

Academic Program Review: External Reviewers' Report

Dept. of Geography & Environmental Systems, Univ. of Maryland, Baltimore County

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Section I: Executive Summary

We appreciate the invitation to review the current state and prospects of the Department of Geography & Environmental Systems (GES) at the University of Maryland, Baltimore County (UMBC). The review was conducted in person from April 13-15, 2025. In advance of our visit, we were provided with the department's self-study along with a variety of supporting materials, including faculty CVs and programmatic data. During our visit, we met with Peggy Re (Interim Vice Provost, Academic Affairs), Kimberly Moffitt (Dean, College of Arts, Humanities and Social Sciences), Stephen Freeland (Interim Dean and Vice Provost of Undergraduate Academic Affairs), Jeffery Halverson (Interim Vice Provost and Dean of the Graduate School), and Christopher Steele (Vice Provost, Division of Professional Studies). We also met with nearly all of the GES faculty and staff and toured the home of GES (Sondheim Hall) as well as facilities at the Interdisciplinary Life Sciences Building (ILSB). We concluded with exit interviews with UMBC administrators and Maggie Holland (GES Chair) during which we provided an initial assessment of the program's strengths, weaknesses, opportunities, and threats along with preliminary recommendations that we expand upon in this document.

This is an exciting time for the disciplines of geography, environmental science, and environmental studies. The spatial perspective that is at the heart of geography is reflected in the growth of spatial studies rooted in the physical and environmental sciences, the 'spatial turn' that has occurred within the social sciences, and growing interests in the geospatial humanities. Space and time provide a language that can support conversations across disciplinary boundaries, while advances in geospatial technologies such as GIS provide fundamental tools and approaches for helping to break down long-standing divides among fields and disciplines. The disciplinary strengths and approaches represented within GES emphasize integration, which places the department in a very strong position in a world of collaborative, interdisciplinary science aimed at solving complex socio-environmental problems. Indeed, these fields provide valuable platforms for integrating social and environmental processes, as is reflected in the ease with which geographers and environmental scientists can participate in the multidisciplinary teams that are needed to tackle pressing issues such as adaptation to climate change, coastal hazards planning, and mitigation of environmental impacts caused by urbanization, to name only a few. Further, data from the Bureau of Labor Statistics indicate that there is a promising future for students graduating with degrees in these areas.

In our view, GES is in excellent shape to capitalize on opportunities in these areas, with strong faculty and students, a collegial culture, and a strong and relevant research program. While the department faces some notable challenges, as we explain below, we believe it is unusually well-positioned to meet them.

Section II: Response to Charge Questions

In this section, we answer the charge questions posed by the university and the department. We follow with an assessment of programmatic strengths, weaknesses, opportunities, and barriers to continued success and growth in the following section.

1. Please comment on the appropriateness of general goals and specific objectives of the program. How are they being met? GES is an interdisciplinary department whose goal is to examine the dynamic relationships between social and natural processes as a means of: 1) contributing to cutting edge debates across the natural and social sciences, and 2) informing policy through innovative, rigorous, and policy-relevant research. Faculty, students, and staff are clearly committed to integrating research, teaching, service, and community engagement activities that reflect the complexity of social, environmental, and biophysical issues today. GES supports general education and is dedicated to teaching concepts, approaches, and research methods needed to prepare undergraduate and graduate students for professional careers and/or further advanced studies. Faculty practice and teach a broad range of methodological techniques that include environmental and physical geography, field and laboratory studies, GIS, spatial statistics, remote sensing, modeling, community engagement and citizen science, ethnography, interviews and surveys, historical research, and document analysis. These efforts are bolstered by out-of-classroom opportunities such as internships, field studies, study abroad, and research opportunities. With respect to scholarship and research, GES personnel produce knowledge that is both academically rigorous and transformative. In terms of service, faculty are actively engaged in a range of activities both on and off campus, often serving in leadership roles. In short, the department is conducting novel research, innovative teaching, and meaningful service that is strongly rooted in diverse (and often multidisciplinary) approaches vital for addressing problems with relevance to the citizens of Maryland and beyond.

2. What is the students' perception of the quality of the program and their evaluations of the faculty's teaching and mentoring? During our visit, we met with groups of graduate and undergraduate students representing different degrees, foci, and stages of academic progress. We genuinely enjoyed these meetings and came away very impressed with their knowledge of and interest in their department and fields of study. Students in both groups were complimentary of the GES program, coursework, and training that they received. From 2017-2024, undergraduate students co-authored publications with GES faculty members 26 times, and 20 undergraduates received an Undergraduate Research Award to conduct independent research with a GES faculty mentor. During the same period, graduate students published 52 times in peer-reviewed academic journals and secured competitive external funding from organizations such as the National Science Foundation, the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, and the Maryland Department of the Environment. In our experience, these are unusually high numbers, and numerous students voiced an appreciation for faculty mentorship in helping them to pursue research opportunities. Several students had suggestions regarding the curriculum in their degrees that we will discuss below, but these were offered as a means for improving student experiences rather than serving as an 'airing of the grievances'.

3. Are the proposed directions of growth of the program consistent with the nature, mission, and overall plans and priorities of the College and the University? Please comment on the overall quality of the program relative to its aspirational peers. Yes. As noted on the university's webpage, UMBC "is a dynamic public research university integrating teaching, research, and service to benefit the citizens of Maryland. UMBC ... emphasizes science, engineering, information technology, human services and public policy at the graduate level (and) ... contributes to the economic development of the State and the region through entrepreneurial initiatives, workforce training, K-16 partnerships, and technology

commercialization in collaboration with public agencies and the corporate community.” Similarly, the mission of the College of Arts, Humanities, & Social Sciences states: “Through diverse, challenging programs of study, with countless opportunities for research, creative work, internships, and other co-curricular activities, our students develop skills and knowledge that prepare them for a variety of careers and a lifetime of thoughtful citizenship and leadership in a complex world.” While the department is crafting an updated mission statement, ongoing activities in GES and proposed directions of growth are clearly consistent with, and supportive of, these missions.

4. What is the quality of the curriculum? Do teaching materials and pedagogical methods reflect the state of the art within particular areas? We want to first note the importance of having an integrated unit that couples the complementary strengths of geography with environmental science and studies. This integration is not as common as it should be across the US; in fact, it seemed to us that not everyone in GES fully appreciates the importance of this for their current and future intellectual and financial well-being, perhaps because it is so ingrained in their culture and everyday interrelationships. That integration and exposure to inter- and multi-disciplinary work is also extremely valuable to students. Since their last review, GES has updated their course offerings to address current issues and changing faculty expertise, while also maintaining a stable offering of the number of sections and seats at each level. Conversations with GES faculty highlighted their use of widely recognized pedagogical methods, including student-centered, active learning approaches such as collaborative learning, experiential learning, and inquiry-based learning, although their ability to fully integrate such approaches into some classes was limited by a lack of current and anticipated graduate student support. We address a few specific points regarding curriculum and alternative sources of teaching assistance below.

5. Considering the program’s assessment of student learning outcomes, discuss ways the faculty might most effectively “close the loop” by enhancing its use of the outcomes of assessment to improve teaching and learning? We did not hear any negative comments about student learning outcomes during the visit and have no immediate concerns about how GES is addressing them. If there are issues that did not come to our attention, we urge the department leadership to work constructively with appropriate university-level administrative offices.

6. Is the level of scholarly work by faculty members in the program suitable for this program? Does the program as operating or planned provide sufficient opportunities for continued growth in quality of scholarship, creativity of faculty, and research opportunities for students? The scholarly work by GES faculty members is robust in terms of both its quantity (e.g., publication rate) and its quality (e.g., outlets and impacts). Their work furthers theoretical knowledge in both core and cognate fields while informing science-based and evidence-based policy and management that is often connected to the Chesapeake Bay watershed and region. GES faculty have actively contributed to large multidisciplinary grants. Faculty are active in presenting their research at national and international meetings and conferences, and as noted earlier, they regularly engage students in their research. These are all hallmarks of a research-active culture.

7. Please comment on the adequacy of the program’s facilities for fulfilling its goals. As is noted in the self-study and discussed throughout this report, the facilities are inadequate for meeting the current needs of GES, let alone the department’s goals and aspirations. There is not appropriate lab space for new faculty in Sondheim Hall, and it is unclear whether they could be accommodated in ILSB. Beyond that, we want to express our personal concerns about the smell and presence of mold that pervades areas of the basement lab and teaching spaces in Sondheim and encourage the administration to address those situations immediately.

8. Given your review, do you think the program resources are being used effectively? Are there other ways you can suggest for them to be used? Are there additional ways the program might generate revenue? The department has a history of good leadership, and we believe that program resources are being used wisely. GES has demonstrated its willingness to make ‘course corrections’ as needed to be more effective, as with the re-homing and re-envisioning of the Master of Professional Studies (MPS) and the Post-Baccalaureate Certificate (PBC) in GIS. That said, future growth (and even maintenance of existing levels of funding for graduate students) will likely necessitate finding new revenue sources or creative uses of existing resources; we include suggestions on that below.

9. To what extent does or should the program collaborate with other units of the University? GES collaborates well with a range of units and organizations at (and beyond) UMBC. Some of the most important examples include NASA Goddard’s GESTAR-II, the Center for Urban Environmental Research and Education, and ICARE (the Interdisciplinary Consortium for Applied Research in the Environment), an NRT program that engages students and communities in environmental research in and around Baltimore Harbor and that involves departments across three UMBC colleges and the Marine, Environmental, and Estuarine Sciences. The department’s broad and interdisciplinary nature, coupled with analytical approaches afforded by GIS and other geospatial technologies, provides a platform for teaching and research that addresses important scientific questions and management applications in areas such as climate change, urban design and sustainability, environmental hazards, and political economy, to name just a few. That said, GES faculty need to continue engaging in such activities, and, as they note in their self-study, work to promote its broader significance and contributions.

10. With regard to any resources identified as needed in the self-study or the external evaluation, which one is most urgent and/or most likely to benefit the program and how? Adequate research and teaching space that is appropriate to the needs of the students and faculty.

Additional questions provided by GES:

1. Since the last APR, GES has not received all the resources requested and approved in that review process. In your current review, how do you see the department as having navigated these limitations and does this connect or help explain specific challenges you are documenting in your report? We discussed this question with faculty during our visit, especially the issue of enhanced graduate student support, which was an important priority in the last program review and was recognized by the College and the Provost’s office. We understand the lingering frustrations expressed by some GES faculty, but in our view, the department has navigated these challenges fairly well. Unfortunately, current issues with funding limit the prospects for additional graduate student lines. Nonetheless, as UMBC strengthens its status as a Carnegie R1 institution, we encourage administrators to consider increasing graduate student resource allocations, as available, for what is one of its strongest research units.

2. In your experience, how do the facilities/spaces of the GES department compare with those of other departments or programs who manage similar needs for faculty and graduate student offices, research, and teaching space? As discussed in numerous places in this report, GES facilities are far below the norm for Geography and Environmental Science/Studies departments at other universities.

3. We (GES) see ourselves as a connective tissue or nexus connecting specific themes on people / environment / climate change across the college and university. Yet we don’t always feel as “visible” as we could be. Do you have specific recommendations for ways in which we could improve that visibility? We understand this concern, which is common in similar departments, but this issue did not

arise frequently in our conversations with members of the department or UMBC administrators. From what we saw during our visit, GES seems to be doing the right things to build visibility: advertising campus events, getting student research featured in UMBC publications, and collaborating with faculty in other units. We do have recommendations below about ways to strengthen existing ties.

4. We see ourselves at an important moment in the trajectory of our graduate programs (MS/PhD and MPS). Would you recommend specific strategies to better align and grow these programs? These will be discussed throughout the remainder of this report.

5. In this time of rapidly shifting priorities and policy action at the federal level, what do you see as important steps for us to take to better provide for and prepare our students for future work? These will also be discussed elsewhere in this report.

Section III: Program Strengths, Weaknesses, Opportunities, and Barriers

Strengths: We are pleased to report that GES is an intellectually vibrant, collegial, and reputable department with a number of strengths that were evident to us throughout the review process (Table 1). The Chair is well respected and deeply engaged in the work needed to strengthen faculty governance. For the most part, the department functions very well. While there have been recent disruptions from staff turnover, the current office staff is small but mighty. Thanks to the presence of geography, environmental science, and environmental studies within GES, the department has a strong major base, and students were very positive about the level of attention and support they received from the faculty. The faculty are productive and highly visible in their fields. They are also reflective and proactive: we were impressed that they pulled back and then overhauled their professional GIS degree when it began to encounter difficulties.

Weaknesses: The largest challenge the department faces is profoundly inadequate space, in terms of both amount and quality. Through our experiences with other academic program reviews (this is our 8th and 4th review, respectively), we know that space is a common complaint of many departments. Yet, we know of no other Geography Department that is forced to hold faculty meetings and host outside speakers in a computer lab. We are worried about the ability of newly recruited faculty to thrive without access to the lab space needed to conduct cutting edge environmental science fieldwork; this can cause retention issues, wasting UMBC's investment in start-ups and faculty development. Finally, we are concerned about the physical conditions in the basement of Sondheim, as we could both see and smell mold.

A second prominent issue is insufficient staffing for a growing department. While it appears that the most mission critical tasks are being done, we noted that some important administrative functions seem to have fallen away; the website appears not to have been updated since 2023, for example.

By all reports, GES has been blessed with a series of strong chairs. It did concern us, however, that the department chair is an associate professor and that other associate professors are filling major service roles. While we understand that mid-career faculty are being asked to take on such roles in part because of the department's demographics and because more senior faculty members are serving in important, higher-level administrative roles, we wonder if that may have played a role in slower times to promotion to the rank of Full Professor.

Table 1. Strengths, weaknesses, opportunities, and threats/barriers for programs in the Department of Geography and Environmental Systems at UMBC

	Drivers	Inhibitors
	Strengths	Weaknesses
Internal	• Department well aligned with college and university missions • Thriving undergraduate degrees • Strong research productivity and reputation • Strong track record of connecting undergraduates to internship and research opportunities • Dedicated front office staff • Collegial faculty, respectful of a broad range of scholarly practices and across TT and NTT ranks • Impressive and highly effective commitment to student success • Increasing co-authoring and collaboration among faculty • Effective redesign of professional GIS degree • Strong and well-respected Chair, and appropriate plan for succession	• Insufficient office space and administrative staff to support a growing department • Access to lab space inadequate to set faculty up for success • No appropriate space for faculty meetings, colloquium series, community building • Much smaller graduate student applicant pool than typical for discipline, particularly given strength and visibility of faculty • Insufficient GA funding to support a vibrant PhD program; minimum incoming cohort of five to build intellectual community and create demand for at least two 700-levels elective per year • Associate professors' time to promotion is longer than the disciplinary norm of 5-6 years • Need for updated governance documents, improved transparency, and much stronger mentoring at the assistant and associate professor levels (current Chair already working on this) • No long-term plans for growing and strengthening the department
External	• Improved recruiting of graduate students could better capitalize on departmental strengths and reputation • Expanded recruiting for professional MS and summer/winter courses could provide much needed department revenue • Strong base of collaboration with other units and external agencies at the local, state, and federal level could enable department to broaden support for research and teaching • UMBC in general and GES in particular have excellent track records of EJ-focused research and effective training for underrepresented students; major foundations such as Mellon and Robert Wood Johnson are currently stepping up their support for such programs • Increase support for interactive pedagogies through the use of undergraduate TAs	• Potential loss of majors and credit hours to Global Studies Program, particularly if it is converted into a standalone department • Uncertain federal funding and employment • Unclear budget model makes it difficult to plan strategically • Limited access to lab space in ILSB • Locating biophysical scientists within the College of Arts, Humanities, and Social Sciences causes some challenges. Current dean clearly recognizes this and has taken steps to address it, but unclear whether that will persist with change in leadership

It appears that the department's policies and practices have not been updated for some time, although we note with approval that the Chair has begun working on this. One critical area to prioritize will be mentoring for assistant and associate professors and the development of a more robust annual review process for all faculty involving a letter from the chair and an in-person meeting. We also encourage the department to take advantage of mentoring resources offered through the Provost's office.

With respect to the graduate program, it is smaller than we would expect to see for the size of the GES faculty. Particularly given the visibility and strength of the faculty's research, we were also surprised by the relatively small applicant pools. Insufficient GA funding to support a vibrant program appears to be one major reason for these issues.

Finally, we were surprised by the absence of a long-term plan to grow and strengthen the department. Although it is possible that such a plan exists but was not shared with us, we expected to see a forward-looking vision for how the department can capitalize on their strengths in the self-study. We provide suggested elements for long-term planning in Section IV.

Opportunities and Barriers: Looking ahead, we believe that GES is well positioned to ride out the current federal instability due to the strength and breadth of its ties with local, state, and federal entities, and also due to its strong track record of effective education and training for under-represented students, which could draw increased foundation support. The department has multiple potential sources of revenue to improve its ability to upgrade facilities and support graduate students: the rebooted professional GIS degree, summer and winter courses, and appropriate increases in course fees for GIS and environmental science courses. Because of the strength and visibility of its faculty, GES is also positioned to more effectively recruit graduate students moving forward. It will be important for GES to build and/or strengthen ties with cognate departments at UMBC to build synergies and prevent cannibalization of majors.

Section IV: Recommendations

We see the next seven years as being an important time for GES and hope that the recommendations made in this section will be useful in positioning the department for future success. Based on our assessment of the self-study and our interactions with GES faculty, students and staff, we offer these recommendations to guide the department as they move forward. We acknowledge our incomplete understanding of the institutional context at UMBC but hope that our own tenures as faculty members at other institutions and our experiences in the roles of Department Chair and long-time Director of Undergraduate Studies (Dr. Kupfer) and President of the American Association of Geographers, Associate Dean for Social & Historical Sciences, and Department Chair (Dr. Lave) provide useful outside perspective. We have seen departments face some of the same challenges that GES will face in the next decade, and we see great potential for the department if they can successfully navigate them. While specific solutions need to come from the department itself working in conjunction with administration at UMBC, we have organized our overarching recommendations into six primary topics:

1. **Space:** As we have noted previously, the lack of usable space is a severe limitation to the daily functioning and future growth of the department and its programs, including their ability to recruit and retain new faculty and support current department faculty, staff, and students. While we appreciate that the administration understands this issue and that there are plans for renovating Sondheim Hall, we strongly recommend that future space allocations, both within Sondheim Hall and potentially elsewhere on campus, consider the needs of GES for dedicated research space and teaching facilities, and also for basic operating needs such as faculty meetings. Access to up-to-date lab facilities, either in

the ILSB or elsewhere, will be an important aspect of recruiting and retaining environmental science and physical geography faculty.

2. **Graduate Program:** The GES graduate program is already strong, and in our view, it has the potential to become one of the pillars of UMBC's R1 status. For that to happen, we recommend a minimum incoming cohort of at least five students a year to build a strong intellectual community and create demand for at least two 700-level electives per year (one in each degree track), which is crucial for adequate graduate training. Attracting a strong pool of applicants and translating that pool into a robust graduate student population will require additional efforts in recruiting and funding. For the former, current application numbers are startlingly out of step with the strength and reputation of the faculty. Thus, we encourage GES to improve and expand graduate student recruitment efforts through outreach at conferences and on-campus recruitment events.

We acknowledge that current budget issues make expanding the GA pool challenging, but we have three suggestions for how the department might tackle this. One approach would be to increase the number of ABD students who serve as lead instructors and thus effectively pay for themselves. In our experience, this is an effective justification for increased GA funding and is also very useful on the academic job market. Another option could be additional funding from foundations such as Mellon and Robert Wood Johnson, who are increasing their giving, particularly to programs with a demonstrated track record of effective work with underserved populations. Finally, there may be opportunities for additional GA support at the local and state level thanks to the faculty's existing ties.

A last recommendation for the graduate program is to revisit the required introductory sequence for graduate students (701/702) to: a) better ground students in the history of and current debates in Geography and Environmental Science, and b) build interdisciplinary conversations from the moment students arrive in the department. For example, the course could be structured around the 'wicked problems' that GES faculty already study (water resources, biodiversity loss, etc.), demonstrating the importance and relevance of integrated approaches.

3. **Undergraduate Program:** While the number of majors in GES remains strong for a unit its size, we applaud the department's efforts to implement recruitment strategies to attract more undergraduate students, especially to the BA in Geography and Environmental Studies. We likewise admire the development of an alumni mentorship program to support career development and networking opportunities for students and recent graduates. Additionally, we've both had positive experiences with the use of undergraduate teaching assistants and recommend that GES explore their potential use, perhaps paid for via revenue from winter/summer courses, the professional masters, or other campus revenue sources. Undergraduate TAs can play a valuable role in enhancing student learning and providing support for faculty by assisting with classroom logistics, facilitating peer-to-peer learning, and improving student engagement. Their use could also free up graduate students for employment in other courses/settings.

The department has worked to make their curriculum more attuned to student needs in response to the last academic program review. One means for doing so has involved the use of specialized 'streams' to guide students with class selection and to highlight areas of teaching and research specialization within GES. After discussions with faculty and administrators, we remain ambivalent about whether these streams, which are currently optional and serve primarily as guidance for students (and thus don't appear on transcripts), should be formalized. Should the department choose to formalize them, we offer these three suggestions based on our own experiences: 1) retain a general 'non-track option' in each major as many students prefer its simplicity and such an option provides a more flexible bailout for students unable to complete more detailed streams due to time,

available course offerings, or other constraints, 2) set up a robust process for allowing exceptions to support students in completing streams even if needed courses are not offered in a given semester, and 3) reduce the number of available streams from the current number of options (n=8) based on an assessment of the number of students currently following each of them.

Finally, we discussed the issue of major progression and academic progress, which was detailed on pp. 13-14 of the self-study, with numerous faculty and undergraduates during our visit. One of the primary challenges to student progression in the BS involves the requirement of Pre-Calculus (Math 150) in order to take the university's introductory biology course (BIO141), which is in turn required to take GES 308 (Ecology), which is in turn required for all upper-level ecology courses. High D/F/W rates were noted in other required non-major courses, including introductory courses in physics and chemistry, raising additional potential roadblocks for GES BS student progression that appear to result in an increased time to degree for BS majors. Several students with whom we spoke ended up changing their degree from the BS to the BA due to these issues with the science and math requirements. That said, such requirements are typical of most Bachelor of Science degrees (including those in Environmental Science and Physical Geography), and a resulting shift of some students from a BS to a BA is fairly common at the University of South Carolina and other institutions with which we are familiar. A common mechanism for addressing this roadblock is pro-active student advising to direct students who are better suited for the requirements of a BA toward the degree in Geography and Environmental Studies as early as possible. A secondary, but related, issue with student progression is that students entering the BS with a weak background in mathematics can find themselves blocked from taking upper-level courses in GES (other than GES 311: Weather and Climate) until they pass Math 150 and other subsequent coursework, including GES308. To decrease time to graduation, it might be worth assessing whether there are additional upper-level courses in GES that students could take without having Ecology (for example) as a prerequisite.

4. **Departmental Policies, Processes, and Governance:** We strongly encourage the department to continue its work to update department-level policies and processes with an eye toward increasing transparency and engagement and shaping the future of the department. One key aspect of such efforts will be developing a robust mentoring and annual review process for assistant and associate professors that addresses issues such as progress towards promotion, mentoring of graduate students, appropriate service levels, and avenues for externally funding research programs.
5. **Faculty:** We were very pleased to see the College's strong support for GES through recent faculty lines. To encourage the retention of new and current faculty, improved space and additional support for GAs will be crucial. After speaking with assistant and associate professors in the department, we also believe that developing a more robust mentoring program in line with disciplinary and UMBC norms will be a crucial component of faculty retention (see previous point).
6. **Longer-term Planning:** We encourage the faculty to work together to develop a strategic plan for the next 5-7 years, drawing broadly on input from faculty, staff, and students. More specifically, we noted that while the GES self-study strongly emphasizes the interdisciplinarity of the department, we saw no mechanisms to facilitate interdisciplinary research or education. We thus encourage the department to develop a framework to walk their interdisciplinary talk through deliberate integration of course work and student research, faculty collaboration, and so on.

We also encourage the department to proactively reach out to cognate/related programs and departments about collaboration or even formal mergers. Global Studies, for example, is an area in which GES faculty have highly relevant expertise; yet to our knowledge, GES faculty are not deeply

involved in the administration of that program. The Department of Emergency and Disaster Health Systems, which has just hired a geographer, could be another strong partner. While it might appear odd at first glance to draw such seemingly disparate departments together, hazards and disasters are a traditional strength of Geography. The [Hazards Vulnerability & Resilience Institute](#) at the University of South Carolina (which is headed by National Academy of Science member, Susan Cutter), for example, conducts interdisciplinary research and training to enhance the ability of communities to plan for and manage disasters and adapt to a changing environment. Further, some Geography departments already house narrowly-focused training programs that benefit from the breadth of Geography courses (e.g., the [air transportation](#) undergraduate major housed within the Department of Geography at The Ohio State University).

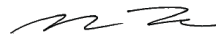
In closing, we would again like to thank everyone who coordinated our visit and met with us during our time at UMBC. We would also like to thank those who invited us to perform this review and who prepared and organized the materials; you made our job substantially easier. Should you have any follow-up questions, please don't hesitate to let us know.

Sincerely,



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