Reconsidered Geology Department Assessment Plan
Submitted 03 February 2014

Department Student Learning Statement
The Geology Department serves a large number of both non-majors and majors at Macalester College. Our goal is to prepare students for a life of engaged citizenship in a rapidly changing and increasingly globalized world through a scientific understanding of the Earth, its history, natural systems, resources, human interactions with the earth, and recent global change. In the context of the liberal arts tradition, we also endeavor to inspire in our students to an appreciation of the natural world and a life-long passion for learning about it. These goals are accomplished through challenging courses that emphasize hands-on learning, field study, and the use of state-of-the-art instrumentation.

Department Learning Goals and Outcomes
In our introductory courses (e.g., Dinosaurs, Geocinema, Exploring the Solar System, Dynamic Earth and Global Change, History and Evolution of the Earth), which serve both non-majors and majors alike, our goals for student learning are: (1) to understand the fundamental materials and processes that characterize the origin and evolution of the Earth, (2) to develop basic skills in spatial, temporal, and systems thinking, and (3) to develop a higher-order reasoning skills (e.g., scientific method, analytical and critical thinking, quantitative reasoning) for investigating important questions about the Earth and environment.

Students who complete a Bachelor of Arts degree in geology will:
• understand fundamental geologic concepts, processes, and materials, and will be able apply this knowledge to address common questions in the Earth sciences

• approach the world like a geologist (e.g., skilled in managing ambiguity; able to think spatially and temporally; understanding of deep time; and able to understand complex interacting systems)

• be adept in using a wide range of methods and skills for investigating the Earth, including: the scientific method; critical thinking, quantitative, and analytical thinking; and basic research skills

• be able to effectively communicate scientific concepts, information, or implications in written, oral, and visual forms

Department Assessment Strategies
The Geology Department has been using several different instruments to assess the Geology Department Learning Outcomes (DLO’s). These instruments are constantly being improved, and new instruments are being developed or adapted for our
assessment purposes. At this time, our efforts are focused on four different tools for assessing the DLO’s: (1) knowledge surveys, (2) direct assessments, (3) science literacy concept inventory, and (4) the senior capstone. An outline of the meaningful, manageable, and sustainable assessment strategy is outlined in the table below.

### Table of Department Learning Outcomes and Assessment Instruments

<table>
<thead>
<tr>
<th>Department Learning Outcomes</th>
<th>Knowledge Surveys</th>
<th>Direct Assessment</th>
<th>Science Literacy Concept Inventory</th>
<th>Senior Capstone Project</th>
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<tbody>
<tr>
<td>understand fundamental concepts, processes, and materials, and be able to apply this knowledge</td>
<td>indirect measure of breadth of knowledge and skills</td>
<td>direct measure of depth of skills &amp; competencies</td>
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**Timeline for assessing DLO**

Our department currently conducts all of the direct measures above. We plan to continue to assess all four of our outcomes every year using both direct and indirect measures. We will reevaluate and update our direct assessment tool (currently conducted in our Senior Seminar) in 2014.