

InTeGrate Logic Model: Revised 24 September 2012

| A: Inputs | B: Activities (years 1&2) | C: Outputs | D: Outcomes: Short | E: Outcomes: Long |
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| <ol style="list-style-type: none"> 1. NSF Funding 2. Advisory Board 3. Literacy documents (earth, atmosphere, ocean, climate, environment) 4. Existing course materials 5. Existing collaborations and working relationships: within undergrad GeoEd, with other science faculty, with professional societies, with education researchers. 6. Leadership experienced at fostering collaborative faculty accomplishments. 7. Internet; infrastructure for dissemination and distributed collaboration 8. SERC technology and administrative infrastructure (CMS, website, personnel) 9. Deep knowledge of Earth System and of geoscience habits of mind (“methods”) 10. Extensive experience teaching Earth & Env. Sci. 11. Research findings on education, teaching, learning, thinking. 12. Shared commitment to improved future through increased public understanding of the Earth & Environment | <ol style="list-style-type: none"> 1. Coalesce leadership group. 2. Recruit Assessment Team & develop instructional materials rubric. 3. Develop instruments for student learning, career interest, sustainability motivation, and for faculty self-reflection. 4. Recruit and train initial materials development teams, each spanning 3 different institutions; embed Assessment Team member. 5. Collaboratively develop course materials, aligning with rubric. 6. Test newly developed courses/modules in multiple venues. 7. Measure effectiveness of course materials using pre/post-survey, pre/post learning assessment, and embedded assessments. 8. Implement and test course materials at non-developers’ institutions 9. Revise course materials. 10. Via workshops, capture wisdom of practice and recruit subsequent materials development teams | <ol style="list-style-type: none"> 1. Exemplary course materials for teachers and students, developed around pedagogical best practices, encompassing sustainability themes, and tested with diverse audiences and venues. 2. Tools, practices, exemplars and experienced individuals, for collaborative development of course materials. 3. Instruments for assessing student learning, attitudes, and motivation, around big ideas of geoscience and environmental sustainability. 4. Website that is a valued resource for project and non-project faculty engaged in Earth & Environmental education. 5. Dissemination materials: presentations, talks, posters, papers, articles. 6. Workshop outputs: Web documentation of effective practices and ways of thinking; new collaborations | <ol style="list-style-type: none"> 1. More geo faculty are familiar with pedagogical best practices and committed to sustainability goals. 2. More faculty in non-geo fields (e.g. engineering, business, elem. education) incorporate Earth System concepts and insights into their teaching. 3. Higher percentage of students learn about Earth Systems during their undergraduate years. 4. More undergraduates elect to major in Earth- or Environment-related fields of study. 5. More undergraduates aspire to careers in which they use Geo-related skills, knowledge and understanding. 6. Robust community of practice of educators sharing insights and materials to improve undergraduate education around environmental sustainability. 7. Findings and results are disseminated to a broad range of educators and the public via internet, conferences, and publications. | <ol style="list-style-type: none"> 1. Larger fraction of the American public understands basic Earth System processes. 2. Larger fraction of the American public considers energy, water, and resource limitations, environmental degradation, natural hazards, and climate change when making decisions in their personal and professional lives. 3. The nation collectively makes wiser decisions on issues concerning energy, water, and mineral resources, environmental degradation, natural hazards and climate change. |