IUPUI | DEPARTMENT OF EARTH SCIENCES
SCHOOL OF SCIENCE
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Response to Review Comments for Applied Earth Sciences Ph.D. Proposal

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I appreciate the opportunity to respond to the comments provided by reviewers, and to revise the proposal in accordance with review comments where appropriate. In general, the comments were supportive of the proposal, with perhaps the greatest concerns being the experience of program faculty in mentoring research-intensive graduate programs, the rigor of the examination process, and the faculty critical mass to deliver the program. I address these major comments below, and then respond to more minor comments/suggestions.

1. Experience of program faculty in mentoring research-intensive graduate programs

Several of the reviewers noted that little information about graduate research mentoring experience for program faculty existed in the proposal, brining up a set of questions related to experience in this area. I believe that most of these comments derived from our lack of articulation in the proposal of the nature of our current M.S. program and of past graduate student mentoring by program faculty. I have now included this mentoring information in Appendix 3, which reveals that current AES TT faculty have mentored or are currently mentoring 55 thesis-based M.S. students and co-Chair or serve on Research Committees of 5 Ph.D. students on other campuses. Furthermore, our M.S. program is almost entirely populated by thesis-track students, and the quality of M.S. theses that arise from our program have been high—approximately 30 peer-reviewed journal publications have arisen from research conducted by our M.S. students over the past 10 years (n=30). Note that until we have a Ph.D. program, we cannot individually serve as Chair of Ph.D. students, and thus one reviewer who notes more experience at mentoring Ph.D. students is putting us in a Catch-22 situation. I hope that by providing the additional background of graduate mentoring and highlighting the research-intensive nature of our M.S. program, that I have justified our claim that we can run a small, focused, and solid Ph.D. program in AES at IUPUI.

2. Rigor of examination process

One reviewer was concerned that our examination structure lacked the rigor of what is typically seen in the Big Ten. Although our initial desire was to foster a more open and flexible atmosphere in our program, this reviewer brings up an important issue with respect to developing performance benchmarks, and we have adopted the examination structure that is typically seen at, for example, IUB (see p. 10).

3. Faculty critical mass to deliver the program

One reviewer noted the small number of ES faculty likely to be involved in this program, and questioned their experience and qualifications for mentoring students. Yes, the number of faculty in ES is relatively small (10 TT faculty), but this is not atypical of the School of Science—all of the other departments in Science have Ph.D. programs, with 10-30 students, even though most of those departments have comparable TT faculty numbers as ES. Certainly, not all faculty in all of the other departments are actively and continuously involved in Ph.D. student training—indeed, this is true for all programs at all universities in the country. We can expect 6-8 ES faculty to be actively engaged in the recruitment, funding, teaching, and on-going research support for the Ph.D. students, with approximately 10 other faculty from across the campus comprising our core of involved AES faculty. This latter is what makes our program both unique and much "larger" than is strictly defined by the size of the ES department.

Other Comments

4. Defining AES and developing a coherent set of research tools common among students

I have included a clearer explanation of the Seminar courses that are required of all students on p. 3-4, noting that these courses will provide both an overview of applied earth science approaches and detailed training in the current research tools and approaches in the field.

5. Comparison with other programs

Several review comments revolved around the articulation of comparable programs. We have revised this section to more accurately reflect our program with respect to others, and to clarify the lack of significant overlap with the Ecological Sciences and Engineering Interdisciplinary Graduate Program at PUWL (p. 5). Additionally, I believe that the support letters from Both SPEA and from IUB Geological Sciences indicate the high level of comfort that both of these program have with us launching this program at IUPUI.

6. Dissertation credits and program goals

Given the research-intensive nature of this Ph.D. program and the norm in the general area of sciences, the 54 hours of dissertation credits is typical. In fact, some programs in the School of Science have even more dissertation credits and fewer course requirements than does this proposed AES program; given the breadth of background required in AES, we feel that slightly higher course credit requirements are appropriate.

I hope that the major comments from the reviews are accommodated in the responses above and in the revisions in the proposal itself, which I submit for the consideration of the Graduate Affairs Committee. I look forward to the opportunity to present this proposal to the GAC in person in late April.

Sincerely,

Gabriel Filippelli
Professor and Chair