

This template is to be used only by programs that have received specific written approval from the Provost's office to proceed with internal proposal development and review. The proposal template should be completed in full and submitted to the University Provost's Office [[mailto: curriculumplanning@asu.edu](mailto:curriculumplanning@asu.edu)]. It must undergo all internal university review and approval steps including those at the unit, college, and university levels. A program **may not** be implemented until the Provost's Office notifies the academic unit that the program may be offered.

DOCTORAL DEGREE PROGRAM

College/School: The College of Liberal Arts and Sciences

Note: Program ownership is coded at the College/School level first and may not be a center, department or division apart from it.

Department/Division/School: School of Geographical Sciences and Urban Planning
(CGEOGRAPHY)

Proposing faculty group (if applicable): N/A

Name of proposed degree program: Doctor of Philosophy (PhD) in Geographic Information Science

Proposed title of major: Geographic Information Science

Doctoral degree type: PHD - Doctor of Philosophy

If Degree Type is "Other", provide degree type and proposed abbreviation: N/A

Is a program fee required? No, a program fee is not required.

Note: for more information about program fee requests, visit <https://provost.asu.edu/curriculum-development/changemaker/form-instructions#fees>

Is the unit willing and able to implement the program if the fee is denied? N/A

Requested effective term and year: Fall 2021
(The first semester and year for which students may begin applying to the program)

Delivery method and campus or location options: *select all locations that apply*

☐ Downtown Phoenix ☐ Polytechnic ☒ Tempe ☐ Thunderbird ☐ West ☐ Other: _____

☐ **Both** on-campus **and** ☐ ASU Online* - (check applicable campus(es) from options listed above)

☐ ASU Online only (all courses online and managed by ASU Online)

Note: Once students elect a campus or Online option, students will not be able to move between the on-campus and the ASU Online options. Approval from the Office of the University Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online. Please complete the ASU Online Offering form in [Curriculum ChangeMaker](#) to begin this request. Prior to completing the online Curriculum ChangeMaker form, please contact EdPlus at asuonline@asu.edu who can provide you with additional information regarding the online request process.

Do Not Fill in this information: Office Use Only

Plan Code:

CIP Code:

PROPOSAL CONTACT

Name: Rebecca Reining **Title:** Manager of Graduate Programs

Phone number: 480-965-8675 **Email:** rebecca.reining@asu.edu

DEAN APPROVAL(S)

This proposal has been approved by all necessary unit and college/school levels of review, and the college/school(s) has the resources to offer this degree program. I recommend implementation of the proposed degree program.

Note: An electronic signature, an email from the dean or dean's designee, or a PDF of the signed signature page is acceptable.

College/School/Division Dean name:

Fabio Milner

Signature:



Date: 09/15/2020

Please note: Proposals for new degrees also require the review and recommendation of approval from the University Graduate Council, Curriculum and Academic Programs Committee (CAPC), the Academic Senate (2 readings), and the Office of the Provost before they can be put into operation.

The final approval notification will come from the Office of the Provost.

1. PURPOSE AND NATURE OF PROGRAM

A. Provide a brief program description:

The PhD in Geographic Information Science will foster training of next generation scientists and engineers who will excel at theoretical, computational, analytical and technical knowledge in transdisciplinary geospatial sciences. Recent advances in location-based big data acquisition using remote sensing, Internet of Things, drones, and citizen sensors have created tremendous demand for a workforce to solve unique challenges across spaces and places, and to develop new ways of analyzing geospatial big data to support decision-making in smart city designs, disaster resilience, precision agriculture, public health, homeland- and cyber-security, refugee operations and environmental management. This exciting field sits in the heart of Science, Technology, Engineering and Mathematics (STEM) education, the enhancement of which will undoubtedly retain the international competitiveness and impact of ASU and its students. This new degree program will also play a key role in achieving ASU's mission of becoming "a global center for interdisciplinary research, discovery and development."

Students in this doctoral program will have the opportunity to conduct research in the Spatial Analysis Research Center (SPARC) alongside world-renowned faculty specializing in GIScience, geoinformatics, spatial statistics and spatial-temporal analysis, remote sensing and earth observation. Students will investigate a variety of issues through the lens of Geographical Information Science including, but not limited to, voting behavior, obesity, socio-demographics, environmental analysis and urban informatics – all in an attempt to better understand the "where" and "why" of our complex and changing world. Graduates of the program will find career opportunities in both the public and private sectors, including education, government agencies and research facilities. The program has sufficient flexibility to allow for individual needs and interests, allowing students to create a plan of study that fits their personal, academic and professional goals.

B. Will concentrations be established under this degree program? ☐ Yes ☒ No

(Please provide additional concentration information in the curricular structure section – number 7.)

2. PROGRAM NEED

Explain why the university should offer this program (include data and discussion of the target audience and market).

There are only four PhD programs focused exclusively on geographic information science (GIS) in the United States, yet the demand for employees and educators with GIS expertise continues to grow. As of 30 March 2020, Indeed.com lists 273 geographic information science faculty or related academic positions available in the US. According to the Bureau of Labor Statistics (BLS), employment of cartographers and photogrammetrists, key occupations in GIS, are projected to grow 15 percent from 2018 to 2028, much faster than the average for all occupations. O*NET Online classifies the geospatial information science and technology field as a "Bright Outlook" career, with a projected 7-10% growth and 35,000 job openings between 2018-2028. Further, according to O*NET,

median annual salary for geospatial information scientists and technologists has increased from \$83,000 in 2014 to \$90,270 in 2018. Geographic information science theory, tools, computational procedures, models, and techniques engage several critical elements in STEM curriculum and instruction. In light of current events, GIS is seen as crucial in the support of public health initiatives. National organizations such as the Centers for Disease Control and Prevention employ GIS tools and researchers to develop immunization campaigns and contract tracing for communicable diseases. Furthermore, the looming challenge of understanding and addressing climate change offers many opportunities for GIS scientists. According to ESRI, international organizations such as the United Nations Environment Programme apply GIS analysis to develop climate change models. O*NET data suggests up to 25% of respondents require a doctoral degree for hiring into remote sensing scientist and related positions such as geospatial intelligence analyst and data analytics scientist. Research skills including the collection, management, and analysis of geospatial data are reported as being of core importance in these occupations.

3. IMPACT ON OTHER PROGRAMS

Attach any letters of collaboration or support from impacted programs (see checklist). Please submit as a separate document.

See Appendix IV.

4. PROJECTED ENROLLMENT

How many new students do you anticipate enrolling in this program each year for the next five years?

Note: The Arizona Board of Regents (ABOR) requires that six doctoral degrees be awarded every three years. Thus, the projected enrollment numbers must account for this ABOR requirement.

5-YEAR PROJECTED ANNUAL ENROLLMENT					
Please utilize the following tabular format	1 st Year	2 nd Year (Yr. 1 continuing + new entering)	3 rd Year (Yr. 1 & 2 continuing + new entering)	4 th Year (Yrs. 1, 2, 3 continuing + new entering)	5 th Year (Yrs. 1, 2, 3, 4 continuing + new entering)
Number of Students Majoring (Headcount)	3	6	9	12	12

5. ACCREDITATION OR LICENSING REQUIREMENTS (if applicable)

Provide the names of the external agencies for accreditation, professional licensing, etc. that guide your curriculum for this program, if any. Describe any requirements for accreditation or licensing.

N/A

6. STUDENT LEARNING OUTCOMES AND ASSESMENT

Attach a PDF copy of the assessment plan printed from the University Office of Evaluation and Educational Effectiveness assessment portal demonstrating UOE's approval of your assessment plan for this program. Visit the assessment portal at <https://uoeee.asu.edu/assessment-portal> or contact uoeee@asu.edu with any questions.

7. CURRICULAR STRUCTURE

A. Curriculum Listing

Required Core Courses for the Degree			
Prefix and Number	Course Title	New Course?	Credit Hours
GIS 520	GIScience Issues and Debates	Yes	3
GIS 521	Geographic Information Science Programming	No	3
GIS 571	Spatial Statistics for Geography and Planning	Yes	3
GCU 585	Geographic Research Design and Proposal Writing	No	3
Section sub-total:			12

Elective or Research Courses <i>Selected in consultation with faculty advisor</i>			
Prefix and Number	Course Title	New Course?	Credit Hours
	Students choose electives or research courses from an approved list (see Appendix II for list).	No	43
GIS 792	Research	Yes	12
Section sub-total:			55
Remote Sensing <i>Students choose one course from the following list. Courses may be substituted with approval of the academic unit</i>			Credit Hours
ABS 560 Ecological Modeling			3
ABS 598 Topic: Introduction to Remote Sensing			3
EEE 598 Topic: Remote Sensing and Adaptive Radar			3
GPH 569 Digital Analysis of Remotely Sensed Data			3
GPH 591 Seminar: Advanced Spatial Analysis			3
GPH 598 Topic: Advanced Digital Analysis			3
GPH/SES 598 Topic: Close-Range Remote Sensing			3
Section sub-total:			3
Other Requirements <i>E.g. – internships, clinical requirements, field studies, foreign language exam as applicable</i>			Credit Hours
GCU 591 or GPH 591 Seminar: Geography Colloquium			1
GCU 591 or GPH 591 Seminar: Geography Colloquium			1
Section sub-total:			2
Culminating Experience <i>E.g. – Capstone course, applied project, dissertation with oral defense (12 credit hours)</i>			Credit Hours
GIS 799 Dissertation			12
Section sub-total:			12
For doctoral programs – When approved by the student's supervisory committee, will this program allow up to 30 credit hours from a previously awarded master's degree to be used for this program? If applicable, please indicate the 30 credit hour allowance that will be used for this degree program.			
If students are admitted with only a bachelor's degree, will the remaining coursework be made up of research and elective coursework? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Total required credit hours			84

- List all required core courses and total credit hours for the core (required courses other than internships, dissertation, capstone course, etc.).
- Omnibus numbered courses cannot be used as core courses.
- Permanent numbers must be requested by submitting a course proposal to Curriculum ChangeMaker for approval.

B. Will concentrations be established under this degree program? ☐ Yes ☒ No

8. COURSES

A. Course Prefix(es): Provide the following information for the proposed graduate program.

- Will a new course prefix(es) be required for this degree program?

Yes ☐ No ☒

If yes, complete the [Course Prefixes / Subjects Form](#) for each new prefix and submit it as part of this proposal submission. Form is located under the courses tab.

- B. New Courses Required for Proposed Degree Program:** Provide course prefix, number, title, credit hours and description for any new courses required for this degree program.

GIS 520 GIScience Issues and Debates, 3 credit hours

Examines the underlying theories, current issues, and debates surrounding the development and foundation of GIScience as a discipline. We will discuss the history of the development of the field, the fundamentals and applications of spatial concepts to problem solving, and explore the trajectories of the field with respect to emerging geospatial technologies. This course will expose students to the major research methods and directions, issues, and current debates in the field of GIScience. The course will trace the development trajectory of the field from the rise of geographic information systems (GIS) as tools used to support applications and decisions through the shift to a theory-driven field with research questions and a research agenda centered on the tools and techniques themselves. Students will be exposed to the foundational topics in the field including geospatial ontologies, uncertainty, representation and GeoVisualization, GeoAI, and CyberGIS as well as the social and ethical issues surrounding the use of GIS.

GIS 571 Spatial Statistics for Geography and Planning, 3 credit hours

This course instructs students on a variety of descriptive and inferential spatial statistics. Students that complete the course will understand the conceptual foundations of spatial statistics, be able to compute spatial statistics using software, and apply spatial statistical testing to a variety of research problems. The primary objective of this course is to teach students to think critically and apply statistics skills to interpret data, draw conclusions, and solve problems that are spatial in nature

9. FACULTY, STAFF, AND RESOURCE REQUIREMENTS

A. Faculty

- i. **Current Faculty** - Complete the table below for all current faculty members who will teach in the program. If listing faculty from an academic unit outside of the one proposing the degree, please provide a support statement from that unit.

Name	Rank	Highest Degree	Area of Specialization/Expertise	Estimated Level of Involvement
Stewart Fotheringham	Regents Professor	PhD	spatial analysis, GIScience, spatial interaction modeling	High
WenWen Li	Associate Professor	PhD	GIScience, spatial analysis, cyberinfrastructure, big data and machine learning	High
Soe Myint	Professor	PhD	remote sensing, land use, land cover change and simulation, human environment interaction, geospatial methods	High
Daoqin Tong	Associate Professor	PhD	spatial optimization, spatial analysis, location analysis and modeling, transportation and network analysis	High
Peter Kedron	Assistant Professor	PhD	spatial analysis, GIScience, economic geography	High
Amy Frazier	Assistant Professor	PhD	remote sensing, landscape ecology, GIScience, spatial analysis	High
Matthew Quick	Assistant Professor	PhD	spatial and spatial-temporal data analysis, urban planning, Bayesian methods	High
Dylan Connor	Assistant Professor	PhD	statistical modelling, population analysis, big data analytics	High

Mary Donovan	Assistant Professor	PhD	quantitative ecology, data science, spatial analysis, conservation science, ecological resilience, ecological monitoring	High
Drew Trgovac	Instructor	PhD	GIScience, spatial analysis	Low

- ii. **New Faculty** - Describe the new faculty hiring needed during the next three years to sustain the program. List the anticipated hiring schedule and financial sources for supporting the addition of these faculty members.

No further faculty hires are anticipated; current personnel are sufficient to sustain the program.

- iii. **Administration of the program** - Explain how the program will be administered for the purposes of admissions, advising, course offerings, etc. Discuss the available staff support.

Current graduate staff support consists of manager of graduate programs (1.00 FTE) and graduate program student services support coordinator (0.50 FTE). Manager of graduate programs oversees all academic advising, coordinates graduate student funding, communicates and implements School, College, Graduate College, and University policies, monitors student progress, and supports class scheduling efforts to ensure appropriate course offerings. Manager of graduate programs oversees graduate program student services support coordinator who coordinates recruitment and admissions activities and provides backup academic advising and administrative support. Current staffing is sufficient and can accommodate the additional expected capacity over the first five years. Applications for admission are reviewed by the graduate committee, chaired by the Associate Director of Research-Based Graduate Programs, and consisting of five tenure-track faculty from a variety of disciplines within the school. Competitive applications are further reviewed by applicants' prospective doctoral advisors to determine research alignment and fit. Admission decisions are made by the graduate committee in partnership with the prospective advisor.

- B. Resource requirements needed to launch and sustain the program:** Describe any new resources required for this program's success such as new staff, new facilities, new library resources, new technology resources, etc.

No new resources required.

APPENDIX I
OPERATIONAL INFORMATION FOR GRADUATE PROGRAMS(This information is used to populate the [Graduate Programs Search](#)/catalog website.)1. **Proposed title of major:** Geographic Information Science2. **Marketing description** *(Optional - 50 words maximum. The marketing description should not repeat content found in the program description.)*

Ready to apply state-of-the-art geospatial analysis methods to social, economic and environmental problems? Be part of the solution with a PhD in Geographic Information Science. You will be joining a school filled with innovative faculty within the discipline and leading research centers that are forging this path of discovery.

3. **Provide a brief program description** *(Catalog type (i.e. will appear in Degree Search) – no more than 150 words. Do not include any admission or curriculum information)*

The PhD in geographic information science (GIS) fosters training of next generation scientists and engineers who will excel at theoretical, computational, analytical and technical knowledge in transdisciplinary geospatial sciences. Students in this doctoral program will have the opportunity to conduct research at the Spatial Analysis Research Center (SPARC) alongside world-renowned faculty specializing in remote sensing and earth observation, GIScience, geoinformatics, spatial statistics and spatial-temporal analysis. Our researchers are investigating a variety of issues, from bikes and bears to voting habits and health crises – all in an attempt to better understand the "where" and "why" of our complex and changing world. Graduates of the program find career opportunities in public and private industries, including education, government agencies and research facilities. The program has sufficient flexibility to allow for individual needs and interests, allowing students to create a plan of study that fits their personal, academic and professional goals.

4. **Delivery/Campus Information Options:** On-campus only (ground courses and iCourses)5. **Campus(es) where program will be offered:**

ASU Online curriculum consists of courses that have no face-to-face content. iCourses are online courses for students in on-campus programs. iCourses may be included in a program, but may not comprise the entirety of a program. On-campus programs must have some face-to-face content.

Note: Office of the Provost approval is needed for ASU Online delivery option.

☐ ASU Online only (all courses online and managed by ASU Online)

All other campus or location options (please select all that apply):

☐ Downtown Phoenix ☐ Polytechnic ☒ Tempe ☐ West ☐ Other: _____

☐ **Both on-campus and** ☐ ASU Online* - (check applicable campus(es) from options listed above)

**Note: Once students elect a campus or Online option, students will not be able to move between the on-campus and the ASU Online options. Approval from the Office of the University Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online. Please complete the ASU Online Offering form in Curriculum ChangeMaker to begin this request. Prior to completing the online Curriculum ChangeMaker form, please contact EdPlus at asuonline@asu.edu who can provide you with additional information regarding the online request process.*

6. **Admission Requirements:**

Applicants must fulfill the requirements of both the Graduate College and The College of Liberal Arts and Sciences.

Applicants are eligible to apply to the program if they have earned a bachelor's or master's degree in geography, geology, earth science, computer programming, GIS, environmental science, geomatics or related field, from a regionally accredited institution.

Applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in the last 60 hours of a student's first bachelor's degree program, or applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in an applicable master's degree program.

All applicants must submit:

1. graduate admission application and application fee
2. official transcripts
3. three letters of recommendation
4. written statement
5. professional resume
6. proof of English proficiency

Additional Application Information

An applicant whose native language is not English must provide proof of English proficiency regardless of current residency

Letters of recommendation should be from academic professionals or professional colleagues capable of evaluating applicant's abilities, accomplishments, and professional potential.

Written statement must address the following questions:

1. What area of specialization within GIS do you wish to pursue, and why?
2. Describe the aspects of your education that will enable you to pursue this area of specialization.
3. What additional training do you feel you can obtain at Arizona State University to realize your education and career goals?
4. Please provide other information (for example: research experience or information which might be drawn from your resume) that you feel we should consider in your application for admission.

Written statement should be no longer than two pages. A generic statement, often sent to multiple universities, does not substitute for a statement that addresses the applicant's reasons for applying to the PhD program in geographic information science.

7. Application Review Terms (if applicable session):

Indicate the first term and year in which applications will be opened for admission. Applications will be accepted on a rolling basis after that time.

Note: It is the academic unit's responsibility to display program deadline dates on their website.

Terms	Years	University Late Fee Deadline
<input checked="" type="checkbox"/> Fall (regular) <input type="checkbox"/> Session B	(year): 2021 (year):	July 1 st October 1 st
<input checked="" type="checkbox"/> Spring (regular) <input type="checkbox"/> Session B	(year): 2022 (year):	December 1 st February 8th
<input type="checkbox"/> Summer (regular) <input type="checkbox"/> Summer B	(year): (year):	May 14th May 14th

Note: Session B is only available for approved online programs.

Program admission deadlines website address: <https://sgsup.asu.edu/degree-programs/graduate-degrees/phd-giscience> (proposed; not yet created)

8. Curricular Requirements:**Curricular Structure Breakdown for the Academic Catalog:**

(To be completed by the Graduate College)

84 credit hours, a written comprehensive exam, an oral comprehensive exam, a prospectus and a dissertation

Required Core (12 credit hours)

GIS 520 GIScience Issues and Debates (3)

GIS 521 Geographic Information Science Programming (3)

GIS 571 Spatial Statistics for Geography and Planning (3)

GCU 585 Geographic Research Design and Proposal Writing (3)

Electives or Research (55 credit hours)**Remote Sensing (3 credit hours)****Other Requirements (2 credit hours)**

GCU 591 or GPH 591 Seminar: Geography Colloquium (2)

Culminating Experience (12 credit hours)

GIS 799 Dissertation (12)

Additional Curriculum Information

Students will select electives, remote sensing and other requirements seminar coursework in consultation with their academic advisor.

9. Comprehensive Exams:**Doctoral Comprehensive Exam (required), please select from the appropriate box.**

A written comprehensive exam is required for all doctoral programs.

An oral comprehensive exam is also required.

10. For Doctoral Degrees that require a dissertation, submission of a written dissertation prospectus and its oral defense are required. (Please include any required timelines for defense of the prospectus.) It is expected that the submission of a written dissertation prospectus and its oral defense will take place no later than the end of the fourth year.

Entering with master's degree: prospectus must be complete by end of 5th semester or within 6 months of comprehensive exam.

Entering without master's degree: prospectus must be complete by end of 7th semester or within 6 months of comprehensive exam.

11. Allow 400-level courses: ☒ **Yes** ☐ **No**

Note: No more than 6 credit hours of 400-level coursework may be included on a graduate student plan of study.

12. Committee:

Required number of dissertation committee members (must be at least 3 including chair or co-chairs): Minimum of three committee members from GIS Faculty in the School of Geographical Sciences and Urban Planning regular or affiliated faculty

- 13. Keywords:** List all keywords that could be used to search for this program. Keywords should be specific to the proposed program – limit 10 keywords.

GIScience, STEM, spatial statistics, geoinformatics, remote sensing, earth observation, geographical analysis, physical geography, cyberGIS, spatial-temporal analysis

14. Area(s) of Interest

- A. Select **one (1)** primary area of interest from the list below that applies to this program.**

- | | |
|--|---|
| <input type="checkbox"/> Architecture & Construction | <input type="checkbox"/> Interdisciplinary Studies |
| <input type="checkbox"/> Arts | <input type="checkbox"/> Law & Justice |
| <input type="checkbox"/> Business | <input type="checkbox"/> Mathematics |
| <input type="checkbox"/> Communication & Media | <input type="checkbox"/> Psychology |
| <input type="checkbox"/> Education & Teaching | <input checked="" type="checkbox"/> STEM |
| <input type="checkbox"/> Engineering & Technology | <input type="checkbox"/> Science |
| <input type="checkbox"/> Entrepreneurship | <input type="checkbox"/> Social and Behavioral Sciences |
| <input type="checkbox"/> Health & Wellness | <input type="checkbox"/> Sustainability |
| <input type="checkbox"/> Humanities | |

- B. Select **one (1)** secondary area of interest from the list below that applies to this program.**

- | | |
|--|---|
| <input type="checkbox"/> Architecture & Construction | <input type="checkbox"/> Interdisciplinary Studies |
| <input type="checkbox"/> Arts | <input type="checkbox"/> Law & Justice |
| <input type="checkbox"/> Business | <input type="checkbox"/> Mathematics |
| <input type="checkbox"/> Communications & Media | <input type="checkbox"/> Psychology |
| <input type="checkbox"/> Education & Teaching | <input type="checkbox"/> STEM |
| <input checked="" type="checkbox"/> Engineering & Technology | <input type="checkbox"/> Science |
| <input type="checkbox"/> Entrepreneurship | <input type="checkbox"/> Social and Behavioral Sciences |
| <input type="checkbox"/> Health & Wellness | <input type="checkbox"/> Sustainability |
| <input type="checkbox"/> Humanities | |

15. Contact and Support Information:

Office Location - Building Code & Room: (Search ASU map)	COOR Hall 5 th Floor
Campus Telephone Number: (may not be an individual's number)	480-965-8733
Program Email Address: (may not be an individual's email)	SGSUP.gradprograms@asu.edu
Program Website Address: (if one is not yet created, use unit website until one can be established)	SGSUP.asu.edu
Program Director (Name):	Elizabeth Wentz
Program Director (ASURITE):	wentz
Program Support Staff (Name):	Rebecca Reining
Program Support Staff (ASURITE):	rljew
Admissions Contact (Name):	Rebecca Reining

Admissions Contact (ASURITE):	rljew
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- 16. Application and iPOS Recommendations:** List the Faculty and Staff who will input admission/POS recommendations to Gportal **and** indicate their approval for Admissions and/or POS:

NAME	ASURITE	ADMSN	POS
Rebecca Reining	rljew	x	x
Zaellotious Wilson	zwilson2	x	x
Mark Schmeeckle	mschmeec	x	x

(NEW GRADUATE INITIATIVES)**PROPOSAL PROCEDURES CHECKLIST**

Academic units should adhere to the following procedures when requesting new curricular initiatives (degrees, concentrations or certificates).

- ☒ **Obtain the required approval from the Office of the Provost to move the initiative forward for internal ASU governance reviews/approvals. Please see the academic strategic plan website at: <https://provost.asu.edu/curriculum-development>.**
- ☒ **Submit any new courses that will be required for the new curricular program to the Curriculum ChangeMaker online course approval system for review and approval.**
 - Additional information can be found at the Provost's Office Curriculum Development website: [Courses link](#)
 - For questions regarding proposing new courses, send an email to: courses@asu.edu
- ☒ **Prepare the applicable proposal template and operational appendix for the proposed initiative.**
- ☒ **Obtain letters or memos of support or collaboration (if applicable).**
 - when resources (faculty or courses) from another academic unit will be utilized
 - when other academic units or degree programs may be impacted by the proposed request
 - if the program will have an online delivery option support will be required from the Provost's office and ASU Online. *(Please complete the ASU Online Offering form in [Curriculum ChangeMaker](#) to begin this request.)*
- ☒ **Obtain the internal reviews/approvals of the academic unit.**
 - internal faculty governance review committee(s)
 - academic unit head (e.g. Department Chair or School Director)
 - academic unit Dean or their designee (will submit approved proposal to the curriculumplanning@asu.edu email account for further ASU internal governance reviews (as applicable, University Graduate Council, CAPC and Senate)

Additional Recommendations

All new graduate programs require specific processes and procedures to maintain a successful degree program. Below are items that the Graduate College strongly recommends that academic units establish after the program is approved for implementation.

- ☒ **Establish satisfactory academic progress policies, processes and guidelines** – Check within the proposing academic unit and/or college to see if there are existing academic progress policies and processes in place. If none have been established, please go to http://graduate.asu.edu/faculty_staff/policies and scroll down to the **academic progress review and remediation processes** (for faculty and staff) section to locate the reference tool and samples for establishing these procedures.
- ☒ **Establish a Graduate Student Handbook for the new degree program** – Students need to know the specific requirements and milestones they must meet throughout their degree program. A Graduate Student Handbook, provided to students when they are admitted to the degree program and published on the website for the new degree, gives students this information. To be included in the handbook are the unit/college satisfactory academic progress policies, current degree program requirements (outlined in the approved proposal) and a link to the Graduate Policies and Procedures website: http://graduate.asu.edu/faculty_staff/policies.

APPENDIX II

Approved Electives: PhD in Geographic Information Science*students may choose other courses in consultation with faculty advisor*

GIS 469	Multivariate Statistics for Social Science (3)
GIS 561	Fundamentals of Spatial Optimization (3)
GIS 562	Location Analysis and Modeling (3)
GIS 563	Local Statistical Modeling (3)
GPH 591	Seminar: Advanced Spatial Analysis (3)
GIS 591	Seminar: Data Mining and Data-Driven Geography (3)
GIS 591	Seminar: Big Data and Geography (3)
GIS 598	Topic: Machine Learning for Geographers (3)
GPH 569	Digital Analysis of Remotely Sensed Data (3)
GPH 598	Topic: Advanced Digital Analysis (3)
GPH 591	Seminar: Advanced Spatial Analysis (3)
GPH/SES 598	Topic: Close-range Remote Sensing (3)
EEE 598	Topic: Remote Sensing and Adaptive Radar (3)
ABS 598	Topic: Introduction to Remote Sensing (3)
ABS 560	Ecological Modeling (3)
GPH 563	Urban Climates (3)
GPH 598	Topic: Advanced Digital Analysis (3)
GPH 511	Fluvial Processes (3)
GPH 591	Seminar: Desert Geomorphology (3)
GPH 598	Topic: Aeolian Geomorphology (3)
GLG 598	Topic: Geomorphology (3)

APPENDIX III

UOEEE Approved Assessment Plan

PhD in Geographic Information Science

PhD1535587153
Approved

LC-College of Liberal Arts and
Sciences - Social Sciences

Outcome 1

Graduates of the GIS PhD program will be able to demonstrate evidence of spatial thinking

Concepts

Recognize that spatial processes are distinct from aspatial processes and that the nature of geographical space adds complexity and challenges to our understanding of the world. Consequently, recipients of the degree need to demonstrate their knowledge of geography and geographical processes and their ability to understand the complexity of spatial vs aspatial problems

Competencies

Spatial data collections, GIS, designing spatially-explicit research questions

Assessment Process:

Measure 1

The first question of the written comprehensive examination will evaluate the student's ability to think spatially.

Performance Criterion 1

At least 80% of students will perform at or above mastery resulting in a pass of the written examination. Criteria is set by the expert evaluating committee, which will determine the capacity of the student to think spatially based on the specific content of the proposed research area. Committee members will be asked to answer the question "Does the student demonstrate proficiency in spatial thinking?"

Measure 2

The oral defense of the first question of the written comprehensive exam

Performance Criterion 2

At least 80% of students will perform at or above mastery resulting in a pass of the oral examination. Criteria is set by the expert evaluating committee, which will determine the capacity of the student to think spatially based on the specific content of the proposed research area.

Outcome 2

Graduates of the GIS PhD program will be able to demonstrate analytical, statistical, computational skills for analyzing geospatial data

Outcome 2

Graduates of the GIS PhD program will be able to demonstrate analytical, statistical, computational skills for analyzing geospatial data

Concepts

Solve complex spatial problems through computational, statistical and/or mathematical skills applied to spatial problems. Apply data science approaches to spatial data.

Competencies

Spatial statistics, GIS programming, geo-statistics, remote sensing

Last Action:
September 24, 2018 2:35 PM

Last User:

PhD in Geographic Information Science

PhD1535587153
Approved

LC-College of Liberal Arts and
Sciences - Social Sciences

Assessment Process:

Measure 1

Students will answer a technical question as part of their comprehensive exam.

Performance Criterion 1

At least 80% of students will perform at or above mastery resulting in a pass of the written examination. Criteria is set by the expert evaluating committee, which will determine the capacity of the student to think spatially based on the specific content of the proposed research area. Committee members will be asked to answer the question "Does the student demonstrate proficiency in spatial science technical skills?"

Measure 2

Students will take a technical course and the culminating project will be assessed on a rubric.

Performance Criterion 2

Mastery on the final project will be assessed using a graded rubric using criteria such as "Does student understand theory and application of technical skills?" Student will receive passing grades on at least 80% of rubric criteria

Outcome 3

Graduates of the GIS PhD program will be able to demonstrate an understanding of where the research frontiers are in geographic information science

Concepts

Demonstrate that, although the student's research is based on previous research, it extends our current knowledge and therefore contributes significantly to geographic knowledge. Able to identify geographic information and knowledge needs that are cutting edge.

Competencies

Conduct review and synthesis of geographic literature. Be able to communicate (via writing and oral presentation) clearly about geographic research frontiers.

Assessment Process:

Measure 1

For the culminating assignment students will situate their research within frontiers of GIS during GCU 585 Research Design and Proposal Writing

Performance Criterion 1

Mastery on the final project or proposal will be assessed using a graded rubric and student will receive passing grades on at least 80% of rubric criteria

Measure 2

Students will present research at an academic conference

Performance Criterion 2

At least 80% of students will present research at conferences

APPENDIX IV

Statements of Collaboration and Impact

The College of Liberal Arts and Sciences – Official Submission

From: [Kimberly Castillo](#)
To: curriculumplanning@asu.edu
Cc: [Kyle Rader](#)
Subject: New Prog- PhD GIS
Date: Tuesday, September 15, 2020 1:16:09 PM
Attachments: [image003.png](#)
[SGSUP-GIS PhD proposal_FINAL.pdf](#)
[SGSUP-GIS PhD proposal_FINAL.doc](#)

Hi All,

Please see the new program proposal for the PhD GIS. Let me know if anything else is needed, thanks.

Best,

Kim Castillo

Academic Success Analyst, Graduate Initiatives

Office of the Dean

The College of Liberal Arts & Sciences

P: 480-965-0044 | E: Kimberly.E.Castillo@asu.edu



School of Geographical Sciences & Urban Planning



Memorandum

To: Graduate College

From: Trisalyn Nelson, Director

cc:

Date: 4/10/20

Re: Support for proposal to establish PhD in Geographic Information Science

The School of Geographical Sciences and Urban Planning is in support of the proposal to establish the PhD in Geographic Information Science. Our faculty believe that this program will enhance the unit's competitiveness in attracting top students and will produce the next generation of talented researchers and scientists in GIS and related fields. Furthermore, the establishment of the Geographic Information Science doctoral program alongside the PhD in Geography and PhD in Urban Planning supports the School's interdisciplinary nature and mission.

Sincerely,

A handwritten signature in black ink, appearing to read "Trisalyn Nelson".

Trisalyn Nelson
Director, School of Geographical Sciences and Urban Planning

School of Geographical Sciences and Urban Planning
College of Liberal Arts and Sciences
PO Box 875302 Tempe, AZ 85287-5302
(480) 965-7533 Fax: (480) 965-8313
<http://geoplan.asu.edu>

School of Earth and Space Exploration, The College of Liberal Arts and Sciences

Rebecca Reining

From: Meenakshi Wadhwa
Sent: Saturday, April 4, 2020 9:08 AM
To: Rebecca Reining
Cc: Trisalyn Nelson
Subject: Re: Statement of Impact requested: PhD Geographic Information Science

Hi Rebecca,
 I support this. The only thing I note is that the courses in SESE listed for this program are not offered every year.
 Best regards,
 Mini

Meenakshi Wadhwa
 Director and Professor



<https://webapp4.asu.edu/directory/person/957644>
<https://wadhwagroup.asu.edu/>
<https://sese.asu.edu/>

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From: Rebecca Reining <Rebecca.Reining@asu.edu>
Sent: Friday, April 3, 2020 2:20:58 PM
To: Stephen Phillips <Stephen.Phillips@asu.edu>; Meenakshi Wadhwa <Meenakshi.Wadhwa@asu.edu>; Kelly Steele <Kelly.Steele@asu.edu>
Cc: Trisalyn Nelson <Trisalyn.Nelson@asu.edu>
Subject: Statement of Impact requested: PhD Geographic Information Science

Dear Drs. Phillips, Wadhwa, and Steele,

The School of Geographical Information Science and Analytics is planning to establish a new PhD degree in Geographic Information Science and Analytics. The degree will focus on the integration of Geographic Information Science, Statistics, Remote Sensing, Earth Observation, and Physical Geography. We have identified courses in your units that we would like to include as part of our proposed curriculum. We have identified the following courses in your units that we would like to include as part of our proposed curriculum:

Get [OUTLOOK FOR IOS](#)

From: Rebecca Reining <Rebecca.Reining@asu.edu>
Sent: Friday, April 3, 2020 2:20:58 PM
To: Stephen Phillips <Stephen.Phillips@asu.edu>; Meenakshi Wadhwa <Meenakshi.Wadhwa@asu.edu>; Kelly Steele <Kelly.Steele@asu.edu>
Cc: Trisalyn Nelson <Trisalyn.Nelson@asu.edu>
Subject: Statement of Impact requested: PhD Geographic Information Science

Dear Drs. Phillips, Wadhwa, and Steele,

The School of Geographical Sciences and Urban Planning is moving forward on our proposal to establish a new PhD degree in Geographic Information Science. This degree will establish concentrations in GIS/Geoinformatics/Spatial Statistics, Remote Sensing/Earth Observation, and Physical Geography. We have identified courses in your units that we would like to include on our list of approved concentration area courses (see attached).

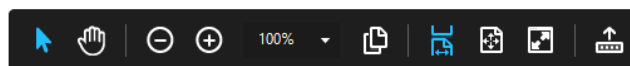
If you approve these listings, kindly send me a brief statement of your unit's support. If you do not approve, please notify me of that as well and we will make adjustments.

Our goal is to submit the proposal by April 10. I apologize for the rush; please don't be shy letting me know if this is too short a deadline. Thank you in advance for your time!

Respectfully,
Rebecca

1

Rebecca Reining
Manager of Graduate Programs
School of Geographical Sciences and Urban Planning
Arizona State University
Phone: 480-965-8675
Email: rebecca.reining@asu.edu



Fulton Schools of Engineering

From: [Kyle Squires](#)
To: [Fabio Milner](#)
Cc: [Kimberly Castillo](#)
Subject: RE: PhD GIS Impact Statements
Date: Wednesday, July 1, 2020 1:01:43 PM
Attachments: [image001.png](#)

Dear Fabio,

Thanks for contacting me. FSE does not have any concerns with the new program or the courses.
Best of luck as this all moves forward!

-- Kyle

From: Fabio Milner <milner@asu.edu>
Sent: Tuesday, June 30, 2020 3:44 PM
To: Kyle Squires <squires@asu.edu>
Cc: Fabio Milner <milner@asu.edu>; Kimberly Castillo <Kimberly.E.Castillo@asu.edu>
Subject: PhD GIS Impact Statements
Importance: High

ar Kyle,

The School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact from FSE. Please find the proposal attached as well two new courses that are being proposed as a part of this program (GIS 520 GIScience Issues and Debates and GIS 571 Spatial Statistics for Geography and Planning.) Since they are requesting program support this statement needs to come from our dean-to-dean communication.

Would you please review the attached materials and provide a statement of impact/support in regards to the:

- Proposed program which includes the request to allow students to take course electives offered by your college.
- New course offerings (GIS 520 and GIS 571)

If you need any additional materials to assist with your review please let me know.

From: Fabio Milner <milner@asu.edu>
Sent: Tuesday, June 30, 2020 3:44 PM
To: Kyle Squires <squires@asu.edu>
Cc: Fabio Milner <milner@asu.edu>; Kimberly Castillo <Kimberly.E.Castillo@asu.edu>
Subject: PhD GIS Impact Statements
Importance: High

Dear Kyle,

The School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact from FSE. Please find the proposal attached as well two new courses that are being proposed as a part of this program (GIS 520 GIScience Issues and Debates and GIS 571 Spatial Statistics for Geography and Planning.) Since they are requesting program support this statement needs to come from our dean-to-dean communication.

Would you please review the attached materials and provide a statement of impact/support in regards to the:

- Proposed program which includes the request to allow students to take course electives offered by your college.
- New course offerings (GIS 520 and GIS 571)

If you need any additional materials to assist with your review please let me know.

If possible, we'd like to request your review and statement by the end of next week (7/10). If this would not be possible please let me know.

Thanks, and best wishes,
Fabio

Fabio Augusto Milner, PhD
Associate Dean of Graduate Initiatives
Assistant Director, SA Levin MCMS Center

College of Integrative Sciences & Arts

From: [Duane Roen \(Dean\)](#)
To: [Fabio Milner](#)
Cc: [Fabio Milner](#); [Kimberly Castillo](#)
Subject: RE: PhD GIS Impact Statements
Date: Tuesday, June 30, 2020 3:57:45 PM
Attachments: [image002.png](#)

Hi, Fabio.

CISA is delighted to support The College's proposal for a PhD in Geographic Information Science.

Further, we are happy to support the proposals for the courses GIS 520 GIScience Issues and Debates and GIS 571 Spatial Statistics for Geography and Planning.

Of course, CISA would be glad if any students in the proposed program enrolled in CISA graduate courses.

Please let me know if CISA can offer any other support for the proposal.

Best,
Duane

Duane Roen
Vice Provost, Polytechnic campus
Dean, College of Integrative Sciences and Arts
Arizona State University
Mail Code: 2780
7271 E Sonoran Arroyo Mall
Mesa, AZ 85212-6415
P: 480-727-1415

From: Fabio Milner

Sent: Tuesday, June 30, 2020 3:41 PM

To: Duane Roen (Dean) <Duane.Roen@asu.edu>

Cc: Fabio Milner <fmilner@asu.edu>; Kimberly Castillo <Kimberly.E.Castillo@asu.edu>

Subject: FW: PhD GIS Impact Statements

Importance: High

Dear Duane,

The School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact from CISA. Please find the proposal attached as well two new courses that are being proposed as a part of this program (GIS 520 GIScience Issues and Debates and GIS 571 Spatial Statistics for Geography and Planning.) Since they are requesting program support this statement needs to come from our dean-to-dean communication.

Would you please review the attached materials and provide a statement of impact/support in

regards to the:

- Proposed program which includes the request to allow students to take course electives offered by your college.
- New course offerings (GIS 520 and GIS 571)

If you need any additional materials to assist with your review please let me know.

regards to the:

- Proposed program which includes the request to allow students to take course electives offered by your college.
- New course offerings (GIS 520 and GIS 571)

If you need any additional materials to assist with your review please let me know.

If possible, we'd like to request your review and statement by the end of next week (7/10). If this would not be possible please let me know.

Thanks, and best wishes,
Fabio

Fabio Augusto Milner, PhD

Associate Dean of Graduate Initiatives

Assistant Director, SA Levin MCMS Center

[College of Liberal Arts and Sciences](#)

Director of Mathematics for STEM Education

[School of Mathematical and Statistical Sciences](#)

[Arizona State University](#)



Armstrong Hall, Office 285

P: 480/965-5877 | F: 480/965-2110

milner@asu.edu

URL: <https://clas.asu.edu/content/fabio-milner>

Rebecca Reining

From: Kelly Steele
Sent: Thursday, April 9, 2020 3:33 PM
To: Rebecca Reining
Cc: Trisalyn Nelson; Fabio Suzart de Albuquerque; Steven Saul; Yun Kang; Douglas Green
Subject: Re: Statement of Impact requested: PhD Geographic Information Science

Rebecca,
After consulting with the faculty who teach, or could teach, the ABS courses listed as electives in the proposed curriculum, we are unanimous in our support for the proposed PhD in Geographic Information Science. Those faculty include Fabio Albuquerque, Yun Kang, and Steve Saul. We see this an opportunity to develop a closer relationship with faculty in Geography and Urban Planning as well as an opportunity to increase the visibility of and enrollment in our ABS program. We also look forward to the possibility of developing and offering additional electives from our program including those utilizing drone technology. It would be good to work together on this in the future. Please let me know if you would like additional information at this time.

Sincerely,
Kelly

Kelly P. Steele, PhD
Associate Professor and Faculty Head, Sciences and Mathematics
Arizona State University
College of Integrative Sciences and Arts | cisa.asu.edu
Mail code: 2780
6073 S. Backus Mall
Mesa, AZ 85212-2780
P: 480-727-1204

From: Rebecca Reining <Rebecca.Reining@asu.edu>
Sent: Friday, April 3, 2020 12:20 PM
To: Stephen Phillips <Stephen.Phillips@asu.edu>; Meenakshi Wadhwa <Meenakshi.Wadhwa@asu.edu>; Kelly Steele <Kelly.Steele@asu.edu>
Cc: Trisalyn Nelson <Trisalyn.Nelson@asu.edu>
Subject: Statement of Impact requested: PhD Geographic Information Science

Dear Drs. Phillips, Wadhwa, and Steele,

From: Rebecca Reining <Rebecca.Reining@asu.edu>
Sent: Friday, April 3, 2020 12:20 PM
To: Stephen Phillips <Stephen.Phillips@asu.edu>; Meenakshi Wadhwa <Meenakshi.Wadhwa@asu.edu>; Kelly Steele <Kelly.Steele@asu.edu>
Cc: Trisalyn Nelson <Trisalyn.Nelson@asu.edu>
Subject: Statement of Impact requested: PhD Geographic Information Science

Dear Drs. Phillips, Wadhwa, and Steele,

The School of Geographical Sciences and Urban Planning is moving forward on our proposal to establish a new PhD degree in Geographic Information Science. This degree will establish concentrations in GIS/Geoinformatics/Spatial Statistics, Remote Sensing/Earth Observation, and Physical Geography. We have identified courses in your units that we would like to include on our list of approved concentration area courses (see attached).

If you approve these listings, kindly send me a brief statement of your unit's support. If you do not approve, please notify me of that as well and we will make adjustments.

Our goal is to submit the proposal by April 10. I apologize for the rush; please don't be shy letting me know if this is too short a deadline. Thank you in advance for your time!

1

Respectfully,
Rebecca

Rebecca Reining
Manager of Graduate Programs
School of Geographical Sciences and Urban Planning
Arizona State University
Phone: 480-965-8675
Email: rebecca.reining@asu.edu



College of Global Futures

[image008.png](#)
[image009.png](#)
[image001.png](#)
[image002.png](#)

Dear Fabio,

The College of Global Futures is pleased to support the PhD proposal for Geographic Information Science.

Chris

Christopher Boone
Dean, College of Global Futures
Professor, School of Sustainability



<https://collegeofglobalfutures.asu.edu/>

P.O. Box 875502 | Tempe, Arizona | 85287-5502

PH: 480-965-2236 | Main: 480-965-2975

Executive Assistant: Lorraine.Protocollo@asu.edu

The College of Global Futures embraces ASU's mission as being a comprehensive public research university, measured not by whom it excludes, but rather by whom it includes and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves. We support and foster a culture of inclusiveness, tolerance, and respect that promotes equal opportunity and diversity among CGF faculty, staff, and students and through our engagement with diverse communities within and beyond the University.

From: Fabio Milner <milner@asu.edu>

Sent: Friday, October 23, 2020 12:31 PM

Subject: Impact letter request- PhD Geographic Information Science

Dear Chris,

The School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact College of Global Futures. Please find the proposal attached here for your review. Since they are requesting program support, this statement needs to come from our dean-to-dean communication.

Would you please review the attached materials and provide a statement of impact, support in regards to the:

- Proposed program being supported by your college

If you need any additional materials to assist with your review please let me know.

If possible, we'd like to request your review and statement by the **end of next week (Friday, Oct. 23)**. If this would not be possible please let me know.

Thanks so much,
Fabio

Edson College of Nursing and Health Innovation

From: [Katherine Kenny](#)
To: [Fabio Milner](#)
Cc: [Kimberly Castillo](#)
Subject: RE: Impact letter request- PhD Geographic Information Science
Date: Wednesday, October 21, 2020 6:32:40 AM
Attachments: [SGSUP-GIS PhD proposal FINAL.doc](#)
[image002.png](#)
[image004.png](#)

Dear Fabio – thank you for asking me to review the proposal for PhD degree in Geographic Information Science. There is no conflict with current Edson College PhD or other degree programs. On behalf of the Edson College of Nursing and Health Innovation, we support your request for this degree. Best to you as you continue through the University Approval Process.

Kathy

Katherine (Kathy) Kenny, DNP, RN, ANP-BC, FAANP, FAAN
Associate Dean of Academic Affairs
Clinical Professor



550 N. 3rd Street | Phoenix, AZ 85004
(P) 602-496-1719
(F) 602-496-0545
Katherine.kenny@asu.edu
<https://nursingandhealth.asu.edu/>

From: Fabio Milner <milner@asu.edu>
Sent: Friday, October 16, 2020 08:24
To: Katherine Kenny <Katherine.Kenny@asu.edu>
Cc: Kimberly Castillo <Kimberly.E.Castillo@asu.edu>; Fabio Milner <milner@asu.edu>
Subject: Impact letter request- PhD Geographic Information Science

Dear Kathy,

The School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact Edson College of Nursing and Health Innovation. Please find the proposal attached here for your review. Since they are requesting program support, this statement needs to come from our dean-to-dean communication.

Would you please review the attached materials and provide a statement of impact, support in regards to the:

- Proposed program being supported by your college

If you need any additional materials to assist with your review please let me know.

If possible, we'd like to request your review and statement by the **end of next week (Friday, Oct.**

23). If this would not be possible please let me know.

Thanks so much,
Fabio

Fabio Augusto Milner, PhD

Associate Dean of Graduate Initiatives

Assistant Director, SA Levin MCMS Center

[The College of Liberal Arts and Sciences](#)

Director of Mathematics for STEM Education

[School of Mathematical and Statistical Sciences](#)

[Arizona State University](#)

Thunderbird School of Global Management

From: [Lena Booth](#)
To: [Fabio Milner](#)
Cc: [Kimberly Castillo](#)
Subject: Re: Impact letter request- PhD Geographic Information Science
Date: Friday, October 23, 2020 9:19:47 AM
Attachments: [image002.png](#)
[image003.png](#)

Dear Fabio:

Thunderbird is pleased to support the proposed Ph.D. in Geographic Information Science. We wish you all the success in launching this new program.

Lena

Lena C. Booth, Ph.D. | Associate Dean of Graduate Programs and Finance Professor | Thunderbird School of Global Management | 400 E Van Buren, Suite 800 | Phoenix, AZ 85004 | Phone: 602-496-7061 |
Email: lena.booth@thunderbird.asu.edu | Website: <http://www.thunderbird.edu>

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Times Higher Education/Wall Street Journal 2019



Thunderbird is a unit of the Arizona State University Enterprise

From: Fabio Milner <milner@asu.edu>
Date: Friday, October 16, 2020 at 8:26 AM
To: Lena Booth <Lena.Booth@thunderbird.asu.edu>
Cc: Kimberly Castillo <Kimberly.E.Castillo@asu.edu>, Fabio Milner <milner@asu.edu>

To: Lena Booth <Lena.Booth@thunderbird.asu.edu>

Cc: Kimberly Castillo <Kimberly.E.Castillo@asu.edu>, Fabio Milner <milner@asu.edu>

Subject: Impact letter request- PhD Geographic Information Science

Dear Lena,

The School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact from Thunderbird School of Global Management. Please find the proposal attached here for your review. Since they are requesting program support, this statement needs to come from our dean-to-dean communication.

Would you please review the attached materials and provide a statement of impact, support in regards to the:

- Proposed program being supported by your college

If you need any additional materials to assist with your review please let me know.

If possible, we'd like to request your review and statement by the **end of next week (Friday, Oct. 23)**. If this would not be possible please let me know.

Thanks so much,
Fabio

Fabio Augusto Milner, PhD
Associate Dean of Graduate Initiatives
Assistant Director, SA Levin MCMS Center

W. P. Carey School of Business

From: "Amy Hillman (DEAN)" <AMY.HILLMAN@asu.edu>
Date: Saturday, October 24, 2020 at 9:04 AM
To: "Pardis Mahdavi (Dean)" <Pardis.Mahdavi@asu.edu>
Cc: Patrick Kenney <pkenney@asu.edu>
Subject: Re: Impact letter request- PhD Geographic Information Science

Hi Pardis,

The W. P. Carey School is supportive of the new PhD in Geographic information Science. No objections.

Amy

Amy J Hillman, PhD
Charles J. Robel Dean's Chair
W. P. Carey School of Business
Arizona State University
amy.hillman@asu.edu
480.965.3402

On Oct 23, 2020, at 9:07 PM, Pardis Mahdavi (Dean) <Pardis.Mahdavi@asu.edu> wrote:

Dear Amy,

I hope this note finds you well and hope that your weekend is off to a good start.

I'm writing because the School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact from the College of Health Solutions. Please find the proposal attached here for your review.

Would you please review the attached materials and provide a statement of impact/support in regards to the:

- Proposed program being supported by your college

If you need any additional materials to assist with your review please let me know.

If possible, we'd like to request your review and statement by the **end of next week (Friday, Oct. 30)**. If this would not be possible please let me know.

Thank you!

All my best,
Pardis

<SGSUP-GIS PhD proposal_FINAL.doc>

Mary Lou Fulton Teachers College

From: "Carole Basile (Dean)" <Carole.Basile@asu.edu>
Date: Friday, October 16, 2020 at 08:53
To: Fabio Milner <milner@asu.edu>
Cc: Kimberly Castillo <Kimberly.E.Castillo@asu.edu>
Subject: Re: Impact letter request- PhD Geographic Information Science
Resent-From: <milner@asu.edu>

MLFTC supports this proposal and does not see any conflict with existing programs. We wish you the best in getting this off the ground.

Carole G. Basile
Dean
Arizona State University
Mary Lou Fulton Teachers College
[P.O. Box 871811, Tempe, AZ 85281-1811](#)
O: [480.965.3463](tel:480.965.3463) | M: [480.310.6887](tel:480.310.6887)

On Oct 16, 2020, at 8:29 AM, Fabio Milner <milner@asu.edu> wrote:

Dear Carole,

The School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact statement for your review. Since they are requesting program support, this statement needs to come from our dean-to-dean communication.

Would you please review the attached materials and provide a statement of impact/support in regards to the:

- Proposed program being supported by your college

If you need any additional materials to assist with your review please let me know.

If possible, we'd like to request your review and statement by the **end of next week (Friday, Oct. 23)**. If this would not be possible please let me know.

Thanks so much,
Fabio

Fabio Augusto Milner, PhD

Sandra Day O'Connor College of Law

From: [Tamara Herrera](#)
To: [Fabio Milner](#)
Cc: [Kimberly Castillo](#)
Subject: RE: Impact letter request- PhD Geographic Information Science
Date: Tuesday, October 20, 2020 8:36:38 AM
Attachments: [image002.png](#)

Good morning,

The College of Law has reviewed the attached proposal for the PhD in Geographic Information Science and supports this proposal.

Please let us know if you need anything additional.

Tamara

Tamara Herrera
Associate Dean of Academic Affairs
Clinical Professor of Law
Sandra Day O'Connor College of Law
Arizona State University
111 E. Taylor Street
Phoenix, Arizona 85004-4467
tamara.herrera@asu.edu
480-727-7194

From: Fabio Milner <milner@asu.edu>
Sent: Friday, October 16, 2020 8:36 AM
To: Tamara Herrera <Tamara.Herrera@asu.edu>
Cc: Kimberly Castillo <Kimberly.E.Castillo@asu.edu>; Fabio Milner <milner@asu.edu>
Subject: Impact letter request- PhD Geographic Information Science

Dear Tamara,

The School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact from the Sandra Day O'Connor College of Law. Please find the proposal attached here for your review. Since they are requesting program support, this statement needs to come from our dean-to-dean communication.

Would you please review the attached materials and provide a statement of impact/support in regards to the:

- Proposed program being supported by your college

If you need any additional materials to assist with your review please let me know.

If possible, we'd like to request your review and statement by the **end of next week (Friday, Oct. 23)**. If this would not be possible please let me know.

College of Health Solutions

From: "Deborah Helitzer (Dean)" <Deborah.Helitzer@asu.edu>
Date: Friday, January 15, 2021 at 5:27 PM
To: "Pardis Mahdavi (Dean)" <Pardis.Mahdavi@asu.edu>
Cc: Fabio Milner <milner@asu.edu>
Subject: Re: Request for Impact Statement, GIS

Dear Pardis,

The College of Health Solutions is delighted to support your proposal for a PhD in Geographic Information Science.

We do welcome the opportunity to offer an upcoming course, POP 610 Social Epidemiology, as an election option for your students if you deem appropriate.

Best of luck in this new endeavor.

Take care and stay safe.

Deborah
Deborah L. Helitzer, Sc.D.
Dean and Professor
College of Health Solutions
Arizona State University
550 N. 3rd Street
Phoenix, AZ 85004
Health North 5th floor
602-496-2511

For assistance with appointments or other information, please contact Daniel Eckstrom (Daniel.Eckstrom@asu.edu)



From: "Pardis Mahdavi (Dean)" <Pardis.Mahdavi@asu.edu>
Date: Wednesday, January 13, 2021 at 3:41 PM
To: "Deborah Helitzer (Dean)" <Deborah.Helitzer@asu.edu>
Cc: Fabio Milner <milner@asu.edu>
Subject: Request for Impact Statement, GIS

Dear Deborah,

The School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact from the College of Health Solutions. I believe that my colleague, Fabio, already sent you the proposal. Since they are requesting program support, this statement needs to come from dean-to-dean communication.

If you need any additional materials to assist with your review please let me know.

If possible, we'd like to request your review and statement by the **end of next week**. If this would not be possible please let me know.

Thanks so much,
Pardis

Herberger Institute for Design and the Arts

From: [Stephani Etheridge Woodson](#)
To: [Fabio Milner](#)
Cc: [Kimberly Castillo](#)
Subject: Re: Impact letter request- PhD Geographic Information Science
Date: Friday, October 23, 2020 11:33:38 AM
Attachments: [image001.png](#)
[image002.png](#)

Hello the Design School and Arts Media Engineering have both reviewed this proposal and support it. AME suggests that you might consider adding: AME 598 Sensable Heatscapes as a suggested elective.

Herberger Institute for Design and the Arts supports your proposal.

with appreciation, Stephani

Stephani Etheridge Woodson
Interim Associate Dean of Students
Herberger Institute for Design and the Arts
The FDT Evelyn Smith Professor | School of Music, Dance and Theatre
Director, Design and Arts Corps | herbergerinstitute.asu.edu/design-and-arts-corps
She/Her/Hers



COVID-19 Resources for Students

Date: Friday, October 16, 2020 at 8:33 AM

To: Stephani Etheridge Woodson <swoodson@asu.edu>

Cc: Kimberly Castillo <Kimberly.E.Castillo@asu.edu>, Fabio Milner <milner@asu.edu>

Subject: Impact letter request- PhD Geographic Information Science

Dear Stephani,

The School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact from Herberger Institute for Design and the Arts. Please find the proposal attached here for your review. Since they are requesting program support, this statement needs to come from our dean-to-dean communication.

Would you please review the attached materials and provide a statement of impact/support in regards to the:

-
- Proposed program being supported by your college

If you need any additional materials to assist with your review please let me know.

If possible, we'd like to request your review and statement by the **end of next week (Friday, Oct. 23)**. If this would not be possible please let me know.

Thanks so much,
Fabio

New College of Interdisciplinary Arts and Sciences

Hi Fabio, please find below statements from the two Schools relevant to this new program. In addition, MNS conveyed a strong wish to collaborate, so I pasted that part below as well. Thank you!

Patty

The School of Mathematical and Natural Sciences in the New College of Interdisciplinary Arts and Sciences is supportive of the introduction of the new PhD degree in in Geographic Information Science, which is to be taught by the School of Geographical Sciences and Urban Planning in The College.

The School of Social and Behavioral Sciences in the New College of Interdisciplinary Arts and Sciences is supportive of the introduction of the new PhD degree in in Geographic Information Science, which is to be taught by the School of Geographical Sciences and Urban Planning in The College. We identify no negative impact on our current programs or courses from this proposed action and we note that the new PhD program is a welcome addition to the ASU repertoire of programs.

I never saw the proposal, but I think that there will be significant support within SMNS.

Specific individuals would come from the B2C2 faculty, some of the environmental science faculty, and I believe that the evolving environmental justice group. Each of these research areas have excellent candidates for collaboration and contribution to the proposed program.

We would especially be look forward to opportunities for our faculty to co-mentor students and collaborate on proposals in the environmental modeling (especially relative to big data and data mining), environmental justice, and environmental science areas.

Patricia Friedrich, PhD
She, Her, Hers
Associate Dean of Academic Programs and Faculty Affairs,
New College of Interdisciplinary Arts and Sciences
Professor of Sociolinguistics,
School of Social and Behavioral Sciences



Arizona State University

From: Fabio Milner <milner@asu.edu>
Date: Friday, October 16, 2020 at 08:39
To: Patricia Friedrich <Patricia.Friedrich@asu.edu>

Cc: Kimberly Castillo <Kimberly.E.Castillo@asu.edu>, Fabio Milner <milner@asu.edu>
Subject: Impact letter request- PhD Geographic Information Science

Dear Patty,

The School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact from the New College of Interdisciplinary Arts and Sciences. Please find the proposal attached here for your review. Since they are requesting program support, this statement needs to come from our dean-to-dean communication.

Would you please review the attached materials and provide a statement of impact/support in regards to the:

- Proposed program being supported by your college

If you need any additional materials to assist with your review please let me know.

If possible, we'd like to request your review and statement by the **end of next week (Friday, Oct. 23)**. If this would not be possible please let me know.

Thanks so much,
Fabio

Watts College of Public Service and Community Solutions

From: [William Terrill](#)
To: [Fabio Milner](#)
Cc: [Kimberly Castillo](#)
Subject: Re: Impact letter request- PhD Geographic Information Science
Date: Saturday, October 17, 2020 11:18:32 AM
Attachments: [image001.png](#)

Hi Fabio, Happy to support your proposed GIS PhD program and wondering if you might consider cross listing with our graduate GIS class listed below?

CPP 570 GIS for Hazards Analysis

Course Description: Provides a basic level of familiarity with several aspects of geographic information science such as key geographic concepts and techniques related to the theory and application of geographic information systems (GIS). Covers topics such as data models, geographic coordinate system and map projections, data entry and editing, and various types of spatial analysis in both conceptual terms as well as practical application. Additionally, outlines a range of GIS-related activities in emergency management and homeland security. Exposes students to the current and potential roles of GIS in support of emergency management activities in each of the four stages of the emergency management cycle. Gives students a basic understanding of GIS and its possibilities along with the capabilities as they apply to emergency management and homeland security.

Bill

William Terrill, PhD

Arizona State University

Associate Dean, Watts College of Public Service and Community Solutions

Professor, School of Criminology & Criminal Justice

Co-Editor, *Policing: A Journal of Policy & Practice*

On Fri, Oct 16, 2020 at 8:41 AM Fabio Milner <milner@asu.edu> wrote:

Dear Bill,

The School of Geographical Sciences and Urban Planning is preparing to launch a PhD degree in Geographic Information Science. As part of the proposal process, we would like to request a letter of support/impact from the Watts College of Public Service & Community Solutions. Please find the proposal attached here for your review. Since they are requesting program support, this statement needs to come from our dean-to-dean communication.

Would you please review the attached materials and provide a statement of impact/support in regards to the:

- Proposed program being supported by your college

If you need any additional materials to assist with your review please let me know.

If possible, we'd like to request your review and statement by the **end of next week (Friday, Oct. 23)**. If this would not be possible please let me know.