

**BUFFALO STATE COLLEGE**  
**Individual Information Sheet**  
**Request for Discretionary Salary Increase\***

Time Frame for Review: July 1, 2004 - June 30, 2005

**FACULTY**

**(Limit the response to three pages.)**

Employee Name: Elisa Bergslien  
Department: Earth Sciences and Science Education

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1. Summarize your professional activities and accomplishments for the past year.

a. Effectiveness in Teaching

In the past year I taught Introductory Geology (GES 101), Hydrogeology (GES 452), Applied Environmental Methods (GES 460), and Forensic Geology (GES 360) and mentored several individual research projects. I have also taught sections of Historical Geology (GES 102) / Restless Earth (GES 502) for the past two summers.

The introductory students are generally positive about their experience. My evaluations on the whole tend to be very positive - averaging a 3.3 in the instructor section for all three sections of GES 101 I taught this year, which isn't bad for a course most students are taking for general education credit. Some of the written comments I have received include "She made everything so interesting + I loved how she made everything understandable. She's a great teacher", "Excellent use of homework assignments to re-enforce lecture and reading" and "Dr. Bergslien is a great teacher!"

The new GES 360 Forensic Geology course was a big hit. The course was extremely labor intensive to create, as it is composed of a series of interlocking hands-on laboratory experiences, but the pay-off, especially for the science education students, appears to be very high. The average instructor evaluation section score was 3.5 for this course. I have already had students asking about taking it next year.

The Hydrogeology (GES 452) and Applied Environmental Methods (GES 460) courses are under constant development. There is a struggle here to present this material to students with very limited math backgrounds. I am introducing more and more hands-on laboratory exercises to these courses each year, which is a plus but very time consuming. The average instructor evaluation score was 3.2 for the Hydrogeology course, which is up substantially from last year and 2.5 for Applied Environmental Methods, which is down substantially from the past couple of years (it was a 4.0). The latter was due to the fact several of the students in the class did not have much of the background for a 400 level course and there was a group of students who didn't attend lectures very often and then complained that they didn't understand the assignments.

I have also had positive feedback from other faculty (from physics strangely enough) who report that students have spoken favorably of my courses.

b. Scholarship, Research, and Creative Activity

The Research Foundation presented me with a recognition award which states "In recognition of your outstanding contributions to Buffalo State College and your efforts, persistence and success in sponsored program research."

I received a National Science Foundation CCLI grant last year for the development of my Forensic Geology class and the purchase of an X-ray Diffractometer, which was installed in December 04/January 05. It was used in the course and I spent a portion of this summer

developing protocols for its use and developing course materials that incorporate its use for Physics and Earth Sciences courses.

I currently have three articles under consideration by journals. One article is entitled "Avoiding the CSI effect: Keeping the Science in Forensic Science" and is currently under review by the Journal of Chemical Education. I also have two articles under review by the Journal of Contaminant Hydrology - one entitled "Measurement of aperture distribution in fractured dolomite via direct and indirect methods" was submitted in July and the other, entitled "The Effect of Changes in Wettability on Multiphase Flow in Replicas of Single Natural Fractures" was submitted in early August. One more article, an expansion of the student research project "Route of a muddy pair of boots" is in development for submission to the Journal of Forensic Science.

I will be presenting twice at the Geological Society of America's annual meeting in October: a poster on "Forensic Geology: An Uncommon Hands-on Approach to Rocks, Minerals and Maps," and an oral presentation about the "Farmersville Landfill Saga: Geoscience and the Law."

I have completed three major grant applications in the past few months. The first, to the National Science Foundation's Course, Curriculum, and Laboratory Improvement Adaptation and Implementation Program, was entitled "Adaptation of a Polarized Light Microscopy Network for Improvement of Student Learning in the Earth Sciences, Geology and Earth Sciences Education Programs" for \$ 114,181. It was rejected, with fairly favorable reviews, mostly on the basis that I received one of these awards last year. Based on this grant I have written an informal three page letter to the Corning Foundation for permission to submit a formal grant proposal that would provide funding to do a proof-of-concept pilot version of the network to demonstrate that it is feasible.

The second major grant was to the National Science Foundation's Geoscience Education program entitled "Forensic Geology and the Geology of Art: A Non-traditional Approach to Attracting Urban Students to the Geosciences" for \$208,105. It was given a "Fund if Possible" rating but was eventually rejected with strong encouragement to apply again next year. I fully intent to re-submit this proposal in the next cycle.

The third grant proposal, to the NSF EAR/IF program, is a joint project with Dr. Gregory Smith in Art Conservation entitled "Acquisition of Equipment for the Creation of a Forensic Geology Laboratory at Buffalo State College: A Non-traditional Approach to Attracting Urban Students to the Geosciences" and requests a total of \$ 693,202 over three years. The long term goal is to create a jointly run, regionally recognized, Analytical Geoscience facility for the analysis of inorganic microsamples, such as forensic soil traces or mineral pigments. This proposal was submitted August 8th and we should hear back by Feb 2006.

I received a Faculty Incentive Grant of \$6,945.09 for development of a research proposal entitled "An Experimental Thermodynamics Analysis of Clay Mineral – Organic Compound Interactions" This funding was used to purchase some analytical equipment and chemicals. I will hopefully get at least one student involved in this research in the next semester.

I presented a poster entitled "Forensic geology: applications of x-ray diffraction" at the Sixth Annual Faculty/Staff Scholarship and Creativity Celebration and was a mentor for five posters in the Seventh Annual Student Research and Creativity Celebration.

c. Service to the College, Community, Profession  
College Service:

- I was selected to serve on the Research Council and am on the Strategic Planning Subcommittee. I was one of the facilitators of the Research Councils stakeholders meeting.

- I have just been elected to the School of Natural and Applied Sciences Senate and will be serving as one of the SNSS representatives to the College Senate.
- Since I arrived I have been an active member of the Departmental Analysis and Planning / Undergraduate Committee, serving as chair this past year. This committee was responsible for compiling the draft department evaluation and assembled a significant portion of the information for the department program review. The committee also compiled a draft report on proposed changes in our curriculum. Based on this information I have been creating drafts of new curriculum for discussion for departmental discussion. In addition, I was on the ad hoc Bylaws Revision Committee which completed its charge this year, and I am the chair of the ad hoc Evaluation Form Revision Committee. Plus, I am the departmental Safety Officer and Library Liaison.
- I am a member of the Women in Science and Mathematics committee.
- I was a member of the 2005 President's Medal for Outstanding Graduate Student, and Chancellor's Award for Student Excellence Committee.

Community Service:

- I am performing local analysis of the Delaware Park area to assist in a larger effort to track pollutants in the Buffalo area.
- I helped with the Penn Dixie "Scare-assic Park ! A Pirate Adventure" fund raiser.
- I am still serving as a consultant to Gary A. Abraham, Esq., of the Concerned Citizens of Cattaraugus County, Inc. on the Farmersville Landfill issue. I have preformed analysis of the geological and hydrogeologic issues associated with the proposed siting of the landfill.

Professional Service:

- I was invited to become a reviewer for the Journal of South American Earth Sciences and have reviewed an article entitled "Surface and groundwater quality in the northeastern region of Buenos Aires Province, Argentina" by G. Galindo, C. Sainato, C. Dapena, J.L. Fernandez-Turiel, D. Gimeno, M.C. Pomposiello & H.O. Panarello
- I reviewed four chapters of the new Chernicoff and Whitney Geology textbook from Pearson Education/Prentice Hall: Mass Movement, Streams and Floods, Groundwater, and Glaciers and Ice Age. I am also a reviewer for the Understanding Earth textbook.

2. Note any changes you have made in your courses that you feel have led to the strengthening of the classroom experience and improvement of student learning.
  - Each year I develop more hands-on experiences for all of my courses. I also submitted four new course proposals: GES 513 - Advanced Forensic Geoscience; GES 521 - Advanced Environmental Geochemistry; GES 525 - Advanced Hydrogeology; GES 529 - Advanced Environmental Field Methods and Analysis.
3. Describe any activities beyond normal classroom activities which foster student development. Include work with student organizations, and any special efforts in the areas of student advisement, student mentoring, or any other student support activities.
  - I am an active student advisor, with an official list of several advisees, plus several other students who visit for suggestions regarding their course selection. I also advise students at the Transfer and First-Year Student Orientations.
  - On September 30th, 2004, I hosted a member of the Student Conservation Association who came to speak about paid internship opportunities. I plan to host them again this year.
  - I am the Faculty Advisor for the Wilderness Club.
4. Note any additional activities of significance in your own professional development or which contribute in some direct way to helping the department/faculty/college meet its objectives and mission.
 

From June 13th to June 18th I attended an NSF sponsored workshop on Forensic Chemistry held in Williamstown, MA, and I have attended my 8-hour refresher course to maintain my OSHA Hazwoper certification.