

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?

Economics and Statistics

We propose a joint MS program in Economics/Statistics using existing courses offered by the Departments of Economics and Statistics. This program is patterned after the highly successful MS in Data Sciences that is currently offered by WMU's Departments of Computer Science and Statistics.

The MS in Economics/Statistics draws on strengths in quantitative analysis that already exist in both departments. Students will take courses in regression analysis, machine learning, computer-based data analysis, and big data analysis from WMU's Statistics Department. Students will take courses in micro economic theory, macro economic theory, cross-sectional econometrics, and time series econometrics from WMU's Economics Department. Students will take electives from both departments.

The proposed MS degree is designed to attract students who desire careers as economic data analysts. Student know there is a strong demand for data analysts. We believe that a formal joint degree in Economics and Statistics will draw students who want a rigorous and focused degree to prepare them for these jobs.

The proposed program will be administered by the Department of Economics.

- 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?

Courses in the proposed MS program will be taken from WMU's Departments of Statistics and Economics. We anticipate four required courses from each department, and we would like to give students the freedom to choose an elective from each department.

- 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 proposed MS degree is designed to attract students who want to pursue careers as economic data analysts. Recently, many students in the Economics MA program have expressed interest in having more quantitative courses in the program. These students currently take statistics courses as electives. The students who have done this have had good job placements in the financial industry, government, and international agencies. Student know there is a large demand for data analysts. We believe that a formal joint degree in Economics and Statistics would draw additional students who would want a more rigorous and focused degree to prepare them for these jobs.

- 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?

We anticipate that the joint program will build on the existing ties between the two departments and lead to joint research between faculty and graduate students. Joint research has begun to take place. A recent economics graduate student's first refereed publication was co-authored with Dr. Kevin Lee of WMU's Statistics Department. Faculty from WMU's Statistics Department have routinely served as outside members on dissertation committees for economics graduate students.

- 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?

WMU already offers an MS in Statistics and an MA in Applied Economics. Because of the proposed program's emphasis is preparing students for careers in as economic data analysts, we anticipate that the MS in Economics/Statistics will attract students who would be unlikely to enroll in either program.

Given the rising demand for social scientists with training in data analysis, we anticipate that the new MS will provide additional revenue to CAS and WMU. Given that the two departments will continue to operate independently, we anticipate few cost savings.

The proposed program will be administered by the Department of Economics. The Department of Economics has adequate staffing to cover admissions and advising.

- 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?

The new MS in Economics/Statistics will be offered using existing courses only; no new courses will be created. In addition to producing graduates with extremely marketable degrees, a goal of the new MS is to put more students in existing courses. Some of these courses are currently under enrolled.

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

The Department of Economics already offers an MA with a concentration where one or two elective courses are taken from the Department of Statistics. The proposed MS contains five statistics courses. If the new MS is successful, the Department of Economics plans to request that the existing concentration be deleted from WMU's program offerings. This would increase enrollment in the proposed MS in Economics/Statistics.

8. Contact

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