

Interdisciplinarity@WMU- Phase One planning Template

- 1. Brief Overview:** Provide a brief overview of the proposed interdisciplinary initiative. What types of questions would the initiative ask? What types of complex problems would it seek to solve?
TITLE: College Science Teaching MA (Online)

Community college enrollments have been rising in recent decades. In addition, the Biden administration has indicated an interest in further boosting the role of community colleges. Increased community college enrollment will increase the demand for qualified community college instructors, particularly in those in-demand, but harder to fill, science disciplines. To help meet this demand, MISE proposes an online MA in college science teaching designed for future community college instructors. The program would include 18 credit hours (6 courses) of graduate level science coursework from a WMU science department along with 12 credit hours (4 courses) of college science pedagogy from MISE. The program would be offered online to make it accessible to a wide variety of students. Potential students would need to have a BA and significant undergraduate coursework in their chosen science field. This degree would be appropriate for people with existing jobs who wish to teach part time at a community college (e.g., high school teachers, industry workers) as well as those who wish to make a career move to teach full time at a community college.

- 2. Impacted units:** What existing units, programs, and colleges would be involved in the proposed initiative? What other possibilities for collaboration across campus or in the broader community might exist now or in the future?

This degree would be a collaboration between MISE and any of the WMU science departments in the COAS who chose to participate. Future collaborations could also extend the program to include math and engineering.

- 3. Impact on teaching, learning, and curricula:** Describe the anticipated impact of the proposed initiative on teaching, learning, and curricula. How might this initiative help to grow enrollment, including by reaching new audiences of learners through continuing education, dual enrollment, or professional certification? How will the proposed initiative positively impact the training of undergraduate and graduate students? How does it enhance our institutional commitment to diversity, equity, and inclusion?

This would be a new graduate program at WMU that would build on existing strength in Science Education, including an online college science teaching certificate graduate program. It would be more beneficial than a typical science MA or MS for future community college instructors because it would include coursework on teaching and learning as well as science coursework. Being online, students could enroll in the program from anywhere. Community college students tend to be more diverse than those at four year colleges. Thus, supporting high

quality instruction at community colleges supports national efforts towards equity in science education.

- 4. Impact on research and creative activity:** Describe the anticipated impact of the proposed initiative on research and creative activity. How will this initiative promote discovery and creative scholarship? How might it result in increased external funding?

Such a program would create some new opportunities for educational research. For example, WMU could develop a research program around how to support community college instructors in doing educational research. Such a program might also be eligible for scholarship funding in some programs.

- 5. Efficiencies and/or cost savings:** How might the proposed initiative contribute to increased efficiencies and/or cost savings, for example by reducing administrative positions (e.g. chairs/directors), sharing staff support services and/or by sharing facilities?

The new program would make efficient use of existing courses. The four science education courses will be made up of courses that are currently part of the MISE College Science Teaching Certificate as well as the existing online MA program in science education. These courses would be modified to meet the needs of both programs, thus creating efficiencies. The program would also make use of content courses currently offered by WMU graduate programs in science departments. Each participating science department would need to have a minimum of six online graduate courses. At present, the Department of Geological & Environmental Sciences is prepared to participate in this new program, as it already offers numerous online graduate courses. We have mentioned this possibility to the other science departments, but have not yet gotten a good feel about their interest in online graduate education.

- 6. Impact on course offerings and workload:** At present, proposed initiatives will only be feasible and sustainable if they can be supported by existing resources, including instructional capacity, faculty and staff time, and facilities. Will the proposed initiative streamline existing course or program offerings? Could the initiative help create more equitable and sustainable workload for faculty, for example, by reducing the need to offer under enrolled courses, reducing the frequency of course offerings or eliminating the need to teach some courses?

Since the program will be created from existing courses, the increase in workload is minimal. There will be some additional administrative time required to admit and advise students in the program. As with any interdisciplinary initiative, there will also be some additional time required to coordinate between the different units involved. This time can be absorbed with current staffing levels. Having additional students in the science education as well as the graduate science courses will reduce the need to offer under enrolled courses. If science departments transition some of their courses online to be a part of this program, there will be additional time required for faculty in those departments to make this transition.

- 7. Additional Information:** What additional information would you like to provide in support of this proposal?

- 8. Contact**

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