

## **Program response to the Program Review Committee's Report on the Master of Science in Biology for Teachers**

We appreciate the Review Committee's hard work, thoughtful comments, and overall favorable evaluation of the program. We find nearly all of their recommendations to be useful and appropriate, as follows

### **4. Students**

*[T]he committee recommends that:*

1. *the students should be specifically told when they joined the program that they will not be part of a cohort per se*
2. *a single office space be provided for the students, with perhaps shared desks. This would greatly alleviate the problem, and provide a place where students would inevitably meet their program peers.*
3. *a program orientation and campus tour would also help the new students feel more comfortable within the university and the department.*

As the committee notes, students at the beginning of their programs do feel isolated, which is somewhat inevitable given the independent nature of the program, the small size of the annual entering class, and the fact that many of the students are part-time. Once students develop their individual research projects they often have desks and supportive colleagues in the lab where the research is being done, and the isolation problem becomes less acute. To reduce the initial feeling of isolation, in the future we will provide a common orientation session (schedules permitting), and campus tour for all entering students in the fall to give them a chance to meet each other. Students already have mailboxes in Hitchcock Hall, and we have made arrangements for the students to use Room 216 Hitchcock as a group office, with individual locked storage space, to provide them a "home" on campus. We held an informational meeting in early February for all currently enrolled students, and about half the students attended. We will continue to hold such meetings quarterly to give the students a chance to get to know each other better and share experiences.

There are currently a substantial number of former high school teachers enrolled as grad students in the Biology department and College of Forest Resources. We are looking into possibilities for connecting these former teachers with the MSBT program, to provide an additional linkage between our program and the larger student groups in Biology and Forestry.

### **5. Faculty**

*The committee recommends that:*

1. *the Graduate School provide an assistant for Buttemer, to enable her to write a program manual;*

We agree that planning for Helen's eventual (although not imminent) retirement is critical. The ongoing success of the program depends on having a dedicated graduate adviser who can effectively assist students in dealing with the complexities of combining their careers with a graduate program that may encompass classes and research projects in units across the

University. While a graduate assistant for Helen Buttemer might help, our preferred alternative would be for the Graduate School to buy out her teaching commitment (33% of her salary) for one or two quarters to allow her to write a program manual herself. This might be a more effective use of money than employing an assistant.

In the longer term, the continued success of the program requires that when Helen retires, she be replaced with someone who is both interested in and able to continue the role she currently plays in the program. Helen is a full-time employee of the Biology Department, and her primary responsibility, the Biology Program for Teachers, is also supported by the Department (not Howard Hughes Medical Institute, as stated in the Report). Since the MSBT program is housed in the Graduate School and its management is only a fairly small part of Helen's responsibilities in the Biology department, there is no long-term guarantee that her successor as director of the Biology Program for Teachers will have the same interest in and dedication to the MSBT program as she does. The current leadership of the Biology department has been extremely supportive of the MSBT program, and we believe that if a successor were needed in the near future, the ability and willingness to manage the MSBT program would be seen as a required part of the new hire's qualifications. However, if the leadership at the time of Helen's retirement were to be less supportive (which is unlikely but possible), it might be necessary to make some other arrangement to ensure the program's continued viability.

- 2. the Steering Committee formalize their roles and provide a written document of expectations for the supervising faculty and students;*

We will expand the current statement of expectations for student research projects that is sent to both students and faculty when a student selects a project. We will also develop a formal statement of the role of the Steering Committee, and a more explicit mechanism for selecting committee members to ensure that all relevant units are represented, and also to ensure that there is enough turnover to ensure a constant supply of fresh ideas and perspectives.

However, other statements in the report suggest that the Review Committee may have underrated the importance of the Steering Committee's role in the overall program guidance, considering it mainly as a rubber stamp for decisions made by the program administrators. While at most times the Steering Committee's main role is to help connect students to potential advisers, the Committee makes critical and independent decisions when significant questions emerge about fundamental policy or program direction,. Three such situations have occurred since the last 10-year review:

- In the late 1990's and early 2000's, then-Steering committee Chair Johnny Palka suggested that the Program should eliminate or modify the requirement that all applicants should have a teaching certificate, to open it to informal as well as formal educators. This was opposed by some members of the Committee who felt it would detract from the program's rigor, but the majority of the Committee approved the change, which led to our current strong linkage with Islandwood and solid position in environmental education.
- In 2003, it was suggested that the MSBT program should be based in the Biology Department rather than being administered directly by the Graduate School. This was again discussed at length by the Steering Committee, which concluded that maintaining the strongly interdisciplinary character of the program would be easier if it were not too closely linked with any single department, so this idea was not pursued further.

- Recently several members of the Steering Committee became concerned by the rather dated list of required subject areas, and pressed for a modernizing of the requirements. A subcommittee of the Steering Committee was set up to develop new requirements, and as described in the self-study, the revised requirements were approved by the whole Steering Committee in 2007.

While three major decisions in ten years is hardly micromanagement, this record does illustrate that the Steering Committee's advisory and oversight role is critical and responsibly carried out when decisions need to be made that have major, long-term consequences for the program.

3. *the Graduate School implement a regular professional assessment for the entire program to support ongoing quality and needs assessment as well as track the impact of the program on their student's professional lives.*

We would welcome the assistance of the Graduate School in carrying out such an evaluation. In the mean time, in order to provide ongoing feedback, we plan to contact each student after 3 and 7 years to see how the program has benefited them, and if they would recommend any changes.

## 5. Growth

*The committee suggests that:*

1. *the Program actively solicit minority students, and for these seek funds from the GO-MAP and similar minority funding programs. This would be particularly helpful for providing support for the in-service teachers. Such a system would require some negotiations with the funding unit that normally provides support for an entire academic year. However, we believe that the Graduate School is in a position to do this for the program.*

This is a logical idea that we will pursue.

2. *To attain the next level of growth would require a much greater administrative structure, and may put too much of a burden on those faculty who volunteer their time for these students. The committee suggested that instead of increasing the number of students in the MSBT program, UW could reproduce similar programs within other science fields, for example in the earth sciences. The MSBT program is a superb model for similar degree programs across campus.*

We concur, and would be delighted to assist in starting similar programs elsewhere.

3. *An alternative path for growth would be to place the MSBT program within the planned College of the Environment, while still maintaining it as an interdisciplinary degree within the Graduate School. This could provide more funding and a more compatible home for the students.*

While the planned College of the Environment might be an exciting and dynamic environment for some elements of the MSBT program, it would not be a good fit for the students who pursue more biomedically oriented projects. It is important that the program remain very broadly interdisciplinary, working with the full range of Schools, Colleges, and Departments that house

biological research and teaching. For this reason we feel that the Graduate School continues to be its logical home.

Other review committee comments:

- *Logistical needs of the students were not well supported. In spite of perceptions by the faculty, the students did not feel that they belonged: there was no orientation, no attempt to have the currently enrolled students meet each other, and they felt like second-class citizens in the biology grad world. Almost all students, present and past, mentioned this issue. Providing a single office space with desk (that could be shared) would go a long way to diminish this problem.*

See comments above under “Students”

- *Because this is such a unique program, it should have a careful and professional evaluation of the program: measuring its outcomes compared with its goals.*

See comments above under “Faculty”

- *The most urgent requirement is more funding for students so that they can take time off teaching to take day-time classes and accomplish their research project in one continuous time-period (1 or 2 quarters) in instead of doing it part time.*

We heartily concur. Additional funding could take a variety of forms. One or two additional RA's would allow more students to attend full-time, which would allow them to take classes that are only offered during school hours, and also to concentrate on their research projects more intensely and finish them more quickly. Travel funds that would allow each student to attend a major scientific meeting would also help students understand and participate in the broader science community, and take the excitement of discovery back to their schools. Additional administrative funds for the program would also be useful, although perhaps less critical than direct student support.

There may also be some departmental or unit funds (e.g. TAs and travel support) that could help MSBT students pursue their programs more effectively. The responsibility of applying for such funds should probably rest mainly on the students themselves or their research advisors, but a statement from the Graduate School to the various units encouraging them to consider MSBT students for such funding might support these efforts.

- *A small addition to the program would be to find a way for a bigger audience on campus to their research results. Sometimes their final presentations were given to just three people. We suggest that a request be made to be part of the Undergraduate Research symposium as a section only for teachers. Perhaps as part of the Undergrad Research symposium – only for teachers who do research. In addition students asked for a website to present their research to other students in the program.*

Having students present their work in a public forum to a larger audience is an excellent idea. The Undergraduate Research Symposium is one option, but for students graduating in the fall or winter, the Biology department Graduate or Undergraduate Research symposia may be more appropriate. Other units have similar symposia that could also be used.

- *The Graduate School needs to formulate a plan on replacing Helen Buttemer in the future. The program is entirely dependent on her: almost every faculty member interviewed reiterated this. We suggest the following plan: to hire an assistant to learn on-the-the job. One of the first pieces to put in place is to have a written manual on all aspects of this diverse program.*

See comments above under “Faculty”

Thank you for the opportunity to comment on the Review Committee’s findings.

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