

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?

WMU's attention to pressing local-to-global issues has resulted in a proliferation of environmental courses, degree programs, faculty research, student projects, and community initiatives. To consolidate these efforts and promote synergy, the Institute of the Environment and Sustainability (IES) and Department of Geography, Environment, and Tourism (GEOG) propose to form the initial nucleus of a larger School that will bring together work across campus on crucial social and environmental sustainability challenges. Both units are multi- and interdisciplinary with complementary programs focused on intersections among the natural world, human culture, and socio-economic systems. This merger will take advantage of our alignment, create a better experience for students, allow faculty to pursue new initiatives, and position WMU for the future.

The formation of a School will expand these benefits to include collaborative relationships with other colleges, units, and faculty to promote the development of environment-, geography-, geospatial-, and sustainability-focused programs, courses, research, outreach, and community engagement. We envision a School with a flexible administrative structure that will provide opportunities such as working groups and joint- and affiliate-faculty appointments as mechanisms to broadly engage faculty across campus with compatible expertise and vision. It will be a focal point for students interested in the environment, and provide clear and consistent communication and marketing for all relevant programs.

The School will function as a hub and incubator of multi- and interdisciplinary teaching, research, and outreach on the environment, regional geographies, geospatial technologies, and sustainable systems. It will provide a welcoming experience for students, the opportunity to rethink curricula, and renewed energy to advance initiatives with other units and organizations, thereby supporting and enhancing the university's mission.

- 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?

Initially, IES and GEOG will form the nucleus of the proposed School, and we will welcome and solicit participation from other units and faculty as the School evolves. In forming a School, we seek to wholly integrate our faculty for the benefit of students through high-quality instruction; our faculty through more stable course rotations and new teaching options; and the university through expanded research opportunities resulting from new faculty interactions.

Our units have degree partnerships, cross-listed courses, and jointly-appointed faculty with Aviation, Biological Sciences, Comparative Religion, Geological and Environmental Sciences, Mallinson Institute for Science Education, and Political Science. In addition to the programs offered by our two current units, we anticipate the School will facilitate long-term cross-cutting partnerships among joint programs such as the Climate Change minor, interdisciplinary working groups on climate change, public health, and others; research and learning centers including the W.E. Upjohn Center for the Study of Geographical Change (which the School will house), and continuing the Transportation Research Center for Livable Communities initiatives; as well as the Office for Sustainability, Global and International Studies, University Center for the Humanities, and Landscape Services.

Both IES and GEOG have had separate internal discussions on aspirational, forward-looking initiatives that would entail partnerships with other units (see section 3).

- 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?

The School will re-envision and adapt our well-aligned curricula. Joining our two units will allow us to eliminate redundancies, for instance by removing some overlap in individual courses and enhancing complementarity from diverse academic offerings. Introductory courses for majors and WES courses (e.g., ENVS 1050, GEOG 1000) are promising areas to analyze.

At the undergraduate level, we see synergies between our Travel and Tourism and Sustainable Brewing majors. We also plan to fill interdisciplinary gaps in student training and learning (in environmental justice and geospatial technology for example). In GEOG, substantial planning has gone into an “Environmental Science” major that builds on faculty expertise and expands career possibilities for students in the sciences. In IES, humanities faculty have discussed campus-wide environmental justice curricula. Such visioning presages dynamic conversations within the new School, and can lead to further collaborations with other units and colleges to help shape the School into the future.

At the graduate level, our combined faculty will expand interdisciplinary research possibilities for master's students. A School structure will also expand internships, experiential learning opportunities, and study abroad programs. The Upjohn Center provides GIS and mapping research internships; its students have impressive post-graduation job placement rates (e.g., with federal, state, and local government, private companies). The Center can serve our School's larger student numbers.

The School will enhance the student experience as a welcoming facilitator for diverse students with a new web portal that will showcase environmental, geographic, and sustainability programs at WMU. The portal will improve communication and advising, provide a landing site for prospective families, and enhance marketing and recruitment. We want each student to find the most appropriate major for their interests.

- 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?

The School will bring together faculty who come from disciplines spanning biophysical and spatial sciences to social sciences and the humanities and who engage local to international communities. Our combined expertise and research will include climate science, natural disasters, freshwater resources, systems modeling, ecology, geographic information science, science and global education, policy, urban and regional geographies and planning, tourism and travel, and environmental history, environmental literature, and comparative religion.

We believe that regular interaction and familiarity are important to exploring and developing new collaborative research ideas, especially with respect to multi-/interdisciplinary initiatives and grant-writing. Through governance, shared programming, and other activities, the School will provide welcome space and continuous forums to get to know each other's work, identify opportunities, and ultimately for supporting expanded or new research collaborations beyond current projects. Examples of high-potential cross-cutting research themes that School faculty might explore in new configurations include: Great Lakes and international freshwater management and conservation, eco-tourism and sustainable economic development, global and regional spatiotemporal change, livable communities and urban health, and citizen science and participatory approaches to problem solving. Cross-cutting research themes will especially benefit graduate-student research.

External funding agencies and foundations now support integrative research in the dynamics of coupled natural-human systems. The experience, expertise, and grant-writing success of our combined faculty positions us to expand integrative research at WMU, including research projects that require both qualitative and quantitative methods to answer critical questions. Such collaborations are more likely to develop and thrive within the more open structure of a School.

- 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?

Embracing a School structure will provide an immediate cost savings in chair/director salary. Currently, IES and GEOG each have one chair/director, whereas the School will have one Director. We envision a decentralized structure which may include program areas and associated committee chairs working closely with the Director to maintain program stability and ensure reasonable faculty workloads. In the long run, streamlining courses/programs and removing redundancies will reduce faculty instructional burdens and create more cost-effective programs. By examining our WES offerings, we can evaluate how reduction (because of overlapping content) might free faculty instructional capacity for other kinds of student training. Uniting IES and GEOG will allow for increased program flexibility, attracting a wider audience of students. The MS in Geography will be strengthened with the expertise of IES faculty in environmental justice, qualitative methods, and more. At the same time, IES faculty will gain access to MS students who can work across programs on more multi-/interdisciplinary funded research.

Expanded access to facilities and equipment will expand their use, while providing a more efficient focal point for collaboration among program areas. The Upjohn Center provides

support for GIS applications in research and administrative decision-making, conducts research in digital cartography and educates the future workforce in GIS and spatial analysis. GEOG also houses a variety of hardware and software resources such as high computing capacity, servers, drones with imaging sensors, GPS receivers, large format scanners and specialized software site licenses (e.g., ESRI, Pix4D). Faculty from both departments are eager to share strategies, facilities, graduate student researchers and access to tools necessary for analysis of big data to increase research capacity and effectiveness of computational workflows in the spatial, environmental, and integrative projects.

- 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?

Overall, we anticipate a reduction in the number of offerings across our majors, minors, certificates, and WES. Revisiting course offerings will allow us to remove courses not able to be taught or no longer serving their original purpose. These changes will increase the likelihood of offering courses with high enrollment, will allow for more balanced and rewarding course assignments, and will value different modalities—e.g., online courses, field courses, seminars, and co-teaching. For facilities, the School will house GIS computer labs, physical geography and meteorology labs, environmental and resource management labs, and other spaces required for instruction (no new facilities required).

We will pursue collaborative instruction (team teaching) and course offerings (cross-listing) that leverage existing faculty resources to promote multi-/interdisciplinary courses and programs and renew and strengthen cooperative relationships with other units. The potential exists to create new programs that could easily be supported by current course offerings.

Better distributed workload and higher faculty satisfaction will be possible in both governance duties—committees, tenure and promotion, APR, etc.—and activities embodying our vision to impact today’s social and environmental challenges and problem solving. For example, organizing speaker series, conferences, symposia, workshops, and community events requires an energetic faculty with reserves to avoid burnout. A School has the potential to recognize and balance this diverse and important service work in an overall workload context.

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

In addition to the benefits a School will bring to WMU, there will be increasing opportunities to form new and strengthen current ties to the larger community, such as to local K-12 schools, community groups, municipalities, and NGOs. An initial canvas of our members already identifies at least twenty organizations and various city and county governments with which we have close ties or ongoing professional commitments. However, our current connections could be more strategically consolidated, coordinated, and featured within the School. Our robust reach will assist WMU in recruiting new students, and will benefit our current students—grounding classroom experiences in real-world context, opening a wider array of experiential learning options, development of possible career mentorships, and ideally meaningful post-graduation job placements.

Finally, the School will establish an alumni network and alumni board that will benefit students during and after their time at WMU. Both units have extensive information on alumni (beyond WMU data) and our combined alumni have impressive reach across geography, environmental, and sustainability professions.

8. Contact

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