyze student success in achieving this program SLO.

Results will be entered Spring 2013 after post-test is given at the end of Fall 2012.

d. Describe revisions in curriculum or teaching strategies implemented to promote student success.

SLO's for GEOL 103 and GEOL 104 are in the process of revision.

e. Future Action (Improvements)

• SLO Matrix

*Key: I-Introduced, P-Practiced with Feedback, M-Demonstrated at the Mastery Level*

<table>
<thead>
<tr>
<th>Course</th>
<th>SLO-1</th>
<th>SLO-2</th>
<th>SLO-3</th>
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<tbody>
<tr>
<td>GEOL 101</td>
<td>M</td>
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<td>GEOL 102</td>
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<td>GEOL 213</td>
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• SLO Matrix Comments

• Course SLO & Assessment

GEOL 102 Introduction to Oceanography

1. Explain an understanding of the chemical, biological, and geological components of the sea through class assignments. Identify the principles of oceanography and relate it to their lives in order to fully understand the importance of the ocean environment to our society and why it should be protected. This will be accomplished through term papers and classroom examinations.

*Indicate planned course assessment strategies*

Other

*Other*

Pre and post quiz given to students at the beginning and end of Fall semester 2012 related to the newly revised course SLOs.

*Describe the criteria and/or performance standards used to appraise student work.*

*Enter assessment results and analyze student success in achieving course SLOs.*

The results pre- and post-assessment questionnaires will be posted during the Spring 2013 semester.
Describe revisions in curriculum or teaching strategies implemented to promote student success.

The CSLO's for this course are currently being revised as part of the course review process through the curriculum committee. Assessment plans are delineated in the PSLOA section.

**Future Action (Improvements)**

GEOL 103 Paleontology and Dinosaurs
1. Identify and demonstrate an understanding of the origin and development of organisms through time, classroom demonstrations, and readings. Apply basic geological principles to paleontology through class discussions and assignments. Cite evidence of how life changes through time and how human beings fit into the fossil record. This will be accomplished through research papers and class projects. Participate in two required Saturday field trips. Participate in a one-hour local field excursion. Visit the Ohlone Museum of Paleontology.

Indicate planned course assessment strategies

Describe the criteria and/or performance standards used to appraise student work.

Enter assessment results and analyze student success in achieving course SLOs.

The results of the pre- and post-test will be posted during the Spring 2013 semester.

Describe revisions in curriculum or teaching strategies implemented to promote student success.

The CSLO's for this course are currently being revised as part of the course review process through the curriculum committee. Assessment plans are delineated in the PSLOA section.

**Future Action (Improvements)**

- **Student Achievement:** A series of measures including course completion, course retention, persistence, program completion, and others.
  1. List expected student achievement outcomes:
  2. Analyze changes in data, identify trends, and provide possible contextual explanations for each measure used. (Example measures include: course completion, course retention, persistence, program completion).

Retention/completion data, though high in most courses in this department, reflects enrollment trends and consistency of instruction, and remained fairly steady and high in the last several years. The retention/completion is normally above 85% for the face-to-face classes, such as GEOL 101, GEOL 102, and GEOL 103 and is lower (70%) for the online hybrid classes, such as GEOL 101 (hybrid) and GEOL 104 in concordance with statewide trends for online classes, which is a more challenging format for many beginning students. However, the retention in hybrid classes, especially GEOL 104, has increased in the last 3 years. This course has been added to the curriculum by the recommendation of geology faculty at CSU East Bay (during the inter-institutional educational conference that the department's faculty has attended) and is regularly drawing lower- and
upper-division student majors from CSU East Bay. All our courses in the geology department are transerrable to CSU's and UC's.

3. **Analyze program budget trends and expenditures. Comment on how the program can best use budget resources.**

The program is very fiscally efficient, as geology labs do not require as many supplies and reagents as most other science programs. We make the best use of our mineral/rock/fossil specimens, which last a long time and are excellent. We also use microscopes that were donated to us by the biology department, as the older models are sufficient for our needs. We normally spend no more than $500 per academic year on lab supplies, specimens, and field trip expenses. The $500 annual separate field trip budget has been temporarily eliminated in 2011 due to the current budget situation. These funds will hopefully be reinstated when the budget crisis eases. We have recently purchased new topographic and geological maps of the local area, as well as top-quality atlases for student use. Demonstration seismographs and fluorescence tube and rock set, as well as rock and fossil specimens were purchased in 2011 under the Title III grant funds.

4. **Analyze the program's current use of staff, equipment, technology, facilities, and/or other resources. Comment on how the program can best use these resources.**

We currently have one full-time and 2 part-time instructors, which is sufficient for our needs in the absence of summer school offerings. The full-time faculty member is due for sabbatical leave in 2012-2013. However, sabbatical leaves have unfortunately been temporarily suspended. If and when the sabbatical leaves and summer offerings are reinstated, we have the sufficient number of part-time faculty to cover teaching of all classes in the geology department, with the exception of GEOL 103, for which we might have to hire a part-time instructor.

5. **Describe any additional notable program achievements (optional).**

The Geology program at Ohlone College benefits from a number of unique assets/achievements:

(1) award of $2000 mini-grant to purchase media products and visual aids that are close-captioned for deaf and hard-of-hearing students.

(2) the faculty at the department (both full-time and part-time) continue to be actively engaged their scientific field, including conducting summer field work, publishing research, sitting on international committees, and participating in conferences. This activity invigorates the faculty, keeps them current in the field, and that enthusiasm rubs off on students. The full-time faculty member is also serving as External Board Member (an appointed, voluntary position) at the Institute of East European and Eurasian Studies at UC Berkeley.
(3) the existence of the Ohlone Museum of Paleontology in the department. This museum contains a collection of Ice-Age fossil mammals, including mammoths, camels, horses, saber tooth cats, and other animals from the local Irvington area that is world famous. Such museums are very rare for community colleges and adds to already extensive collections of minerals, rocks, and fossils from around the world. Ohlone students conduct lab work and individual research projects in the museum, and school kids from the Fremont area have visited it on field trips. Despite its great educational value, the museum is running out of space to display the specimens properly and would need space for display (one spacious room) in the planned new science building in order to retain the collection and provide access to students and the community at large.

6. Additional Program Table Data
   **GEOL_FTES**

   There is an increase in enrollment in the Geology program in the last 5 years (see graph). We maintained 1 full-time faculty but have added one more adjunct (now totaling 2).

   **Data_PR**

   The lower retention rate during the Fall semester in comparison to that during Spring can be explained by the presence of new additional hybrid classes that are taught only in the Fall semester (GEOL 104, GEOL 101). The retention rate in the online and hybrid classes has historically been lower compared to the face-to-face classes across disciplines.

7. Future Action
   Current levels of student achievement indicators maintained.

   **Program Analysis**

   After assessing student learning outcomes/impacts, student/program achievement, and the status of previous program improvement objectives (PIOs), analyze the data and any identified trends, and summarize your findings. Use these data and trends to prioritize, revise, or develop new PIOs

   1. *Describe program achievements and successes.*

      We have a highly diverse program in terms of the number of courses in the earth sciences (4 lecture courses and 3 lab courses), all transferrable to UC's and CSU's, as well as the unique Ohlone Museum of Paleontology, which is used and curated by students and is open by appointment to the community. We also have large teaching collections of minerals, rocks, and fossils from all over the world, as well as a library of professional magazines. The department also has 2 seismographs (one working and one - for demonstration) that provide the record of the earthquake activity in the local
area and serve as teaching tools for students. This makes our program larger than most at community colleges in the Bay area and unique in its emphasis on paleontology. A number of our student majors have transferred into the top universities in and out of state. The faculty at the department possess advanced degrees and have taught at various universities over the years, as well as community colleges. They remain active as scientists, maintain membership in the professional societies, do field work, publish scientific papers, and sit on international environmental boards. The program continues to emphasize a hands-on approach to science by scheduling regular field trips to various points of geological interest including weekend trips to the Monterey Peninsula and cruise of San Francisco Bay aboard a ship.

2. According to the evidence, what are the areas needing improvement?

The main goals are (1) to move the museum to a larger location on campus, so it can finally be open to the public and (2) to improve the visual aids (atlases, videos) for use of students and instructors in the department; (3) to improve the online component such as GoogleEarth and other web links and resources into the curriculum, both online and in class.

• Program Improvement Objectives:
  1. Objective:

   Improve the geographic literacy of the Ohlone students by providing better maps and atlases, and incorporating geographic online resources into the curriculum. Currently, US students rank last among the industrialized nations in geographic literacy. The department is in short supply of maps and atlases for individual student use in the lab.

   a. Action Plan
      Year 1:

      1. To purchase new topographic and geological maps of the local area (USGS Niles quadrangle) for individual student use in the geology labs.

      2. To purchase up-to-date National Geographic Atlases for individual student use in the labs. The department has an inadequate number of student atlases for use in the labs.

      Year 2:

      To incorporate web resources, specifically Google Earth, into the lab exercises and homework assignments. These resources are highly effective and should further improve students' geographic literacy.

   b. Equipment (Include items that fit under department budget codes)
      Year 1:
1. 40 new student atlases (from National Geographic) - cost estimate -$700

2. 3 maps of the world (1 physical, 2 political)  - cost estimate $300

2. 50 USGS topo quadrangles of the local area (Niles quad) - cost estimate - $400

3. 50 geological maps of the local area (Niles quad) - cost estimate - $400

Year 2:

1. Geographic software for class demonstrations - cost estimate $500

c. Assessment Plan: List Assessment Strategies

Year 1:

Standardized National Geographic Society pre and post tests of students on geographic literacy, given on the first and last day of each earth science course. Improved maps and atlases, as well as the use of the web and software should increase the scores in the post tests on scientific literacy. These changes will be noted and recorded, and teaching emphasis adjusted accordingly.

d. Which college goal(s) does this program improvement objective work to achieve? Clearly describe how your PIO will help achieve one or more of the college goals and objectives, has impact beyond the particular department, and contributes to student learning/success.

1. Through innovative programs and services, improve student learning and achievement.

Rationale:

In the modern and complex world, geographic literacy should be a key component of student learning, much more than it has been in the past. Considering the potential involvement of students in international affairs, the geographic literacy will greatly improve their knowledge about the people and cultures they will come in contact with.

4. Use human, fiscal, technological, and physical resources responsibly, effectively, and efficiently to maximize student learning and achievement.

Rationale:
good maps and atlases are low-cost, but are very helpful in achieving geographic literacy and improving student success.

5. Lead and educate the community in environmental sustainability.
   Rationale:
   Geographic literacy provides students with the knowledge base of current environmental problems, their location, and relationships to our country and local community. The next step is to apply that geographic knowledge in addressing environmental issues, including sustainability.

6. Enhance college-wide interaction with, and acceptance of, diverse peoples, cultures, arts, and perspectives.
   Rationale:
   We are an extremely diverse culture. Knowledge about geography and other cultures improves not only the students’ ability to travel successfully and conduct business abroad, but also to create an enlightened, inclusive, and tolerant atmosphere on campus.

2. PIO Assessment
   a. Enter assessment results with analysis.
      Got a $2000 in mini-grant and purchased maps and atlases for the next semester. We expect a significant improvement in geographic literacy with the use of new resources.
   b. Describe how PIO achieved one or more of the college goals and objectives, had an impact beyond the particular department, and contributed to student success/learning.
      check college goal 1.
   c. Future Action
      Completed.

1. Objective:
   Provide new visual aids, visual displays, digital displays, and other visual resources, such as closed-captioned DVD’s for hearing-impaired, that demonstrate important geological concepts and hazards to students and the community at large.
   a. Action Plan
      Year 1:
      1. Incorporate new, closed-captioned DVD’s for hearing impaired into the
lecture and lab presentations. The present DVD collection is out-of-date, inadequate and, most importantly, largely unsuitable for use by hearing-impaired because it lacks closed captions, which are currently required by law.

**Year 2:**

2. cooperate with IT in order to create a display outside of Room 8109, which illustrates local earthquake activity as recorded by our in-house sesmograph in 8109, as well as a link to USGS website educating the public about earthquakes.

b. **Staffing**

**Year 2:**

part-time involvement of IT personnel in order to set up two computer screens and the cable connection to the seismograph in Room 8109.

c. **Technology (Include items that fit under IT budget codes)**

**Year 1:**

any equipment associated with setting up the digital display in room 8109 - estimated cost - uncertain, but no more than a few hundred dollars.

d. **Other (Include other resources needed)**

**Year 1:**

Purchase through the library funds of closed-captioned DVD's on specific topics in geology and geography - estimated cost - $2000

e. **Assessment Plan: List Assessment Strategies**

**Year 1:**

acquiring of the visual aids

**Year 2:**

assessment of the functionality of the seismograph display by the department and the division dean

f. **Which college goal(s) does this program improvement objective work to achieve? Clearly describe how your PIO will help achieve one or more of the college goals and objectives, has impact beyond the particular department, and contributes to student learning/success.**

1. Through innovative programs and services, improve student learning and achievement.
Rationale:
better visual aids and displays - improved student success and science literacy in the community

4. Use human, fiscal, technological, and physical resources responsibly, effectively, and efficiently to maximize student learning and achievement. Rationale:
the requested items are relatively low-cost but effective for student learning

8. Engage all members of the college community in active, continual institutional improvement. Rationale:
awareness of the local geological hazards through earthquake display will benefit all members of our college community

2. PIO Assessment
   a. Enter assessment results with analysis.

   A list of DVD's for the National Geographic Society, Discovery Channel, and BBC is near completion. DVD's will be ordered by the end of Fall 2012 semester

   b. Describe how PIO achieved one or more of the college goals and objectives, had an impact beyond the particular department, and contributed to student success/learning.

   Geography and Anthropology Department will have access to these new resources.

   c. Future Action
   Current level of focus maintained. Describe.

   A list of DVD's for the National Geographic Society, Discovery Channel, and BBC is near completion. DVD's will be ordered by the end of Fall 2012 semester

1. Objective:
Move the Ohlone Museum of Paleontology to a larger location on campus, where the unique collection of Ice-Age fossils from our local area can be adequately displayed and open to the community on a regular basis.

   a. Action Plan
Year 1:

The Ohlone Museum of Paleontology is currently located in a cramped room 8109B, behind the Geology lab at 8109. Because of its location and lighting limitations it cannot be open to public. The donators of the fossils have expressed the desire to have them displayed so the public could see them and even threatened to take back the collection if the museum continues to be of limited access to the public. Thus it is essential that the museum moves to a larger location, separate from the classroom, so that it has enough space for the exhibits and can be open to the public on the regular basis. Ohlone College currently has available free space, especially in Building 1. The department is awaiting the decision from the administration.

b. Staffing

Year 2:

part-time docents and/or volunteers will be needed to keep the museum open and educate the public at least a few hours per week - estimated cost - $50/week

c. Facilities (Include items that fit under the Facilities budget codes)

Year 1:

facilities help and equipment will be needed to move the museum to the new location.

d. Which college goal(s) does this program improvement objective work to achieve? Clearly describe how your PIO will help achieve one or more of the college goals and objectives, has impact beyond the particular department, and contributes to student learning/success.

1. Through innovative programs and services, improve student learning and achievement.
Rationale:
the museum will provide the unique opportunity of students hands-on learning

5. Lead and educate the community in environmental sustainability.
Rationale:
this is a local museum that will address local environmental issues

7. Increase access to higher education of under-served and under-represented demographic groups in the District and local communities.
Rationale:
the museum will host visits by school kids of all socioeconomic backgrounds and benefit local communities

2. PIO Assessment
   a. Enter assessment results with analysis.
      The move of the museum is contingent upon the availability of space in the planned new science museum and elsewhere on campus, as well as decisions of administrators.
   
   b. Describe how PIO achieved one or more of the college goals and objectives, had an impact beyond the particular department, and contributed to student success/learning.
      The museum will be a great outreach effort to students from other science departments and the community at large.
   
   c. Future Action
      Current level of focus maintained. Describe.
      The effort to move the museum is continuing. It is contingent upon the availability of space in the planned new science museum and elsewhere on campus, as well as decisions of administrators.

• Outside Review Results
  1. List each team members name and title.
     None.
  2. Discuss key feedback provided by team and how it was incorporated into the report.
     None.

• Attached Files
  1. GEOL 103 course assessment.doc