

A preliminary assessment of the viability for establishing a School of Spatial Sciences at the University of Wyoming

Prepared for Dr. Kate Miller, Provost, University of Wyoming

Prepared by the School of Spatial Sciences Task Force Steering Committee

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University of Wyoming

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Executive Summary

This report summarizes the efforts of the School of Spatial Sciences Task Force Steering Committee during the fall 2017 semester. The original charge to the Steering Committee was “...to develop a formal proposal and accompanying implementation process for creation of a new School of Spatial Sciences, to begin operations in FY2019.” Over a three-month period, concerns of the Task Force expanded and contracted significantly, reflecting an early emerging consideration of potential for a broader Spatial Sciences Initiative at the University of Wyoming. Substantial thought was given to differences in both the meaning and interpretation of the terms *spatial*, *geographic*, *geospatial*, *space* and *place*, and how they are addressed in academic scholarship and teaching. Consideration of a new school and its alternatives was informed by direct and indirect observations of existing on-campus work in the spatial sciences and by insights from numerous outside experts.

Given the short timeline associated with the original charge, as well as inconclusive stakeholder feedback on the appropriateness of standing up a new school, and the wide range of potential implementation issues to be addressed in such a process, Steering Committee expectations were subsequently modified (with Provost approval) to focus on providing a preliminary feasibility assessment for establishing a new School of Spatial Sciences, including recommendations on alternative initial investments upon which a new school could eventually be established. As a first step, the Steering Committee recommends the establishment of a new Geospatial Information Science & Technology Education and Training Program, operated by the Wyoming Geographic Information Science Center. If continued interest and support by administration exists for consideration of a new School, the Steering Committee recommends that a more in-depth exploration of interest and support for this alternative be conducted during AY18-19, centered on extensive input from faculty, student and external stakeholder constituencies.

Finally, recognizing that terminating or extending the process for considering and potentially establishing a new school will have significant near-term impacts on the Department of Geography, the Steering Committee recommends that an Office of Academic Affairs-facilitated discussion involving Geography faculty and representatives of key potential partner academic units be convened for the purpose of finalizing a new academic home for the department and determining the future recommended status of Geography’s existing degree programs. This should be conducted during the first month of the spring 2018 semester, with a decision finalized by March 1st to allow sufficient time for transfer of faculty line assignments and budget planning.

Note: This report is accompanied by two additional documents: (1) the report of the Task Force’s Geospatial Curriculum Subcommittee, which provides details on proposed undergraduate and graduate curricula associated with a new interdisciplinary Geospatial Information Science & Technology Education and Training Program; and (2) the Geography Department ‘Futures’ document.

Introduction

This report summarizes the efforts of the School of Spatial Sciences Task Force Steering Committee during the fall 2017 semester. The Steering Committee was convened to lead efforts in addressing the charge of the Task Force to “...develop a formal proposal and accompanying implementation process for creation of a new School of Spatial Sciences, to begin operations in FY2019.” This document provides a preliminary feasibility assessment of prospects for creating and operating such an institution at the University of Wyoming.

The report describes the process undertaken by the Steering Committee, followed by a description of the intellectual context for the group’s deliberations, along with a vision and set of goals and measures for success in advancing the spatial sciences at UW. A high-level situation analysis of internal and external influences on trends in this transdisciplinary domain is presented, followed by an initial outline and assessment of the mission, benefits, structure, and general feasibility of a school implementation.

The report concludes with a series of recommendations regarding possible next steps for a new school and alternative activities considered and proposed by the Steering Committee. Overall, the report’s objective is to initiate both immediate action in spring 2018 and, if warranted, guide further study in the next academic year.

Process

Establishment of the Spatial Sciences Task Force was preceded by the work of an ad hoc working group tasked in the second half of the spring 2017 semester with envisioning a new, centrally coordinated interdisciplinary curriculum in geospatial technologies (including geographic information systems and remote sensing). During this same time period, UW’s Office of Research & Economic Development convened a pair of campus-wide listening sessions focused on spatial science research and education. Attracting participation by 30 to 40 faculty across campus, the sessions included presentations from both academics and industry representatives and revealed strong interest in building more capacity in this arena.

As convened in September 2017, the School of Spatial Sciences Task Force consisted of a Steering Committee and two subcommittees. The first subcommittee was the *Geospatial Curriculum Subcommittee*, charged with “developing a comprehensive plan for a new interdisciplinary geospatial curriculum [GIS, remote sensing, visualization, and analysis and modeling] to be coordinated through the School, including concentration areas, course sequencing, credentialing options, articulation policies, enrollment targets, and a three-year multi-phase implementation schedule.”

The second subcommittee - the *Geography-WyGIS Transition Subcommittee* – was charged with “conduct[ing] degree program reviews of existing geography and planning degree programs in light of the mission developed for the new school by the steering committee, and to make recommendations on the near- and long-term sustainability of these programs and their ties to the new interdisciplinary geospatial methods and technology program” and to “[d]evelop a set of by-laws for the internal organizational structure and governance of the school, to include a committee structure, personnel management, teaching loads, tenure, promotion and reappointment, and anything else deemed necessary by the subcommittee.”

Over a three-month period, concerns of the Steering Committee expanded and contracted significantly, reflecting an early emerging consideration of potential for a broader *Spatial Sciences Initiative* at the University of Wyoming. Considerable thought was given to differences in both meaning and understanding of concepts of *spatial*, *geographic*, and *geospatial*, as well as those of *space* and *place*, and how they are addressed in academic scholarship and teaching. Consideration of a new school and its alternatives was informed by the committee's direct and indirect observations of existing on-campus work in the spatial sciences and by insights from numerous outside experts, including Diana Sinton, Executive Director of the University Consortium for Geographic Information Science and John Wilson, Director of the Spatial Sciences Institute at the University of Southern California. Steering Committee Chair Hamerlinck visited the U-Spatial Program at the University of Minnesota and the Center for Geographic Analysis at Harvard University. Hamerlinck was joined by some members of the Geospatial Curriculum Subcommittee in visiting the Center for Geospatial Analytics at North Carolina State University, and ESRI and the University of Redlands' Center for Spatial Studies, both located in Redlands, California.

Given the short timeline associated with the original charge, as well as inconclusive stakeholder feedback on the appropriateness of standing up a new school, and the wide range of potential implementation issues to be addressed in such a process, Steering Committee expectations were modified (with Provost approval) from delivering a full proposal and implementation plan to instead completing a preliminary feasibility assessment of establishing a new School of Spatial Sciences and including recommendations on alternative initial investments upon which a new school could potentially be established in the future.

Under this modified process, the work of the Geospatial Curriculum Subcommittee proceeded as originally proposed and has resulted in a draft blueprint for creating and supporting a new set of undergraduate and graduate curricula for a new interdisciplinary Geospatial Information Science & Technology Education and Training Program (see accompanying subcommittee report). The Geography-WyGISc Transition Subcommittee was not officially convened in the fall, given the anticipated absence of a complete proposal. However, the Steering Committee did meet with Geography Department faculty to address how best to respond to questions of that department's involvement in a new campus-wide spatial sciences initiative and the faculty subsequently delivered a Geography Department "Futures" document for Steering Committee consideration (see accompanying Geography Department report).

Context: Spatial Sciences Defined

The spatial sciences may be defined as areas of knowledge, investigation and problem-solving concerned with understanding the location and characteristics of things and events and their relationships across space.

Foundational to all work in the spatial sciences is the idea of spatial thinking, an activity combining concepts of space, tools of representation, and the process of reasoning. Spatial thinking can occur in different dimensions across a wide range of physical and temporal scales. In many ways, spatial thinking functions as a common approach to how people behave in their daily lives, from making your grocery list in the order you'd encounter items in the store to planning a trip using multi-modal public

transportation, and determining an appropriate time for a Skype meeting with colleagues in Europe and Asia.

A great deal of work in the spatial sciences is concerned with understanding phenomena occurring at a geographic scale - that is, the organization and impacts of people, places and environments which exist on or near Earth's surface either at a single location or across the globe. This work is fundamentally interdisciplinary, as it may involve STEM disciplines, humanities, social sciences, economics, and law.

The practice of spatial science at the geographic scale has been significantly enhanced by digital, geographically-referenced data that are managed and manipulated by geospatial technologies like geographic information systems, global navigation satellite systems and remote sensing. Today, geospatial technologies are integral to how we apply spatial thinking to geographic problem solving not only in scientific and humanistic research, but also in government and public service, business and service planning, design and engineering, transportation and logistics, and the management of natural resources and the environment.

With ever growing access to geographic data and geospatial technologies, great societal benefit can be realized with practitioners who are both fluent in spatial thinking and proficient in the appropriate application of geospatial analysis methods and geospatial information and communication technologies.

A Vision for Spatial Science at the University of Wyoming

The Steering Committee developed the following vision for spatial sciences at the University of Wyoming:

The University of Wyoming aspires to be a recognized leader in interdisciplinary spatial sciences research and education, and provide valuable, action-oriented contributions to emerging place-based innovations and the solution of place-based problems in our state, the Mountain West region, and beyond.

This vision, and the goals and values that follow, are meant to have relevance regardless of the specific programs and institutional structures considered and proposed here or in the future.

Spatial Science Goals

- Foster spatial reasoning and support geographic thinking in research and teaching
- Advance geographic information science and technologies
- Build capacity in geographic information literacy, geospatial technology fluency and interdisciplinary place-based research

Spatial Science Values and Measures of Success

Superior Performance.

- Excellence in scholarship
- Excellence in teaching

- Interdisciplinary collaborations leading to new research and approaches to teaching

Distinctive Impact.

- Pervasiveness of spatial thinking and spatial approaches in scholarship and teaching across disciplines at UW
- Accomplished students and better prepared workforce
- Curricular development that anticipates innovation and is responsive to changing societal needs
- Support for and contributions to local, national and global economic and community development
- Integration of spatial thinking into K-12 experience through Wyoming
- Action-oriented research informing public policy decision

Lasting Endurance

- Support for UW's land grant mission
- Establishment of an interdisciplinary science culture
- Sustained civic / community engagement
- inclusion of spatial thinking and geospatial technology use throughout K-12 general education

Situation Analysis

External

The spatial sciences represent a collection of disciplines which embrace spatial thinking in problem solving and the use of space in general as a framework for understanding (National Research Council Committee on Support for Thinking Spatially, 2006). Spatial thinking has become increasingly relevant over the last two decades, driven by a number of factors including among others, the increasing familiarity with spatial perspectives among our students and the increasing availability of spatial technologies in science, commerce, and everyday life (UCSB Center for Spatial Studies, 2010). Spatial science concepts can be scale-independent, with application from the sub-cellular to the galactic. Recognizing the importance of spatial thinking and reasoning, many universities have elevated the idea of spatial literacy in their curriculum (e.g., "Spatial@UCSB", "U-Spatial" at the University of Minnesota, and "The University of Redlands – A Spatial University").

Occupying a central place in the broader domain of spatial sciences, the field of geography is a highly interdisciplinary one that stands out in the way that it relates phenomena of space and place to the interaction of humans with their environment. Thanks to the explosion in geographic technologies such as global positioning and geographic information systems and remote sensing as well as the large role that environmental change and sustainability challenges are playing in the organization of social and economic structures world-wide, the discipline of geography has been experiencing something of a renaissance in recent years.

Today there is an increasing number of scientists from disciplines outside geography who employ geographical concepts and techniques in their work; their work has engendered a transdisciplinary geographical science. Understood in these terms, geographical science is not restricted to the discipline of geography; many geographers are involved but increasingly so are individuals from other scientific fields and professions. The rapid growth of the geographical sciences over the past two decades is a reflection of both technological developments and emerging interest in transdisciplinary research focused on coupled human-environment systems... It has also fostered a powerful conceptual engagement with spatial thinking – a constructive amalgam of concepts of space, tools, of representation, and processes of reasoning (National Research Council Committee on Strategic Directions for the Geographical Sciences in the Next Decade, 2010).

Internal

The spatial sciences at the University of Wyoming are practiced across the institution in a wide variety of ways, from work on spatial cognition in the Psychology Department to Building Information Management (BIM)-based design and operations management in Architectural Engineering, to 3-D visualization of sub-surface petroleum reservoirs in the School of Energy Resources. Much of the work is geographic, and clearly, the geographical sciences have a large role to play in the university’s vision to “meet the economic, social and environmental challenges of today, and to create a sustainable, diverse and equitable world without borders for tomorrow”.

The Steering Committee’s charge called for strategies that consider components of two existing units on campus: the academic programs in geography and community planning from the Department of Geography, and the functions of the Wyoming Geographic Information Science Center.

PROGRAM_DESC	Total
BA in Geography	11
BS in Geography	38
MA in Geography	17
Master in Planning	1
MST in Geography	1
PhD in Ecology	1
PHD in Hydrologic Science	1
Grand Total	70

Table 1: UW Geography Department Majors, Fall 2017

The **UW Geography Department** has been in existence for more than 50 years, though coursework in geography was offered as early as 1945 through the Department of Economics, Sociology, and Anthropology. From the early 1980s to late 1990s, the department was named the Department of Geography & Recreation, when it hosted a program in outdoor recreation planning and management. Currently, the department offers both Bachelor of Arts and Bachelor of Science degrees in Geography, as well as a minor in Geography and a minor in Geographic Information Science. A Master of Arts and Master of Science in Teaching in Geography and a Master of Planning

(MP; community and rural emphasis) are offered at the graduate level. As of fall 2017, the department includes 49 undergraduate majors and 21 graduate majors (Source: UW Office of Institutional Analysis, *Fall 2017 Day 15 Unduplicated Headcount*).

The department has long cultivated interdisciplinary inquiry with cross-university collaboration with units such as American Studies, American Indian Studies, Global and Area Studies, the Water Center, WyCEHG, and the Haub School of Environmental and Natural Resources. Collaboration across campus has been intellectual and academic as many of the units affiliated with UW Geography have trained

geographers on their faculty. The result is a diffusion of geographic expertise across campus and a dilution of resources needed for the maintenance of a core Geography Department.

The Geography Department completed an external review in fall 2015 and developed its own 'Futures' document as part of the current Spatial Sciences Initiative. The external review has been reviewed by both the Office of Academic Affairs and the Initiative Task Force Steering Committee. The 'Futures' document has informed this report and is provided in its entirety as a separate accompanying document for consideration. In their document, the department identifies faculty expertise in cultural geography, political geography, climatology, geovisualization, geospatial analysis, big data science, GIS, planning, environmental change, biogeography, and conservation. The department sees its interdisciplinary connections across campus as a particular strength and its intellectual niche on campus as being "at the intersection of Environment and Society". This intersection represents the "core of Geographic Thinking" and [provides] the motivation for the development and application of geospatial technologies to global issues". From this viewpoint, geography "provides the contextual implementation framework for geospatial technologies to empower linkages between environment, society, and technology." While the faculty's primary goal is to maintain capacity to offer undergraduate and graduate degrees in Geography, they acknowledge the opportunity to create a flexible geography-oriented curriculum that supports the Spatial Sciences Initiative by optimizing opportunities for training in Environmental and Societal contextualized spatial thinking (i.e. geographic thinking) across the University. (Geography 'Futures' document).

The **Wyoming Geographic Information Science Center (WyGISC)** is an interdisciplinary research institute focused on the development of geospatial information and technologies and their applications in science, education, government and business. WyGISC's mission is to advance the knowledge and application of geographic information science and technology through research, education, and service. Disciplinary specializations among WyGISC personnel range from geography and urban planning to ecology, geology, hydrology and natural resource management. Technical expertise includes spatial database design and development, remote sensing and image processing, geographic analysis and modeling, application programming, and GIS program management. WyGISC's research and development activities are broad, from geospatial data collection and spatial database design and development, to environmental modeling and Web-based geographic query and visualization implementations. Over the last two decades WyGISC has lead the establishment of geographic information science as one of the University of Wyoming's Areas of Distinction, not only as a critical area of science and technology related to energy, earth and computational science, but also through its significant contributions to place-based planning, management, and problem-solving in the environment and natural resources arena. WyGISC works closely with faculty in a wide range of academic programs across numerous colleges and schools on campus and continues to provide leadership to the Wyoming geospatial community, advocating for coordinated development of a statewide spatial data infrastructure and supporting standards and policies for data development, sharing and stewardship. Center staff have consulted with the Wyoming Governor's Office and the Wyoming Office of the Chief Information Officer.

Considering a New School of Spatial Studies & Geographical Sciences

This section outlines the Steering Committee's preliminary assessment of the viability of establishing a new *School of Spatial Studies & Geographical Sciences* at the University of Wyoming. The school name,

as presented here, differs from the original School of Spatial Sciences label used in the Task Force charge. It remains a “working title” but is used in this instance to reflect both the broad nature of ‘spatially’ oriented disciplines (for example, brain-focused spatial cognitive psychology, multi-scale analysis from sub-cellular microbiology, mapping of astronomical features) and the more specific focus of research and education concerning phenomena at a ‘geographic’ scale.

Potential Components

In developing possible structures and implementation strategies, the following components were considered:

- New curricula - minimally in geospatial methods and technology application
- Aspects of existing Geography Department functions – including degree programs
- Aspects of existing WyGIS functions – including research and service activities
- Connections to other existing and new spatially-oriented infrastructure and programming – e.g., UW Science Initiative, EPSCoR Data Science Institute, Wyoming Institute for Humanities Research

Guiding Principles

The following guiding principles were developed to assist in identifying possible implementation strategies:

- Support the new University Strategic Plan
- Address both education and research opportunities
- Promote interdisciplinary activities
- Development of a new geospatial methods and technologies curricula should be a priority and present in all options
- Options should be scalable and structured in such a way as to facilitate a phased-in implementation
- Requirements of new resources should be well defined for each option and options compared and evaluated in part according to differences in these requirements

Mission

The mission of the School would be to enable a spatially infused learning community, by facilitating the integration of spatial thinking and technologies into instruction, research, and service to the University and community at large.

The school’s mission could support activities in numerous complementary focus areas. Following a model advanced at the University of California-Santa Barbara, one possible configuration would include support for the following: (a) Spatial Thinking; (b) Spatial and Geographical Science; and (c) Space and Place.

The ***Spatial Thinking*** focus would emphasize spatial cognition and reasoning associated with problem solving and representation, and applications of both elementary and complex reasoning processes in different domains of human activity and knowledge development. This focus represents a concentration on the science of spatial learning at individual and societal levels, and on the mental associations that facilitate learning about and functioning within human and natural environments.

The ***Spatial and Geographical Science*** focus would emphasize the analysis and visualization of information through application of methodological and technological approaches for documenting spatio-temporal patterns and processes about phenomena in the physical world as well as about behavior and its consequences in the human world.

The ***Space and Place*** focus would emphasize spatial reasoning and visualization in the humanities and social sciences. Examples include creative and aesthetic renderings (e.g., stories, visualizations, sounds, and fine arts), the design of lived-in environments that reflect and accommodate human values and activities, the documentation and assessment of affinity to sense of place and region, and communication through use of spatial metaphor and spatialized languages.

A fourth, cross-cutting focus, supporting each of these other three areas of emphasis, would be the establishment of a new interdisciplinary **Geospatial Information Science & Technology Education and Training Program**.

Structure

Figure 2 diagrams a conceptual structure for the new School that would support a broad mission and wide range of participants. Organizationally, the School should be situated similarly to the Haub School of Environment & Natural Resources and the School of Energy Resources, alongside the other academic colleges in the Division of Academic Affairs with a direct report to the Provost. Administratively, the School should be led by a Dean or Executive Director, similar to the other colleges and schools. Other anticipated administrative staffing includes new office support, a science communication specialist, and a dedicated information technology system administrator. A Business Manager position could be developed from the existing Accountant position in WyGIS.

In terms of educational functions, the School would host and coordinate a new interdisciplinary program in Geospatial Information Science & Technology education and training. This program would include new credentialing at the undergraduate, graduate and professional levels, and would also offer non-credit training opportunities and general technical support in geospatial analytics to faculty and students across the university. An initial blueprint for a set of proposed undergraduate and graduate degree programs is outlined in the Geospatial Curriculum Subcommittee's report (provided separately as a supporting document to this report).

Potential exists for development of additional degree programs in spatial studies and geographical sciences. Examples include earth systems science, environmental change, place and culture, and community and regional planning.

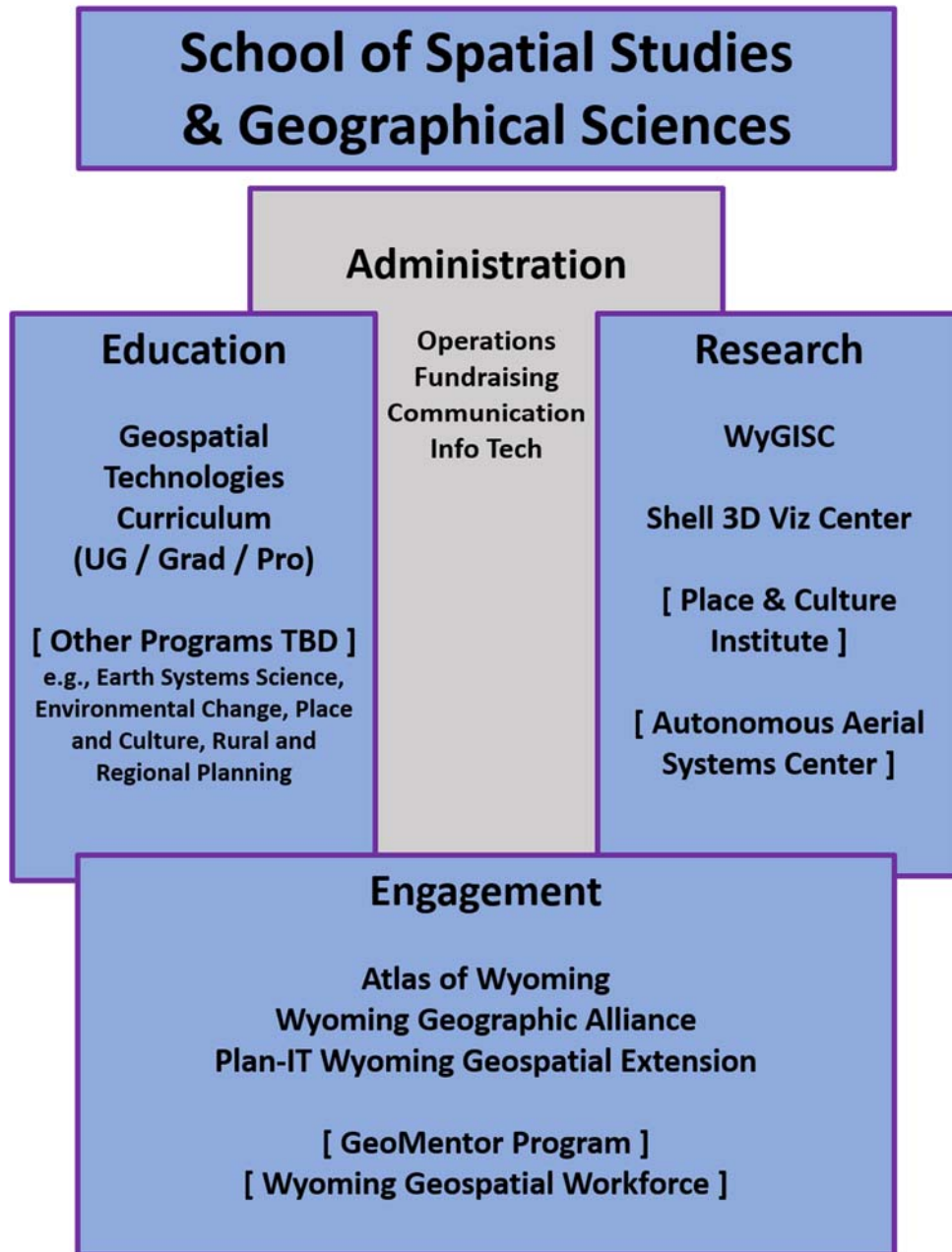


Figure 2: Concept for School of Spatial Studies & Geographical Sciences Structural Organization. Items in brackets [] represent potential programs not yet created.

In terms of research functions, a new school would house the existing Wyoming Geographic Information Science Center (WyGISC), which would continue to maintain its current mission and operate as a distinct entity within the school, similar to the Haub School’s Ruckelshaus Institute or the School of Energy Resource’s Centers of Excellence. The new school might also be an appropriate home for SER’s Shell 3D Visualization Center, given its diverse portfolio of thematic domain application areas. The school’s research framework would also be scalable to enable expansion with the creation of new centers and institutes, for example supporting work in the “geo-humanities” and autonomous aerial systems.

Finally, the School could support a wide range of existing and future engagement initiatives. Existing programs include the Atlas of Wyoming Project and the Wyoming Geographic Alliance, as well as the recently suspended Plan-IT Wyoming geospatial extension program aimed at building geospatial capacity in community planning and economic development. New ideas include a K-12 GeoMentor program for pre-service and in-service teachers, and a Wyoming Geospatial Workforce initiative matching students with employers through internship and job co-op program and helping professionals already in the workforce to re-train in response to needs for geospatial skills identified for example by Wyoming ENDOW.

Benefits

There are several key benefits to the spatial sciences community at University of Wyoming that would be realized through the establishment of a school. The proposed school would serve as an administrative home for critical university functions that would facilitate implementation of short- and long-range planning revolving around curriculum development, strategic hiring for faculty and staff, and innovation in instruction. It is possible to carry out these functions in a distributed environment, but academic cultures and practices vary among departments, and having a school would allow for greater connection between academic planning and implementation. A school would also provide greater exposure for academic and research activities in the spatial sciences, acting as a hub for faculty and staff to communicate and work together. A school would offer greater opportunities for branding, outreach, and development since the school would be instantly identifiable from within and without the campus as the locus of spatial work. A school would also make the management and disbursement of research funds more tractable and, much in a similar vein to WyGIS, Haub and SER, attract nontraditional extramural funding.

The most significant benefit of creating a school would be sending a clear and unambiguous signal that the University of Wyoming has an ongoing commitment to excellence in geospatial analytics, geographic thinking, and the spatial sciences in general. Presumably a school would have administrative structure that would encourage vision and planning and allow faculty from a range of expertise to participate in geospatial teaching and research. At present, (geo-) spatial research and teaching on campus is fragmented, somewhat ad hoc, and does not serve a central vision for growth at the University level. Given the establishment of an RCM budget model, a school will be better positioned to serve as the focus for academics, and can serve as the academic home for undergraduate and graduate programs and certificates. On the research side, having a branded school would help faculty recruit non-competitive funds such as from donors or project-related work and be able to collect IDCs for the ongoing support of geospatial facilities.

Feasibility Assessment

A preliminary feasibility assessment was conducted, both elaborating on potential benefits and considering potential challenges. The following issues were identified with establishing and operating the new school: (Issues were categorized by 'types' of feasibility; no distinction is implied on relative weight, importance, or influence across categories.)

- **Administrative feasibility:**
 - School needs to operate at same level as Haub and SER to ultimately be successful

- School structure would facilitate implementation of short- and long-range planning revolving around curriculum development, strategic hiring for faculty and staff, and innovation in instruction
- A school would also provide greater exposure for academic and research activities in the spatial sciences, acting as a hub for faculty and staff to communicate and work together.
- A school would offer greater opportunities for branding, outreach, and development since the school would be instantly identifiable from within and without the campus as the locus of spatial work.
- Question of what makes a difference outside a college different from a college; is it important to be able to articulate this difference and what impact does it have?
- Would a school with a different type of focus (e.g., “information sciences”) better support some aspects of the spatial sciences?
- **Fiscal feasibility:**
 - School model will require significant financial investment; recommend not proceeding without performing a detailed and comprehensive fiscal analysis of costs and potential revenue sources
 - New GIS&T programs (especially proposed online professional Masters) need to be revenue generators
 - Financial model for cross listed courses needs to be well thought out in the coming RCM approach (i.e., courses cross listed with School of Spatial Sciences and participating academic programs? Cross listed with participating programs and program embedded in School...)
 - Standing up a new school could have the cachet that is attractive to donors; that said, fund- raising will be a challenge and take some time to gain traction
- **Political feasibility:**
 - Supportive viewpoint
 - Unique moment of opportunity to build a highly visible, active, collaborative school that will help retain excellent students and faculty
 - Scope of the school would not be program centric in a way that is driven by one or two units, but rather potentially involve many different degree options and departments/programs on campus
 - Critical viewpoint
 - Negative optics of creating something new on heels of recent budget cuts and reduction in workforce

- Impression that this represents a big investment to “save” a unit that has been struggling, when maybe resources should go to units that have demonstrated success
 - Summary: Overall, the Steering Committee agreed that standing up a new school could be a bold and innovative action. However, individual opinions differed on whether such an action would be viewed as a truly unique and broadly beneficial academic opportunity or as a potentially competitive ‘resource grab’.
- **Implementation schedule feasibility:**
 - Unrealistic to initiate School before FY2020 (July 2019)
 - Even with July 2019 start date, elements will have to be phased-in
 - Certain programs could be phased in under existing units (e.g., new GIS&T curriculum in WyGISC) as school is undergoing further study; if school is approved, these programs could then migrate accordingly

Summary

Recommendations

The Steering Committee is in agreement on a vision for spatial sciences at UW that enables a spatially infused university learning community through integration of spatial thinking and technologies into instruction, research, and service to the University and community at large. However, due to a number of remaining operational questions and strategic issues of concern identified in the preliminary feasibility assessment, the committee could not reach consensus that *immediately* moving forward with a new *School of Spatial Studies & Geographical Sciences* is the most appropriate or feasible alternative for achieving such a vision at this time.

The Steering Committee does recommend that development of a new GIS&T program operated by WyGISC be pursued immediately, beginning with refinement of the existing blueprint document, and an offering of initial coursework in fall 2018, followed by a launching of first degree programs in fall 2019. The committee feels that the new GIS&T program represents the first of several steps which could be taken over the next several years toward creation of a new School, in particular by building and enabling access to new, broadly applicable technical capacity.

If interest exists to continue considering a new School, the Steering Committee recommends that more extensive stakeholder input be gathered during AY18-19 to assist in determining a more concrete path forward. This should include a more in-depth analysis of student needs and interests, as well as state and regional workforce opportunity.

Finally, recognizing that terminating or extending the process for considering and potentially establishing a new school will have significant near-term impacts on the Department of Geography, the Steering Committee recommends that an Academic Affairs-facilitated discussion involving Geography faculty and representatives of key potential partner academic units be convened for the purpose of finalizing a new academic home for the department and determining the future recommended status of Geography’s existing degree programs. This should be conducted during the first six weeks of the spring

2018 semester, with a decision finalized by March 1st to allow sufficient time for transfer of faculty line assignments and budget planning for FY2019.

Next Steps

The Steering Committee looks forward to discussing details of its recommendations with Provost Miller on December 19, 2017.

If the proposed recommendations are accepted, next steps to consider in this process include:

- Deciding course of action regarding continued study of School concept in AY18-19
 - Role of existing Task Force?
- Convene Geography faculty with key partners
 - Facilitated by Academic Affairs
- Implementation plan for new GIS&T degree programs within WyGISC
 - Solicit an EAB market analysis for geospatial technology programs
 - Conduct series of student focus groups with undergraduate and graduate students currently taking geospatial coursework
 - Fine-tune curriculum blueprint document and initiate approval process
 - Engage in formal articulation discussion with community college faculty offering geospatial coursework and programs
 - Engage with WyGISC on development of budget proposal and assessment of administrative impacts