Board of Trustees

Committee on Academic and Student Affairs

Wednesday, May 13, 2020
1:00pm-3:00pm

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Board of Trustees
Committee on Academic and Student
Affairs May 13, 2020
1:00pm-3:00pm
https://uwyo.zoom.us/j/91633216348

AGENDA

1. Information: Update: Grand Challenges *(Synakowski/Henkel)*
   ***AA/SA committee will join Research/Economic Development Committee meeting for this joint agenda item*
2. Discussion: Shared Governance *(Benham-Deal/McCracken-Flesher)*
3. Discussion: Geography program recommendation *(Miller)*
4. Consideration and Action: Transfer the Academic home for the Bachelor of Applied Science *(Miller)*
5. Consideration and Action: Request for Authorization – BAS in Career and Technical Education (CTE) Teacher Education *(Alexander/Reutzel)*
6. Consideration and Action: UW Master List of Degrees *(Alexander)*
7. Information: Existing Degree Program Change Request process *(Alexander)*
8. Information: Update-Food Insecurity Task Force *(Chestnut)*
9. Information: Update-Green Dot Initiative *(Chestnut/O'Neil)*

ACADEMIC AND STUDENT AFFAIRS
RESEARCH AND ECONOMIC DEVELOPMENT

COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: **Grand Challenges**, Synakowski/Henkel

☒ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
☐ Yes
☒ No

FOR FULL BOARD CONSIDERATION:
☐ Yes
☒ No

☒ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY:
In January 2019, Vice Presidents Miller and Synakowski appointed a cross-disciplinary team of faculty (Research Planning Committee, or RPC) to explore and assess transdisciplinary research strengths and opportunities for research planning at UW. Over the ensuing months, the team:

- Visited universities with similar initiatives; commissioned a WySAC survey of Wyoming residents to assess public opinion; and studied the ENDOW report to gather ideas.
- Designed and conducted listening sessions with nearly every academic unit on campus, 38 total sessions, including approximately 50 units.
- Explored opportunities for coursework, partnerships, and investments.
- Held public town hall meetings at several stages to refine the process for topic selection.

After this considerable amount of planning, study, and conversation with stakeholders on campus and in the state, the RPC identified these topics for research and teaching cultivation:

Biodiversity and Climate Change; Quality of Democracy and Equality; Energy Transition and Economic Diversification; Health and Rural Issues; Public Trust in Research and Information

We have spoken briefly with incoming President Seidel about the Grand Challenges initiative, and we are grateful to have his enthusiastic support.

WHY THIS ITEM IS BEFORE THE COMMITTEE:
To inform the Academic and Student Affairs committee of the initial results.

ACTION REQUIRED AT THIS COMMITTEE MEETING: N/A

PROPOSED MOTION: N/A

Wyoming Survey & Analysis Center
UNIVERSITY OF WYOMING

SUMMARY REPORT | SEPTEMBER 6, 2019

Background for Identifying Wyoming's GRAND CHALLENGES

This executive summary and associated full report[1] provide an overview of Wyoming's strengths and challenges according to public priorities and Wyoming's ranking in key sectors. Their purpose is to inform discussions about what grand challenges the University of Wyoming should tackle with publicly engaged, transdisciplinary research.

Public Priorities

Priority issues in public opinion: Residents of Wyoming view economic issues as the number one concern facing Wyoming and their communities. They also identified insufficient state resources/ lack of tax revenue, availability of healthcare, and environmental concerns/public land policy as the top problems facing Wyoming today.[2,3]

Executive and Legislative priorities: Economic development is also a major state government focus. In particular, the Economically Needed Diversity Options for Wyoming (ENDOW) initiative provides a comprehensive approach to diversifying the state's economy.[4] Governor Gordon has specified three related priorities: (1) Set Wyoming on a sustainable fiscal path and continue Wyoming's efforts to diversify its economy; (2) Ensure citizens have access to quality education; and (3) Provide local communities with the tools and resources needed to thrive.[5] Legislative primary goals are to: (1) Address the state's volatile revenue picture; (2) Find reasonable solutions for healthcare and education; and (3) Build a stable workforce that can endure into the future.[6]

Wyoming's citizen and governmental entities agree—**Wyoming's economy is the most pressing issue facing the state today**. Education, healthcare, and investing in local communities are also top priorities for the executive and legislative bodies of Wyoming.

Indicator Data on Wyoming Challenges & Strengths

WYSAC researchers reviewed data on state rankings in key sectors, in particular for when Wyoming ranked in the best or worst 10.

Agriculture is one of the top industries in Wyoming, particularly in cattle, sheep, sugar beets, barley, beans, and farm space.[1] Challenges include political and legal decisions about land and wildlife management;[7] tariffs, subsidies, and quotas;[7] sustainability;[7] commodity price cycles and volatility in the market;[8] weather

phenomenon from floods to droughts;[9] and urban growth.[9] Wyoming has been ranked last in investments to support regional food systems and make nutritious foods more readily available, and 43rd for investments in making agriculture more ecologically sustainable.[10]

In national rankings of **economic** indicators, Wyoming places well in Gross Domestic Product (GDP), employment, and poverty rates.[1] On the other hand, Wyoming is ranks poorly in economic growth, the gender pay gap, children living in households that were food insecure at some point during the year, population change, and proportion of the eligible population using federal anti-poverty programs TANF (Temporary Assistance for Needy Families) and SNAP (Supplemental Nutrition Assistance Program).[1]

WYOMING'S CITIZEN AND GOVERNMENTAL ENTITIES AGREE—WYOMING'S ECONOMY IS THE MOST PRESSING ISSUE FACING THE STATE TODAY.

Overall, Wyoming ranks well in **education**, placing 7th overall in education quality in one study.[11] Wyoming excels in pupil to teacher ratios; percent of people who have completed high school; associate's degree graduation rates; public school revenue and expenditures; pass rates for GEDs and high school equivalency tests; low debt at graduation; and percent of children under age 6 whose family members read to them less than 4 days per week.[1] Still, Wyoming has some opportunities within education. Wyoming is ranked among the worst in the nation for high school dropout rates, high school graduation rates among students of color, and college participation.[1]

In **environment**, Wyoming has low air pollution, but has the highest CO_2 emissions in the United States.[12] Wyoming's carbon dioxide emissions per person decreased 10% from 2005 to 2015, but remain seven times the national average.[12] Wyoming's water quality is also among the worst in the nation. The Environmental Protection Agency ranks Wyoming among the worst 10 states for toxic water, air, and overall net releases.[13]

In **health**, Wyoming has been ranked 24th for overall health outcomes.[14] Strengths include low cancer death rate, low percentage of children in poverty, infant care, and rates of disease.[1] Challenges include having a high percentage of uninsured, a high occupational fatality rate, a low rate of primary care physicians, and a very high suicide rate.[1] Wyoming also has opportunities for growth related to screenings and immunizations, substance use, and diabetes management.[1]

Infrastructure is a national challenge, with the U.S. earning a D+ grade in one analysis.[15] Wyoming's infrastructure issues include 3,127 (10%) structurally deficient bridges, 99 high-hazard dams, and 8% of Wyoming's public roads being in poor condition. Additionally, the state has $458 million in drinking water and $91 million in wastewater infrastructure needs over the next 20 years and $149 million gap in estimated school capital expenditures.[15] Wyoming is ranked 49th for broadband coverage and speeds.[16]

In **natural resources**, Wyoming extractive industries accounted for 20% of the State's GDP in 2016, and jobs in the extractive industries made up 7% of statewide employment.[17] Wyoming leads the nation in the production of coal, producing 41% of total U.S. production.[17] Wyoming ranks highly in carbon-based energy production and has potential for growth in geothermal, wind, and solar energy.[1] Wyoming has opportunities to reduce the amount of energy consumed.[1]

In **politics**, Wyoming is the most Republican-leaning state in the nation.[18] It also can run 367 days on its rainy day fund, as of fiscal year 2018.[19] Wyoming ranks last in the nation for the proportion of women in the state legislature.[20]

In **social** benchmarks, Wyoming has low rates of violent crime, child abuse, and familial risk factors.[1] However, the state ranks poorly for juvenile custody rates; the rate of youth residing in juvenile detention, correctional, and/or residential facilities; the felony disenfranchisement rate (the number of people barred from voting due to a felony conviction, per 100,000 residents); and the disparity in incarceration rates for Hispanic vs. White residents.[1]

What Does it All Mean?

There are many challenges facing Wyoming, providing a wealth of potential research opportunities. These challenges include:

Economic opportunity—diversification is needed for the welfare of present day residents of Wyoming and those in the future.

Natural resources—outdoor spaces, wildlife, recreation farm/ranch land, and energy production are very important to the State's identity and economy. Decisions about Wyoming's public space certainly have environmental and economic implications.

Infrastructure—public investment priorities are needed for structurally deficient bridges, high-hazard dams, drinking and waste water infrastructure needs, road repairs, and school infrastructure needs.

Inequality—Wyoming has significant inequality and racial disparities in education and criminal justice systems, gender disparities in pay and political representation, gaps between eligibility and enrollment in federal anti-poverty programs, and health disparities.

Health—occupational facilities, suicides, and substance use severely impact the health of Wyomingites. Improving access to care, preventative services, and insurance coverage would improve Wyomingites' health.

Opportunities to diversify Wyoming's economy and tackle challenges may include investing in: renewable energy and clean water; higher education participation; equity in education, economics, and politics; food system diversification and sustainability; enrollment in existing anti-poverty programs; state infrastructure; and health.

Acknowledgments: The full report and this executive summary were commissioned by the University of Wyoming's Grand Challenges initiative and paid for by the Office of Research and Economic Development.

Endnotes

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UNIVERSITY OF WYOMING

Advancing Research and Scholarship at the University of Wyoming: A Focus on Society's Grand Challenges

January, 2019

Ed Synakowski, *Vice President for Research and Economic Development*
Kate C. Miller, *Provost and Vice President for Academic Affairs*

I. Introduction and Purpose

This purpose of this document is to propose processes and structure for engaging stakeholders at UW in planning for, investment in, and implementation of a University-wide research agenda for 2019 and beyond.

The purpose of this planning activity is to deeply engage the campus communities in identifying and planning for UW's pursuit of grand research challenges. Investing in and pursuing such transdisciplinary challenges will enable the University of Wyoming to assert leadership and be among leaders in select areas as it serves the state, region, nation, and globe. This activity will identify areas where investments in research capacity are needed, where incentives to promote vibrant partnering need to be created, where opportunities to align and identify academic coursework with Grand Challenges should be sought, and where opportunities for Grand Challenge research to have an economic impact are high. Girding all of this is the requirement that Grand Challenge research serves as a powerful platform for student education, and for educational outreach to citizens of Wyoming and the Mountain West.

A successful outcome will be an assessment and recommendations from a new Research Planning Council (RPC) for six to eight transdisciplinary Grand Challenge research areas. Some or all of them will be selected by the Office of Research and Economic Development and Academic Affairs for further detailed planning for transdisciplinary research centers or institutes, with resources provided to support this planning and initial investments in research capacity. Long-term goals for such centers include developing business models that engage federal and state sponsors, foundations and donors, private industry, and the state in supporting transdisciplinary research enterprises that are financially viable.

Broad faculty engagement to develop the RPC's recommendations will be central to the process. This will take place through open discussions, led by RPC members, about the research activities and perspectives on transdisciplinary research that are specific to each college and its departments. The process will also provide opportunities to give feedback on the RPC report before final decisions are made.

Fundamentally, pursuing this activity is meant to set the stage for creating new opportunities for faculty and students to lead and be among leaders in addressing questions of great societal importance, and for its citizens to benefit from this engagement. Impact will arise by generating

ideas that contribute to solutions to problems of practical importance, and that yield intellectual property that will be at the foundation of new businesses in Wyoming. The activity will create educational opportunities connected to today's most important questions. It will support a vision for a UW future enabled by the nimbleness that comes with UW's modest size, the university's Land Grant mandate to serve the state across a wide range of disciplines, UW's culture of partnership on campus, and its faculty's strong sense of Wyoming patriotism. With planning, targeted dedication of resources, and smart partnership between faculty, the administration, the Board of Trustees, and the UW Foundation, the University of Wyoming can become known nationally as a research leader and strong partner, one that excels and responds ably to rapidly evolving research developments important for Wyoming, the nation, and the world. Its research will become known for its unusually strong combination of scholarship and practical import. UW will do this while creating unparalleled opportunities for education through research.

II. Background

In the Spring of 2018, the UW Office of Research and Economic Development (ORED) published an Office of Research and Economic Development Strategic Plan, *Breakthroughs in Research 2018-2022* that aligns with the University Strategic Plan: *Breaking Through 2017-2022*. That ORED plan is comprised of 5 goals with associated drivers, enabling forces and metrics that give high-level guidance for the research enterprise:

- Breaking through in sponsored research
  - Increase research supported by external sponsors in all fields in areas of statewide, national and global interest.
  - Raise institutional expectations and rewards regarding research intensity and external research sponsorship
- Breaking through to the marketplace
  - Facilitate intellectual property protection of ideas born from UW research, lead business development resources at the university, and work with the state and its initiatives to increase of the number and diversity of businesses launched
- Breaking through to new research horizons
  - Increase UW's capacity to respond to disruptive research developments that cannot be predicted, especially those that demand transdisciplinary responses and that are of national and global importance.
  - This demands practices that promote interdepartmental cooperation, including transdisciplinary programs and sharing of resources
- Breaking through to new research talent
  - Increase research opportunities for the UW campus and Wyoming community college students, enabled by a new office of undergraduate research.
  - Support increasing the number of underrepresented faculty who perform research and apply for grants that support growth in minority Student representation.
- Breaking through with excellence in research administration
  - Implement an organizational structure and practices that enable efficient, transparent research program administration and engages a broad range of stakeholders

In the time since the publication of ORED's strategic plan, significant momentum has been built in the areas of breaking through to sponsored research, breaking through to the marketplace, and breaking through to excellence in research administration. For example, UW has made hires to stand up its Institute for Innovation and Entrepreneurship, ORED has strengthened its support of technology transfer, and ORED is filling critical gaps in research support capacity. In addition, ORED and Academic Affairs have implemented and are optimizing a transparent, scalable process for awarding startup funds for research to promising new faculty. This is in the context of major investments and activities in the Tier 1 Engineering, Science, and Trustees Education Initiatives.

As a result, now is the time to begin development strategy and actions plans around the other three goals: breaking through 1) in sponsored research, 2) to new research horizons and 3) towards new research talent. By necessity, such work requires a strong partnership between the Divisions of Research and Economic Development and Academic Affairs. The purpose of this document is to outline principles, processes and structure for engaging stakeholders at UW in planning for, investment in, and implementation of break through research activities for 2019 and beyond.

III. A Focus on Transdisciplinary Research

That Wyoming and society in general are facing challenges for which solutions can only be found through transdisciplinary collaboration has been clear for a long time. That universities need to step beyond disciplinary bounds to examine and revise their approaches to finding these solutions has also been recognized at the highest levels. For example, the National Academies have addressed the necessity and challenges of transdisciplinary research in two studies, one in 2004, and another in 2014. The 2014 study, titled "Convergence: Facilitating Transdisciplinary Integration of Life Sciences, Physical Sciences, Engineering, and Beyond" focuses in part on lessons learned at research institutions from across the country in the intervening decade.

Institutional approaches - The challenge of meeting transdisciplinary research problems head-on has prompted a wide array of responses at universities. Many responses have been incremental. For example, some universities have instituted policy changes related to faculty performance, tenure, and promotion to ensure that transdisciplinary research is rewarded properly when an academic department's *de facto* interests may understandably be discipline specific. At the other extreme, complete restructuring of academic units have been undertaken. Arizona State's president led the complete *dismantling* of its previous departmental structure in favor of cross-cutting units and reward structure centered on societally important, transdisciplinary challenges. Between these extremes, many universities have promoted the formation of transdisciplinary research centers and institutes that draw upon expertise from across their campuses. Considerable effort has gone into identifying and working through obstacles, and adapting and developing policies and practices to make such enterprises work effectively within existing departmental and college structures. Concepts proposed here will be designed to lay the groundwork for establishing or reinvigorating such centers and institutes.

Examples of supported transdisciplinary research programs - Transdisciplinary research enterprises are supported at national policy levels, and this has found its way into national program priorities and funding. An outcome of this activity will include an initial assessment of

national sponsor participation in and support for proposed transdisciplinary research at UW. Examples include the National Science Foundation launching in 2017 a $17.7M program in "Transdisciplinary Research in Principles of Data Science" (TRIPODS), which has funded 12 institutions. More recently, NSF issued a call for proposals for "Research Centers the Mathematics of Complex Biological Systems" (MathBioSys, 2018), as well as "Innovations at the Nexus of Food, Energy, and Water Systems" (INFEWS, 2018), not yet awarded.

Transdisciplinary opportunities also extend to the humanities, social sciences, and arts. Such research is a major focal point of the National Endowment for the Arts (NEA). Its five-year research agenda (2017 – 2021), emphasizes the interface and overlap of social scientific and behavioral research. This includes support from NEA for research labs focusing on arts, entrepreneurship, and innovation, as well as arts, health, and social/emotional well-being. The National Institutes of Health (NIH) supports regional coalitions of academic institutions, community organizations, service providers and systems, agencies, and other stakeholders focused on minority health and health disparities through its "Transdisciplinary Collaborative Centers for Health Disparities Research" program, linking STEM-based health sciences research and social issues. Many such centers exist nationally, often receiving funding of several $M over three to five years.

To respond successfully to this research landscape, it is critical that the UW planning process be guided by the following questions:

- What are the transdisciplinary research opportunities that address Grand Challenges of high societal and economic importance to Wyoming, the nation, and the world?
- What foundational disciplinary research investments are needed to enable such transdisciplinary research?
- What inter-institutional research partnerships for UW need to be strengthened or initiated in order to fully lever the University's capacity to lead in this research?

IV. Examples of Transdisciplinary Grand Challenges for UW

The transdisciplinary challenges to be supported will need to be of the highest order in both potential impact and complexity. In some circles, these are known as "wicked problems." The provost of the University of Southern California described wicked problems as the "most intractable, multifaceted problems of our time" (https://www.provost.usc.edu/initiatives/wicked-problems/). These are problems central to issues that are, by nature, resistant to resolution. Given below are candidate examples that represent the expected scope of Grand Challenges that UW might choose. The list is purely illustrative. It is fully expected that faculty will develop candidate topics that exceed these in excitement, relevance, and potential impact.

1. Harnessing data for science, policy, and economic development
2. Water: predictive capability, management, and policy
3. Energy, transition to sustainability, and data-driven natural resource stewardship
4. Health care inequities driven by socio-economics and distance: Wyoming solutions and global application
5. Education inequities driven by socio-economics and distance: Wyoming delivery, and global application

6. Artificial intelligence: preparing educational institutions and citizens for disruption
7. Agriculture's future: the interface of economics with life, water, and evolving climate
8. Biodiversity, ecosystem evolution, and economics: Wyoming as a test bed for prediction, policy, and stewardship
9. The role of the arts in strengthening sense of community and supporting mental health and well-being in rural areas
10. Genetic manipulation: impacts and ethics for health and national security

Wyoming's unique character can serve as a powerful driver for research problems that will yield significant impact far beyond the state's borders. However, where Wyoming's attributes are not an obvious resource for a nationally or globally important Grand Challenge, it may still be in the university's and state's interest to invest. For example, existing infrastructure assets and/or excellence in research-oriented faculty, may drive an opportunity and imperative to contribute to multi-institutional, national efforts.

V. Establishing a Research Planning Council

The ORED is in the process of establishing two advisory groups, the Research Advisory Group of Associate Deans and Directors (RAGAD) and the Advisory Group of Research-Intensive Faculty (AGRIF). At the request of ORED, research intensive faculty and associate deans and directors are currently being identified by their college's or school's leadership. The main purpose of establishing these advisory groups is provide long term advice to ORED, including and beyond this activity.

For the purpose of the proposed research planning exercise, a Research Planning Council (RPC) will be formed by combining AGRIF and RAGAD. In addition, at-large representation to the RPC will include additional faculty as identified by the Council, an undergraduate student, a graduate student, Faculty Senate representative from the Research Committee, Staff Senate representative, and one member of the Board of Trustees subcommittee on Research and Economic Development. The RPC will be co-chaired by Ed Synakowski, Vice President for Research and Economic Development and Kate Miller, Provost and Vice President for Academic Affairs. The co-chairs will guide the RPC in addressing the charge described below.

VI. Charge, Process, and Deliverable for the Research Planning Council

Charge - The charge to the Research Planning Council has three elements:

Element 1: Identify up to six to eight transdisciplinary Grand Challenge research themes that will strongly inform UW future investments in research infrastructure and faculty hiring.

Element 2: Identify single-discipline research areas at the foundation of Grand Challenges that require investment in faculty or UW infrastructure

Element 3: Identify institutional partnerships to develop or strengthen in order to create new transdisciplinary research opportunities to create strong teams capable of confronting high priority transdisciplinary Grand Challenges. Partners may include other universities, national labs, industry, community colleges, Native American sovereign nations, international research organizations, and foundations

Process

Broad faculty engagement to develop the RPC's response to the Charge will be central to the process. While details will be defined through discussions with the RPC, the process shall include the following elements:

- Meetings open to the entire campus will be held by the RPC that focuses on each college separately. Their purpose will include allowing all faculty and the RPC to learn of the status of research overall within the college especially as it pertains to transdisciplinary challenges, and to exchange views on opportunities;
- UW departments will each be visited by RPC members, probably in pairs, to receive department-specific perspectives on transdisciplinary research, and on discipline-specific needs for filling gaps to enable such research;
- The process will provide opportunities to give feedback on the RPC report before final decisions are made, likely including a Town Hall meeting or meetings.

Deliverable: The Research Planning Council is to generate a summary report addressing the three Charge elements, including discussing the following:

1. *Summary high level descriptions of up to six to eight transdisciplinary research themes recommended for further development* - Include the following:
   i. an overview of each theme, with a description of the challenge to be addressed;
   ii. assessment of the potential of this theme of using Wyoming as a research and economic development platform in order to serve the following:
      - ✓ economic and societal interests of Wyoming
      - ✓ economic and societal national interests
      - ✓ economic and societal global interests;
   iii. identification of the disciplines likely to be involved;
   iv. a description of the unique role of Wyoming in supporting this research, if any; and
   v. potential as a platform for student education through research

2. *Strengths and gaps analysis* - The report shall identify existing strengths at UW that will support pursuit of each theme, including faculty who have demonstrated success in acquiring sponsor support, faculty success in partnering across campus and outside, and infrastructure at UW that can be used in support of the pursuit of the theme

   The report shall identify gaps that need to be filled to enable UW to lead or be among leaders, including faculty and post-doc needs, partnerships that would enable UW to join regional and national leaders in this area, as well as UW infrastructure needs

3. *Assessment of investment requirements in specific disciplines needed to address high priority Grand Challenges* – Building on the strengths and gaps analysis, describe needed investments in foundational disciplines. This can include investments in new faculty, UW research infrastructure, and partnership needed to credibly advance high priority Grand Challenge research needed and sponsor interest

4. *Description of the potential for using this research as a platform for student education* – Research at the foundation of some of society's deepest challenges can enlarge and undergraduate's view of what they are capable of in today's complex society

5. *Preliminary assessment of sponsor and policy maker interest* – Considerations will include interest of federal and state funding agencies, as well as private industry. Resources for assessment may include studies of the National Academies, federal agency strategic plans, and studies and statements from the Office of Science and Technology Policy. Engagement with Congressional committee staff can also be revealing. Sponsor plans, National Academies programs, and state and federal policies provide measure of potential research vitality; also, together with private donations, it is a required if a Grand Challenge research enterprise is going to be partially or completely self-sustaining

6. *Alignment with UW initiatives and programs* – How will research in this theme lever investments made in other UW initiatives and programs? Will it capture the investment of more than one? Initiatives include the Science Initiative, Tier 1 Engineering, and the Trustees Education Initiative. Federally funded programs that provide leverage opportunities include EPSCoR program supported by NSF, and the COBRE and INBRE programs supported by NIH.

7. *Preliminary assessment of potential donor interest* – Engagement of the UW Foundation will be critical for this. Colleges already have fundraising efforts underway with the Foundation. Of high value will be assessing how these plans and activities intersect with the Grand Challenges, and how building upon them might add value to the proposed research activity.

8. *Preliminary assessment of existing, required, and highly desirable institutional partnerships* – Describe partnerships with universities, national labs, international research organizations, and industry that are in hand that make this Grand Challenge endeavor particularly compelling. Comment on potential partnerships that would fill gaps identified in the strengths and gaps analysis. Comment on investments required to enable new partnerships to be formed

9. *Broader impacts potential* - The report shall identify the broader impacts beyond progress in the specific area of interest that will likely be afforded by addressing this Grand Challenge. For example

    a. regarding on-campus impact, describe how taking on this Grand Challenge will enhance UW's research and educational infrastructure
    b. describe the opportunities for citizen engagement in this area of research
    c. describe how will it impact the strength and viability of industries in Wyoming
    d. outline the potential economic benefit for the state and the nation

10. *Summary evaluation of the themes* - Rank the research themes into the following categories:

    - *Tier 1*: Essential for UW to pursue-a "must do," considering societal and economic needs measured at the statewide, national, and global levels

- *Tier 2*: Important for UW to pursue-an important current or emerging area where we should consider realigning resources to pursue
- *Tier 3*: Areas UW should pursue if resources are available, but not a priority for resource realignment

Other considerations in delivering on the Charge

- *Contributions to the ORED Strategic* Plan - For each Grand Challenge theme, the RPC report shall comment on the potential of investment in this area to promote the goals of the ORED Strategic Plan, *Breakthroughs in Research*, namely, to promote breakthroughs in sponsored research, translate ideas to the marketplace, open up new research horizons, and develop new research talent. Please also provide recommendations for what is necessary in research administration to best promote these goals

- *Relation of research to the academic mission* - For each Grand Challenge theme, the RPC report shall rate the proposed work against the following considerations. This list is not exhaustive, but should consider:
  - potential richness of the enterprise as measured by the range of disciplines engaged
  - the value of this transdisciplinary work forming the basis of a transdisciplinary degree program, if it does not already exist
  - potential for using this theme as the basis for undergraduate education through research
  - academic course offerings that can be explicitly identified with this Grand Challenge
  - potential for measurable, high impact public outreach in Wyoming and the Mountain-west
  - incentives needed, as well as obstacles experienced, for faculty to conduct transdisciplinary research, including those pertaining to pre-tenured faculty and how their success is measured
  - UW research infrastructure capacity and investments needed to support this theme
  - *Capturing UW investments in economic development resources* - The Institute for Innovation and Entrepreneurship (IIE) and its Center for Business and Economic Analysis (CBEA) should be regarded as a resource for these assessments. Encouraged is engaging IIE and CBEA faculty and staff. Commentary on economic interests should include a preliminary assessment of potential impact due to intellectual property creation and business formation that may be spawned from this research.
- *Comment on the potential of UW/Community College research partnerships* - For Grand Challenge areas and their constituent disciplines, the RPC report shall comment on the potential of research partnership with community colleges. In addition to the research itself, consider how such a partnership can promote community college education through research through sharing of resources and establishment of relationships for transferring students. Resources can include facilities coming on-line in the Tier 1 Engineering Initiative, Science Initiative, Education Initiative, and research computing.

In particular, the report will comment on the potential and required infrastructure for a new UW/Community College Research Network that is being established by the Office of Research and Economic Development. The overarching goal is to promote education through research, making UW resources available to advance the education through research of students statewide, and to enhance research opportunities for UW faculty and students across the state

VII. Follow-up Activities

Anticipated is delivery of a report on the Charge to the Board of Trustees in the summer of 2019.

Final selection for further development of research Grand Challenges will be made by the Office of Research and Economic Development and Academic Affairs, considering the advice of the Research Planning Council and the deans. Development of detailed plans will be performed by a faculty-led task force specific to each Grand Challenge.

In the Fall of 2019, a schedule that includes a timeline for activities, deliverables, and the resource requirements for carrying out this follow-on planning activity will be developed and presented to the Office of Research and Economic Development and Academic Affairs for consideration. This schedule of activities will describe planned visits with potential partners at other institutions, visits of scholars to UW to inform the planning, potential near-term hires of post-docs to jump start this activity, and so on. Resources requested to support this activity may be for travel to various institutions, and support for visitors from potential partners or other experts in the field, will be provided through the Office of Research and Economic Development. Some buy-out of time for faculty leadership of the Task Forces will be considered. Also considered will be requests for post-doc hires that can enable jumpstarting new research activity.

The final product of this subsequent planning activity will be detailed proposals for new or reinvigorated Grand Challenge research centers or institutes that will be enabled by external federal and state sponsor support and support identified, in partnership with revenue identified in partnership with the UW Foundation. These proposals will be presented to the Board of Trustees for consideration.

VIII. Anticipated Timeline for Planning and Implementation

Through January 2019	Develop membership of Research Advisory Group of Associate Deans (RAGAD) and the Advisory Group of Research Intensive Faculty (AGRIF)
Late January 2019	Introduce high level concept of the planning activity to Board of Trustees
February 5	Introduce concept of this activity at Deans and Directors meeting
February 12	Kickoff meeting for Research Planning Council.

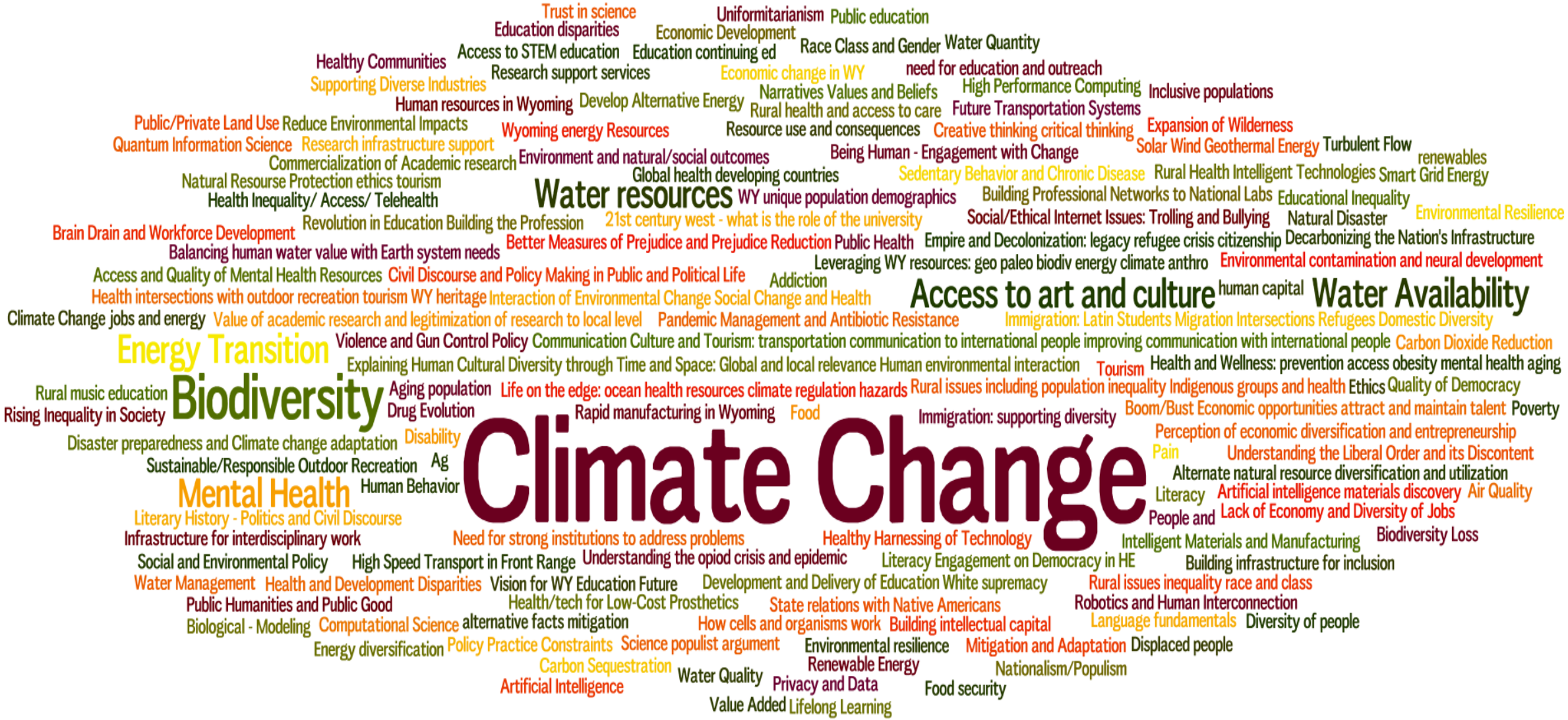
February 13	RPC initiates college and departmental visits
February 19	Update to Deans and Directors
March 5	RPC meets to assess progress, identify issues
March 12	Update to Deans and Directors
April 9	RPC meets to assess progress, make adjustments
April 16	Update to Deans and Directors
May 6	Research Planning Council finalizes recommendations and reports
May 21	Research theme candidates (aka "Grand Challenges") are reviewed and approved by deans
June	ORED finalizes overall report to campus
July 18	Report to Board of Trustees
September 2019	Final selection of Grand Challenges for near-term investment for planning and initial support thrust areas is announced
September 2019	Seed programs are launched to jumpstart transdisciplinary research in select areas. Also, launch of seed programs to strengthen select single-discipline research that enables transdisciplinary goals
Remainder of FY 2019	Grand Challenge Research Center Task Forces are launched develop resource-loaded plans

Timing and subject of Town Hall meetings will be determined as the process matures.

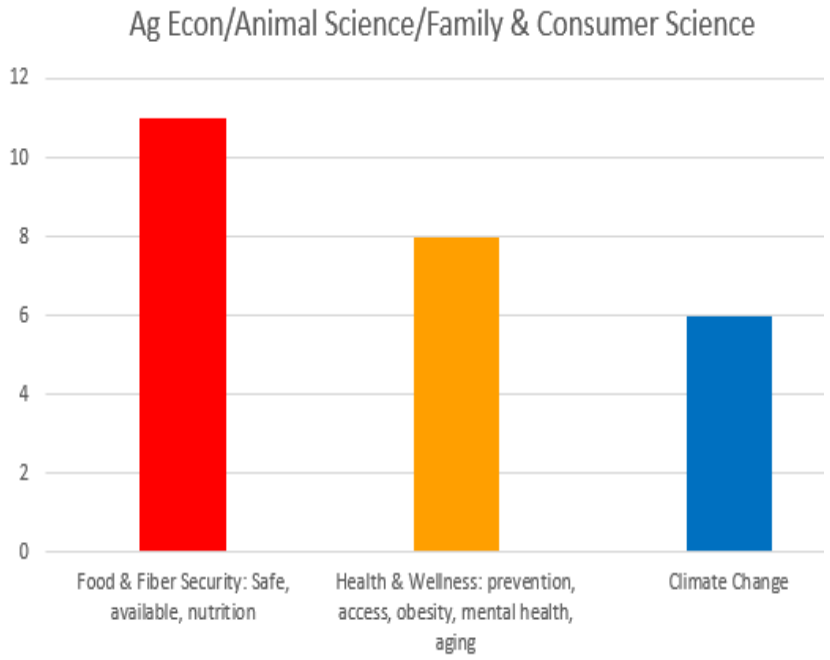
Grand Challenges Initial Results 12/2/2019

To download please visit:
http://www.uwyo.edu/research/advancing-research-and-scholarship/index.html

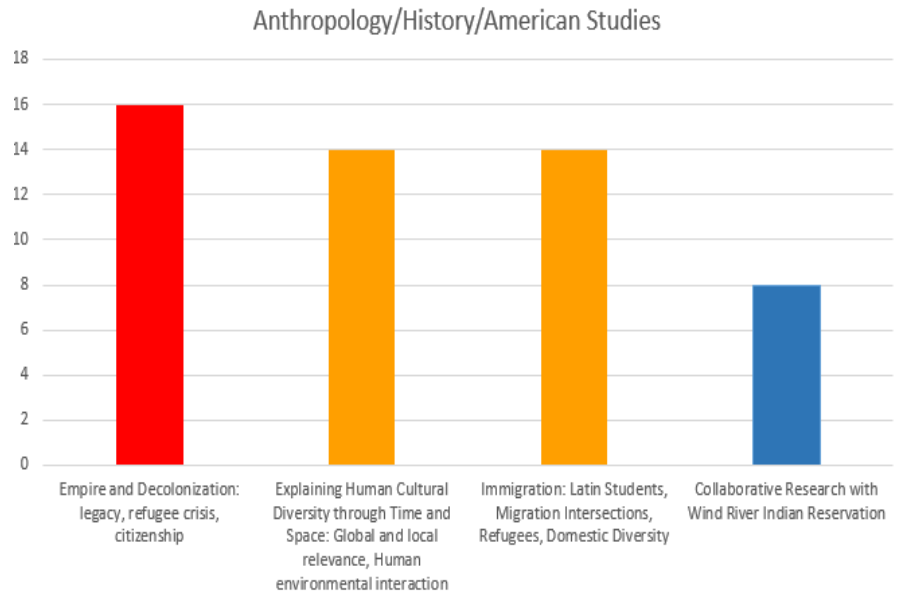
All Topics


Trust in science
Uniformitarianism
Public education
Education disparities
Economic Development
Race Class and Gender
Water Quantity
Healthy Communities
Access to STEM education
Education continuing ed
Research support services
Economic change in WY
need for education and outreach
Supporting Diverse Industries
Narratives Values and Beliefs
High Performance Computing
Inclusive populations
Human resources in Wyoming
Develop Alternative Energy
Rural health and access to care
Future Transportation Systems
Public/Private Land Use
Reduce Environmental Impacts
Wyoming energy Resources
Resource use and consequences
Creative thinking critical thinking
Expansion of Wilderness
Quantum Information Science
Research infrastructure support
Solar Wind Geothermal Energy
Turbulent Flow
Commercialization of Academic research
Environment and natural/social outcomes
Being Human - Engagement with Change
renewables
Natural Resourse Protection ethics tourism
Global health developing countries
Sedentary Behavior and Chronic Disease
Rural Health Intelligent Technologies
Smart Grid Energy
Health Inequality/ Access/ Telehealth
Water resources
WY unique population demographics
Building Professional Networks to National Labs
Educational Inequality
Revolution in Education Building the Profession
21st century west - what is the role of the university
Social/Ethical Internet Issues: Trolling and Bullying
Natural Disaster
Environmental Resilience
Brain Drain and Workforce Development
Better Measures of Prejudice and Prejudice Reduction
Public Health
Empire and Decolonization: legacy refugee crisis citizenship
Decarbonizing the Nation's Infrastructure
Balancing human water value with Earth system needs
Leveraging WY resources: geo paleo biodiv energy climate anthro
Environmental contamination and neural development
Access and Quality of Mental Health Resources
Civil Discourse and Policy Making in Public and Political Life
Addiction
Health intersections with outdoor recreation tourism
WY heritage
Interaction of Environmental Change Social Change and Health
Access to art and culture
human capital
Water Availability
Climate Change jobs and energy
Value of academic research and legitimization of research to local level
Pandemic Management and Antibiotic Resistance
Immigration: Latin Students Migration Intersections Refugees Domestic Diversity
Energy Transition
Violence and Gun Control Policy
Communication Culture and Tourism: transportation communication to international people
improving communication with international people
Carbon Dioxide Reduction
Explaining Human Cultural Diversity through Time and Space: Global and local relevance
Human environmental interaction
Tourism
Health and Wellness: prevention access obesity mental health aging
Rural music education
Biodiversity
Aging population
Life on the edge: ocean health resources climate regulation hazards
Rural issues including population inequality
Indigenous groups and health
Ethics
Quality of Democracy
Rising Inequality in Society
Drug Evolution
Rapid manufacturing in Wyoming
Food
Immigration: supporting diversity
Boom/Bust Economic opportunities attract and maintain talent
Poverty
Disaster preparedness and Climate change adaptation
Disability
Climate Change
Perception of economic diversification and entrepreneurship
Sustainable/Responsible Outdoor Recreation
Ag
Pain
Understanding the Liberal Order and its Discontent
Alternate natural resource diversification and utilization
Mental Health
Human Behavior
Literacy
Artificial intelligence materials discovery
Air Quality
Literary History - Politics and Civil Discourse
People and
Lack of Economy and Diversity of Jobs
Infrastructure for interdisciplinary work
Need for strong institutions to address problems
Healthy Harnessing of Technology
Intelligent Materials and Manufacturing
Biodiversity Loss
Social and Environmental Policy
High Speed Transport in Front Range
Understanding the opiod crisis and epidemic
Literacy Engagement on Democracy in HE
Building infrastructure for inclusion
Water Management
Health and Development Disparities
Vision for WY Education Future
Development and Delivery of Education
White supremacy
Rural issues inequality race and class
Public Humanities and Public Good
Health/tech for Low-Cost Prosthetics
State relations with Native Americans
Robotics and Human Interconnection
Biological - Modeling
Computational Science
alternative facts mitigation
How cells and organisms work
Building intellectual capital
Language fundamentals
Diversity of people
Energy diversification
Policy Practice Constraints
Science populist argument
Environmental resilience
Mitigation and Adaptation
Displaced people
Carbon Sequestration
Renewable Energy
Nationalism/Populism
Water Quality
Artificial Intelligence
Privacy and Data
Food security
Value Added
Lifelong Learning

Top Three from Each Department



Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Food & Fiber Security: Safe, available, nutrition	**3**	**1**	**0**	**11**
Health & Wellness: prevention, access, obesity, mental health, aging	2	1	0	8
Climate Change	2	0	0	6
Human Behavior	0	2	1	5
Land Quality: urban growth, recreation, agriculture, landscapes, habitat	1	0	1	4
Sustainability	0	1	2	4
Mitigation & Adaptation	0	1	0	2
Quality of Work & Life	0	0	2	2
Role of University: Research, Extension, Outreach & Engagement	0	0	2	2
Value Added (Ag) Products/Services	0	1	0	2
Disparities/Ineqality: gender, wealth	0	1	0	2
Air Quality	0	0	0	0
Water Quality	0	0	0	0
Water Quantity	0	0	0	0
Tourism	0	0	0	0
Migration	0	0	0	0
Brain Drain & Workforce Development	0	0	0	0
Poverty	0	0	0	0



Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Empire and Decolonization: legacy, refugee crisis, citizenship	**4**	**1**	**2**	16
Explaining Human Cultural Diversity through Time and Space: Global and local relevance, Human environmental interaction	3	0	5	14
Immigration: Latin Students, Migration Intersections, Refugees, Domestic Diversity	2	3	2	14
Collaborative Research with Wind River Indian Reservation	0	4	0	8
How to Stop History from Repeating Itself: Returning Vets, Wyoming Histories, Pathways from Prison	1	0	1	4
Environment - Climate Change	0	2	0	4
Understanding the Liberal Order and its Discontent	0	0	0	0

How to Stop History from Repeating Itself: Returning Vets Wyoming Histories Pathways from Prison

Explaining Human Cultural Diversity through Time and Space: Global and local relevance Human environmental interaction

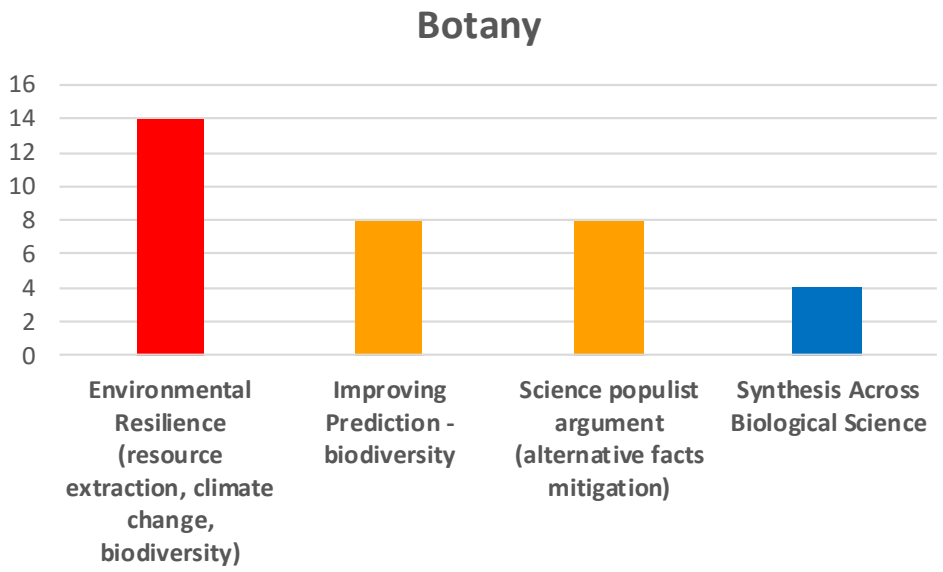
Understanding the Liberal Order and its Discontent

Environment - Climate Change

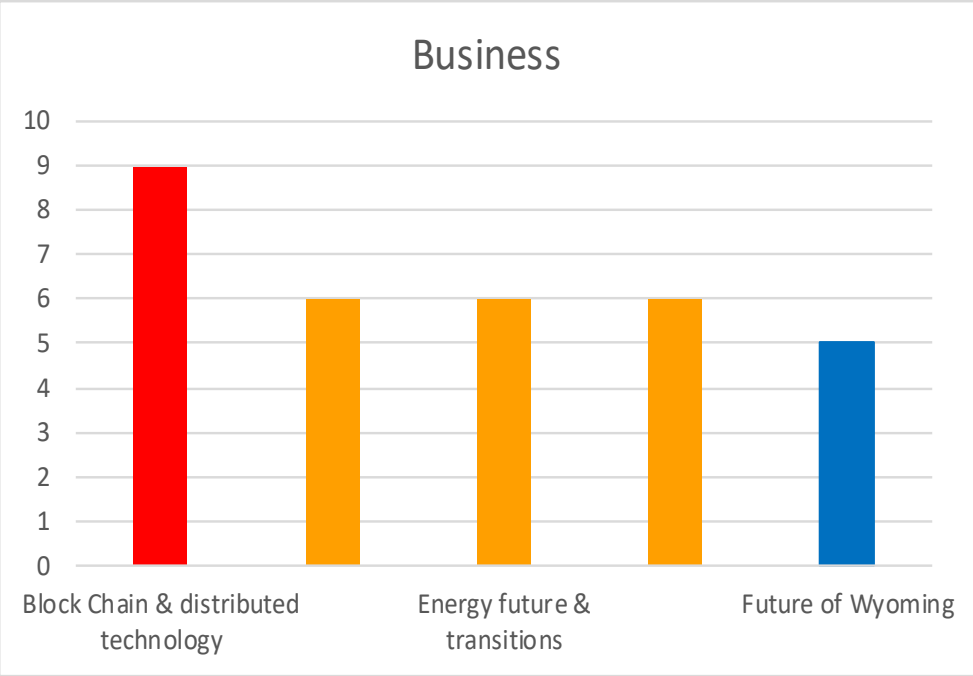
Collaborative Research with Wind River Indian Reservation

Empire and Decolonization: legacy refugee crisis citizenship

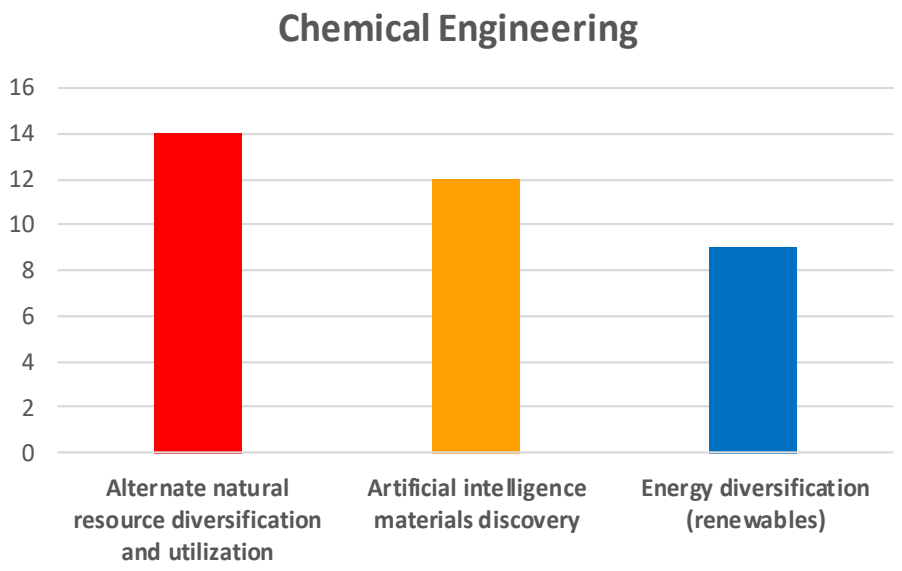
Immigration: Latin Students Migration Intersections Refugees Domestic Diversity



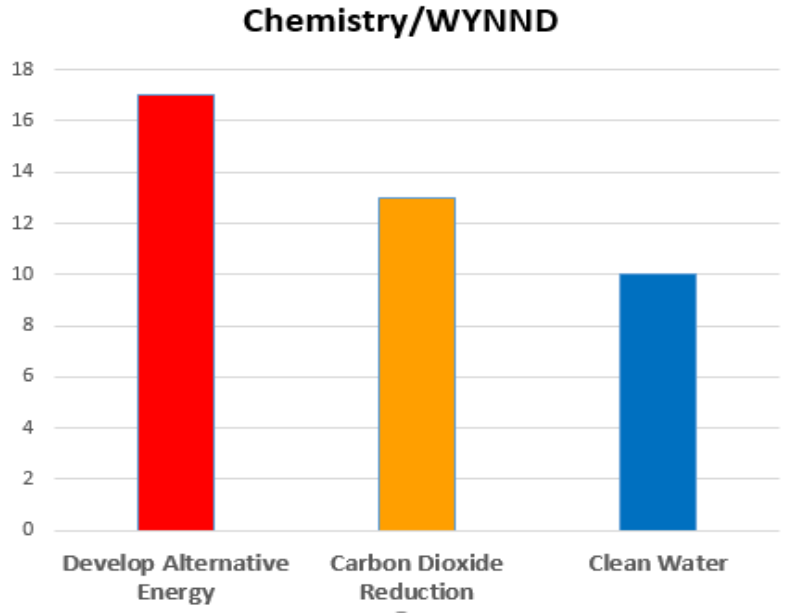
Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Environmental Resilience (resource extraction, climate change, biodiversity)	**3**	**1**	**3**	**14**
Improving Prediction - biodiversity	1	1	3	8
Science populist argument (alternative facts mitigation)	1	2	1	8
Synthesis Across Biological Science	1	0	1	4
Carbon Sequestration (Biological - Modeling)	1	0	0	3
Food insecurity	1	0	0	3
Water resources	0	1	0	2
Uniformitarianism	0	0	0	0
Access Biological Scale	0	0	0	0



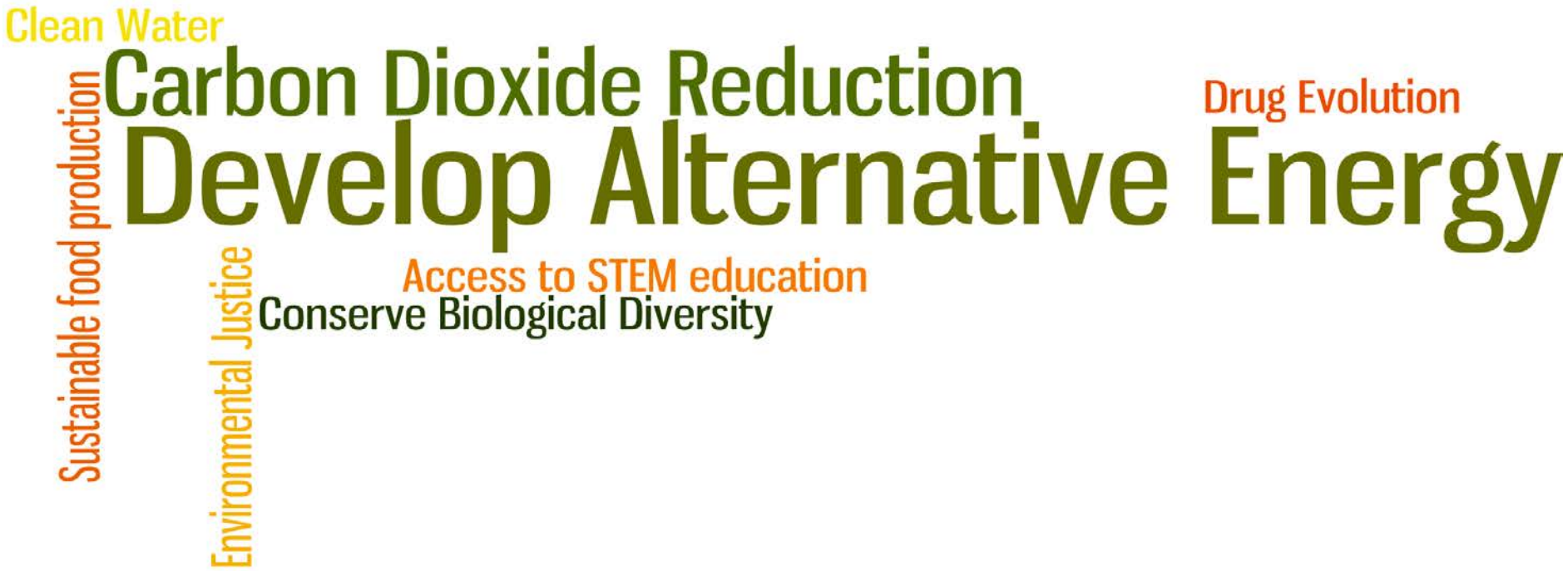
Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Block Chain & distributed technology	**3**	**0**	**0**	**9**
Disaster preparedness & Climate change adaptation	2	0	0	6
Energy future & transitions	0	2	2	6
Commercialization of Academic research	0	3	0	6
Future of Wyoming	1	1	0	5
Data credibility	0	0	4	4
Alternative investment opportunities	0	0	0	0
Value of academic research & legitimization of research to local level	0	0	0	0

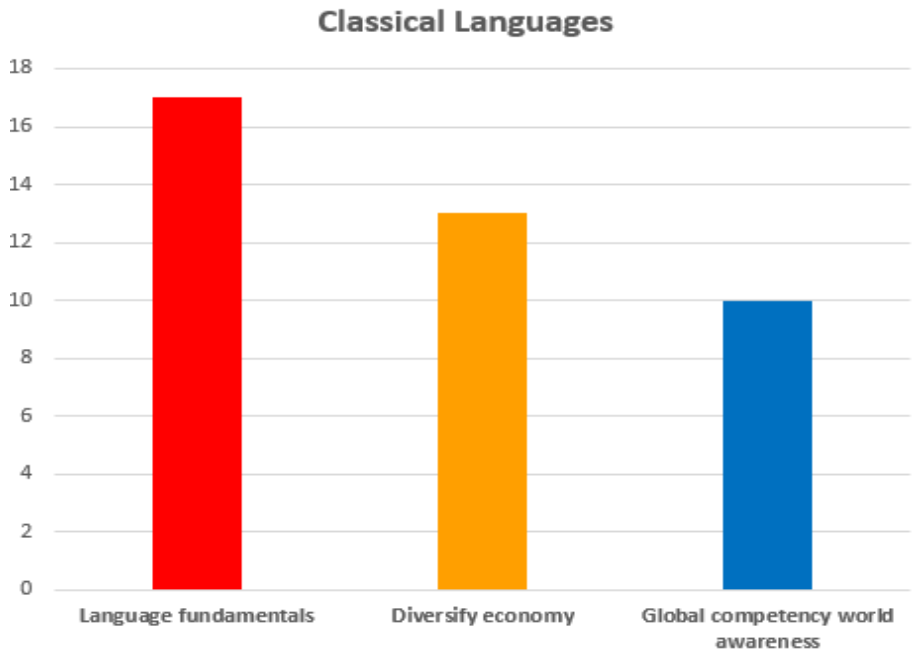


Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Alternate natural resource diversification and utilization	**2**	**3**	**2**	**14**
Artificial intelligence materials discovery	2	3	0	12
Energy diversification (renewables)	2	1	1	9
Data-driven process memory for resource recovery	1	1	3	8
Rapid manufacturing in Wyoming	2	0	0	6
Research infrastructure support (human capital)	1	1	1	6
Sustainable food production	1	0	2	5

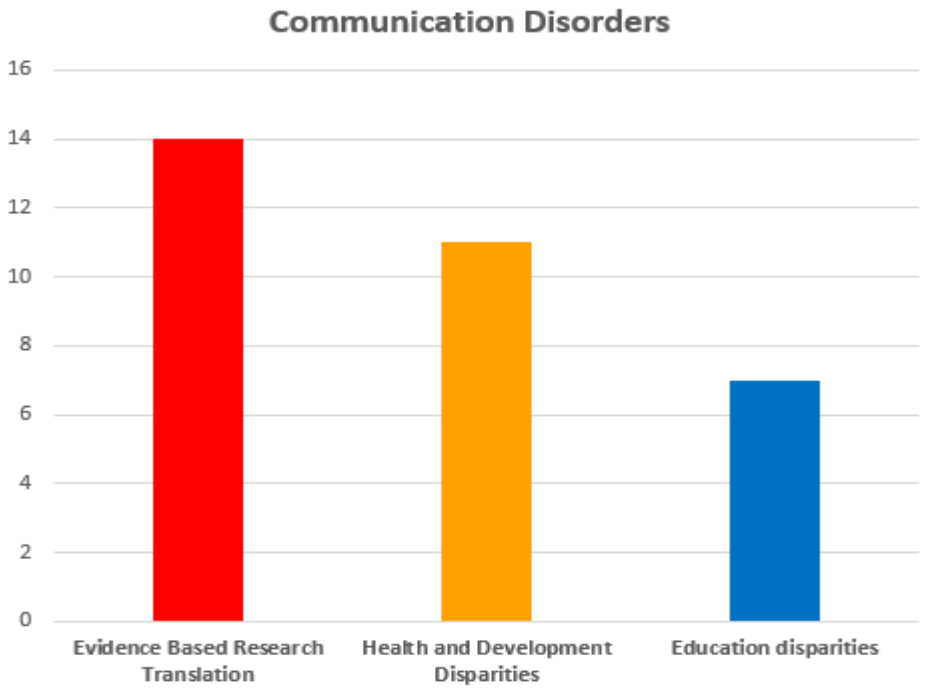


Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Develop Alternative Energy	**5**	**1**	**0**	**17**
Carbon Dioxide Reduction	1	4	2	13
Clean Water	0	4	2	10
Conserve Biological Diversity	2	1	0	8
Drug Evolution	0	2	1	5
Environmental Justice	1	0	2	5
Access to STEM education	1	0	1	4





Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Language fundamentals	**5**	**1**	**0**	17
Diversify economy	4	0	1	13
Global competency world awareness	0	5	0	10
Diversity of people	0	2	1	5
Information technology - computer processing - automation	0	1	0	2
Education continuing ed	0	0	2	2
Homogeneity of leadership	0	0	2	2
Inclusive populations	0	0	2	2
Resources - water energy	0	0	1	1
White supremacy	0	0	0	0
Heritage cultural Re-appropriation	0	0	0	0
Ethics	0	0	0	0

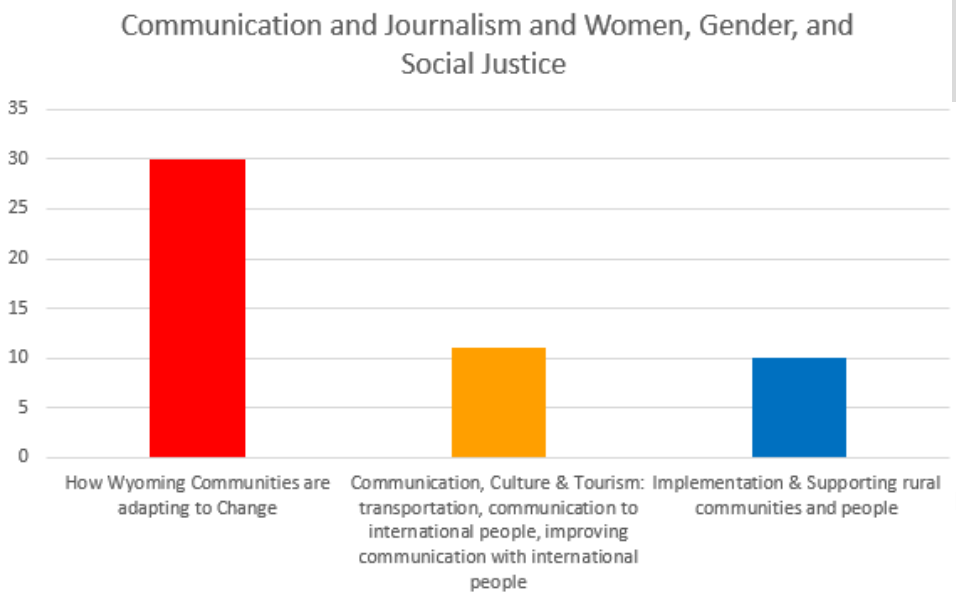


Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Evidence Based Research Translation	**4**	**1**	**0**	**14**
Health and Development Disparities	1	4	0	11
Education disparities	1	2	0	7
Policy Practice Constraints	0	1	3	5

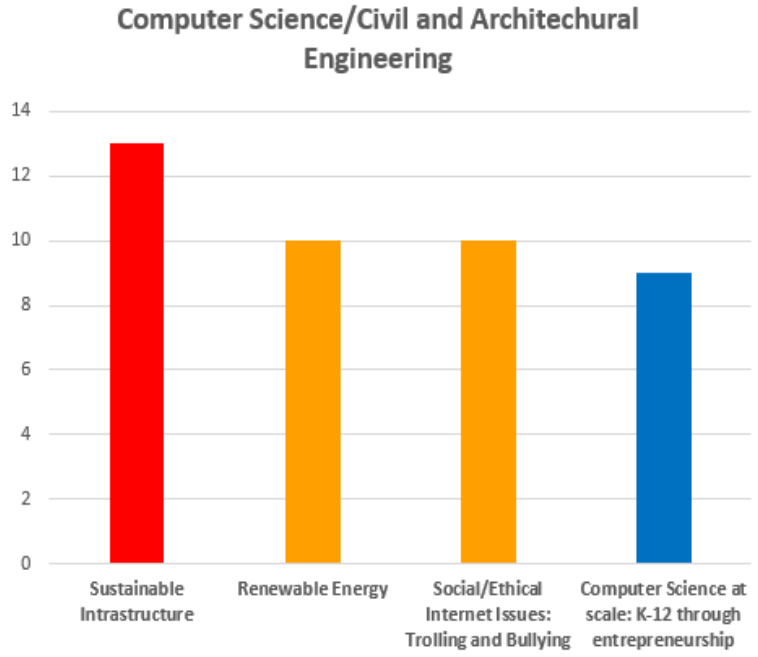
Health and Development Disparities Education Disparities

Policy Practice Constraints

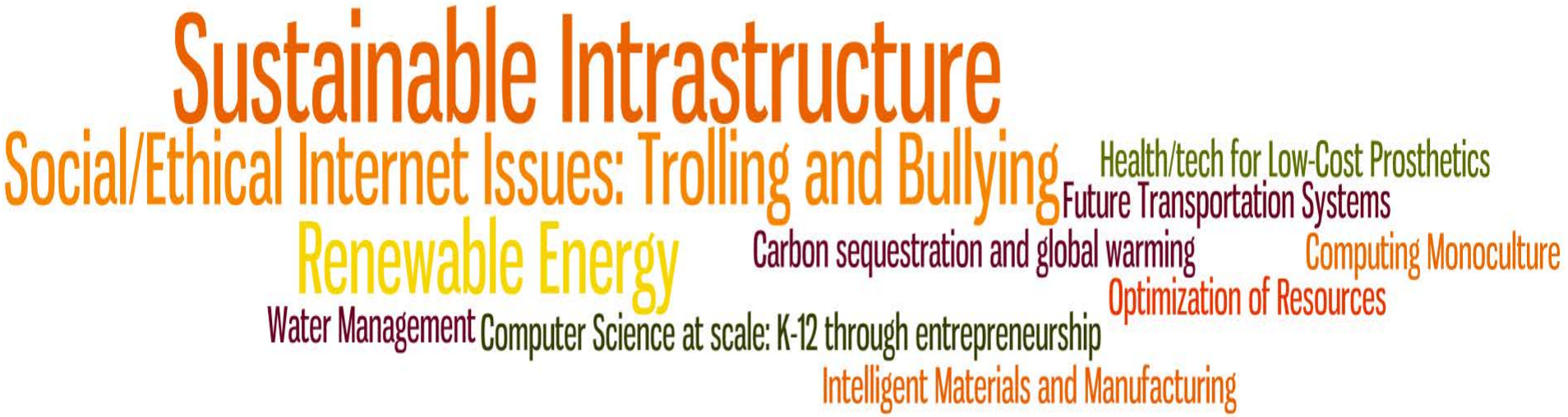
Evidence Based Research Translation

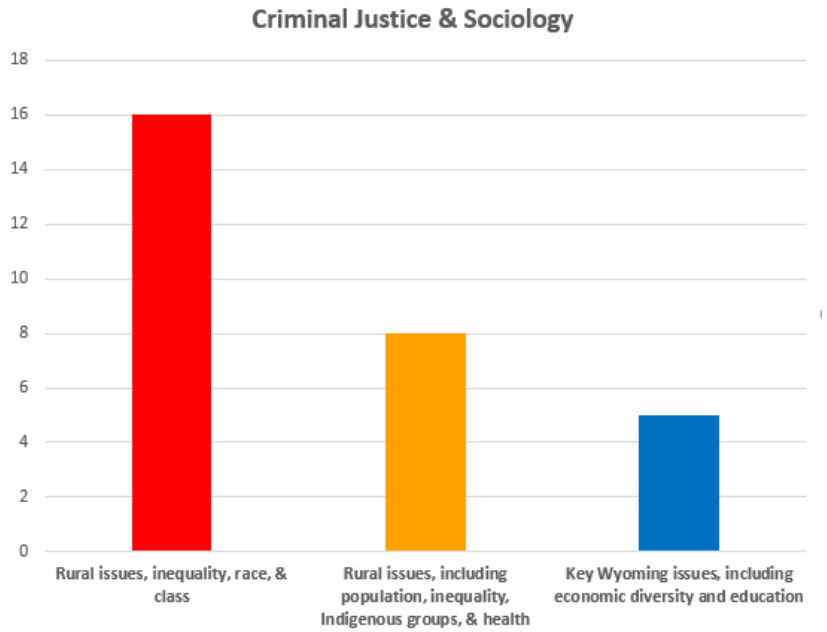


Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
How Wyoming Communities are adapting to Change	**8**	**2**	**2**	**30**
Communication, Culture & Tourism: transportation, communication to international people, improving communication with international people	1	2	4	11
Implementation & Supporting rural communities and people	1	3	1	10
Social Justice	1	1	0	5
Safety	0	2	0	4
Changing Industries	0	0	3	3
Women & people of color: service access, education, wage gap	1	0	0	3
Immigration: supporting diversity	0	1	1	3
Expanding Wyoming Horizons: Metaphorically, naturally, being globally engaged	0	0	2	2
Supporting Diverse Industries	0	0	0	0

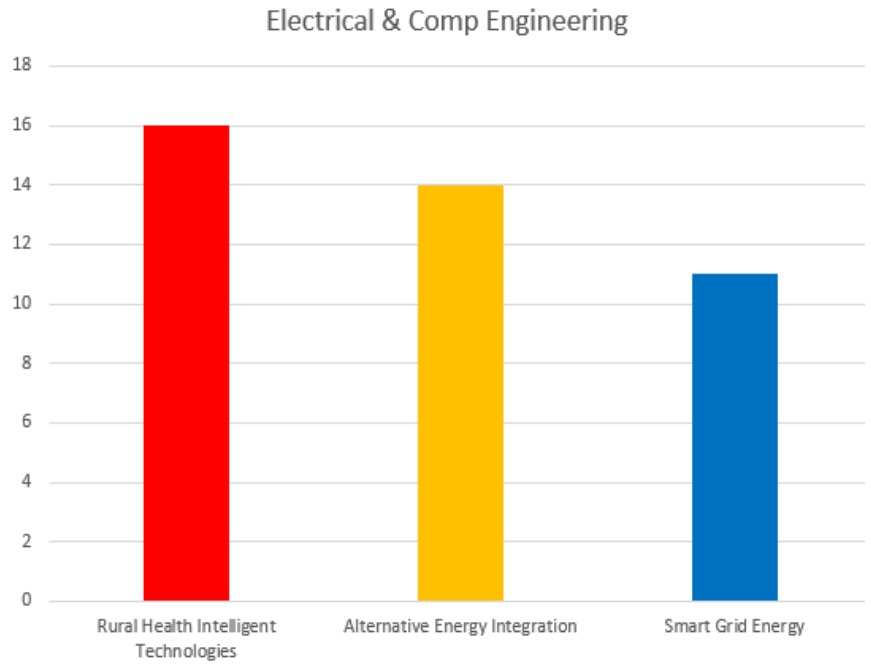


Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Sustainable Intrastructure	**1**	**4**	**2**	**13**
Renewable Energy	2	1	2	10
Social/Ethical Internet Issues: Trolling and Bullying	2	2	0	10
Computer Science at scale: K-12 through entrepreneurship	1	2	2	9
Health/tech for Low-Cost Prosthetics	2	0	0	6
Intelligent Materials and Manufacturing	1	0	2	5
Future Transportation Systems	0	1	2	4
Carbon sequestration and global warming	1	0	0	3
Water Management	1	0	0	3
Computing Monoculture	0	1	0	2
Optimization of Resources	0	0	1	1

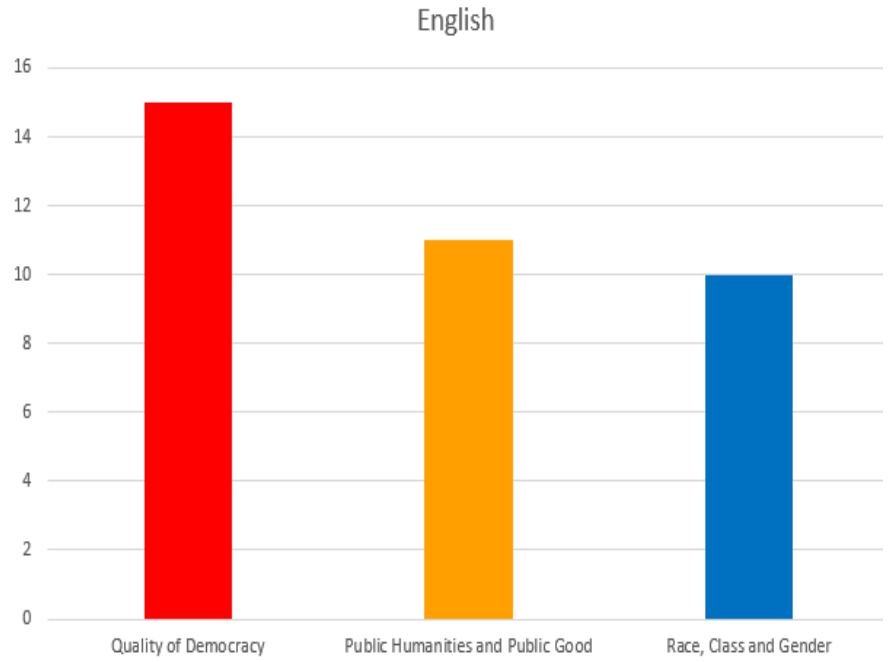




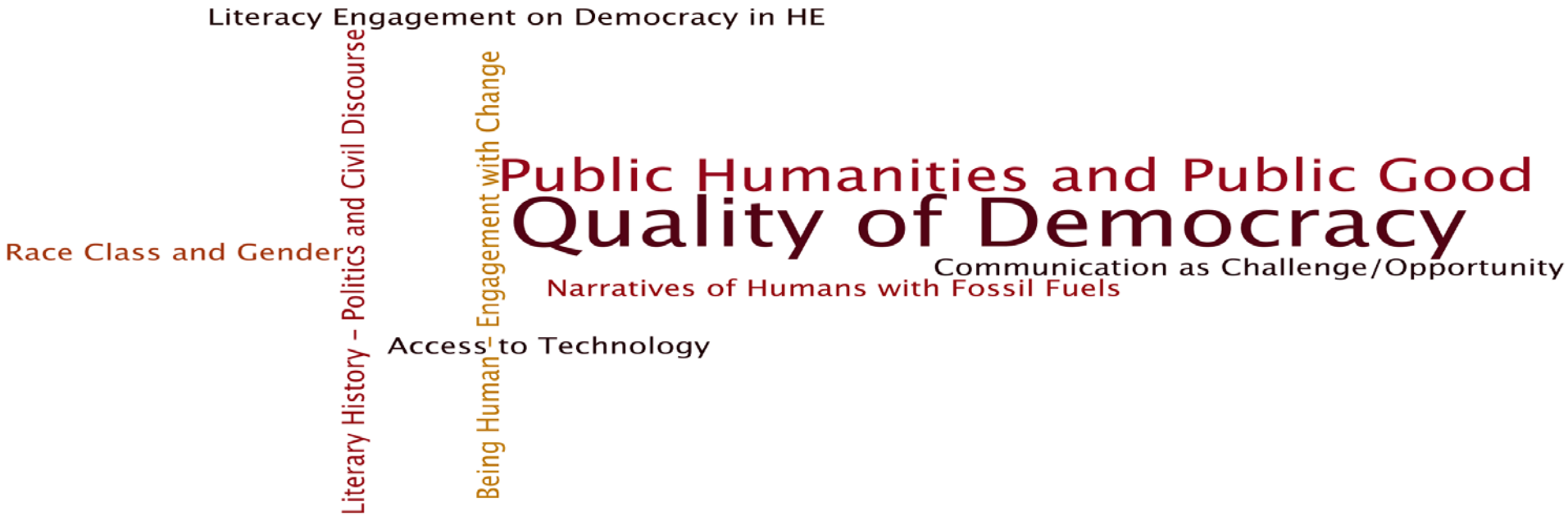
Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Rural issues, inequality, race, & class	**4**	**2**	**0**	**16**
Rural issues, including population, inequality, Indigenous groups, & health	1	2	1	8
Key Wyoming issues, including economic diversity and education	1	1	0	5
Policy center	0	1	1	3
Economic diversity & investment in other areas	0	0	2	2
Education and quality of teachers	0	0	1	1
Rural criminal justice issues, including reentry, law enforcement, courts, aging, resources, mental health issues	0	0	1	1

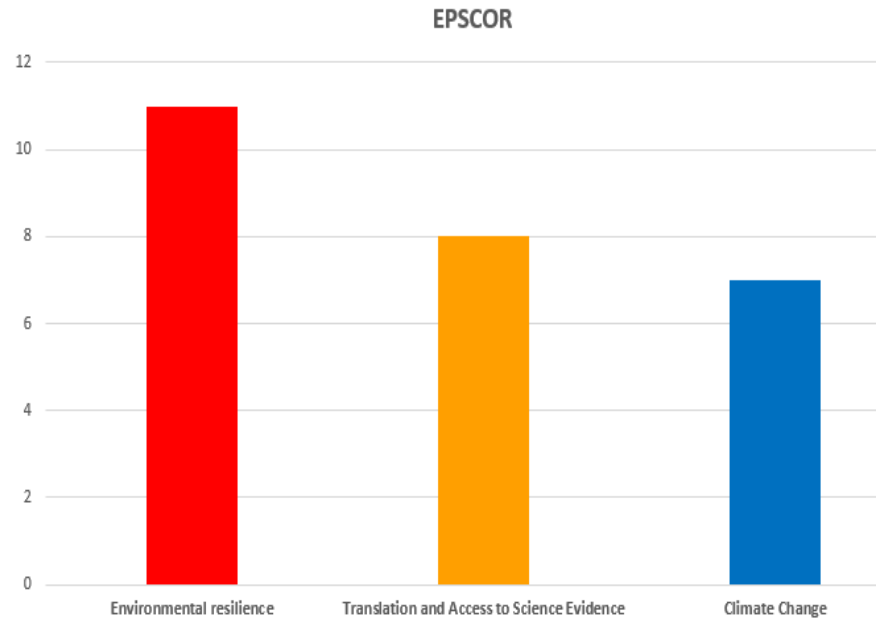


Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Rural Health Intelligent Technologies	**3**	**3**	**1**	**16**
Alternative Energy Integration	3	1	3	14
Smart Grid Energy	2	2	1	11
High Performance Computing	2	0	3	9
Robotics & Human Interconnection	1	2	1	8
Economic Development	0	4	0	8
Energy & Natural Resource Policy	1	0	1	4

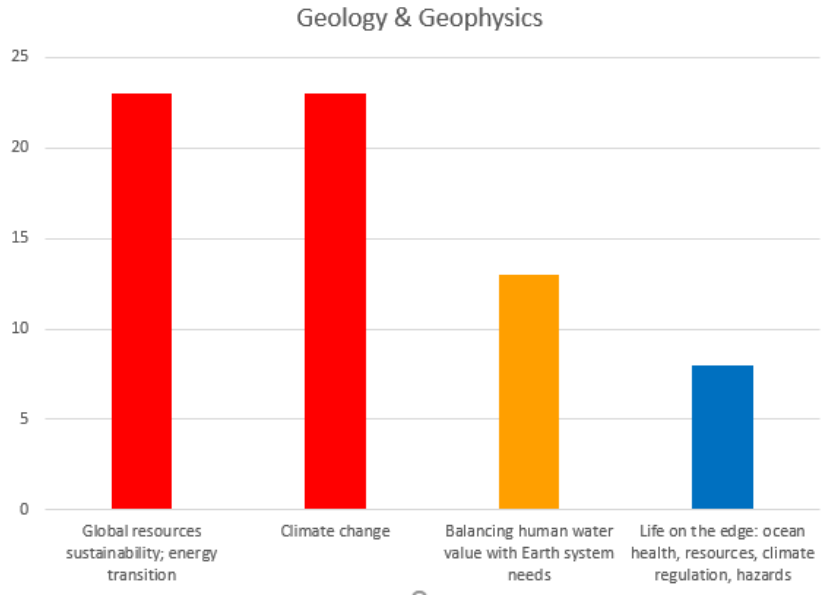


Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Quality of Democracy	3	3	0	15
Public Humanities and Public Good	2	1	3	11
Race, Class and Gender	1	3	1	10
Being Human - Engagement with Change	2	1	1	9
Access to Technology	2	1	1	9
Communication as Challenge/Opportunity	1	2	0	7
Narratives of Humans with Fossil Fuels	1	1	1	6
Literary History - Politics and Civil Discourse	0	1	2	4
Literacy Engagement on Democracy in HE	0	1	2	4





Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Environmental resilience	**3**	**1**	**0**	**11**
Translation and Access to Science Evidence	2	1	0	8
Climate Change	1	2	0	7
Biodiversity	0	1	4	6
Water Availability	0	2	0	4
Limits to Prediction	0	1	2	4



Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Global resources sustainability; energy transition	**5**	**3**	**2**	**23**
Climate change	3	4	6	23
Balancing human water value with Earth system needs	2	2	3	13
Life on the edge: ocean health, resources, climate regulation, hazards	2	1	0	8
Leveraging WY resources: geo, paleo, biodiv, energy, climate, anthro	0	2	1	5

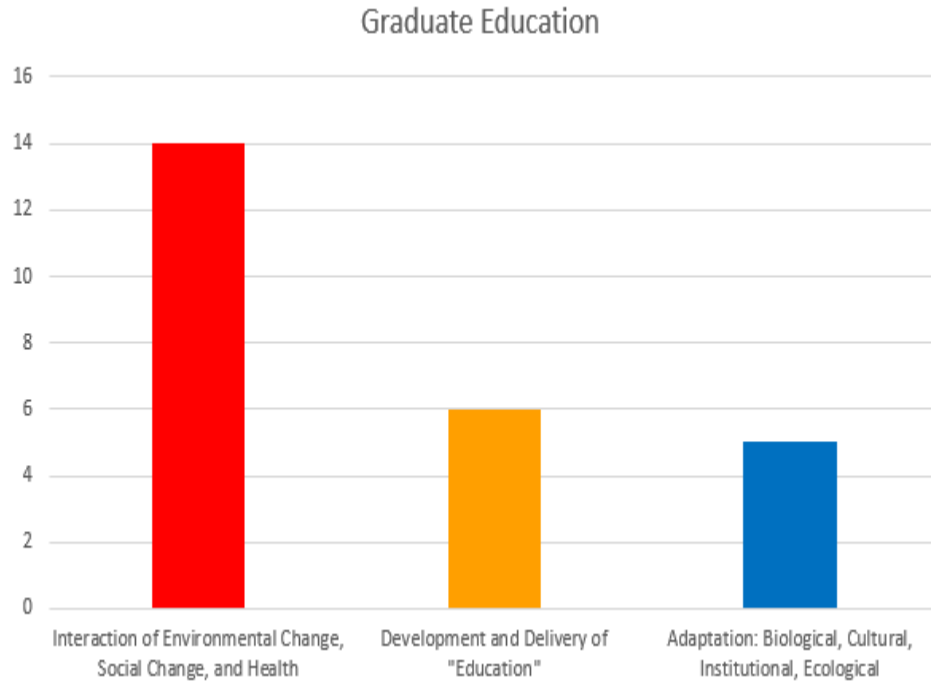
Global resources sustainability: Energy Transition

Life on the edge: ocean health resources climate regulation hazards

Leveraging WY resources: Geo paleo biodiv energy climate anthro

Balancing human water value with Earth system needs

Climate change



Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Interaction of Environmental Change, Social Change, and Health	**4**	**1**	**0**	**14**
Development and Delivery of "Education"	1	1	1	6
Adaptation: Biological, Cultural, Institutional, Ecological	0	2	1	5
Quality, Validity, and Integrity of Information and its Dissemination	0	0	4	4
Pandemic Management and Antibiotic Resistance	0	2	0	4
Biodiversity Loss	1	0	0	3

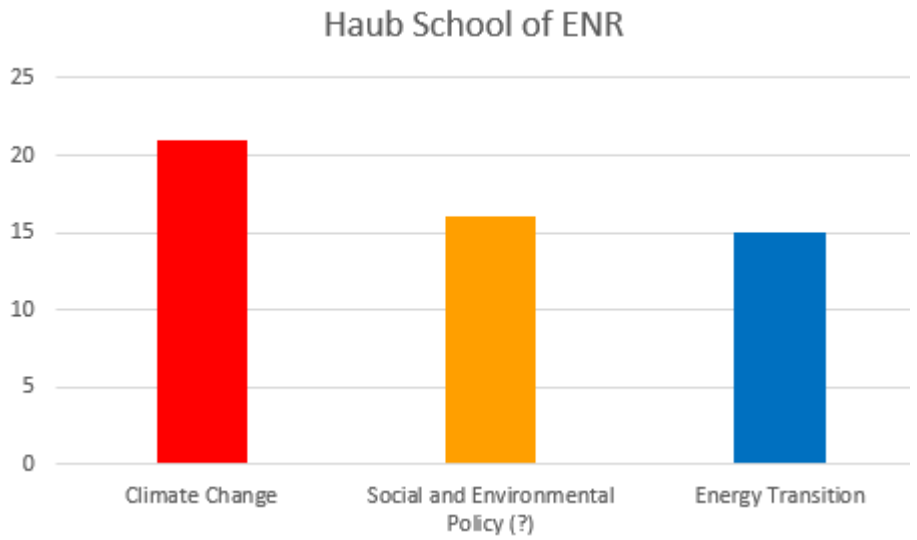
Adaptation: Biological Cultural Institutional Ecological

Development and Delivery of Education

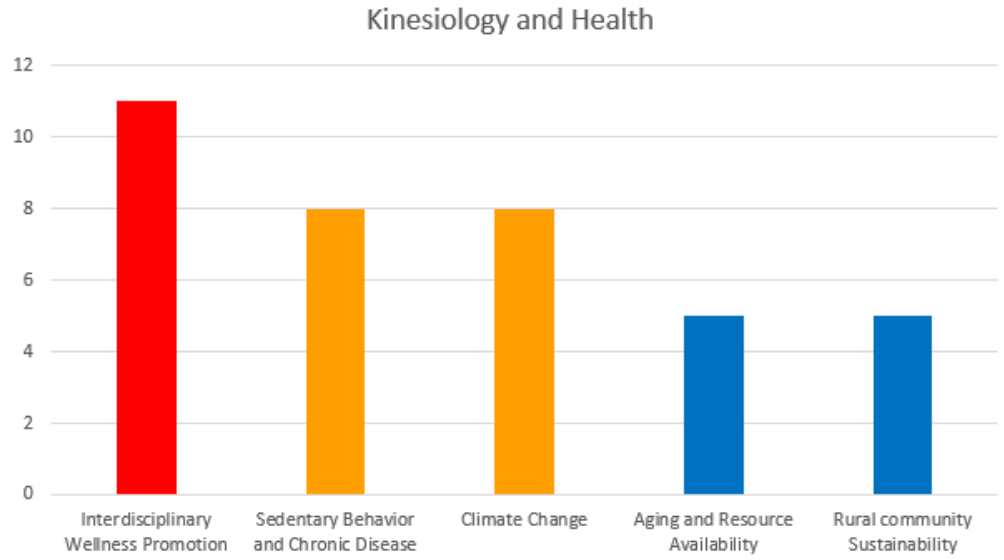
Interaction of Environmental Change Social Change and Health

Pandemic Management and Antibiotic Resistance

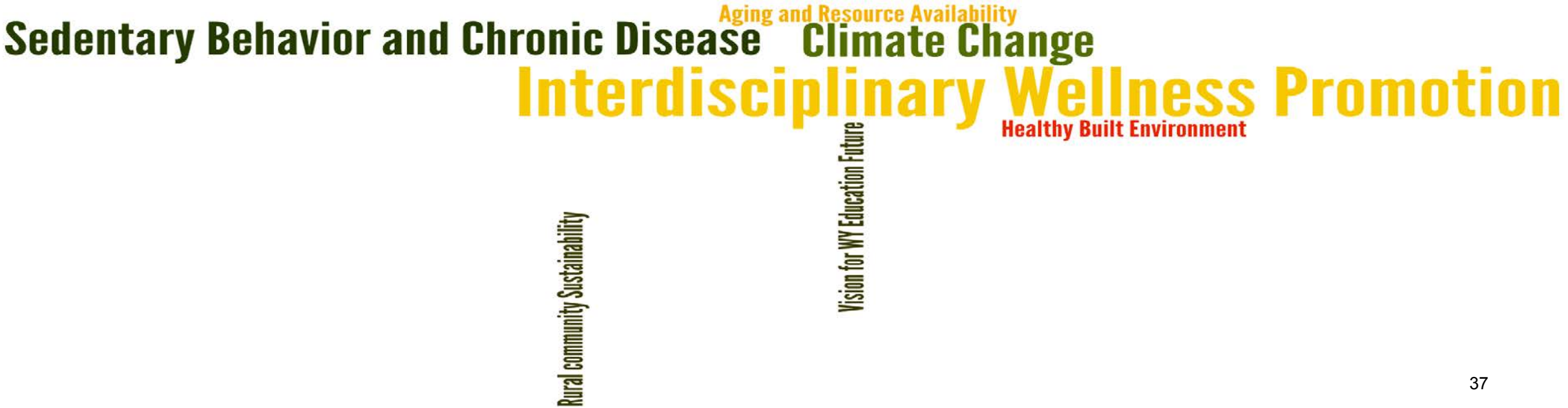
Quality Validity and Integrity of Information and its Dissemination

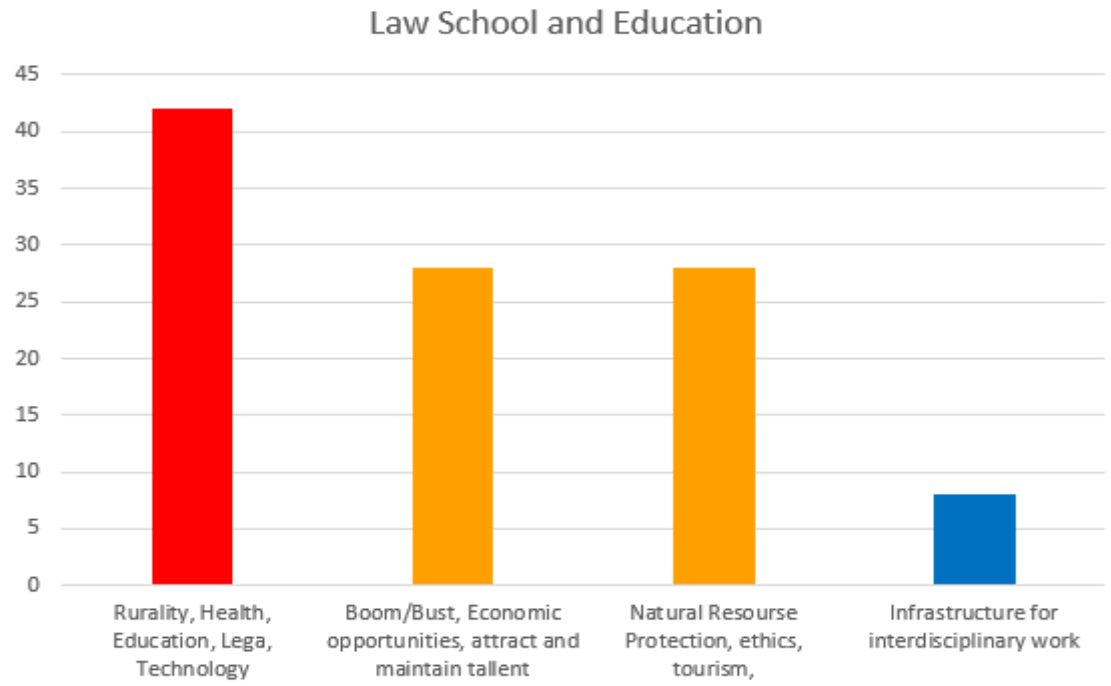


Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Climate Change	**4**	**3**	**3**	**21**
Social and Environmental Policy (?)	3	3	1	16
Energy Transition	3	2	2	15
People and ?	2	2	1	11
Biodiversity	2	2	0	10
Public/Private Land Use	0	2	3	7
Effective Science Communication and Policy	0	3	0	6
Civil Discourse and Policy Making in Public and Political Life	1	1	1	6
Sustainable/Responsible Outdoor Recreation	1	0	3	6
Restructuring State Revenue	1	0	0	3
What Does It Mean To Be Human?	1	0	0	3
Higher Education in the Future	0	0	1	1
Narratives, Values, and Beliefs	0	0	1	1

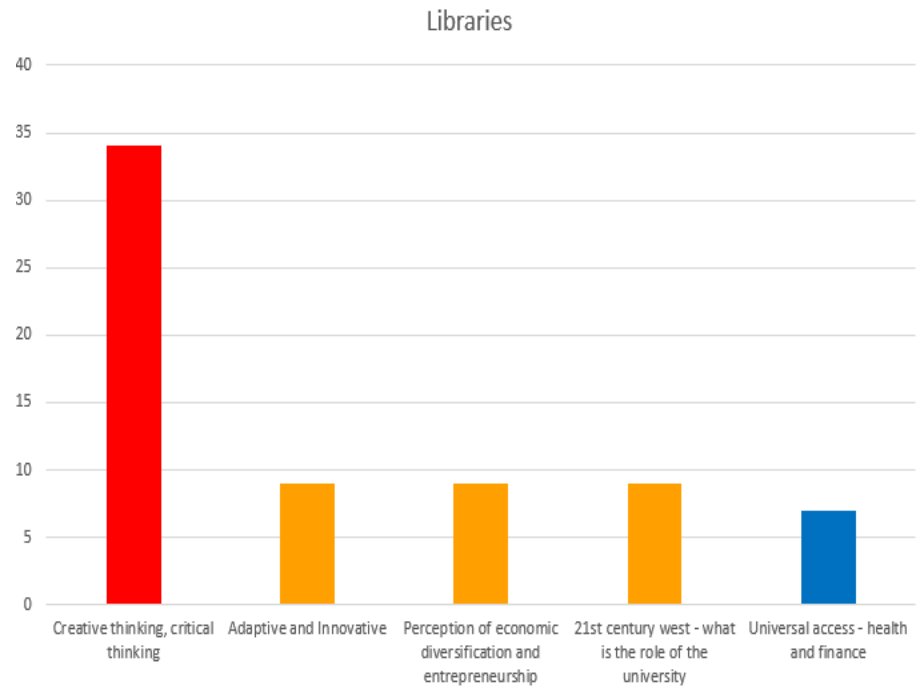


Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Interdisciplinary Wellness Promotion	**2**	**2**	**1**	**11**
Sedentary Behavior and Chronic Disease	1	1	3	8
Climate Change	2	1	0	8
Aging and Resource Availability	1	1	0	5
Rural community Sustainability	0	2	1	5
Vision for WY Education Future	1	0	0	3
Healthy Built Environment	0	1	0	2

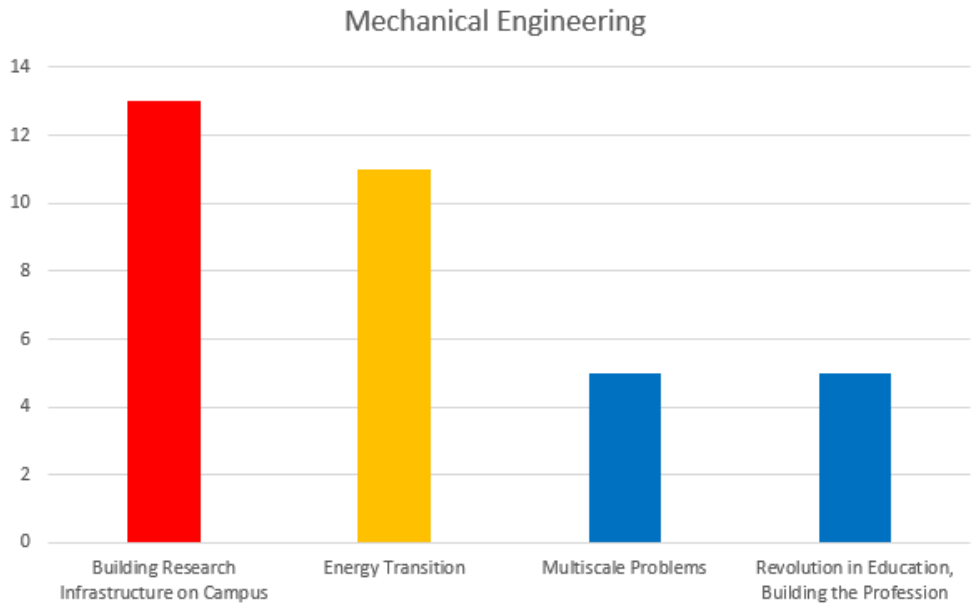




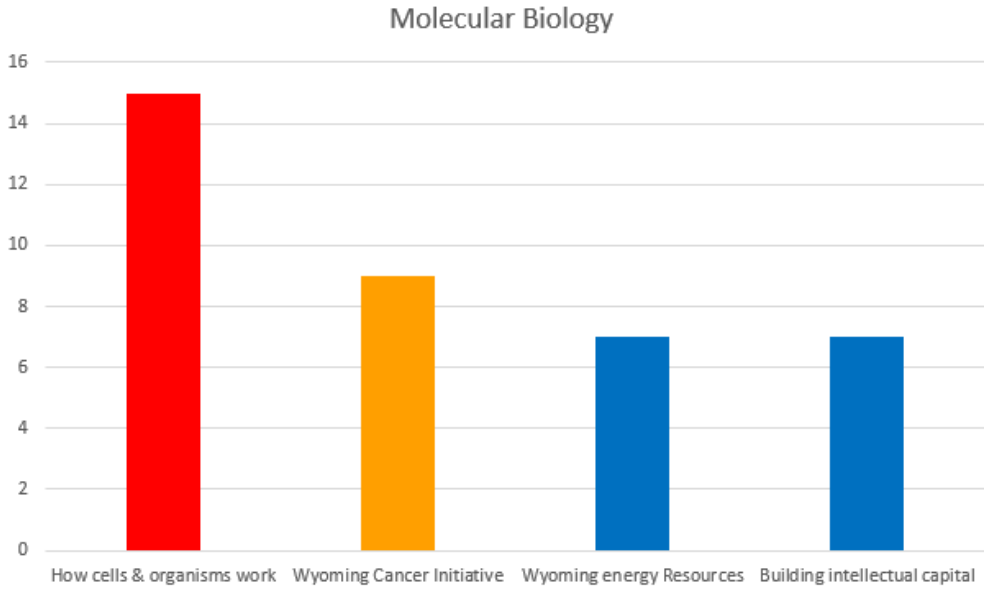
Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Rurality, Health, Education, Lega, Technology	**9**	**6**	**3**	**42**
Boom/Bust, Economic opportunities, attract and maintain tallent	4	4	8	28
Natural Resourse Protection, ethics, tourism,	2	9	4	28
Infrastructure for interdisciplinary work	2	0	2	8
State relations with Native Americans	1	0	0	3
Non combustable use of coal	0	0	2	2



Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Creative thinking, critical thinking	**5**	**9**	**1**	**34**
Adaptive and Innovative	2	1	1	9
Perception of economic diversification and entrepreneurship	2	0	3	9
21st century west - what is the role of the university	1	2	2	9
Universal access - health and finance	1	1	2	7
Welcome/Inclusive environment	1	1	1	6
Urban rural divide	0	1	3	5
Communicating Science research reproducibility	0	1	2	4
Preservation of History	0	1	1	3
Accessibility - public access to information and tools	1	0	0	3
Privacy and Data	1	0	0	3
Climate Change, jobs and energy	1	0	0	3
Student issues and debt.	1	0	0	3
Long term goals.	0	0	0	0
Food security	0	0	0	0
GIS mapping health connecting social science to the community	0	0	0	0
Outreach	0	0	0	0



Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Building Research Infrastructure on Campus	**2**	**3**	**1**	**13**
Energy Transition	3	1	0	11
Multiscale Problems	1	0	2	5
Revolution in Education, Building the Profession	0	2	1	5
Artificial Intelligence	1	0	1	4
Building Professional Networks to National Labs	0	1	1	3
Solar, Wind, Geothermal Energy	1	0	0	3
High Speed Transport in Front Range	0	1	0	2
Turbulent Flow	0	0	2	2



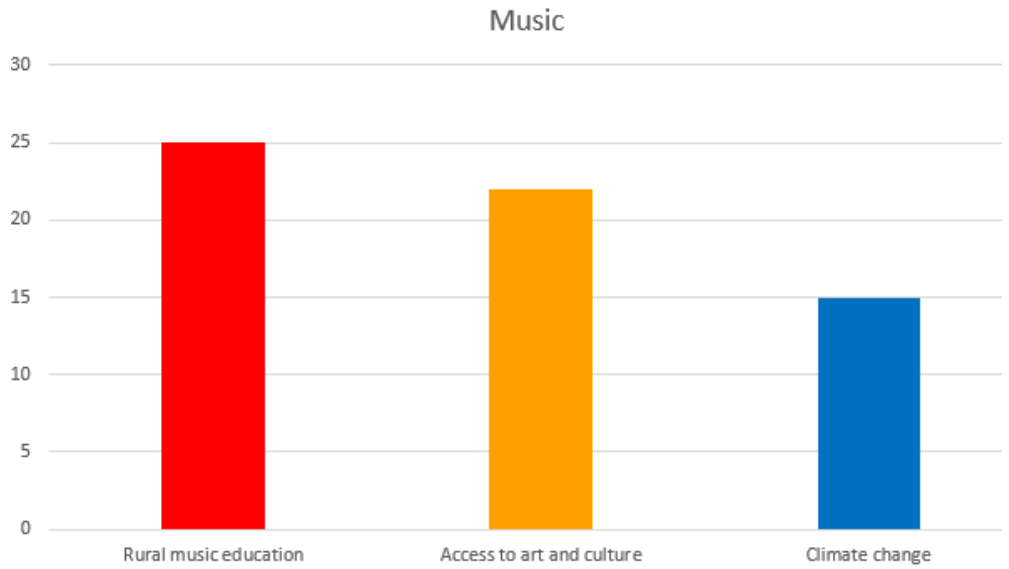
Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
How cells & organisms work	**3**	**2**	**2**	**15**
Wyoming Cancer Initiative	2	1	1	9
Wyoming energy Resources	0	2	3	7
Building intellectual capital	1	2	0	7

Building intellectual capital

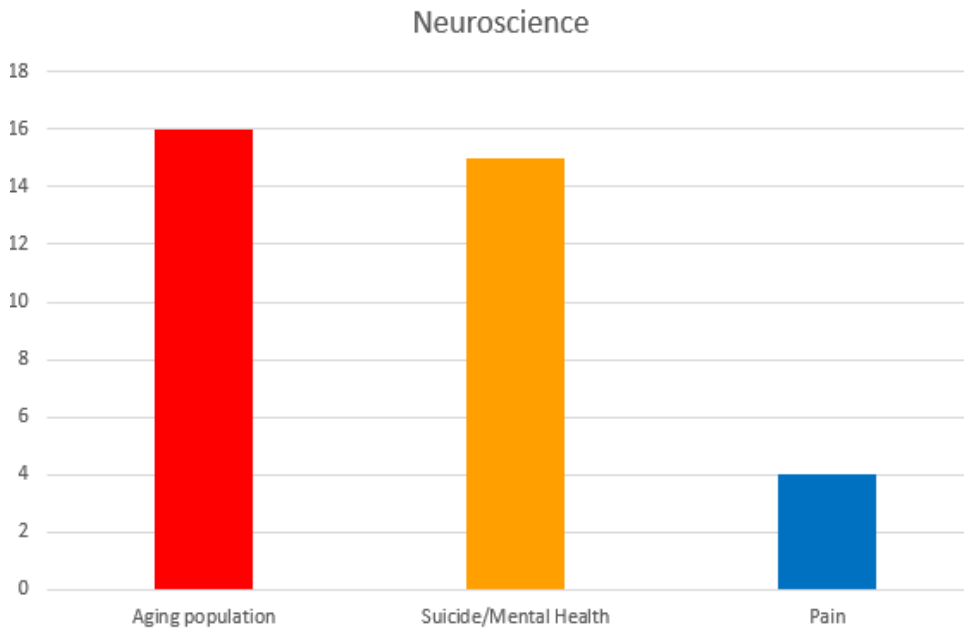
Wyoming Energy Resources

Wyoming Cancer Initiative

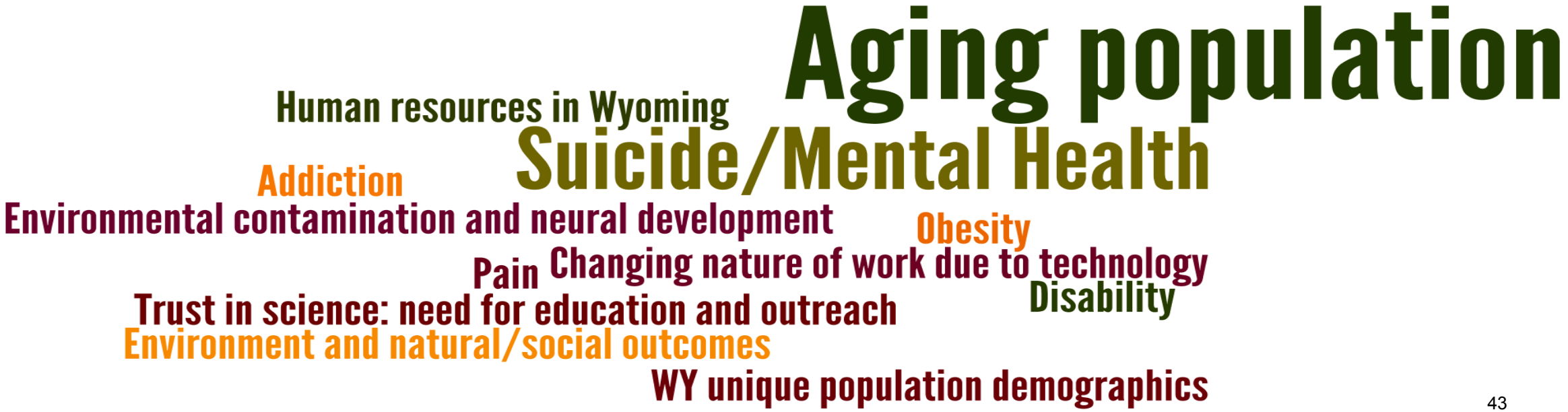
How cells and organisms work

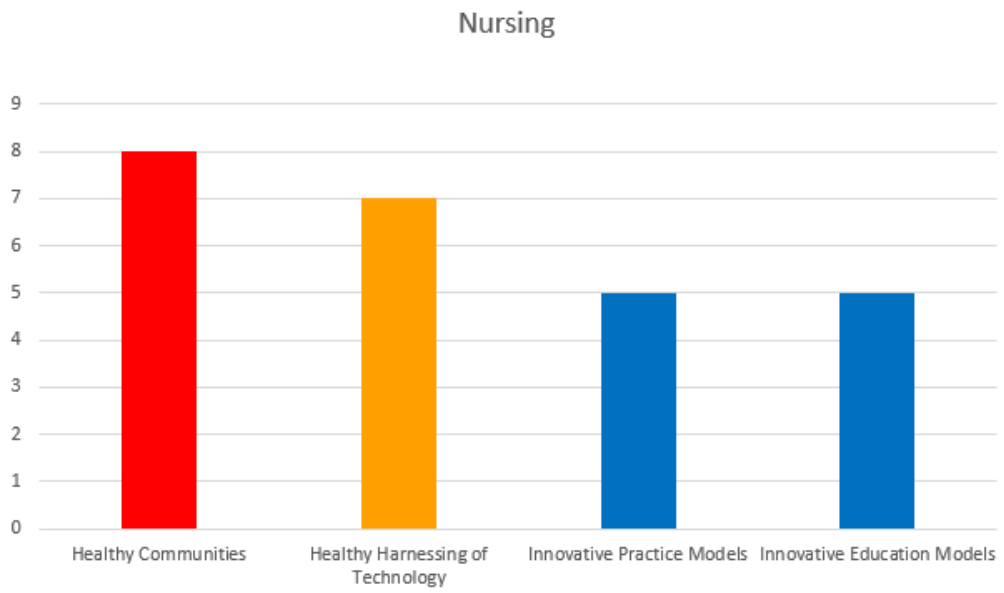


Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Rural music education	**7**	**2**	**0**	**25**
Access to art and culture	3	2	9	22
Climate change	3	1	4	15
STEAM	3	2	1	14
Influence Change	0	5	1	11
Sustainability of culture and society	1	2	0	7
Critical thinking	0	1	4	6
Social sciences	0	2	0	4
Teaching creativity	0	2	0	4
Public education	1	0	0	3
Creating new art	1	0	0	3

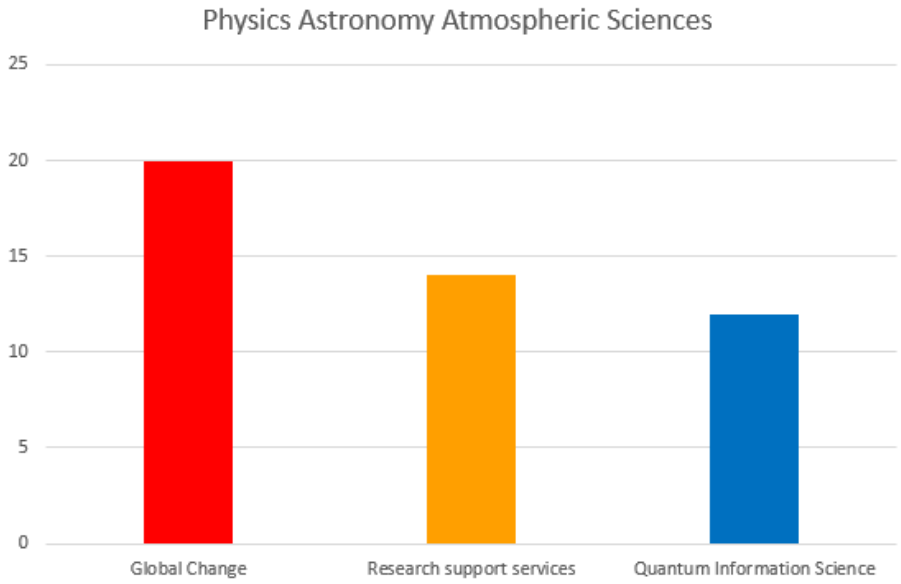


Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Aging population	**4**	**2**	**0**	**16**
Suicide/Mental Health	3	3	0	15
Pain	0	1	2	4
Trust in science (need for education and outreach)	0	0	3	3
WY unique population demographics	0	1	0	2
Human resources in Wyoming	0	0	1	1
Environmental contamination and neural development	0	0	1	1
Changing nature of work due to technology	0	0	0	0
Disability	0	0	0	0
Obesity	0	0	0	0
Addiction	0	0	0	0
Environment and natural/social outcomes	0	0	0	0

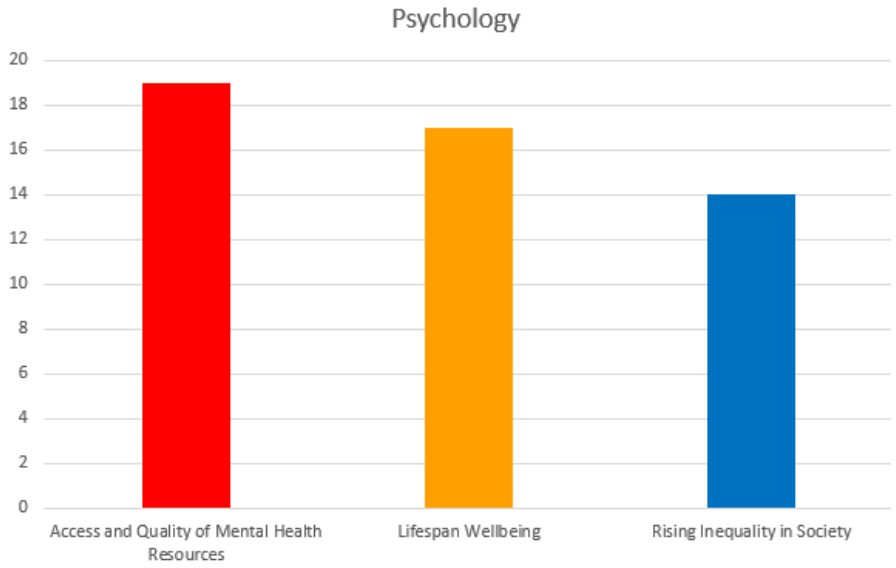




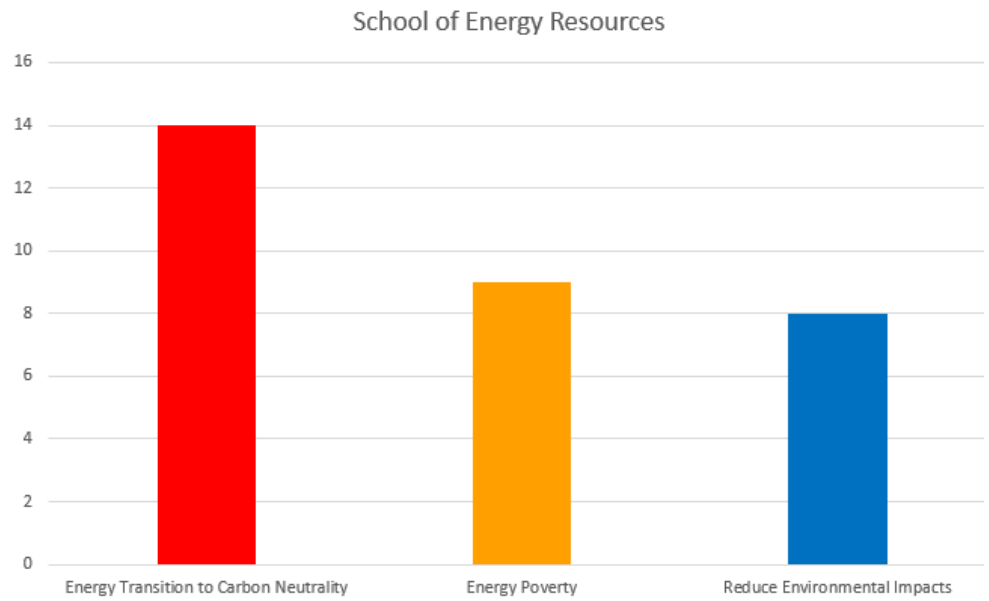
Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Healthy Communities	**2**	**1**	**0**	**8**
Healthy Harnessing of Technology	1	2	0	7
Innovative Practice Models	1	1	0	5
Innovative Education Models	0	2	1	5
Mental Health	1	0	1	4
Health Promotion Policy	0	1	0	2
Workplace Satisfaction	0	0	1	1



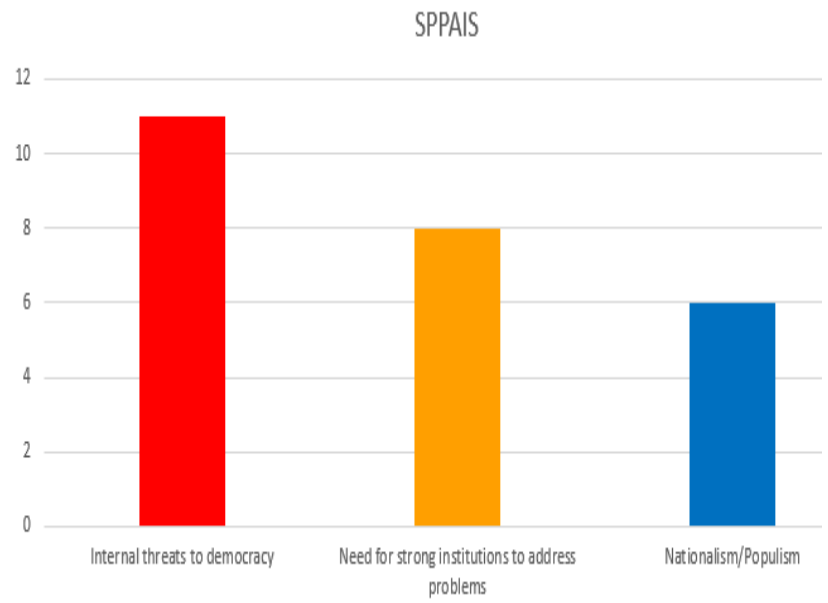
Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Global Change	**4**	**4**	**0**	**20**
Research support services	2	2	4	14
Quantum Information Science	4	0	0	12
Decarbonizing the Nation's Infrastructure	1	2	1	8
Computational Science	0	3	1	7
Water resources	0	2	0	4
Expanding representation of underrepresented groups in research	0	2	0	4
Natural Disaster	0	0	1	1



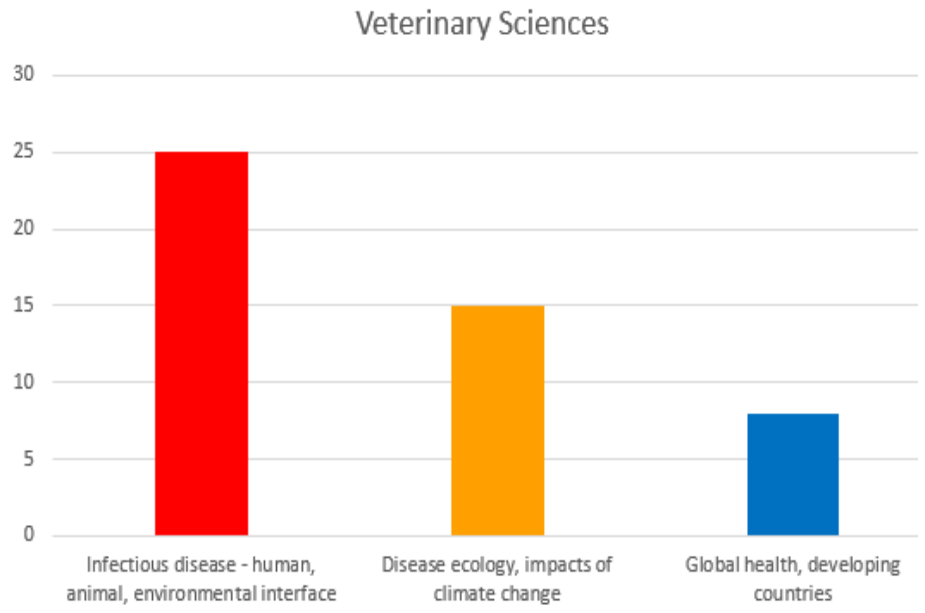
Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Access and Quality of Mental Health Resources	**5**	**2**	**0**	**19**
Lifespan Wellbeing	3	3	2	17
Rising Inequality in Society	2	3	2	14
Crisis in Democracy	2	1	2	10
Violence and Gun Control Policy	0	1	5	7
Society Psychology Perception as Science	0	2	0	4
Better Measures of Prejudice and Prejudice Reduction	0	0	1	1



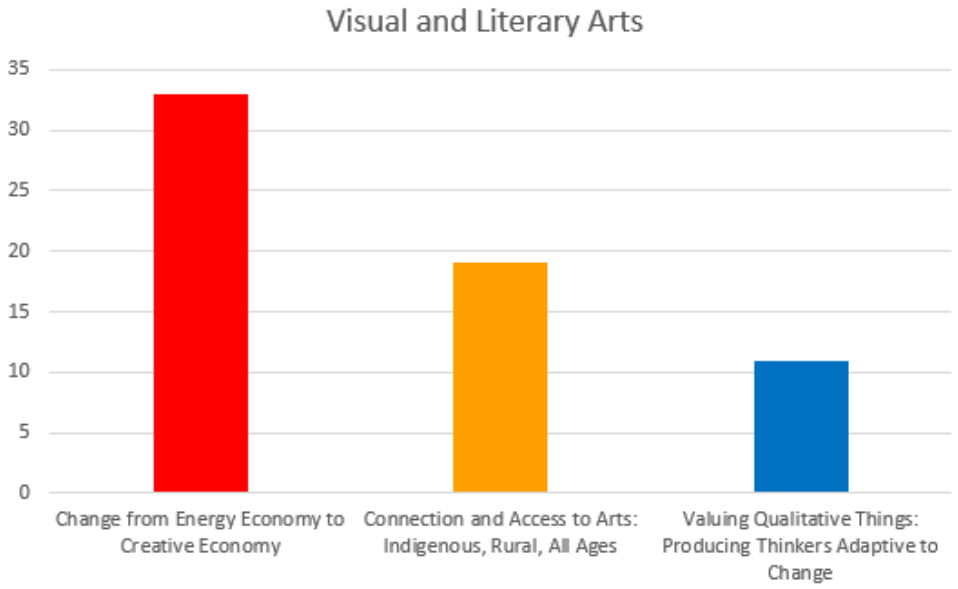
Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Energy Transition to Carbon Neutrality	**4**	**0**	**2**	**14**
Energy Poverty	1	3	0	9
Reduce Environmental Impacts	2	0	2	8
Lack of Economy and Diversity of Jobs	1	2	0	7
Expansion of Wilderness	1	0	2	5
Revenue Addition to State to Offset Losses	0	1	2	4
Heterogeneity of Resources/Scarcity	0	2	0	4
Reduce Hostility in Politics	1	0	0	3
Developing Advanced Materials	0	1	0	2
Community Health and Wellbeing	0	0	1	1



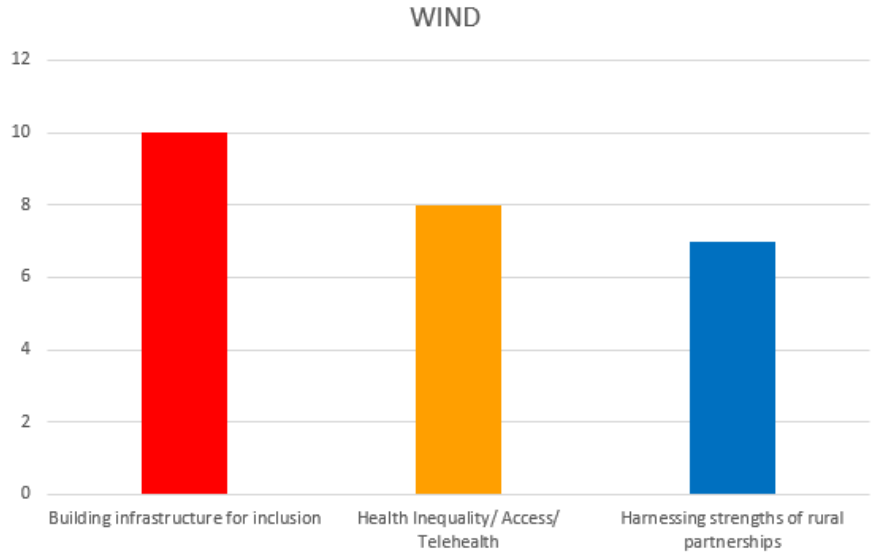
Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Internal threats to democracy	**3**	**1**	**0**	**11**
Need for strong institutions to address problems	2	1	0	8
Nationalism/Populism	0	2	2	6
Economic change in WY	1	0	0	3
Displaced people	1	0	0	3
Ecological destruction	0	1	1	3
Empathy to others	0	1	1	3
Rural health and access to care	0	0	3	3
Global catastrophic risks	0	1	0	2
Social support for elder care	0	0	0	0



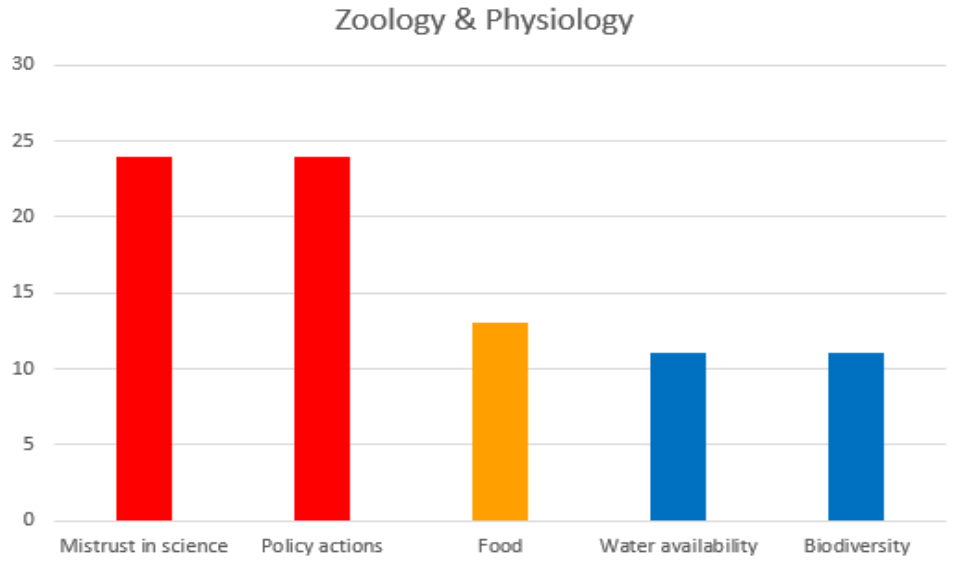
Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Infectious disease - human, animal, environmental interface	**8**	**0**	**1**	**25**
Disease ecology, impacts of climate change	1	6	0	15
Global health, developing countries	0	1	6	8
Health intersections with outdoor recreation, tourism, WY heritage	0	2	2	6
One Health - interdependence of human, animals, environment (Theme)	0	0	0	0



Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Change from Energy Economy to Creative Economy	**8**	**4**	**1**	**33**
Connection and Access to Arts: Indigenous, Rural, All Ages	3	4	2	19
Valuing Qualitative Things: Producing Thinkers Adaptive to Change	1	3	2	11
Building a Network/Infrastructure for Creativity and Community	0	1	6	8
The University is Not a Business	1	1	0	5
Arts Opportunities for 20-50 age group	0	0	1	1
Arts against Fascism and Nationalism	0	0	1	1



Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Building infrastructure for inclusion	**2**	**1**	**2**	**10**
Health Inequality/ Access/ Telehealth	2	0	2	8
Harnessing strengths of rural partnerships	0	3	1	7
Educational Inequality	2	0	0	6
Understanding the opiod crisis and epidemic	0	2	1	5
Lifelong Learning	0	0	0	0
Literacy	0	0	0	0
Public Health	0	0	0	0



Topic	1st place votes	2nd place votes	3rd place votes	Weighted Score
Mistrust in science	**6**	**3**	**0**	**24**
Policy actions	4	4	4	24
Food	3	2	0	13
Water availability	1	3	2	11
Biodiversity	1	2	4	11
Mental health	1	1	3	8
Human migration & natural resources	0	0	2	2
Resource use and consequences	0	1	0	2

ACADEMIC AND STUDENT AFFAIRS

COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: Shared Governance (Benham-Deal)

☒ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
- ☒ Yes
- ☐ No

FOR FULL BOARD CONSIDERATION:
- ☐ Yes (Date here)
  [Note: If yes, materials will also be included in the full UW Board of Trustee report.]
- ☒ No

☐ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY:

Topic: 'Shared Governance'

In July 2019 Academic Affairs and Faculty Senate tasked a small working group to engage the university community in discussion about shared governance and to develop recommendations for successful shared governance at UW. As part of this work, the group conducted a number of focus group discussions with various stakeholders. Chair of the working group, Caroline McCracken-Flesher will present the committee with a brief report on their work thus far, including insights from the focus groups.

WHY THIS ITEM IS BEFORE THE COMMITTEE: To provide committee with update and to discuss next steps, including how the board may participate in the process.

ACTION REQUIRED AT THIS COMMITTEE MEETING: No required action.

PROPOSED MOTION: No required motion.

ACADEMIC AND STUDENT AFFAIRS

COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: Geography Program recommendations (Miller)

☒ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
- ☒ Yes
- ☐ No

FOR FULL BOARD CONSIDERATION:
- ☒ Yes (May 2020)
  [Note: If yes, materials will also be included in the full UW Board of Trustee report.]
- ☐ No

☐ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY:
In March of 2019, the Board approved a proposal to reorganize, consolidate, reduce, or discontinue the Department of Geography and reimagine the future of geography education at UW. The proposal was reviewed and approved in accordance with University Regulation 2-13. Within the final approved proposal were recommendations to convene two taskforces; one taskforce would review the B.S. and M.A. in Geography; another was charged with reviewing the Master of Planning degree that had previously resided within the Geography Department. The taskforces have completed their work; the Dean of Arts and Sciences and Academic Affairs have reviewed their reports and have made recommendations to the President, which he has approved.

WHY THIS ITEM IS BEFORE THE COMMITTEE:
To seek approval of the recommendations for the B.S. and M.A. Geography and Master of Planning programs.

ACTION REQUIRED AT THIS COMMITTEE MEETING:
Approval of the President's recommendations and recommendation of approval to the full Board.

PROPOSED MOTION:
"I move that we approve the recommendations for the B.S. and M.A. in Geography and Master of Planning programs."

UNIVERSITY OF WYOMING

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www.uwyo.edu/acadaffairs

February 6, 2020

To: Neil Theobald, Acting President
From: Kate C. Miller, Provost
Re: Recommendations Regarding Geography Curriculum and Degrees

In Fall of 2018, the Provost put forward a proposal to reorganize, consolidate, reduce, or discontinue the Department of Geography and reimagine the future of geography education at UW. The proposal was reviewed in accordance with University Regulation 2-13, including review by the Faculty Senate, Staff Senate, and ASUW. Feedback was solicited from currently-enrolled students and constituents statewide via a survey mechanism that accompanied the proposal. Feedback from stakeholders was integrated into an updated proposal. Upon completion of review of the final proposal, the proposal was presented by the Provost to the President, and approved by the Board of Trustees in March 2019.

Within the final approved proposal were recommendations to convene two taskforces; one taskforce would review the B.S. and M.A. in Geography; another was charged with reviewing the Master of Planning degree that had previously resided within the Geography Department. The taskforces have completed their work; the Dean of Arts and Sciences and Academic Affairs have reviewed their reports and make the following recommendations.

Recommendations

Program: B.S. Geography

- *Recommendation from Task Force:* Retain and revise curriculum
- *Recommendation from Dean:* Retain and revise curriculum
- *Recommendation from Provost:* Retain and revise curriculum

Rationale: A revised Geography BS could build upon existing courses to serve a unique role at UW, preparing students to face the transdisciplinary global challenges of the 21st century. It will:

- Provide a unique depth of exposure to both physical and social science; and
- Create opportunities for the students to think critically about problems from multiple perspectives across disciplinary boundaries.

A multi-departmental steering committee composed of geography-related faculty in Geology & Geophysics and SPPAIS would oversee the program, manage its curriculum, and advise its students. Program decisions would be made in consultation with the heads of Geology & Geophysics and the School of Politics, Public Affairs, and International Studies. The program would operate across departments, but with the administration of the program supported through the departmental cost centers along with the Geography Minor and other majors currently run within each department.

The current core group of faculty with geography-related teaching and research includes three faculty from Geology & Geophysics and three from the School of Politics, Public Affairs, and International Studies. A steering committee composed of five voting faculty and a committee chair could include all six core members. We propose a three-year probationary period for the BS beginning this academic year to assess student interest and the fit of the program within the strategic directions of the two departments. This period overlaps with the current Geography teach-out period.

Program: M.A. Geography:

- *Recommendation from Task Force:* Terminate program
- *Recommendation from Dean:* Terminate program
- *Recommendation from Provost:* Terminate program

Rationale: The Geography MA program has been successful, producing graduates who have gone on to related careers across the country. However, in the current UW environment, the program would be difficult to maintain. The absence of a MA-PhD pipeline limits the ability of the UW program to attract students. Other existing programs can support graduate student research in various areas of geography.

Program: Master of Planning

- *Recommendation from Task Force:* Retain and revise curriculum
- *Recommendation from Dean:* Terminate program
- *Recommendation from Provost:* Terminate program

Rationale: The Master of Planning program has extremely small enrollments (one or fewer students graduating annually) and has effectively had no faculty for the last 10 academic years. That is not to say there are no faculty with interest in this area; however, for a degree program to be sustained, the task force estimated that two new faculty lines would be needed along with an operating cost of $25,000 annually. In the current UW environment, other existing programs can support graduate student interest in this field without an official degree program and the commensurate investments required. Programs that can support student interest through existing mechanisms include the Civil and Architectural Engineering department, Agricultural and Applied Economics department, the Haub School, the MPA program, and the WYGISC program.

Kate C. Miller

Dr. Kate C. Miller
Provost and Vice President for Academic Affairs
University of Wyoming

Geography BS/MA Task Force – Fall 2019 Report

Task force members: Stephanie Anderson, Drew Bennett, Thomas Minckley, Zoe Pearson, Bryan Shuman (chair)

I. Recommendations

1) Terminate the Geography MA degree

Key points

The Geography MA program has been successful, producing graduates who have gone on to related careers across the country. However, in the current UW environment, the program would be difficult to maintain. The absence of a MA-PhD pipeline limits the ability of the UW program to attract students. Other existing programs can support graduate student research in various areas of geography.

2) Retain and revise the Geography BS major

Key points

A revised Geography BS could build upon existing courses to serve a unique role at UW, preparing students to face the transdisciplinary global challenges of the 21st century. It will:

- Provide a unique depth of exposure to both physical and social science; and
- Create opportunities for the students to think critically about problems from multiple perspectives across disciplinary boundaries.

The major is aimed at students interested in global problems ranging from energy to health, where an understanding of the world, its environments, its cultures, and their interconnections is critical.

If the Geography Minor is retained as planned, the same core courses can accommodate a major based around a similar set of requirements but a greater number of credits.

Doing so would serve at least one important role in the state by filling a key void in geography training for K-12 education (e.g., Wyoming K-12 social science standards rely 60% on geography content, and high school social studies provides content for College Board AP Human Geography college credits).

As noted by the Spring 2019 Geography Reorg Plan, the Secondary Education program has a social studies option geared specifically around a concurrent major in Geography, but no plan to support future teacher training in this core area without continued support of a core set of geography courses. As a social studies program, the need is not in GIST (i.e., the K-12 standards emphasize social and physical science not technology). The proposed major revision focuses on the core set of geography courses maintained for the Minor and would be suitable for supporting the Secondary Education option (as described here: http://www.uwyo.edu/ste/teacher-preparation-and-advising-office/majors-and-program-sheets/undergraduate%20program-sheets/geog.pdf).

The revised major would

- Build upon the core of the Geography Minor retained by the spring 2019 decision of the UW Trustees and the pool of faculty and GAs needed to maintain the minor;
- Use existing courses in Geology & Geophysics, SPPAIS, and WyGISC/GIST;
- Drop past focus on natural resources and planning, enabling greater depth in core competency areas and minimizing overlap with other programs;
- Provide education in global cultural and social issues not included in ENR or Geology majors;
- Provide education in the physical sciences of global surface environments (climates, biomes, and landforms) not found in International Studies or traditional Geology majors (focused on the solid Earth);
- Produce a unique program bridging biophysical sciences and international studies, centered on transdisciplinary training that is more global and scientific in scope than related majors.

Typical paths to meeting the requirements would have students take 5-6 courses from SPPAIS, 3-4 courses from Geology & Geophysics, and 2 courses from WyGIS plus additional allied USP courses.

Benefits

Educational value to students:

- **Students will prepare to face society's grand challenges** by gaining competency in sociopolitical, cultural and scientific areas at the intersections of those fields.
- **They will have a unique opportunity for transdisciplinary experience**, considering topics ranging from cultural diversity to global conflicts in the context of the physical sciences needed to understand the globe's diverse environments.
- **Current programs lack the range of dimensions offered by a Geography BS** because Geology, ENR, and other similar programs do not expose students to the cultural or international dimensions while International Studies students miss the depth of physical science.

Career value to students:

- **Students will gain a global perspective and knowledge required for many careers** ranging from international business (e.g., energy or development consultants working in Africa) to health and education (e.g., doctors working with immigrant communities; K-12 teachers presenting the Wyoming social science standards). These examples represent real former students we know.
- **Students with a Geography degree have an advantage for Federal and state jobs** in USA Jobs where a Geography BS degree is a requirement for many positions including numerous positions in Wyoming.

Value added to the departments:

- **Faculty commitments and courses required to support the Geography minor enable the major to continue** without additional faculty lines or courses.
- **The major creates new bridges between programs** (Geology & Geophysics and SPPAIS), which will create opportunity for new interdisciplinary interaction.

- **The major provides courses required by other programs** (especially for the social studies option in Geography for education students, but also electives for majors like ENR and ESS) and brings additional students to courses in Geology & Geophysics and SPPAIS (and A&S).
- **The major attracts students not interested in traditional geology or international studies programs** and thus brings new students into the classes supported by the departments.

Long-term projected costs

- GA support for the large-enrollment introductory courses (specifically GEOG 1000, 1010 and 1020) will need to continue in support of the Trustees-approved continuation of the minor. Such resources will also support the proposed continuation of the Geography BS. However, versions of the courses could be offered with modified GA support.

Governance

A multi-departmental steering committee composed of geography-related faculty in Geology & Geophysics and SPPAIS would oversee the program, manage its curriculum, and advise its students. Program decisions would be made in consultation with the heads of Geology & Geophysics and SPPAIS. We envision a program that would operate across departments like LIFE or the Program in Ecology, but with the administration of the program supported through the departmental cost centers along with the Geography Minor and other majors currently run within each department.

The current core group of faculty with geography-related teaching and research includes three faculty from Geology (Shinker, Minckley, Shuman) and three from SPPAIS (Chen, Crane, Pearson). A steering committee composed of five voting faculty and a committee chair could include all six core members.

Timeline

We propose a three-year probationary period for the BS beginning in AY20-21 to assess student interest and the fit of the program within the strategic directions of the two departments. This period overlaps with the current Geography teach-out period.

AY 2019-2020 – Complete approval process of a revised major and updated courses
– Continue teaching existing majors (34 need to graduate over the next ~4 years)
– Begin recruiting new majors to the degree

AY 2020-2021 – Actively launch a probationary revitalized BS in Geography
– Continue teaching existing majors (<34 need to graduate over the next ~3 years)
– Begin tracking new majors through 1000-levels courses

AY 21-22 & 22-23 – Departmental reviews of the major
– Continue teaching existing majors (<34 need to graduate by ~'22-'23)
– Track new ('20-'21) majors through 2000-3000 courses

AY 2023-2024 – Track the first group of now-graduating majors through 4000 courses
– Graduate first class of students enrolled through the probationary period

Metrics for assessing the proposed plan

By reactivating the major, we expect to increase the number of majors.

- The March 2019 Geography Reorg Proposal listed 53 majors in Fall 2018. However, as of August 23rd, 2019, after the moratorium period on the major, the number of majors had fallen to 34 (and 6 minors).
- Within a 3 year probationary period, we aim to regain a pool of 50-60 majors (~10 advisees per core faculty member).
- This timeline accounts for the need for the faculty to advertise the program and for new freshman and transfer students to "discover" it.

We anticipate attracting students from other majors, including secondary education.

- Historically, students in other science-related disciplines have been unaware of geography upon arriving at UW, but switch to it once they take a geography course or two.
- Within 1-2 years, we would like to see evidence of students switching into the Geography BS.
- We also expect to see evidence that the major is serving the secondary education option.

Increased majors should yield success at populating upper-level GEOG courses.

- If new students enter the major within ~2 years, we expect to see a rise in demand for the 4000-level course in 3 years (by AY22-23).

II. Program Specifics

Learning outcomes

Learning outcomes focus on four key competency areas: societal, scientific, spatial, and transdisciplinary. Students completing the major will be able to

1. Demonstrate knowledge of both the physical and human dimensions of Earth's grand challenges;
2. Implement and understand the methods of both physical and social sciences and how they can complement one another;
3. Evaluate the role of space and place in phenomena across a wide range of scales; and
4. Think critically about interconnections among the physical Earth and culture, economy and politics.

Proposed course requirements

The following course plan for the Major is based on the requirements and stable of courses needed to offer the Geography Minor, especially the core required classes (GEOG 1000, 1010, 1020, and 2150).

As described in the Geography Reorg Plan from Spring 2019: "GEOG 1000; GEOG 1010; GEOG 1020; and GEOG 2150. As subject matter critical to the Geography Minor, the College of Education Social Studies Education degree, and continuing education in geography for the liberal arts, each of the above courses would continue to be delivered every year." Assuming that faculty who teach these courses offer upper-division electives, they would provide offerings suitable for the major.

Flexibility in the electives also exists by incorporating relevant courses from programs like GEOL, INST, SOIL, and GIST beyond GEOG classes taught by the core geography-oriented faculty.

The following provides a comparison of the Minor and proposed Major requirements:

Geography	Minor	Major
Total Credit Hours:	**19**	**41**
Required Course Hours:	**10**	**10**

Current:

- GEOG 1010 Intro to Physical Geography (4)
- GEOG 1020 Intro to Human Geography (3)
- GEOG 2150 Foundations of GIS and Technology (3)

Revision to increase flexibility and include GIST course changes (tentative 2020 instructors listed):

- GEOG 1010 or GEOL 1070 — Intro to Physical Geography (3) - Shuman; Earth: Its Physical Environment - G&G faculty including Shuman
- GEOG 1000 or 1020 — World Regional Geography (3) - Crane; or Intro to Human Geography (3) - Crane
- GIST 1100 or 2100 — Foundations of Spatial Thinking (4) - GIST faculty; or Introduction to GIS (4) - GIST faculty

Electives	**9**	**21**

Minor (Current):

- One 3000+ level course in human, cultural, or economic geography (3)
- One 3000+ level course in physical, environmental, or resource geography (3)
- Any other geography course(s)

Major (Proposed Revision):

Doubling the three elective requirements in the Minor

- Two 3000+ level courses in human, cultural, or economic geography (6)
- Two 3000+ level courses in climatology, biogeography, or other physical geography (6)
- Two 3000+ level courses in transdisciplinary geography (6)

Plus

- One 3000+ level course in GIST (3)

Required Allied USP Courses:	**0**	**10**

Required for revised Major only

At least one of the following courses in international studies (meets COM2)

- INST 2230 Intro to Asian Studies (3, COM2)
- INST 2240 Intro to African Studies (3, COM2)
- INST 2250 Intro to Latin American Studies (3, COM2)
- INST 2280 Intro to European Studies (3, COM2)

At least one of the following science courses (meets PN)

- CHEM 1020 General Chemistry I (4, PN) or CHEM 1000 Introductory Chemistry (4, PN)
- PHYS 1110 General Physics I (4, PN) or PHYS 1050 Concepts of Physics (4, PN)
- LIFE 1010 General Biology (4, PN) or LIFE 1020 Life Science (4, PN)
- GEOL 1100 Physical Geology (4, PN)

At least one of the following statistic courses (meets Q)

- STAT 2050 Fundamentals in Statistics or STAT 2070 Introductory Statistics for the Social Sciences

Current Elective Options:

The following courses in GEOG, GEOL, INST, or GIST to ensure a range of options to students and represent classes currently taught on a regular basis.

2020 offerings by permanent geography-oriented faculty are listed to demonstrate representative availability; other courses in the teaching rotations of the geography-oriented faculty are also identified by faculty names in parentheses. Note that both Chen and Shinker will be away in Spring 2020, and the list is thus a useful gauge of minimum offerings.

Asterix notes courses taught by other faculty as parts of other programs.

- **Societal competencies** (human, cultural, or economic geography)
    - GEOG 3030 Geography & Development (3) (Chen)
    - GEOG 3050 Economic Geography (3) (Chen)
    - GEOG 4013 Political Geography (3) **- Fall, Crane**
    - GEOG 4560 Global Cities (3) (Chen)
    - GEOG 4570 Cultural Geography (3) **- Spring, Crane**
    - INST 4990/5990 & POLS 4710/5710 Topics: Political Ecology (3) **- Spring, Pearson**

- **Scientific competencies** (climatology, biogeography, or other physical geography)
    - GEOG 3550 Natural Hazards & Society (3)(Shinker) or *GEOL 3400 Geologic Hazards (3)
    - GEOG 3450 Weather and Climate (3) - **Fall, Shinker**
    - GEOL 3500 Global Change (4) - **Fall, Shuman**

- *GEOL 3600 Earth and Mineral Resources (3)
- *SOIL 4120 Soil Genesis and Morphology (3)
- GEOG 4440 Advanced Climatology (3) (Shinker)
- GEOG 4460 Biogeography (3) **- Spring, Minckley**
- *GEOL 4880 Earth Surface Processes (3)
- GEOG 4470 Fire Ecology (3) (Minckley)
- GEOG 4880 Advanced Climate Variability (3) (Shinker)
- GEOG 4880 Quaternary Ecology (3) (Minckley)

- Additional BOT and ATSC courses are likely also suitable as needed for replacement

- **Spatial competencies**
  - *GIST 2150 – Introduction to Programming in GIS&T (3)
  - *GIST 2160 – Survey of Remote Sensing Applications (3)
  - * GIST 4410 – UAS Sensors and Platforms (1)
  - *GIST 4430 – UAS Regulations and Safety (1)
  - *GIST 4211 – Advanced Remote Sensing (3)

- **Transdisciplinary competencies**
  - GEOG 3480 Environmental Change (3), Proposed for revision as COM3 - **Fall, Shinker**
  - *GEOL 3650 Energy for Society (3)
  - *INST 3860 World Food, Ag, & Development (3)
  - *GEOG/AMST/ENR/POLS/REWM 4051 Environmental Politics (3)
  - *GEOG/AMST/ENR/POLS/REWM 4052 Federal Land Politics (3)
  - GEOG 4040 Conservation of Natural Resources (3) **- Fall, Minckley**
  - GEOG 4080 Management of Major River Basins (3) **- Spring, Minckley**
  - INST 4445 Drug War Geopolitics in the Americas (3) **- Spring, Pearson**
  - INST 4475 Politics of Natural Resources in Latin America (3) **- Fall, Pearson**
  - *INST 4580 Gender, Global Change, and Development (3)
  - *INST 4455 Energy Security (3)
  - GEOG 4500/5880 American Landscapes (3) **- Fall, Crane**
  - GEOG 4590/5590 Geography of Conflicts (3) **- Fall, Crane**

  - Additional INST courses are likely also suitable

Appendix: Examples of comparable Geography degrees

Many universities provide separate degrees in GIST and GEOG (as well as separate degrees in environmental science, geology, and international studies). Below are a few illustrative examples.

Examples within Geography Departments:

University of Minnesota (within the Department of Geography, Environment, and Society)
https://onestop2.umn.edu/pcas/viewCatalogProgram.do?programID=154

- Similarities include separate majors for Geography and GIST; similar requirements for allied physical sciences

Texas A&M (within the Department of Geography)
https://catalog.tamu.edu/undergraduate/geosciences/geography/#majorstext

- Similarities include separate BS in GIST and Geography; required allied physical science courses; complementary sets of electives in human and physical geography; two required GIST courses.

University of Wisconsin (within the Department of Geography)
https://geography.wisc.edu/academics/undergraduate/

- Similarities include separate majors for Geography and GIST; required selection of courses in both physical and human geography as well as “People–Environment Interaction” and GIST methods

Examples outside of stand-alone Geography Departments:

Montana State (within the Department of Earth Sciences)
http://catalog.montana.edu/undergraduate/letters-science/earth-sciences/geography-option/

- Similarities include separate options for Geography, Geology, and GIST
- Differences include MSU options to focus on Human or Physical geography rather than a requirement to emphasize both and transdisciplinary studies

U. Mass - Amherest (within Department of Geosciences)
https://www.geo.umass.edu/programs/undergraduate

- Similarities include separate degrees for Geography, Geology, Earth Systems, and a multi-departmental Environmental Studies major; differences include six different concentrations within Geography

University of Wyoming

Master of Planning Task Force

Initial Report | October 31, 2019

Task Force Members: ***Jeff Hamerlinck****, Director, Wyoming Geographic Information Science Center (chair);* ***Yi-Ling Chen****, Associate Professor, International Studies, School of Politics, Public Affairs and International Studies;* ***Roger Coupal****, Professor, Agricultural and Applied Economics;* ***Shawn Reese****, CEO, Wyoming Business Council;* ***Robert Schuhmann****, Director, Master of Public Administration Program, School of Politics, Public Affairs and International Studies;* ***Steve Smutko****, Professor, Haub School of Environment and Natural Resources;* ***Derek Teini****, Planning Manager, City of Laramie.*

INTRODUCTION

This document is an initial report of the Master of Planning Task Force convened by UW Provost Kate Miller in April 2019. The task force was created as a result of the recent dissolution of the UW Geography Department, approved by the Board of Trustees on March 28, 2019 and made effective July 1, 2019. Enrollment in the Master of Planning (MP) graduate degree has been suspended since November 2018 when the Office of Academic Affairs released the proposal for reorganization of the Geography Department and its academic programs, which eventually led to closure of that department. With elimination of a standalone administrative home for the MP degree, a need and opportunity arose to assess the possible future of the program.

The task force includes members of the UW faculty as well as professionals representing the community planning and economic development professions in the State.

The charge of the task force is threefold:

1. Investigate the continued viability of the program, including as it is currently delivered and with any possible recommended curricular changes to strengthen the Master of Planning program;
2. Recommend the curricular structure of the program if it is viable; and
3. Evaluate the budget implications of these recommendations.

Process

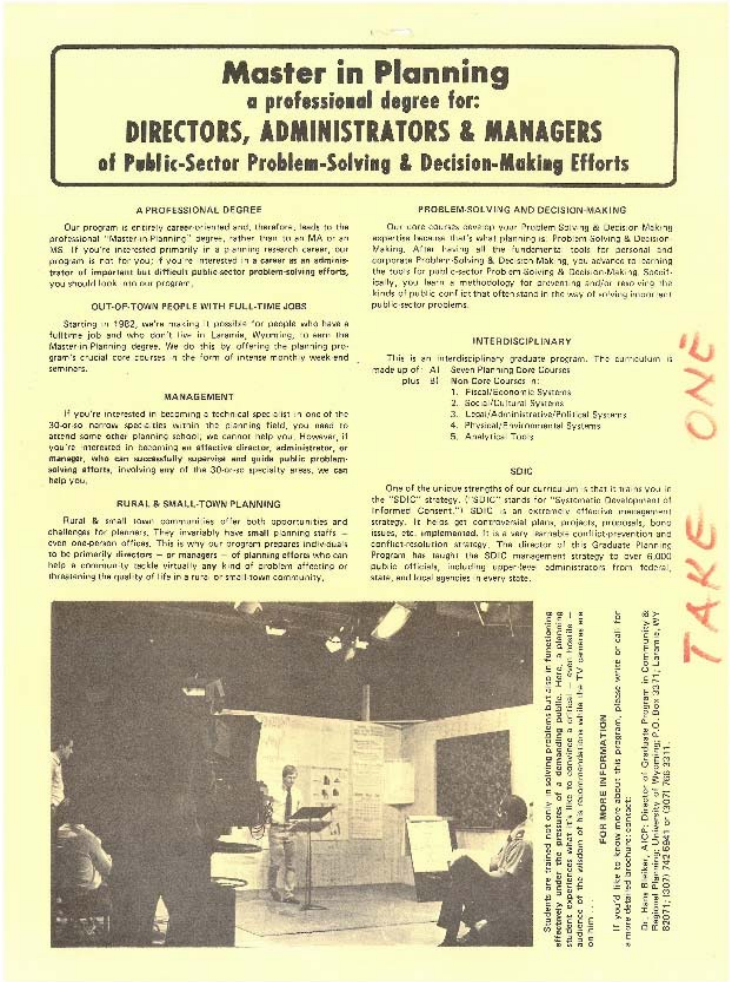
The task force met once before the end of the spring 2019 semester and four times during the fall 2019 semester. The task force conducted a situational analysis of the degree program, including a Strengths-Weaknesses-Opportunities-Challenges (SWOC) assessment. Information accessed by the task force included reports of the Association of Collegiate Schools of Planning (ACSP), Planetizen's online curriculum resources and *Guide to Graduate Urban Planning programs (6th edition)*, and guidelines on program accreditation developed by the Planning Advisory Board (PAB), an independent accreditation

body of planning programs jointly sponsored by ACSP, the American Planning Association (APA) and the American Institute of Certified Planners (AICP). In addition, national- and regional-level information on planning program enrollment, degree completion, and employer demand was attained from the UW's Gray Associates GrayData database subscription, and from the U.S. Bureau of Labor Statistics O*NET online database. Task force deliberations were also informed by input from retired UW Graduate Planning Program Director Emeritus Professor William Gribb, and from participants in both the Western Planners Annual Conference (Santa Fe, NM; September 8-11, 2019) and joint Wyoming Planning Association-Wyoming Geospatial Organization annual conference (Gillette, WY; October 9-11, 2019).

The purpose of this report is to provide a response to the task force charge, including a set of preliminary recommendations regarding the future of the MP degree and recommended next steps for further decision making.

SITUATIONAL ANALYSIS

History of Program



Master in Planning
a professional degree for:
DIRECTORS, ADMINISTRATORS & MANAGERS
of Public-Sector Problem-Solving & Decision-Making Efforts

A PROFESSIONAL DEGREE

Our program is entirely career-oriented and, therefore, leads to the professional "Master in Planning" degree, rather than to an MA or an MS. If you're interested primarily in a planning research career, our program is not for you; if you're interested in a career as an administrator of important but difficult public-sector problem-solving efforts, you should look into our program.

OUT-OF-TOWN PEOPLE WITH FULL-TIME JOBS

Starting in 1982, we're making it possible for people who have a full-time job and who don't live in Laramie, Wyoming, to earn the Master in Planning degree. We do this by offering the planning program's crucial core courses in the form of intense monthly week-end seminars.

MANAGEMENT

If you're interested in becoming a technical specialist in one of the 30-or-so narrow specialties within the planning field, you need to attend some other planning school; we cannot help you. However, if you're interested in becoming an effective director, administrator, or manager, who can successfully supervise and guide public problem-solving efforts, involving any of the 30-or-so specialty areas, we can help you.

RURAL & SMALL-TOWN PLANNING

Rural & small-town communities offer both opportunities and challenges for planners. They invariably have small planning staffs — even one-person offices. This is why our program prepares individuals to be primarily directors — or managers — of planning efforts who can help a community tackle virtually any kind of problem affecting or threatening the quality of life in a rural or small-town community.

PROBLEM-SOLVING AND DECISION-MAKING

Our core courses develop your Problem-Solving & Decision-Making expertise because that's what planning is: Problem-Solving & Decision-Making. After having all the fundamental tools for personal and corporate Problem-Solving & Decision-Making, you advance to learning the tools for public-sector Problem-Solving & Decision-Making. Specifically, you learn a methodology for answering and/or resolving the kinds of public conflict that often stand in the way of solving important public-sector problems.

INTERDISCIPLINARY

This is an interdisciplinary graduate program. The curriculum is made up of: All Seven Planning Core Courses
plus all Non-Core Courses in:
1. Fiscal/Economic Systems
2. Social/Cultural Systems
3. Legal/Administrative/Political Systems
4. Physical/Environmental Systems
5. Analytical Tools

SDIC

One of the unique strengths of our curriculum is that it trains you in the "SDIC" strategy. ("SDIC" stands for "Systematic Development of Informed Consent.") SDIC is an extremely effective management strategy. It helps get controversial plans, projects, proposals, bond issues, etc. implemented. It is a very sensible conflict-prevention and conflict-resolution strategy. The director of this Graduate Planning Program has taught the SDIC management strategy to over 6,000 public officials, including upper-level administrators from federal, state, and local agencies in every state.

Students are trained not only in solving problems but also in forestalling effectively under the pressures of a demanding public. Here, a planning student experiences what it's like to convince a critical — even hostile — audience of the wisdom of his recommendations while the TV cameras are on him . . .

FOR MORE INFORMATION

If you'd like to know more about this program, please write or call for a more detailed brochure/contact:

Dr. Hans Bleiker, AICP, Director of Graduate Program in Community & Regional Planning, University of Wyoming, P.O. Box 3171, Laramie, WY 82071; (307) 742-6841 or (307) 766-3211.

TAKE ONE

Figure One
UW Master in Planning Marketing Flyer, ca. 1981.

The Master of Planning degree was approved by the UW Board of Trustees on April 9, 1976, and has operated continuously since then as a graduate credential offered by the Geography Department in the College of Arts & Sciences (Figure One). Between 1976 and 2018, only two directors have overseen the program: Dr. Hans Bleiker (MIT, 1972) from 1976 to 1987, and Dr. Bill Gribb (Michigan State, 1976) from 1988 to 2018 (upon his retirement). Throughout this time, the program director has also served as the only primary instructor for the program.

Since the 1990s, the program's curricular requirements have essentially remained unchanged. Both Plan A (thesis) and Plan B (non-thesis) options are available. (See Table One for details.) While numbers are incomplete over the entire time period that the degree has been offered, UW's Office of Institutional Analysis reports that there have been 28 M.P. degrees awarded since fall 1998. Of these graduates, nine completed a Plan A thesis (32%), while 19 graduated

under the Plan B option.[1] The most recent MP degree was granted in Fall 2018. With the present enrollment freeze, there is currently one student enrolled in the program with an anticipated graduation date of May 2020.

Many of the graduates of the program have gone on to employment in city and county government in Wyoming, as well as throughout the Rocky Mountain region and beyond, including Indiana, Florida, and Washington. Other graduates have secured employment as planners and economic development specialists in state and federal government (including land use and recreation planning in the Bureau of Land Management and the U.S. Forest Service). Over time, there have also been a number of students who have left the program after completing their coursework (but not their thesis or Plan B papers) due to employment opportunities in the planning field or related occupations.

Table One
Current Master of Planning degree requirements
40 credits

Core Courses (12 hours):	• GEOG 4310: Foundations of Sustainable Planning (3 cr.) • POLS 5510: Public Policy and Program Management (3 cr.) • GEOG 5325: Legal Aspects of Planning (3 cr.) • GEOG 5330: Land Use Planning (3 cr.)
Analysis Courses (3 courses – 9 hours):	• One course in statistics (3 hours) • Two courses in techniques (6 hours)
Elective Courses:	• 15 hours of elective course work in planning areas: land use, natural resource, or small town and rural area approved by faculty advisor.
Plan A / Plan B Options:	• Students completing the Plan A option are required to complete a minimum of four hours of thesis research. • Students completing the Plan B option are required to complete a minimum of four hours of geographic research writing and two papers from the areas of planning: land use, natural resource, or small town and rural area.

Source: *University of Wyoming 2018-2019 University Catalog.*

SWOC Assessment

Figure Two (next page) is a summary of the MP Program's representative recent strengths, weaknesses, opportunities and challenges (sometimes called 'threats'), as collectively identified by the task force members. In this case, strengths are characteristics of the MP Program that are advantageous in some way, while weaknesses represent characteristics that place the program at some sort of disadvantage. Opportunities may be viewed as elements in the program's surrounding environment - either at UW or more broadly – that the program could exploit to its advantage. Challenges are defined as elements in that same surrounding environment that could be impediments to the program's ultimate success.

Despite minimal resources and low enrollment, the graduates produced by the program have been very successful in their careers. While faculty retirements and the closure of its home department are problematic, great opportunity exists with a certain level of investment, including the benefits of

[1] Source: UW Office of Institutional Analysis and UW Libraries/ProQuest Dissertations & Theses Database.

partnering with strong programs such as the Master of Public Administration (MPA) program and the Haub School of Environment and Natural Resources, as well as the newly anticipated graduate credential in Geospatial Information Science and Technology (GIST). The fact that the program has never aggressively marketed a small town / rural specialty makes establishment of such a niche fertile ground for growth, as does the prospect of developing new distance delivery modes to increase enrollment not only from parts of the state outside of Laramie but beyond the borders of Wyoming as well.

Figure Two
MP Planning Program SWOC Summary

Student Demand and Employment Trends

Urban Planning as Profession and Academic Discipline. Urban (aka community) planning emerged as an organized profession in the early 20th century. The American Institute of Planners and the American Society of Planning Officials were formed in the 1930s, merging to become the American Planning Association (APA) in 1978. The American Institute of Certified Planners (AICP) is the APA's professional institute. AICP certifies professionals in the United States in the field of urban planning and assists planners in the areas of ethics, professional development, planning education, and the standards of planning practice. To become certified, a planner must have a specified combination of relevant education and professional experience, must pass an examination that tests skills and knowledge, must pay an annual fee, and must be a member of the APA in good standing. AICP members are required to complete 32 hours of continuing education units every two years in order to maintain their credential, including a mandatory 1.5 CEUs in both law and ethics.[2]

The Association of Collegiate Schools of Planning (ACSP) was founded in 1969, leading to the institutionalization of a planning academy independent of, but still inherently tied to, professional planning practice. Since 1984, accreditation of academic planning programs has been governed by the Planning Accreditation Board (PAB), a non-profit educational accreditation organization, jointly sponsored by APA and ACSP. As of 2019, PAB accredits 75 master's and 16 bachelor's programs at 79 North American universities.

Planning Program Enrollment Trends. In a 2016 survey of PAB-accredited master's-level planning programs, 64% of responding institutions experienced stable or increased growth in current student enrollment between 2011 and 2015.[3] According to *Gray Associates*[4], 94 institutions granted 2,042 master's degrees in "City/Urban, Community and Regional Planning" (accredited and non-accredited) in Academic Year 2017-2018, with 22 average completions per institution. In a related directory of planning graduate programs, only 9 of 80 responding institutions identified 'small town/rural planning' as an area of specialization[5], something UW could capitalize on when redesigning its program. (See next section.)

Regionally, only one other institution within a 360-mile radius of UW offers a master's degree in planning (the University of Colorado-Denver). CU's program is a combined MA/PhD program emphasizing urban design and land use-transportation interactions, and currently does not offer courses via distance delivery. Consequently, relative to regional competitors, UW achieves a relatively high *GrayData* score, strongly influenced by this positive *competitive intensity* metric.[6]

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[2] As of October 2019, 15 AICP members list Wyoming as their home state. The most recent University of Wyoming M.P. degree graduate to sit for the AICP exam did so in 2015 and successfully passed on their first attempt. (Source: Eric Roach, AICP Customer Service Liaison. Pers. Communication, 22 October 2019.)

[3] APA, AICP, ACSP, and PAB Joint Task Force on Enrollment Report. Available at: https://cdn.ymaws.com/www.acsp.org/resource/collection/954F9DA0-9F8A-497C-B651-ECFDD57626CE/Planning%20Enrollment%20Trends%202015.pdf. Last accessed: 20 October 2019.

[4] See Appendix A, Figure A-1 for details.

[5] *Planetizen Guide to Graduate Urban Planning Programs*, 6th edition. Los Angeles: Planetizen, Inc. p. 73. Schools identifying the 'rural/small town' specialization included: Auburn, Cornell, Eastern Washington, Iowa State, U. of Arizona, U. of Charleston, U. of Puerto Rico, U. of Southern Maine, and U. of Utah.

[6] See Appendix A, Figure A-2 for details.

Employment Trends. Gray Associates GrayData analysis reports 9,925 job postings nationally for the 12-month period from July 2018 through June 2019 with some connection to the urban planning field.[7] The U.S. Department of Labor's Bureau of Labor Statistics (BLS) states that employment of urban and regional planners (SOC Code 19-3051) is projected to grow 11 percent from 2018 to 2028 (much faster than the anticipated 5% average for all BLS-tracked occupations), with the number of permanent jobs increasing by 4,200 over that ten-year time period – from 39,100 in 2018 to 43,300 in 2028. The BLS notes demographic, transportation, and environmental changes as key drivers of employment growth for urban and regional planners and identifies the Master's degree credential in that field as the requisite entry-level education for the majority of such opportunities.[8] In 2018, the median salary for practicing planners with a master's degree in the field was $78,000 ($58,000 for those with five years or less job experience).[9]

ASSESSMENT AND RECOMMENDATIONS

Need and Current Viability

The task force reached consensus that a need exists in Wyoming and the U.S. Mountain West for graduates of a master's degree in community planning who can apply the associated knowledge, skills and abilities to problems of growth pressure and economic instability as well as sustainable natural resource management in the region's rapidly changing multi-jurisdictional urban-rural environments. This demand exists not only in city and county local governments, but also in state and federal government, as well as the NGO and private employment sectors.[10]

Continuation of the Master of Planning graduate degree program at UW will provide unique ***career value*** not only to students enrolled in the program, but also to students enrolled in other graduate programs (e.g., Agricultural & Applied Economics, Environment & Natural Resources, Public Administration, Rural Law Center) seeking to add breadth to their primary courses of study and diversity of faculty strength to their theses committees. The program will provide ***value to UW*** by supporting the university's land grant mission and external engagement goals, and in possible contributions to policy and 'action research' oriented aspects of UW's emerging Research Grand Challenges priorities. The program will provide ***value to the state*** through workforce development supporting needs for experts trained in community planning (land use, transportation, housing, natural resources) and economic development. Finally, the program will provide ***value to the planning profession and academic discipline*** in the way it can uniquely address pedagogy, research and employer demands in predominantly rural, multijurisdictional environments typical of the region.

[7] See Appendix A, Figure A-1 for details.
[8] U.S. Bureau of Labor Statistics Occupational Outlook Handbook (entry on Urban and Regional Planners). Available at: https://www.bls.gov/ooh/life-physical-and-social-science/urban-and-regional-planners.htm#tab-1. Last accessed: 20 October 2019.
[9] APA/AICP 2018 Planners Salary Survey. Available at: https://www.planning.org/salary/ Last accessed: 30 October 2019. (Requires APA membership to access.)
[10] See Appendix B for letter of support from Wyoming Planners Association.

Despite a recognized need, the task force members are all in agreement that, without new resources (including faculty), the continuation of UW's MP degree is not viable. However, if resources can be secured – and the program is deemed to be an institutional priority, the task force believes that the program can be both grown and sustained with investment in curriculum refinement, new modes of delivery, and targeted marketing.

Re-Envisioning UW's MP Program

This section first presents some foundational ideas upon which a re-envisioned MP degree program should be built, followed by an outline of critical curricular components and an initial determination of the resources necessary to support it. It concludes with an evaluation of possible host units for the program.

Foundational Characteristics. The task force identifies the following foundational characteristics in re-envisioning UW's Master of Planning degree:

- **Specific focus on rural and community planning and economic/regional development…** addressing multi-jurisdictional settings involving planning issues of variable geographic scale and unique issues associated with the U.S. Mountain West;
- **Recognized professional degree…** as specified by the American Planning Association and defined by UW's Office of Graduate Education;
- **Interdisciplinary in scope…** recognizing both the multi-faceted nature of the planning profession and breadth of education it requires, and capitalize on opportunities to leverage partnerships with affinity programs across the UW campus.

Curriculum. A revised MP curriculum should be reflective of national standards for high quality programs, *and* incorporate the following content that teaches students the essential knowledge, skills, and values central to the planning profession:

- **General Planning Knowledge:** The comprehension, representation, and use of ideas and information in the planning field, including appropriate perspectives from history, social science, and design and other allied fields.
    - Purpose and Meaning of Planning: why planning is undertaken by communities, cities, regions, and nations, and the impact planning is expected to have.
    - Planning Theory: behaviors and structures available to bring about sound planning outcomes.
    - Planning Law: legal and institutional contexts within which planning occurs.
    - Human Settlements and History of Planning: growth and development of places over time and across space.
    - The Future: relationships between past, present, and future in planning domains, as well as the potential for methods of design, analysis, and intervention to influence the future.
    - Global Dimensions of Planning: interactions, flows of people and materials, cultures, and differing approaches to planning across world regions.
- **Planning Skills:** The use and application of knowledge to perform specific tasks required in the practice of planning.

    - Research: tools for assembling and analyzing ideas and information from prior practice and scholarship, and from primary and secondary sources.
    - Written, Oral and Graphic Communication: ability to prepare clear, accurate and compelling text, graphics and maps for use in documents and presentations.
    - Quantitative and Qualitative Methods: data collection, analysis and modeling tools for forecasting, policy analysis, and design of projects and plans.
    - Plan Creation and Implementation: integrative tools useful for sound plan formulation, adoption, and implementation and enforcement.
    - Planning Process Methods: tools for stakeholder involvement, community engagement, and working with diverse communities.
    - Leadership: tools for attention, formation, strategic decision-making, team building, and organizational/community motivation.
- **Values and Ethics:** Values inform ethical and normative principles used to guide planning in a democratic society. The Program shall incorporate values and ethics into required courses of the curriculum, including:
    - Professional Ethics and Responsibility: key issues of planning ethics and related questions of the ethics of public decision-making, research, and client representation (including the provisions of the AICP Code of Ethics and Professional Conduct, and APA's Ethical Principles in Planning).
    - Equity, Diversity and Social Justice: key issues in equity, diversity, and social justice that emphasize planners' role in expanding choice and opportunity for all persons, plan for the needs of the disadvantaged, reduce inequities through critical examination of past and current systems and disparities, and promote racial and economic integration.
    - Governance and Participation: the roles of officials, stakeholders, and community members in planned change.
    - Sustainability and Environmental Quality: environmental, economic, and social/political factors that contribute to sustainable communities, and the creation of sustainable futures.
    - Growth and Development: economic, infrastructure, social, and cultural factors in urban and regional growth and change.
    - Health and Built Environment: planning's implications on individual and community health in the places where people live, work, play and learn.[11]

Other, more specific recommendations for modifying the existing curriculum include the following:

- **Consider reducing the number of required credits from 40 to 36 or 32, in consultation with outside experts from ACSP and PAB;**
- **Enforce the introductory planning course (currently GEOG 5310) as a prerequisite requirement for all other courses in program,** helping establish stronger graduate class cohorts and improving focus and depth of next courses in the core sequence.
    - Subsequently, eliminate dual listing of the introductory course at the 4xxx-level (GEOG 4310), and consider adding a 3xxx-level *Introduction to Planning* course (and possibly a

[11] Source: PAB Accreditation Standards and Criteria, 2017. Available at: https://www.planningaccreditationboard.org/index.php?s=file_download&id=500. Last accessed: 20 October 2019.

planning design course) as undergraduate recruitment instrument(s) that would also serve as electives for other undergraduate programs such as ENR, energy systems science and civil engineering;

- **Explore the use of third-party, online planning curriculum resources such as *Planetizen Courses*…**[12] to augment or alternatively fulfill certain program course requirements;
- **Eliminate the Plan A thesis option** and replace with required internship/practicum experience, identified as a common core requirement in many of the other master's programs reviewed by the task force.

Finally, as curricular redesigns occur, the task force recommends exploring how specific core courses and electives complement and benefit from other graduate programs on campus, for example the Master of Public Administration, the Haub School's graduate ENR programs, International Studies, Agricultural Economics, and Civil & Architectural Engineering.

Resources Requirements

Faculty. The task force recommends the hiring of two dedicated faculty lines in order for the MP program to maintain a level of high quality relative to the new curricular standards the task force proposes above. Two faculty lines would ensure that core courses not be taught by adjuncts, and would provide the program with a more diverse set of intellectual viewpoints than in the past. Specifically, the first hire should be at the Associate or Full Professor level. In addition to teaching, this person would assume overall administration of the program. The second hire could be added a year or two after the initial hire, provided bridging resources were available for adjunct instructors. Future hiring of Adjuncts and/or Professors of Practice would provide opportunity to significantly enhance the program's breadth and depth in the future. Some of this could be accomplished through MOUs with other programs on campus.

Other Required Resources. In addition to new faculty resources, a program budget will need to include funds estimated at $25,000 annually for: (a) program marketing; (b) internship program support; and (c) membership and travel costs associated with participation in state, regional, and national planning education organizations. Consideration should also be given to costs of new administrative support (managing inquiries, admissions, communications, etc.) for the program's host unit. (See next section.)

Identifying a Program Host

Given the recent closure of the UW Geography Department, the MP degree program will require a new administrative host unit if it is to continue. The task force identified and preliminarily evaluated four possible options, each of which were represented by at least one individual in the task force membership. Table Two (next page) summarizes some potential opportunities and challenges associated with each unit considered: Agricultural & Applied Economics Department; Haub School of Environment & Natural Resources; School of Politics, Public Affairs, and International Studies; and the Wyoming Geographic Information Science Center.

The Task force also briefly considered the Department of Civil and Architectural Engineering (CAE) in the College of Engineering and Applied Sciences, but concluded that the necessary tie to the architecture-

[12] Online at: https://courses.planetizen.com/ . Last accessed: 8 October 2019.

oriented elements of that unit would be difficult to develop due to that department's stronger focus on civil engineering and construction management, and the number of already established urban planning programs across the U.S. that explicitly emphasize urban design and architecture.

Of the four options considered, the task force objectively concluded that the College of Arts & Sciences' School of Politics, Public Affairs and International Studies would be the best potential host unit for the MP degree program, *based on current task member knowledge and understanding of the current operations of the various units*. The opportunity to benefit in co-locating with the Master of Public Administration program was particularly attractive as well as the receptiveness of the SPPAIS faculty to accept the program.

Table Two
Evaluation of Possible MP Degree Hosting Unit

UNIT (in alpha order)	**OPPORTUNITIES**	**CHALLENGES**	**COMMENTS**
Agricultural & Applied Economics Department	Connect to unit's expertise in community development, and minor in Applied Economics.	Being an appropriate T&P home for non-economist planning faculty.	Currently minimal activity in community development area; unit housed in College of Agriculture & Natural Resources.
Haub School of Environment & Natural Resources	Strong expertise supporting environmental and sustainability aspects of planning; links to Ruckelshaus Institute's Open Spaces Initiative and Collaborative Solutions Program.	School currently experiencing significant growth and leadership transition.	Open to partnering in some way with the program; an undergraduate introductory planning course could fit well in the ESS and ENR programs.
School of Politics, Public Affairs, and International Studies	Linkages to MPA Program; opportunities for international students.	Could strain available administrative support resources; high competition for new positions within College of Arts & Sciences.	MP would be a discrete program within SPPAIS and not simply a track within MPA; faculty are receptive to hosting.
Wyoming Geographic Information Science Center	Connect to new Geospatial Information Science & Technology program; develop unique GIST-based 'geodesign' multi-scale physical planning emphasis[13].	Center already standing up several new credentials in next year.	Geospatial technology and 'spatial planning' (*geodesign*) would become a part of the program's unique niche; could help rebuild graduate-level education in the geographical sciences.

[13] McElvaney, Shannon, and David Rouse. 2015. "Geodesign and the Future of Planning." PAS Memo, March/April. Available at www.planning.org/pas/memo/2015/mar/ .

SUMMARY AND NEXT STEPS

In summary, the task force has concluded that, if supported with resources and deemed as an institutional priority, the MP graduate program can be both grown and sustained through investment in curriculum refinement, new modes of delivery, targeted marketing, and commitment to a focused specialization associated with rural and community planning and economic/regional development. The task force identified a need for two FTE faculty lines plus an estimated $25,000 annual support budget (assuming some level of administrative staff support from a hosting unit).

Based on current knowledge and understanding of the task force members, the School of Politics, Public Affairs and International Studies in the College of Arts & Sciences was identified as the best potential host unit to support the standalone MP program at this time. That said, it's recommended that the appropriateness of SPPAIS and the other three units considered should be further vetted by the UW administration and include input from the deans/directors and faculty of those various units before a final decision is made.

In terms of next steps, if the task force recommendations are deemed feasible, a final determination of host unit location should be made, informed by further dialogue on the desired areas of emphasis for the program (e.g., policy focus v. physical planning focus) and accompanied by a more detailed analysis of course redesign requirements and fiscal requirements, and consideration of additional program components such as development of a graduate certificate and a 'Citizen Planner' public engagement program.[14] The current task force could be engaged to participate in that work, or a new task force could be constituted with a narrower membership reflecting the possible paring down of host unit possibilities. (One additional currently ongoing activity that will continue through the spring 2020 semester is a joint faculty-student evaluation of the previously mentioned Planetizen Courses for their suitability in meeting MP degree program elective requirements.)

Finally, to maintain some momentum and minimize uncertainty, it is recommended that decisions regarding a path forward - and whether to proceed - should be finalized by mid-semester spring 2020, in order to identify FY22 CPM requests with a goal of re-opening program applications in spring 2021 for a launch of the revamped curriculum with the first new faculty hire in place in fall 2021.

Appendices on following pages.

[14] For an example of a Citizen Planner program in the State of Michigan, see: https://www.canr.msu.edu/michigan_citizen_planner/ .

APPENDIX A – GRAY ASSOCIATES GRAYDATA DATABASE INFORMATION

Figure A-1: GrayData Program Scorecard for City/Urban, Community and Regional Planning
Award level: Masters | Market: National

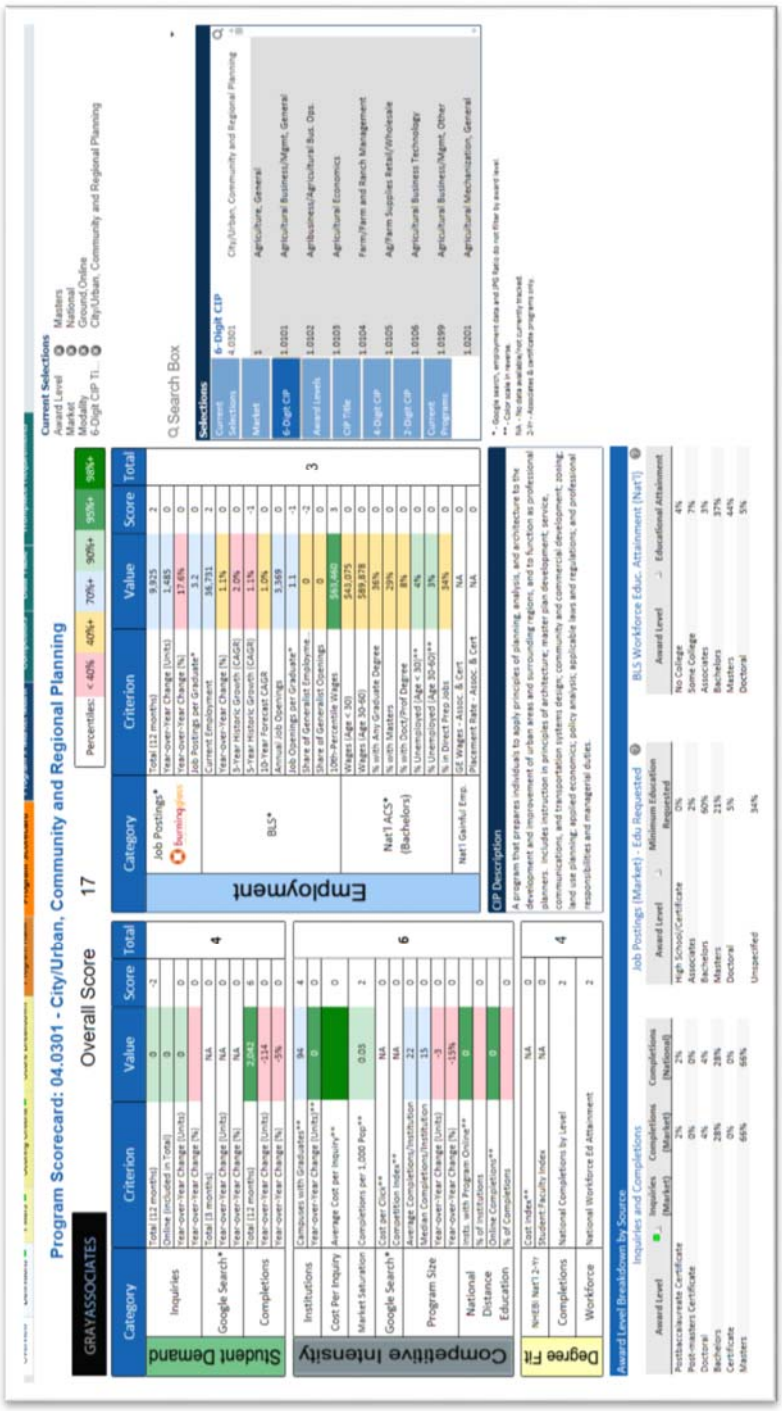
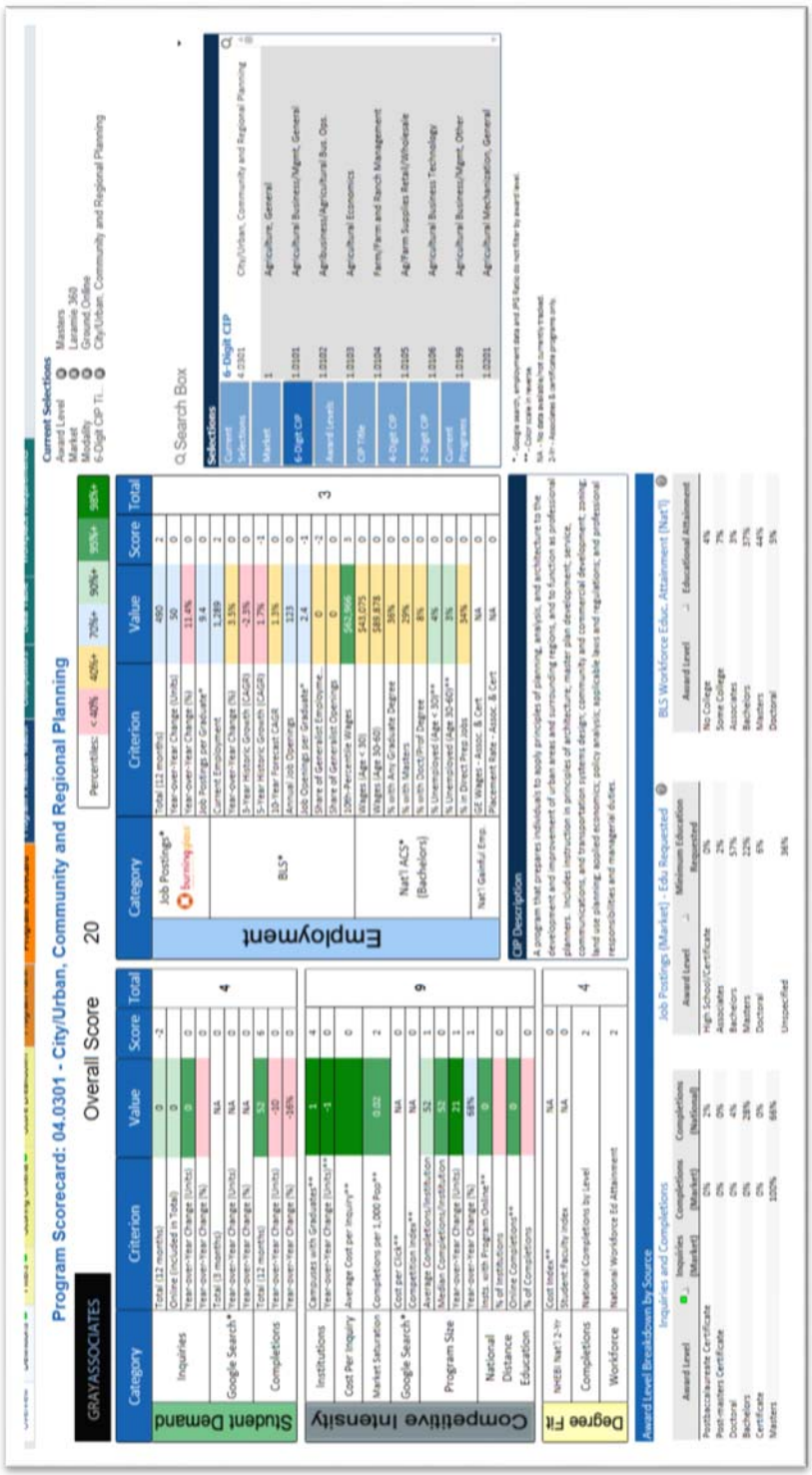


Figure A-2: GrayData Program Scorecard for City/Urban, Community and Regional Planning
Award level: Masters | Market: Laramie 360



APPENDIX B - WYOMING PLANNERS ASSOCIATION LETTER OF SUPPORT

Wyoming Planning Association

Planning for a Better Wyoming

October 23, 2019

Jeff Hamerlinck, PhD., AICP, GISP
Director
Wyoming Geographic Information Science Center
University of Wyoming

RE: Letter of Support for continuation of the MP Graduate Degree

The Wyoming Planning Association (WYOPASS) is comprised of nearly 200 county and city land use planners, planning commissioners, and others directly involved in land use and transportation planning. Created in 1971, we as an organization, are involved in planning activities which affect the physical, economic, and social well-being of Wyoming residents. The University's Master of Planning graduate degree program plays an important role in supporting WYOPASS, which was formed for the purposes of advocating planning programs to preserve the quality of life in Wyoming, facilitate coordination and cooperation between planners, and to provide continuing education opportunities.

Because WYOPASS plays one of the largest organizational roles in the State of Wyoming related to planning, and because of our charge, we as an organization and on behalf of the WYOPASS membership are providing this letter of support encouraging the University of Wyoming to continue the Master's in Planning Program. WYOPASS believes continuation of the program will:

- Provide a training ground for professional planners to learn and gain knowledge in the planning field as Wyoming and the Rocky Mountain region continues to grow.
- UW's Master of Planning degree has a long history of successfully meeting Wyoming's workforce needs in this field, with the majority of the state's city and county planners being graduates of the program.
- An opportunity exists to strengthen the current program with an updated curriculum, and by enhancing current offerings with continuing education opportunities for planners already in the workforce
- The potential benefit of focusing the program's emphasis on issues facing small towns and rural planning will aid Wyoming and WYOPASS in the future.
- The potential for the program to be remotely accessible through distance delivery will be a benefit to planners or those working in the planning field without a degree who may want to achieve that level of education.
- WYOPASS can provide a network for student practicum and internship opportunities, as well as connections to the Western Planner professional community.

Although these are just some of the reasons why WYOPASS and its membership consider the continuation of the Master's in Planning program critical for the future of our State and for the continuation of good planning in the region. WYOPASS believes the program is important and should be continued at the University of Wyoming.

If you have any questions or feel WYOPASS could help in any other way, please let us know.

Respectfully Submitted,
The WYOPASS Board of Directors

ACADEMIC AND STUDENT AFFAIRS

COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: **Bachelor of Applied Science**, Miller

☒ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
☐ Yes
☒ No

FOR FULL BOARD CONSIDERATION:
☐ Yes Proposed meeting date May 2020
[Note: If yes, materials will also be included in the full UW Board of Trustee report.]
☒ No

☒ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY:
On January 22, 2020, the University of Wyoming Provost's Office and University of Wyoming Casper campus proposed to move the academic administration of the Bachelor of Applied Science (BAS) undergraduate degree program, currently located administratively in the College of Agriculture and Applied Sciences, fully to the UW-Casper campus branch located in Casper, Wyoming. This proposed change was based on analysis of the location of the majority of program interest, current student location data, and current advising administration out of Casper. The proposal has been reviewed by the Faculty Senate, Staff Senate, and ASUW. Feedback was solicited from currently-enrolled students and constituents statewide via a survey mechanism that accompanied the proposal. No objections have been raised. UW Regulation 2-13 requires that the President recommend to the Board the final action for discontinued programs within 120 days of release of a proposal; for this proposal, the recommendation is due to you by May 22, 2020. The committee will receive an update the proposal and be asked to bring the proposal forward to the Board for approval of recommendations.

WHY THIS ITEM IS BEFORE THE COMMITTEE:
University Regulations require that the President makes a recommendation to the Board on proposals for academic program reorganization, consolidation, reduction, or discontinuance.

ACTION REQUIRED AT THIS COMMITTEE MEETING:
Approval of the proposal to move the academic administrative home of the BAS to UW-Casper.

PROPOSED MOTION:
"I move the Academic and Student Affairs Committee approves the proposal for moving the academic administration of the Bachelor of Applied Science degree to UW-Casper, and that we bring this to the full Board for approval."

Proposal to Move the Administrative Home of the Bachelor of Applied Science Degree from the College of Agriculture and Applied Sciences to the University of Wyoming at Casper

Under University Regulation 2-13, the Division of Academic Affairs presents here a proposal to move the administrative home of the Bachelor of Applied Science in Organizational Leadership (BAS) to the University of Wyoming at Casper. Since the interim director of the BAS is already at UW-Casper, and much of the academic advising also comes out of the University's branch campus, there will be no personnel consequences associated with this decision.

There are several reasons for making this recommendation:

- The BAS not only fits well with UW's mission as a land-grant university committed to outreach, it fits with UW-Casper's mission to deliver degree programs to site-bound students who are often non-traditional learners. UW-Casper has focused on students of this type since its creation in 1976.
- The directing and advising have been coming out of the UW-Casper office for several years and that arrangement has worked as evidenced by the growth in enrollments over the last four years. (See Table 1.) Given the similarity in profile between the students enrolled in the BAS program and those enrolled at UW-Casper more generally, it is unsurprising that the

directing and advising have worked in ways advantageous to BAS majors, such as the opportunity for in person advising.

- Since the BAS is designed to stack on to a two year AAS degree (and other applied associates that do not meet the Common Core, such as the AFA), it is advantageous to have the administrative home at a branch campus that is co-located with a community college. This arrangement will help to facilitate positive administrative and faculty relations between a leading AAS graduate producing institution and the BAS leadership team, as well as promoting student recruitment into the program. It is also worth noting that UW-Casper is centrally located in the state, and thus often serves as an in-person hub for advising, registration, and financial aid assistance.
- Locating the program outside of the main campus would help show the University's commitment to serving the needs of the state.
- UW-Casper personnel will be able to explore new options for the degree. For instance, there may be a sufficient population of BAS students located in Natrona County that an on-site, in person course could be added as an option every semester in addition to the current on-line delivery. This could help to build relationships among students, or even a feeling that they are members of a cohort.

- UW-Casper could work with its academic partners on the development of new options within the BAS, including in ways that draw on areas of strength at the branch campus. For instance, the CTE Teacher Education Task Force is working to re-envision the Technical Education degree at UW-Casper. A possible, even likely, outcome of this process is that Technical Education will be reconfigured as a BAS option, since it would improve transferability of credit from AAS programs. UW-Casper will also work to explore other options, such as hospitality management.
- The relocation of the program would not cause discontinuity; it would be a recognition of the large role that UW-Casper has played in the program for several years, and the College of Agriculture and Natural Resources would continue to play a significant role, especially in teaching and curricular matters.

In accordance with University Regulation 2-13, this proposal is subject to review and comment by students currently enrolled in the academic program, the academic degree program's faculty and staff, the academic degree program's current college, and the Associate Vice Provost for Undergraduate Education. After reviewing submitted comments and making any necessary revisions, the Provost will submit the revised proposal, including a recommendation and supporting materials, to the Faculty Senate, ASUW Senate, Staff Senate, and the

AA Deans and Directors for review and comment. The Provost will then review all submitted comments and provide a final proposal and recommendation to the President. As required by University Regulation 2-13, the President shall make a final recommendation to the Board of Trustees within a maximum period of 120 days from the date of release of this document.

Background:

The BAS degree was initially created by faculty in the College of Agriculture and Natural Resources in 2007 in response to requests from several constituencies that the University works with, including the Wyoming Community College Commission. The goal was the creation of a program that could work well for students who had initially received an AAS two year degree and now wanted a bachelor's degree in order to expand their knowledge, skills, and credentials, often while continuing to work in their chosen fields. When the degree program was initially put together at UW, the College of Agriculture and Natural Resources agreed to serve as its academic home. An inaugural launch of the program occurred in October of that year at UW-Casper and was broadcast statewide.

The BAS program has grown and has, as of the fall 2019 term, 134 declared majors. Advising for BAS students has long been located at UW-Casper. The students in the program fit the general pattern of other students at the branch

campus: often non-traditional, many of them working full-time, and transferring in credit from one or more community colleges. In 2015, the senior academic advisor (who also holds credentials to serve as faculty) became the interim director of the program, due to the retirement of the previous director, who served on the College of Agriculture and Natural Resources faculty. The advising and directorship have remained at the branch campus since.

Recommendation: relocate the administrative home of the BAS degree program to the University of Wyoming at Casper.

TABLE I: BAS ENROLLMENTS AND DEGREES AWARDED

Bachelor of Applied Science in Organizational Leadership

Duplicated Headcounts	
Fall 2007	4
Fall 2008	19
Fall 2009	19
Fall 2010	31
Fall 2011	37
Fall 2012	38
Fall 2013	68
Fall 2014	73
Fall 2015	73
Fall 2016	89
Fall 2017	125
Fall 2018	132
Fall 2019	134

Degrees Awarded	
2007-08	0
2008-09	1
2009-10	3
2010-11	3
2011-12	11
2012-13	8
2013-14	14
2014-15	16
2015-16	14
2016-17	25
2017-18	34
2018-19	40

Appendix I: the BAS Curricular Structure and Requirements

Name_____ W#_____

Date_____

BACHELOR OF APPLIED SCIENCE CHECK LIST - Organizational Leadership

CAREER/AAS SPECIALTY component: 40-60 credits

Degree received_____ Awarding

institution_____

No. major hours (min. 40)_____

PROFESSIONAL CONCENTRATION component: 36-40 credits

1. Discovering and Utilizing Ideas and Information (3 credits)

AGRI 3000 Discovering/Utilizing Ideas and Information

(Required Course) Grade:_____ Completion date:_____

2. Communicating in Writing and Speaking (2 courses, 6 credits)

COJO 3010 Business and Professional Communication Grade:_____ Completion date:_____

COJO 3190 Cross-Cultural Communication Grade:_____ Completion date:_____

ENGL 4010 Technical Writing in the Professions Grade:_____ Completion date:_____
AGRI 4600 Developing Organizational Leadership (**Required**) Grade:_____ Completion date:_____
3. Analysis and Problem Solving (1-2 courses, 3-6 credits)
AGRI 4350 Problem Solving in Organizational Settings (**Required**)
Grade:_____ Completion date:_____
ENR 4500 Risk Analysis Grade:_____ Completion date:_____
FCSC 3110 Personal Finance Grade:_____ Completion date:_____
4. Organizational Leadership (**4 courses from one Option**, 12 credits): Students must choose Option A **or** Option B to complete this section of their requirements. Courses must be taken only from the option chosen. Courses from the other option may be taken as career electives with prior approval of the program adviser.
Option A: This area of emphasis guides students through an examination of how managers operate effectively with stakeholders and employees in community leadership and non-profit settings.
AGEC 4660 Community & Economic Develop. Grade:_____ Completion date:_____
AGEC 3750 Natural Resource Economics Grade:_____ Completion date:_____
AGEC 4720 Water Resource Economics Grade:_____ Completion date:_____
CHST 4650 Women, Gender & Migration Grade:_____ Completion date:_____
FCSC 4117 Community Leadership: Working with
Services & Systems (**Required for Option A**) Grade:_____ Completion date:_____
FCSC 4985 Seminar: Dev. In Community Leadership Grade:_____ Completion date: _____
POLS 4420 Seminar in Public Administration Grade:_____ Completion date:_____
POLS 4710 Introduction to the Non-Profit Sector Grade:_____ Completion date:_____
POLS 4710 Non-Profit Management & Leadership Grade:_____ Completion date:_____
POLS 4710 American Political Issues Grade:_____ Completion date:_____
Option B: This area of emphasis guides students through an examination of how managers create value by understanding and developing employee and customer relationships. We ***strongly suggest*** that students complete ACCT 1010 and ECON 1010, both of which are available from, and articulated with, the community colleges throughout Wyoming before taking these courses. The area of emphasis consists of the following additional courses:
MGT 3110 Business Ethics Grade:_____ Completion date:_____
MGT 3210 Management & Organizations Grade:_____ Completion date:_____
MKT 3210 Introduction to Marketing Grade:_____ Completion date:_____
MGT 3410 Human Resource Management Grade:_____ Completion date:_____
NOTE: Students with this option may not take more than 30 hours (total) in business and must obtain a “C” or better in each of the courses listed above in order to advance to the next course.

5. Contemporary Society (2 courses, 6 credits)
AIST 3000 Plains Culture & History Grade:_____ Completion date:_____
COJO 3160 Theory of Language and Society Grade:_____ Completion date:_____
CRMJ 3200 Ethics in Administration of Justice Grade:_____ Completion date:_____
CRMJ 3500 Drugs and the Criminal Justice System Grade:_____ Completion date:_____
CRMJ/CHST 4860 Social Inequality, Crime, Criminal
Justice and the Law Grade:_____ Completion date:_____
ENR 4890 Special Topics Grade:_____ Completion date:_____

HIST 4340 Social History of American Women Grade:_____ Completion date:_____

HIST 4490 Modern America, 1960-present Grade:_____ Completion date:_____

HIST 4545 Multicultural West Grade:_____ Completion date:_____

POLS 3100 Politics and Judicial Process Grade:_____ Completion date:_____

POLS 3600 American Political Thought Grade:_____ Completion date:_____

POLS 4051 Environmental Politics Grade:_____ Completion date:_____

SOC 3150 Collective Behavior & Social Movement Grade:_____ Completion date:_____

SOC 4050 Social Inequality Grade:_____ Completion date:_____

SOC 4370 Global Political Economy Grade:_____ Completion date:_____

6. Career Electives (9 credits). Students must obtain prior approval by the program adviser for any courses in the career electives area. Students must write a two-paragraph justification for each course proposed explaining how it will meet their career objectives and increase their skills in their chosen profession.

Course:_____ Grade:_____ Completion date:_____

Course:_____ Grade:_____ Completion date:_____

Course:_____ Grade:_____ Completion date:_____

AGRI 4960 BAS Internship is available for 6 credit hours and will fit this category but is not required. The course is done by contract basis.

UNIVERSITY STUDIES requirements: 30 credits

First Year Seminar (3)_____ Q: Basic Math (3)_____

COM1::Communication (3) COM2:Communication 2* (3)_____

COM3: Communication 3* (3)_____ V: US/WY Constitution: (3)_____

PN: Science: (3)_____ PN: Science (3)_____

HC: Human Culture (3)_____ HC: Human Culture (3)_____

UPPER DIVISION requirement (3000 level or above): 42 hours (30 of which must be earned from UW). Electives may be taken at the upper division level in addition to courses required for the degree areas to reach the required 42 hours of upper division credit.

(3)_____ (3)_____ (3)_____ (3)_____

(3)_____ (3)_____ (3)_____ (3)_____

Students in the BAS must earn a ”C” or better in all courses from the checklist, and must retake the course(s) where a C-, D or an F are earned.

A minimum of 120 hours is required for completion of the BAS degree. May 2017

ACADEMIC AND STUDENT AFFAIRS

COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: Request for Authorization, BAS in Career and Technical Education (CTE) Teacher Education (Alexander/Rush)

☒ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
- ☐ Yes
- ☒ No

FOR FULL BOARD CONSIDERATION:
- ☐ Yes Proposed meeting date May 2020
  [Note: If yes, materials will also be included in the full UW Board of Trustee report.]
- ☒ No

☒ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY:
A collaborative Request for Authorization for a Career Technical Education (CTE) degree developed by the UW College of Education, UW-Casper, the Wyoming Community College Commission, the PTSB, WACTE, the Wyoming Department of Education, K-12 Superintendents, and representatives from business and industry will be presented. The new proposed program, designed collaboratively to be delivered by the community colleges and UW, will have students complete an applicable AAS degree and subsequently take a third year of coursework at a Wyoming community college or online at UW before completing a fourth year through UW that includes online education courses and student teaching. The proposed program will culminate in a Bachelor of Applied Sciences degree with a major in CTE Education, and an appropriate initial teaching license from the PTSB. The feasibility study has been reviewed and approved by the Faculty Senate, ASUW, and Staff Senate. The Provost has provided a letter of commitment. The committee will receive an update the proposal and be asked to bring the request for authorization forward to the Board for approval of recommendations.

WHY THIS ITEM IS BEFORE THE COMMITTEE:
University Regulations require that new academic programs are approved by the Board of Trustees. This committee is the designated committee for consideration.

ACTION REQUIRED AT THIS COMMITTEE MEETING:
Approval of the Request for Authorization for the **BAS in Career Technical Education Teacher Education degree.**

PROPOSED MOTION:
"I move that the Academic and Student Affairs Committee approves the **Request for Authorization as presented by the College of Education** and that we recommend approval to the full Board."

Request for Authorization

B.A.S. Career and Technical Education (CTE) Teacher Education

Executive Summary

Degree or Certificate Title: B.A.S. Career and Technical Education (CTE) Teacher Education

Level of Degree or Certificate: Bachelor's

Delivery Mode(s): Distance + UW-Casper

Estimated Startup Cost of Degree:

Anticipated Launch Date: August 2021

Description: This new BAS degree in Career and Technical Education (CTE) Teacher Education is designed to provide a flexible pathway for students entering from Wyoming community colleges into the teaching field in Career and Technical Education fields.

Table of Contents

Feasibility Study Required Contents:

Overview and Description of Degree or Certificate, Purpose, Strategic Plan Overlay

Program Rationale

Several years ago the University, faced with budget cuts, eliminated the program to prepare Career and Technical Education (CTE) teachers due to low enrollment. Subsequently, the state legislature mandated that a new CTE initial teacher licensure preparation degree program be co-developed through a partnership between the University of Wyoming and the Community Colleges. A task force carried out this charge with membership that included representatives from UW's College of Education, UW-Casper, the Wyoming Community College Commission (WCCC), the Wyoming Professional Teaching Standards Board (PTSB), the Wyoming Association for Career and Technical Education (WACTE), the Wyoming Department of Education (WDE), K-12 Superintendents, and representatives from business and industry. After presenting a Notice of Intent (NOI) to the Board of Trustees, members of the task force developed this Feasibility Study, which provides information about the newly designed B.A.S. in Career and Technical Education Teacher Education.

The program is designed as an applied science bachelors' degree (BAS) completion program between the community colleges and the University of Wyoming. The program was designed to provide flexibility, so that students coming into the program might be bringing an Associate of Arts (AA), an Associate of Science (AS) or an Associate of Applied Science (AAS). Students who have completed an applicable AAS degree can take a third year of coursework at a Wyoming community college or online at the University of Wyoming, before completing a fourth year through UW that includes teacher education courses offered by distance and student teaching. This program will culminate in a Bachelor of Applied Sciences degree, with a Major in CTE Teacher Education, and eligibility for an appropriate initial teaching license (grades 6-12) from the Wyoming Professional Teaching Standards Board (PTSB). The list of potential educational license areas is as follows:

Business Education 6-12 (BUS)

Family and Consumer Science 6-12 (HME)

Trade and Technical 6-12 (TRT)

Each community college in Wyoming has its own areas of specialties; all Wyoming community colleges will be represented in this degree, but we do not expect that all colleges will offer all licensure/endorsement areas.

Program Purpose

The B.A.S. in Career and Technical Education (CTE) Teacher Education is designed to provide an option for potential students seeking to complete a bachelor's degree and to gain initial licensure as a secondary teacher in any number of fields related to career and technical education. The specifics of these fields are provided in the curriculum section below.

Fit with Current Offerings

The B.A.S. in Career and Technical Education (CTE) Teacher Education joins the Secondary Education programs in the College of Education that prepare teachers in the fields of Agriculture, English,

Mathematics Science, Social Studies, and World Languages. It also serves to replace the previous program, the BS in Technical Education, which was recently eliminated and then reinstated temporarily by the Board of Trustees. The overlap in coursework requirements among the secondary education bachelor's degree programs in the College of Education allow for efficiency in course offerings, as courses at the 1000, 2000, and 3000 level are (for the most part) required by all College of Education students preparing to teach in secondary schools.

Relationship to Strategic Plan

College of Education Strategic Plan. The proposed B.A.S. in Career and Technical Education (CTE) Teacher Education most closely aligns with Goal 6 of the College of Education's strategic plan, which is part of Theme 2, "Connected to Community." Goal 6 specifically calls for the following: "The College of Education will engage with Wyoming community college partners to make select educator preparation programs accessible throughout all geographic regions of the state to place-bound students." By designing a new CTE teacher education degree program, and by making that program accessible at various sites and through distance education and flexible through multiple entry points for students who come in from a community college program, the College of Education is making great strides toward meeting Goal 6. The proposed program aligns with the University mission by preparing individuals to serve students, families, and communities, throughout Wyoming, other states within the US, and the globe.

University of Wyoming Strategic Plan. The development of this program is designed to align with the University of Wyoming's Five-Year Strategic Plan (*Breaking Through*). Here, we will highlight the goals that most closely align to our proposed program.

Goal 1 emphasizes the promotion of academic programs that meet workforce needs within the state and region. Community members and legislators in Wyoming have been vocal about the need for CTE teachers. The program being proposed here is designed to provide a portion of those workforce needs, while also meeting the accreditation requirements of the teacher education accrediting body (AAQEP) and the program approval requirements of the Wyoming Professional Teaching Standards Board (PTSB).

Goal 2 emphasizes the need to engage and graduate well-rounded and creative thinkers, capable of meeting unpredictable and complex challenges. The proposed program will provide opportunities for students to engage in internships and practicum placements. By providing multiple and diverse experiences in Wyoming classrooms and by accepting coursework and internship opportunities that will provide content background for CTE teachers, we will better prepare students to meet the complexities of the modern-day school environment.

Goal 3 encourages programs to build a statewide community of learners by collaborating with schools, community colleges and tribal nations to connect students and citizens. The proposed B.A.S. in Career and Technical Education (CTE) Teacher Education supports these efforts through the expansion of student teaching placements and the ability to better collaborate with community colleges throughout the state. Currently, the College of Education is partnering with 30 local school districts. These institutions will support student placements throughout the state. Several of these locations include American Indian and low-income schools. We will continue to partner with these schools in an effort to better prepare our students to provide instruction to diverse learners.

Learning Outcomes

The B.A.S. in Career and Technical Education (CTE) Teacher Education is designed to meet two sets of program standards. The first, from the Wyoming Professional Teaching Standards Board (PTSB) provides standards specific to programs that lead to educator licensure in the CTE fields. As the PTSB provides program approval necessary for graduates to achieve teacher licensure in Wyoming, it is critical that these standards be met in the program. The second set of program standards, from the Interstate Teacher Assessment and Support Consortium (InTASC) are required for all teacher education programs. The accrediting body for teacher education, Association for Advancing Quality in Teacher Preparation (AAQEP) requires that we provide assessment data to show how we are meeting the InTASC standards for each of our programs that lead to teacher licensure. Each set of standards is delineated below.

PTSB Program Standards

Business Education (PTSB Chapter 4, Section 5d)
(i) The program shall require knowledge and demonstrated competence in the following:(A) economic systems, including finance or money and banking; (B) business organizations and management; (C) business communications, math and law; (D) computer information systems and occupational technology used in business and other occupational areas; (E) entrepreneurship; (F) clerical/secretarial occupations; and (G) accounting or bookkeeping occupations.
(ii) The program shall require knowledge and skills necessary for establishing youth organizations that prepare students for occupational, civic, and social responsibilities and leadership.
(iii) The program shall require knowledge of the history, philosophy, objectives, and trends in vocational education.
(iv) The program shall require demonstrated competence in planning, organizing, and administering the cooperative vocational education program in business.
(v) The program shall require knowledge and demonstrated competence in the principles of counseling as they pertain to career selection, vocational assessment, job placement, and cooperative vocational education in business education.
(vi) The program shall require skills in organizing and working with a local advisory committee.

Family and Consumer Science (PTSB Chapter 4, Section 5g)
(i) The program shall require knowledge and application of the factors that influence personal and family relationships, including lifespan development, interpersonal interactions, and parenting practices in a context of contemporary, global, societal, and technological change.
(ii) The program shall require knowledge and demonstrated competence in consumer education to include managing individual and family resources in a socially responsible manner.
(iii) The program shall require knowledge and demonstrated competence in healthy living by selecting, planning, preparing, and serving foods based on nutritional, cultural, and socioeconomic needs of individuals, families, and groups.
(iv) The program shall require knowledge and demonstrated competence in the selection, care, and use of clothing and textiles that satisfy the needs of individuals and families.
(v) The program shall require knowledge and demonstrated competence in satisfying the needs of individuals and families relative to environmentally responsible housing, equipment, and furnishings.
(vi) The program shall require knowledge and demonstrated competence in creating practical experiences for career paths related to family and consumer sciences.
(vii) The program shall require knowledge of the history, philosophy, and objectives and trends in family and consumer sciences including career and technical pathways.

(viii) The program shall require knowledge and skills necessary for establishing youth organizations that prepare students for (1) family; (2) occupational, civic, and social responsibilities; and (3) leadership.
(ix) The program shall require knowledge of professional organizations and available community, state, and national resources, agencies, and programs and how to develop collaborative relationships for curriculum enrichment and program support.
(x) The program shall require demonstrated competence in planning, organizing, and administering an integrated curriculum in family and consumer science education.

Trade and Technical Education (PTSB Chapter 4, Section 5m)
The program shall require competence in the:
(i) knowledge of core concepts, characteristics, and scope of trade and technical education including the relationships and connections between trade and technical education careers and careers in other disciplines;
(ii) identification of historical and current attributes and roles of the cultural, social, economic, political and environmental effects and influences of trade and technical education;
(iii) analysis of the characteristics of design including troubleshooting, research and development, invention and innovation, and experimentation in problem solving/ideation;
(iv) use, maintenance, and assessment of products and systems utilized in trade and technical education, including safety; and
(v) knowledge of various trade and technical systems including but not limited to: (A) medical, biotechnologies; (B) agriculture; (C) energy and power; (D) information and communication; (E) transportation; (F) manufacturing; (G) construction; (H) technical and graphic design, animation; and (I) technological systems.

InTASC Standards

I. The Learner and Learning
Standard 1: Learner Development—The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.

Standard 2: Learning Differences—The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.

Standard 3: Learning Environments—The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self motivation.

II. Content

Standard 4: Content Knowledge—The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.

Standard 5: Application of Content—The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

III. Instructional Practice

Standard 6: Assessment—The teacher understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making.

Standard 7: Planning for Instruction—The teacher plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.

Standard 8: Instructional Strategies—The teacher understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections, and to build skills to apply knowledge in meaningful ways.

IV. Professional Responsibility

Standard 9: Professional Learning and Ethical Practice—The teacher engages in ongoing professional learning and uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.

Standard 10: Leadership and Collaboration—The teacher seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth, and to advance the profession.

Curriculum Map and Program Structure

The task force has identified a design for the CTE teacher education degree completion program that allows for multiple entry points and culminates in a Bachelor of Applied Science degree. Coursework in the degree includes 42 semester hours of secondary education coursework to include student teaching in the College of Education at the University of Wyoming; CTE coursework; and courses to meet the requirements of the University Studies Program curriculum.

Students wishing to apply for the program will be required to demonstrate sufficient CTE coursework to qualify for admission. While an AAS in a relevant field is preferable, students without an AAS, or with other degrees may apply by demonstrating completion of some minimum number of CTE credits. Upon admission, students will begin the program as dually enrolled students at a Wyoming community college as well as UW. Working closely with advisors, students will map out a course plan that ensures all unmet USP requirements are addressed as well as enrolling in any Education prerequisite courses that may not have been addressed in their Associates curriculum.

In addition to USP and prerequisite coursework, the curriculum includes at least 28 credits of upper division Education coursework, 15 credits of student teaching (which is also upper-division coursework),

and the opportunity to utilize internships or special projects to connect CTE field expertise with classroom teaching. The program includes at least 42 credits of upper division coursework as required by all UW degree programs, and most students will complete the program with 45-50 upper division credits. Much of the third-year curriculum will be offered by the community colleges, although UW's distance offerings will be available for site-bound students in community college service areas that lack components of the curriculum. The fourth year will be offered exclusively by UW through distance education and student teaching in local settings.

Because the program is designed to provide as much flexibility as possible, students may come in with a wide variety of coursework. The tables below provide a semester-by-semester example of courses taken by a student transferring to UW-C from Casper College with an AAS in Construction Technology.

Sample Course Plan for a student with an AAS in Construction Technology from Casper College.

Semester 1	**Course**	**Title**	**Credits**	**USP**
AAS science or math option	GEOL 1100	Introduction to Physical Geology	3	PN
AAS math or science	MATH 1000	Problem Solving	3	Q
AAS writing or communications	ENGL 1010	College composition and Rhetoric	3	COM1
AAS option (must pick one of three area but meet 17 credits of general study)	POLS 1000	American and Wyoming Government	3	V
Required for AAS	PEAC	Physical Education	1	
Required for AAS	CNTK 1560	Construction Safety	3	
		Total Credits	16	
Semester 2	**Course**	**Title**	**Credits**	**USP**
AAS	EDST 2450	Foundations of Development and Learning	3	CH
AAS	1700	Introduction to Construction	4	
AAS	1750	Blueprint Reading	2	
AAS	CNTK 1860	Woodworking Fundamentals	4	
Education	ITEC 2360	Teaching with Technology	3	

		Total Credits	16	
Semester 3	**Course**	**Title**	**Credits**	**USP**
AAS	CNTK 1975	Materials Handling and Construction Equipment	3	
AAS	CNTK 2510	Construction Estimating	3	
AAS	CNTK 2520	Architectural and Construction Planning	3	
AAS	ENTK 1010	Elements of Surveying	3	
Education	EDEX 2484	Introduction to Special Education	3	
		Total Credits	15	
Semester 4	**Course**	**Title**	**Credits**	**USP**
AAS	ENTK 1710	Architectural Drafting	4	
AAS	CNTK 1905	Carpentry	4	
	PHYS 1050	Concepts of Physics	4	PN
Education	EDST 3480	Diversity and the Politics of Schooling	3	CH
		Total Credits	15	

Semester 5	**Course**	**Title**	**Credits**	**USP**
Education	EDST 2550	Educational Assessment	3	
AAS	CNTK 1870	Building Materials and Systems	3	

AAS	ENTK 1510	Drafting	4	
AAS	CNTK 2525	Construction Project Manager	3	
AAS	ENTK 1750	Commercial Architectural Drafting	4	
		Total Credits	16	
Semester 6	**Course**	**Title**	**Credits**	**USP**
Education	EDST 3100	Teacher as Practitioner	3	COM2
Education	EDST 3101	Practicum/Lab	2	COM2
Electives	TBD	Special projects work experience or elective content	11-14	
		Total Credits	16-19	
Semester 7	**Course**	**Title**	**Credits**	**USP**
Education	EDSE 3277	CTE Methods 1	4	
Education	EDSE 4277	CTE Methods 2	4	COM3
Education	EDSE 3020	Facilities and Grant Writing Management	3	
Electives		Special projects work experience or elective content	5-8	
		Total Credits	16-19	

Semester 8	**Course**	**Title**	**Credits**	**USP**

Education	EDSE 4500	Residency in Teaching	15	
		Total Credits	15	

Course Descriptions

No new courses will need to be developed for this program.

Assessment Plan

Existing undergraduate programs in the College of Education, all of which lead to initial teacher licensure, are evaluated on specific teacher education standards (see PTSB and InTASC standards provided above) through common assessments that are embedded in courses and aligned to those standards. Data from course-based assessments are regularly collected through LiveText, an online data/assessment system. In addition, standards-based assessments will be used during the student teaching/practicum periods, including edTPA, a nationally recognized performance assessment for novice teachers.

Degree Program Evaluation

In addition to collecting and reviewing data from the assessment system described above, the B.A.S. in Career and Technical Education (CTE) Teacher Education will be part of the program review and accreditation system that is regularly undertaken by the College of Education and other units at UW that provide programs leading to teacher licensure or endorsement. The program review process will take place in a timeline that is aligned with unit accreditation through the Association for Advancing Quality in Educator Preparation (AAQEP). This program will be reviewed by a committee of trained and knowledgeable individuals who are recruited by the Wyoming PTSB, resulting in a determination regarding program approval for teacher licensure. This is a similar review process to all other licensure or endorsement programs in the College of Education.

Substantive Change Determination

According to Dr. Anne Alexander, this program does not represent a substantive change.

New Resources Required

The attached budget spreadsheet provides information about the program budget. No new faculty lines will be required. We have included in this budget a $2000 amount for travel, and an initial FY 21 budget of $25,000 for marketing, followed by a $5000 budget each subsequent year. Existing advising staff in the College of Education, as well as staff support at both UW-C and UW-Laramie will be used to provide support for this program.

Executive Summary of Demand Statistics*

The task force anticipates initial student demand for the 4th year of the program (the only year offered through UW) will begin with 5-15 students in the first year (see timeline) because of pent-up demand and publicity. On an ongoing basis, we estimate that this number would remain within this range for the foreseeable future. While these numbers are significantly higher than the previous CTE teacher ed program's enrollments, the task force believes that those numbers will expand due to the wide geographical offerings (7 community colleges across the state instead of 1) as well as the "stackable" nature of the degree. Because the program incorporates existing AAS degrees, students engaged in those studies can more easily "add on" additional coursework to earn their teaching credential. In short, multiple pathways to a CTE teaching credential can appeal to a larger group of students, and multiple locations expands the pool to include place-bound candidates.

The B.A.S. Career and Technical Education (CTE) Teacher Education Initial Licensure degree program (BAS-CTE) will be a unique degree and provide another pathway among several that will help fill the demand for CTE teachers in Wyoming. There are approximately 451 Career and Technical Education (CTE) teachers currently teaching in Wyoming. The average age of Wyoming CTE teachers is 55. According to the Wyoming Retirement System the average age of retirement of Wyoming teachers is 62.6. Consequently, we are anticipating approximately 225 CTE teachers will retire in the next seven years. As a result, the state will need to replace 32 CTE teachers each year, and districts look to UW for a significant percentage of these. This number does not include natural attrition that occurs for a variety of reasons. As an example, there have been six teachers leave their positions since school began in August, 2019. When added to the 32 anticipated retirements, this results in 38 teachers being needed. In addition, there is an expectation that the changes to the Hathaway Scholarship Success Curriculum that took place in 2019 as a result of Senate File 43 will increase demand for CTE courses and consequently require even more CTE instructors. Vacancies have been filled by recruiting teachers from surrounding states who have maintained their CTE teacher education programs, graduate programs that result in CTE endorsements, and industry professionals via alternative routes to certification.

In addition to the information above, which was compiled from PTSB, the WDE, and the WRS, the task force also created a statewide survey for CTE teachers, K12 administrators, and business and industry leaders. This survey closely aligned with the other employment data, and uniformly highlighted both an existing shortage, and a widening gap between a decreasing number of licensed CTE teachers and increasing need for CTE-trained employees. The task force also utilized Gray Associates data based on existing job descriptions. These regionally sensitive data showed very little demand for CTE teachers, and seems to contradict the other data sources. One possibility for the variance is the Gray report's usage of pre-existing job codes, while the survey data from professionals and administrators in the state K12 field approached future projections with a more locally informed approach. All the data sets are provided as an appendix to this document.

This template is intended to be used as a basic guide to generate a projection of additional expenses and revenues at the University.

Cells in orange are variables which can be updated as needed. Please enter information in numerical tab order.

Cells in gray calculate automatically

	Fiscal Year			
	2021	2022	2023	2024
Revenue				
Cummulative Total NEW Laramie campus headcount enrollment	0	0	0	0
NEW Resident enrollment (# of new students entering the program each year)				
NEW Non Resident Enrollment (# of new students entering the program each year)				
NEW Resident distance enrollment (ONLY use this field if the Program is 100% delivered online)	*5*	*5*	*8*	*10*
NEW Non Resident distance enrollment (ONLY use this field if the Program is 100% delivered online)	*1*	*2*	*2*	*4*
Resident (credit hours delivered outside of NEW Program)	0	0	0	0
Resident (credit hours delivered in NEW Program)	0	0	0	0
Resident Distance (credit hours delivered in NEW Program through Distance)	0	0	55	210
Non Resident (credit hours delivered outside of NEW Program)	0	0	0	0
Non Resident (credit hours delivered in NEW Program)	0	0	0	0
Non-Resident Distance (credit hours delivered in NEW Program through Distance)	0	0	11	53
Total Resident credit hours generated**	0	0	0	0
Total Non Resident credit hours generated**	0	0	0	0
Per Credit Tuition*				
Resident (Posted Tuition Rate)	$145	$151	$157	$163
Nonresident (Posted Tuition Rate)	$603	$627	$652	$678
Prior Year's Non Resident Discount Rate (updated annually by the budget office)	30%	30%	30%	30%
Estimated Actual Non Resident Per Credit Tuition	$422	$439	$457	$475
Total Resident Tuition generated outside of NEW Program	$0	$0	$0	$0
Total Resident Tuition in NEW Program	$0	$0	$0	$0
Total Non Resident Tuition outside of NEW Program	$0	$0	$0	$0
Total Non Resident Tuition in NEW Program	$0	$0	$0	$0
Total Distance Tuition in NEW Program				
Total Tuition from NEW Enrollment	$0	$0	$0	$0
Fees				
Program Per Credit Hour	$0	$0	$0	$0
Program Fee Revenue	$0	$0	$0	$0
Advising Fee Per Credit Hour	$6.00	$6.00	$6.00	$6.00
Advising Fee Revenue	$0	$0	$0	$0
Mandatory Fee (Per Full Time Student)	$705.47	$705.47	$705.47	$705.47
Mandatory Fee Revenue	$0	$0	$0	$0
Distance Fee	$25	$25	$25	$25
Total New Revenue Generated Within New Program	$0	$0	$0	$0
Total New Revenue Generated Outside of the Program	$0	$0	$0	$0
Total Distance Revenue Generated	$0	$0	$15,298	$65,992
Total Distance Revenue Remaining with College	$0	$0	$9,553	$41,592
Total Distance Revenue Remaining with Provost's Subdivision	$0	$0	$5,744	$24,400
Total New Revenue Generated**	$0	$0	$15,298	$65,992
New Program Expense Assumptions				
Compensation and benefits				
Faculty	$0	$0	$0	$0
Other administrative staff				
Graduate Assistants				
Supplies	$ -	$ -	$ 1,250	$ 2,500

Travel	$ 2,000	$ 2,000	$ 2,000	$ 2,000
Marketing	$25,000	$5,000	$5,000	$5,000
Capital expense				
Other (specify)				

Projected Financial Results for New Program	**FY1**	**FY2**	**FY3**	**FY4**
Total Expenses	$27,000	$7,000	$8,250	$9,500
Total New Revenues Generated by NEW Program	$0	$0	$9,553	$41,592
New Program's Total Surplus or Deficit	**-$27,000**	**-$7,000**	**$1,303**	**$32,092**
Operating margin (surplus or deficit / revenues)	No Value	No Value	0.14	0.77

Enter Course of Study, Credit Hours, indicate if the course is new and if the course will be offered through distance education			
Freshman Fall	15	NEW Course	Distance Option
Course 1	3		
Q	3		
USP C1	3		
USP FYS	3		
Course 2	3		
Freshman Spring	15		
USP PN	3		
USP H	3		
USP V	3		
Course 3	3		
Course 4	3		
Sophmore Fall	16		
USP H	3		
Course 5	4		
Course 6	3		
Course 7	3		
Course 8	3		
Sophmore Spring	16		
USP H	3		
Course 9	4		
Course 10	3		
Course 11	3		
Course 12	3		
Junior Fall	15		
Course 13	3		
Course 14	3		
Course 15	3		
Course 16	3		
Course 17	3		
Junior Spring	14		
Course 18	3		
Course 19	2		
Course 20	3		
Course 21	3		
Course 22	3		
Senior Fall	16		
Course 23	3		
Course 24	4		
Course 25	3		
Course 26	3		
Course 27	3		
Senior Spring	15		
USP C3	0		
Course 28	15		
Course 29	0		
Course 30	0		
Course 31	0		
Total Hours	122		

NEW CREDIT HOURS OFFERED
BY ACADEMIC YEAR

			1		2		3		4	
Freshman Fall	New Course hours	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	
Course 1	FALSE	3	0		0		0		0	
Q	FALSE	3	0		0		0		0	
USP C1	FALSE	3	0		0		0		0	
USP FYS	FALSE	3	0		0		0		0	
Course 2	FALSE	3	0		0		0		0	
Freshman Spring										
USP PN	FALSE	3		0		0		0		0
USP H	FALSE	3		0		0		0		0
USP V	FALSE	3		0		0		0		0
Course 3	FALSE	3		0		0		0		0
Course 4	FALSE	3		0		0		0		0
		30	0	0	0	0	0	0	0	0
Sophmore Fall					0		0		0	
USP H	FALSE	3			0		0		0	
Course 5	FALSE	4			0		0		0	
Course 6	FALSE	3			0		0		0	
Course 7	FALSE	3			0		0		0	
Course 8	FALSE	3			0		0		0	
Sophmore Spring						0		0		0
USP H	FALSE	3				0		0		0
Course 9	FALSE	4				0		0		0
Course 10	FALSE	3				0		0		0
Course 11	FALSE	3				0		0		0
Course 12	FALSE	3				0		0		0
		32	0	0	0	0	0	0	0	0
Junior Fall										
Course 13	FALSE	3					0		0	
Course 14	FALSE	3					0		0	
Course 15	FALSE	3					0		0	
Course 16	FALSE	3					0		0	
Course 17	FALSE	3					0		0	
Junior Spring								0		0
Course 18	FALSE	3						0		0
Course 19	FALSE	2						0		0
Course 20	FALSE	3						0		0
Course 21	FALSE	3						0		0
Course 22	FALSE	3						0		0
		29	0	0	0	0	0	0	0	0
Senior Fall									0	

Course 23	FALSE	3							0		
Course 24	FALSE	4							0		
Course 25	FALSE	3							0		
Course 26	FALSE	3							0		
Course 27	FALSE	3							0		
Senior Spring											0
USP C3	FALSE	0									0
Course 28	FALSE	15									0
Course 29	FALSE	0									0
Course 30	FALSE	0									0
Course 31	FALSE	0									
		31	0	0	0	0	0	0	0	0	0
Total Hours		122	0	0	0	0	0	0	0	0	0

Teaching load	fall	spring								
faculty line 1	9	6	0	0	0	0	0	0	0	0
faculty line 2	9	6	0	0	0	0	0	0	0	0
faculty line 3	9	6	0	0	0	0	0	0	0	0
faculty line 4	9	6	0	0	0	0	0	0	0	0

		0.39				
Compensation	Salary	Benefits	1	2	3	4
faculty line 1		$0	$0	$0	$0	$0
faculty line 2			0	$0	$0	$0
faculty line 3			0	$0	$0	$0
faculty line 4			0	$0	$0	$0
			$0.00	$0	$0	$0

For more specific salary and benefit data please contact the Budget Office at 766-9028

NEW CREDIT HOURS OFFERED
BY ACADEMIC YEAR

			1		2		3		4	
Freshman Fall	New Course hours		Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Course 1	FALSE	3	0		0		0		0	
Q	FALSE	3	0		0		0		0	
USP C1	FALSE	3	0		0		0		0	
USP FYS	FALSE	3	0		0		0		0	
Course 2	FALSE	3	0		0		0		0	
Freshman Spring										
USP PN	FALSE	3		0		0		0		0
USP H	FALSE	3		0		0		0		0
USP V	FALSE	3		0		0		0		0
Course 3	FALSE	3		0		0		0		0
Course 4	FALSE	3		0		0		0		0
		30	0	0	0	0	0	0	0	0
Sophmore Fall					0		0		0	
USP H	FALSE	3			0		0		0	
Course 5	FALSE	4			0		0		0	
Course 6	FALSE	3			0		0		0	
Course 7	FALSE	3			0		0		0	
Course 8	FALSE	3			0		0		0	
Sophmore Spring						0		0		0
USP H	FALSE	3				0		0		0
Course 9	FALSE	4				0		0		0
Course 10	FALSE	3				0		0		0
Course 11	FALSE	3				0		0		0
Course 12	FALSE	3				0		0		0
		32	0	0	0	0	0	0	0	0
Junior Fall										
Course 13	FALSE	3					0		0	
Course 14	FALSE	3					0		0	
Course 15	FALSE	3					0		0	
Course 16	FALSE	3					0		0	
Course 17	FALSE	3					0		0	
Junior Spring								0		0
Course 18	FALSE	3						0		0
Course 19	TRUE	2						2		2
Course 20	TRUE	3						3		3
Course 21	TRUE	3						3		3
Course 22	TRUE	3						3		3
		29	0	0	0	0	0	11	0	11
Senior Fall									0	

Course 23	TRUE	3							3		
Course 24	TRUE	4							4		
Course 25	TRUE	3							3		
Course 26	TRUE	3							3		
Course 27	TRUE	3							3		
Senior Spring											0
USP C3	FALSE	0									0
Course 28	TRUE	15									15
Course 29	FALSE	0									0
Course 30	FALSE	0									0
Course 31	FALSE	0									0
		31	0	0	0	0	0	0	16		15
Total Hours		122	0	0	0	0	0	11	16		26

Teaching load	fall	spring								
faculty line 1	9	6	0	0	0	0	0	1	1	1
faculty line 2	9	6	0	0	0	0	0	1	1	1
faculty line 3	9	6	0	0	0	0	0	0	0	1
faculty line 4	9	6	0	0	0	0	0	0	0	1

		0.39							
Compensation	Salary	Benefits	1		2		3		4
faculty line 1		$0	0	$0			$0		$0
faculty line 2		$0	0	$0			$0		$0
faculty line 3		$0	0	$0			$0		$0
faculty line 4		$0	0	$0			$0		$0
			$0.00		$0		$0		$0

For more specific salary and benefit data please contact the Budget Office at 766-9028

Academic Affairs
1000 E. University Avenue, Laramie, WY 82071
(307) 766-4286

April 28, 2020

Board of Trustees:

This letter serves as a Letter of Commitment for a new Academic Program, the BAS in Career and Technical Education (CTE) Teacher Education to be housed in the School of Teacher Education within the College of Education. The program is designed as an applied science bachelors' degree (BAS) completion program between the community colleges and the University of Wyoming. The program was designed to provide flexibility, so that students coming into the program might be bringing an Associate of Arts (AA), an Associate of Science (AS) or an Associate of Applied Science (AAS). Students who have completed an applicable AAS degree can take a third year of coursework at a Wyoming community college or online at the University of Wyoming, before completing a fourth year through UW that includes teacher education courses offered by distance and student teaching. This program will culminate in a Bachelor of Applied Sciences degree, with a Major in CTE Teacher Education, and eligibility for an appropriate initial teaching license (grades 6-12) from the Wyoming Professional Teaching Standards Board (PTSB). The program not only aligns with our UW Strategic Plan, but it meets the employment needs of our local Wyoming School districts as well.

Needs

The B.A.S. Career and Technical Education (CTE) Teacher Education Initial Licensure degree program (BAS-CTE) will be a unique degree and provide one pathway among several that will help fill the demand for CTE teachers in Wyoming. There are approximately 451 Career and Technical Education (CTE) teachers currently teaching in Wyoming. The average age of Wyoming CTE teachers is 55. According to the Wyoming Retirement System the average age of retirement of Wyoming teachers is 62.6. Consequently, we are anticipating approximately 225 CTE teachers will retire in the next seven years. As a result, the state will need to replace 32 CTE teachers each year, and districts look to UW for a significant percentage of these. In addition, there is an expectation that the changes to the Hathaway Scholarship Success Curriculum that took place in 2019 as a result of Senate File 43 will increase demand for CTE courses and consequently require even more CTE instructors. Vacancies have been filled by recruiting teachers from surrounding states who have maintained their CTE teacher education programs, graduate programs that result in CTE endorsements, and industry professionals via alternative routes to certification.

In addition to the information above, a statewide survey of CTE teachers, K12 administrators, and business and industry leaders highlighted both an existing shortage and a widening gap between a decreasing number of licensed CTE teachers and increasing need for CTE-trained employees. However, Gray & Associates data showed very little demand for CTE teachers and seems to contradict the other data sources. One possibility for the variance is the Gray report's usage of pre-existing job codes, while the survey data from professionals and administrators in the state K12 field approached future projections with a more locally informed approach. Please see the Request for Authorization for these data.

Requirements

The CTE teacher education degree completion program allows for multiple entry points and culminates in a Bachelor of Applied Science degree. Coursework in the degree includes 42 semester hours of secondary education coursework to include student teaching in the College of Education at the University of Wyoming; CTE coursework; and courses to meet the requirements of the University Studies Program curriculum.

Resources

The attached budget spreadsheet provides information about the program budget. No new faculty lines will be required. The budget allocates $2000 for travel, and an initial FY 21 budget of $25,000 for marketing, followed by a $5000 budget each subsequent year. Existing advising staff in the College of Education, as well as staff support at both UW-C and UW-Laramie will be used to provide support for this program.

Four Year Budget

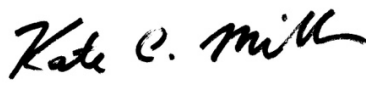
The pro forma budget is attached to the Request for Authorization, which accompanies this letter. It includes the minimal direct costs associated with the establishment of this program, as described above.

Timeline

The anticipated launch date for this program is Fall 2021. Wyoming community college administrators are in the process of developing the pathways through which students will enter the UW program for their final year of coursework and student teaching. Ben Moritz of the Wyoming Community College Commission is leading this effort.

In conclusion, I support the creation of the Bachelor of Applied Sciences in Career and Technical Education (CTE) Teacher Education. This program is well-designed and will meet a critical need of Wyoming local school districts.

Best,



Kate C. Miller

Provost and Vice President for Academic Affairs

CTE Teacher Ed Program Update

This program is a collaboration between UW and the community colleges to increase the number of CTE teachers trained in the state of Wyoming. By utilizing a "degree completion" approach rather than a traditional 2+2 or 3+1, we are increasing both the level of access and flexibility, thereby making the program available to a larger population of future CTE teachers. It is modeled on a traditional teacher preparation program designed specifically for CTE

Community College Phase

1

Students who can join the program

a. Students with no industry OR college experience
b. Students with some college credit but no degrees
c. Students with a certificate or degree in a CTE field
d. Students with industry background but little or no college credit

2

Initial Advising Meeting

During this meeting an advisor will discuss the student's CTE interests, review transcripts, and work with them to map out an individualized course plan.

3

Community College Phase

Students will initially enroll in a CC program aligned with their CTE endorsement areas, and augment existing curricula with the USP requirements when viable. Most students will be able to take a significant number of their education coursework at the CC as well.

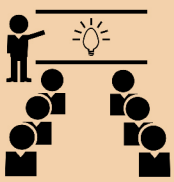
University of Wyoming Phase

4

University of Wyoming Phase

Students will enroll as UW students for the final 1 or 2 years of their program, but remain in their CC location. UW offers all of its education courses online or in hybrid format, and these online offerings will comprise most or all of their coursework.

5



Student Teaching Phase

While still enrolled as UW students, students will complete their studies by doing student teaching.

6

Outcome

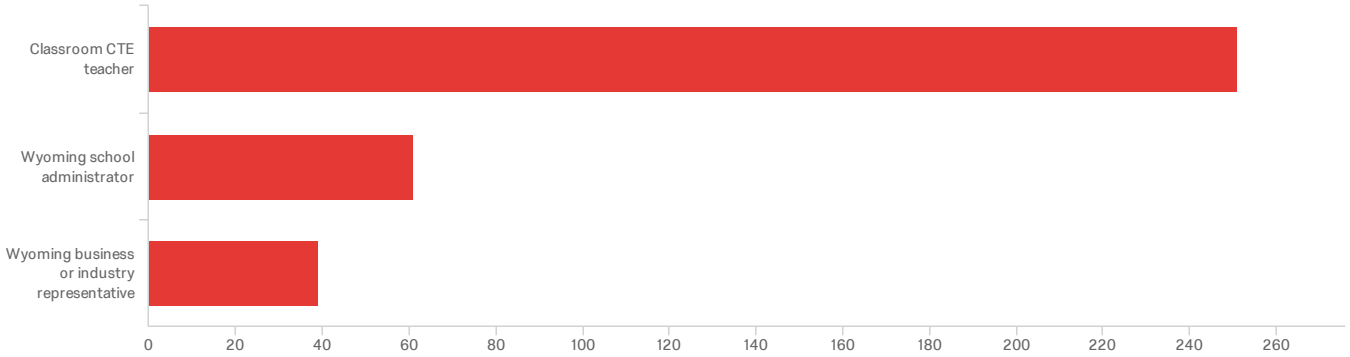
Students will earn a Bachelor of Applied Science degree with an emphasis in CTE Teacher Education, as well as certificate(s) and/or Associate degrees at the home community college in relevant CTE fields. Additionally, they will also have the skills for relevant industry jobs.

Default Report

WY CTE Needs 2020

November 26, 2019 8:26 AM MST

Q31 - The University of Wyoming is seeking input as a new CTE degree program is being created. Please indicate your classification for continuing the survey.

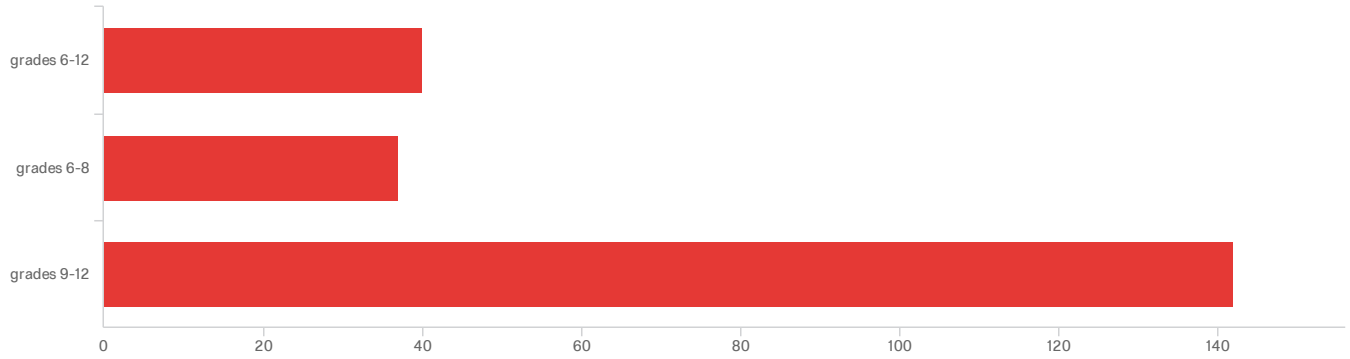


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The University of Wyoming is seeking input as a new CTE degree program is being created. Please indicate your classification for continuing the survey.	1.00	3.00	1.40	0.68	0.46	351

#	Field		Choice Count
1	Classroom CTE teacher	71.51%	251
2	Wyoming school administrator	17.38%	61
3	Wyoming business or industry representative	11.11%	39
			351

Showing rows 1 - 4 of 4

Q1 - Mark the selection that best fits your situation.

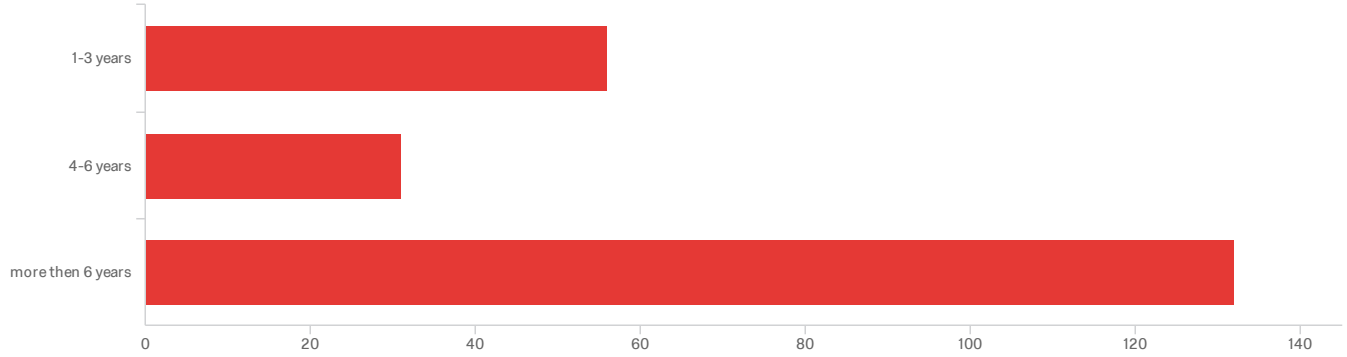


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Mark the selection that best fits your situation.	1.00	3.00	2.47	0.78	0.61	219

#	Field	Choice Count	
1	grades 6-12	18.26%	40
2	grades 6-8	16.89%	37
3	grades 9-12	64.84%	142
			219

Showing rows 1 - 4 of 4

Q2 - How long do you plan to teach in your present position?

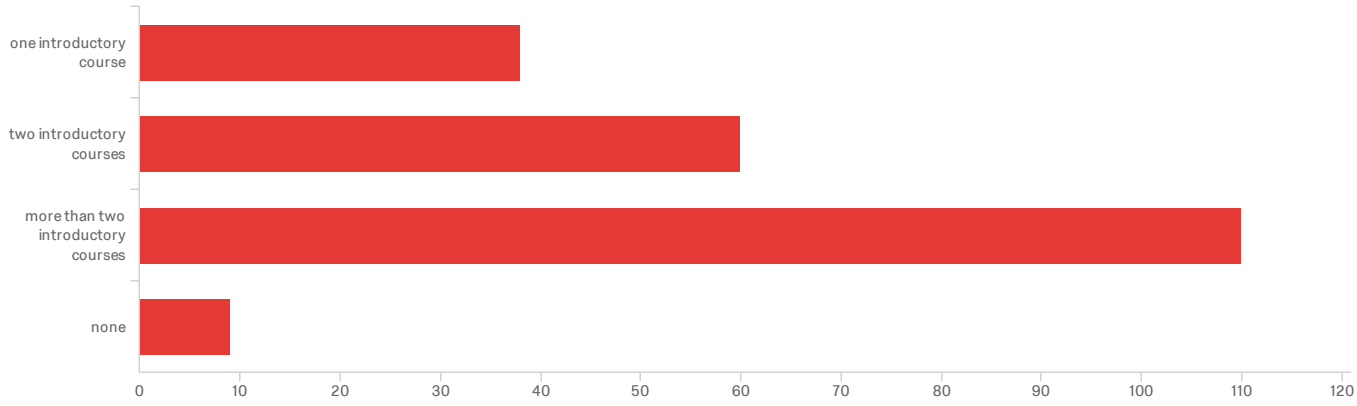


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How long do you plan to teach in your present position?	1.00	3.00	2.35	0.86	0.74	219

#	Field		Choice Count
1	1-3 years	25.57%	56
2	4-6 years	14.16%	31
3	more then 6 years	60.27%	132
			219

Showing rows 1 - 4 of 4

Q4 - How many sections of introductory CTE courses do you teach?An example of an introductory course would be a course that is first in sequence; for instance, Foods 1.

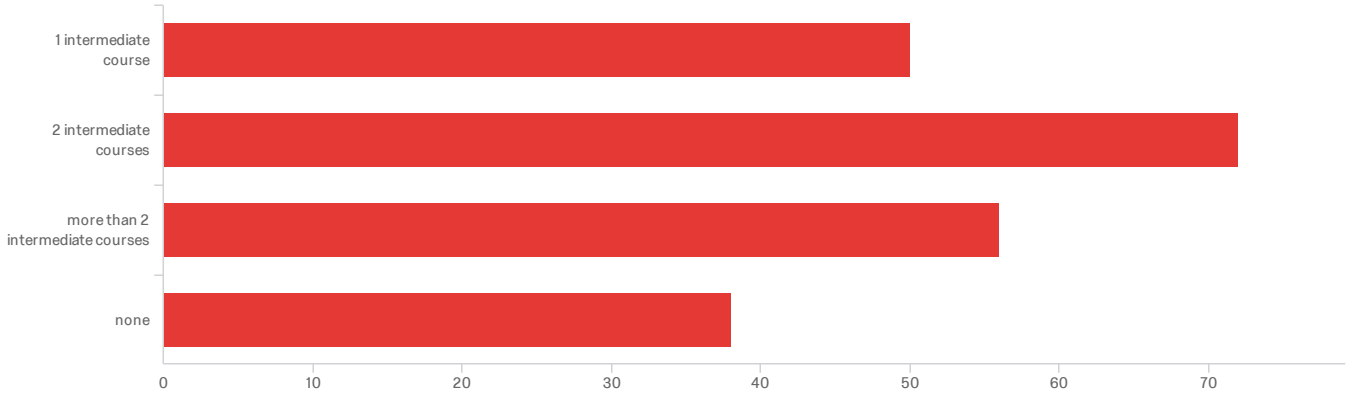


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How many sections of introductory CTE courses do you teach?An example of an introductory course would be a course that is first in sequence; for instance, Foods 1.	1.00	4.00	2.41	0.82	0.68	217

#	Field		Choice Count
1	one introductory course	17.51%	38
2	two introductory courses	27.65%	60
3	more than two introductory courses	50.69%	110
4	none	4.15%	9
			217

Showing rows 1 - 5 of 5

Q5 - How many sections of intermediate CTE courses do you teach?An example of an intermediate course would be a course that is second in a sequence; for instance, Foods 2.

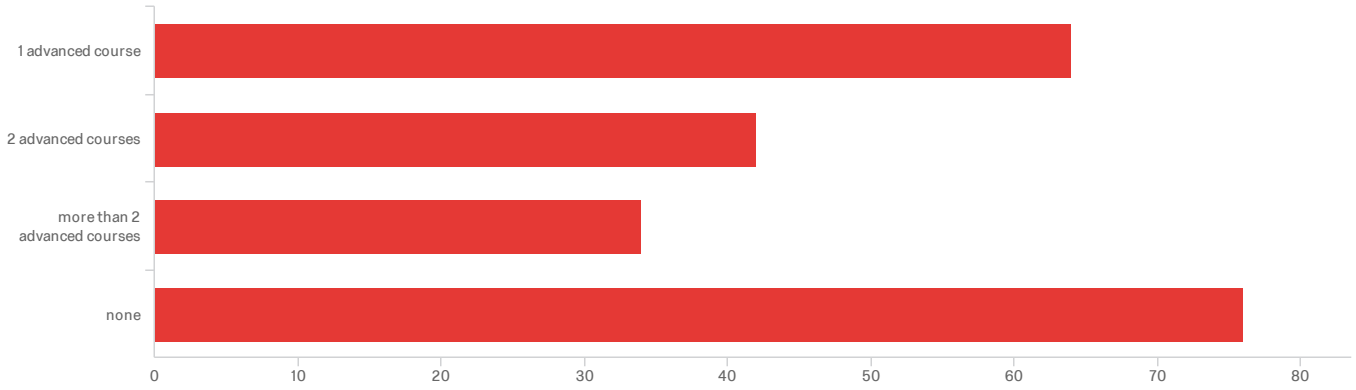


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How many sections of intermediate CTE courses do you teach?An example of an intermediate course would be a course that is second in a sequence; for instance, Foods 2.	1.00	4.00	2.38	1.02	1.05	216

#	Field	Choice Count	
1	1 intermediate course	23.15%	50
2	2 intermediate courses	33.33%	72
3	more than 2 intermediate courses	25.93%	56
4	none	17.59%	38
			216

Showing rows 1 - 5 of 5

Q6 - How many sections of advanced CTE courses do you teach?An example of an advanced course would be a course that is in a sequence; for instance, Foods 3.

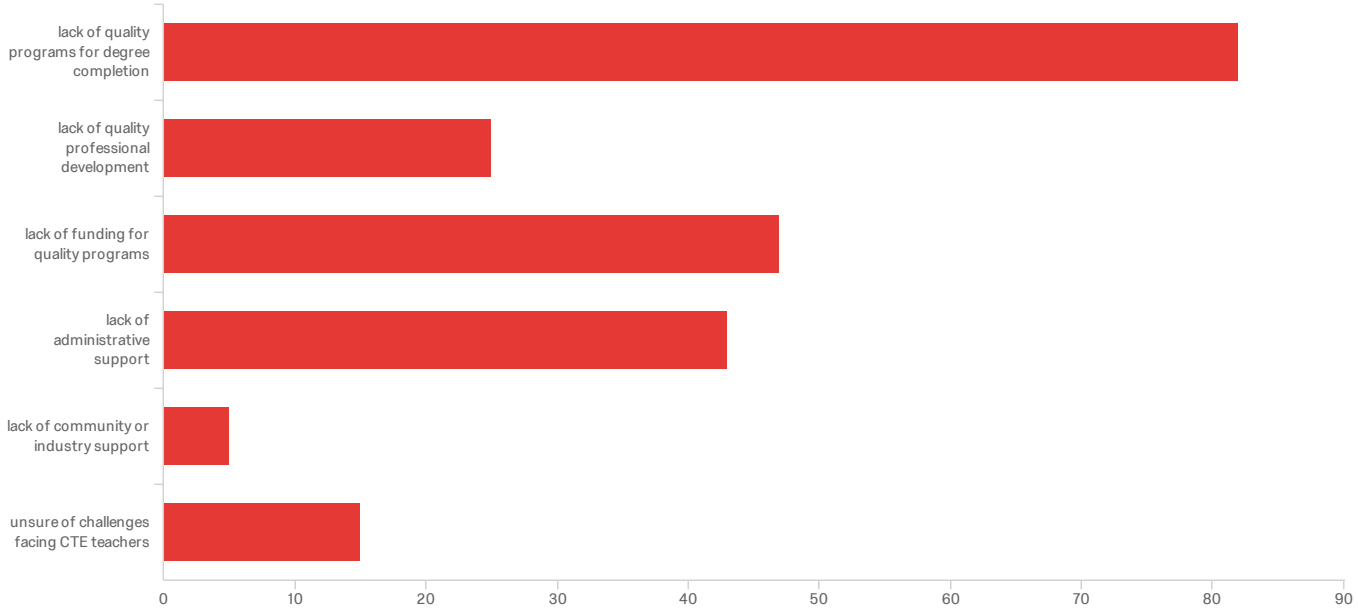


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How many sections of advanced CTE courses do you teach?An example of an advanced course would be a course that is in a sequence; for instance, Foods 3.	1.00	4.00	2.56	1.24	1.54	216

#	Field	Choice Count	
1	1 advanced course	29.63%	64
2	2 advanced courses	19.44%	42
3	more than 2 advanced courses	15.74%	34
4	none	35.19%	76
			216

Showing rows 1 - 5 of 5

Q7 - Mark the selection you feel is the greatest challenge facing CTE teachers.

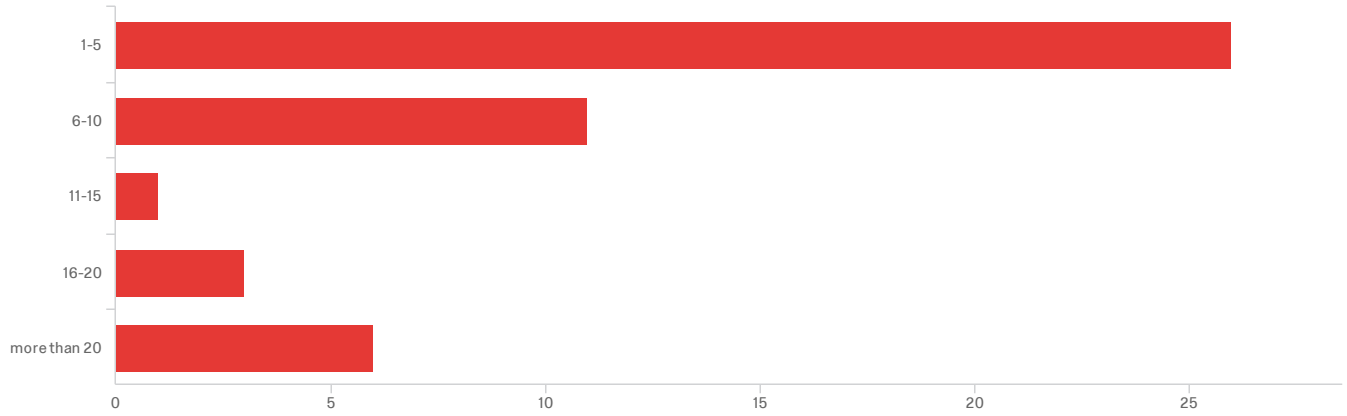


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Mark the selection you feel is the greatest challenge facing CTE teachers.	1.00	6.00	2.58	1.54	2.36	217

#	Field		Choice Count
1	lack of quality programs for degree completion	37.79%	82
2	lack of quality professional development	11.52%	25
3	lack of funding for quality programs	21.66%	47
4	lack of administrative support	19.82%	43
5	lack of community or industry support	2.30%	5
6	unsure of challenges facing CTE teachers	6.91%	15
			217

Showing rows 1 - 7 of 7

Q9 - How many CTE teachers are currently employed in your district?

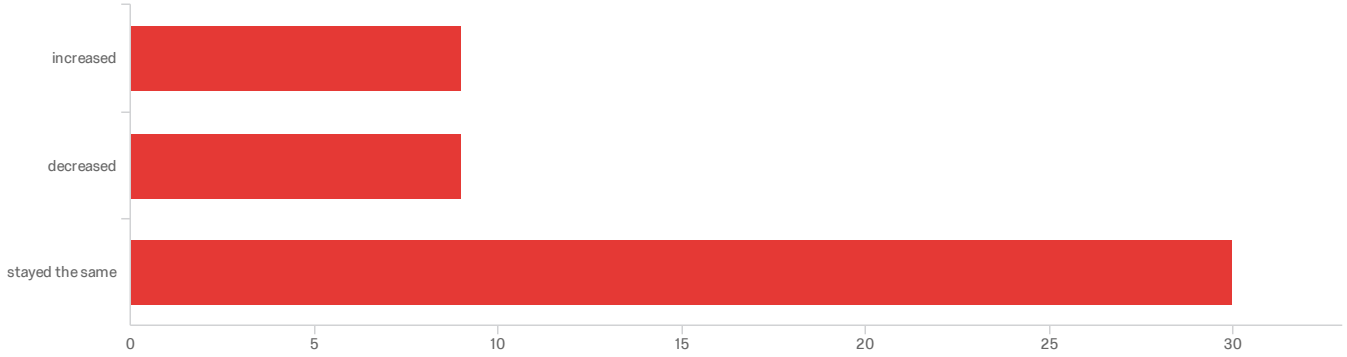


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How many CTE teachers are currently employed in your district?	1.00	5.00	1.98	1.41	1.98	47

#	Field		Choice Count
1	1-5	55.32%	26
2	6-10	23.40%	11
3	11-15	2.13%	1
4	16-20	6.38%	3
5	more than 20	12.77%	6
			47

Showing rows 1 - 6 of 6

Q10 - Over the past five years the number of CTE teachers in your district has?

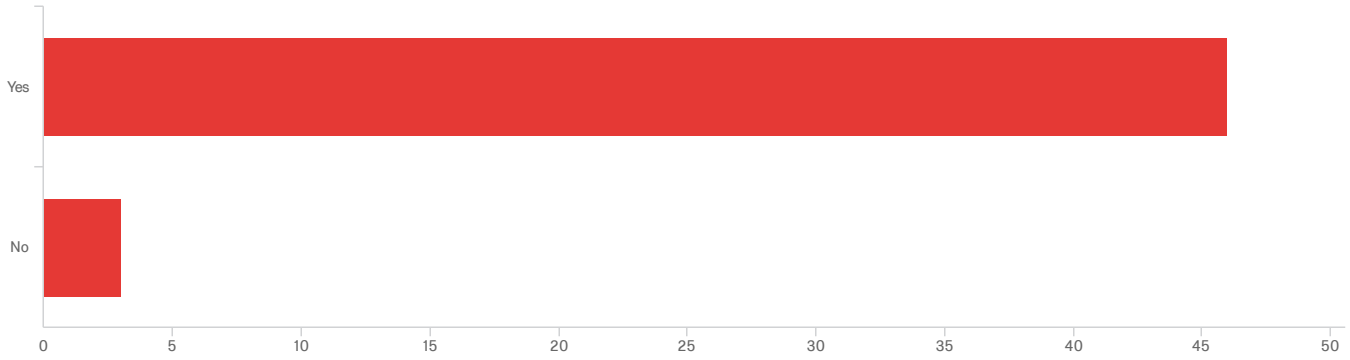


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Over the past five years the number of CTE teachers in your district has?	1.00	3.00	2.44	0.79	0.62	48

#	Field		Choice Count
1	increased	18.75%	9
2	decreased	18.75%	9
3	stayed the same	62.50%	30
			48

Showing rows 1 - 4 of 4

Q11 - Do you anticipate needing to hire additional/replacement CTE teachers in the next 3-10 years?

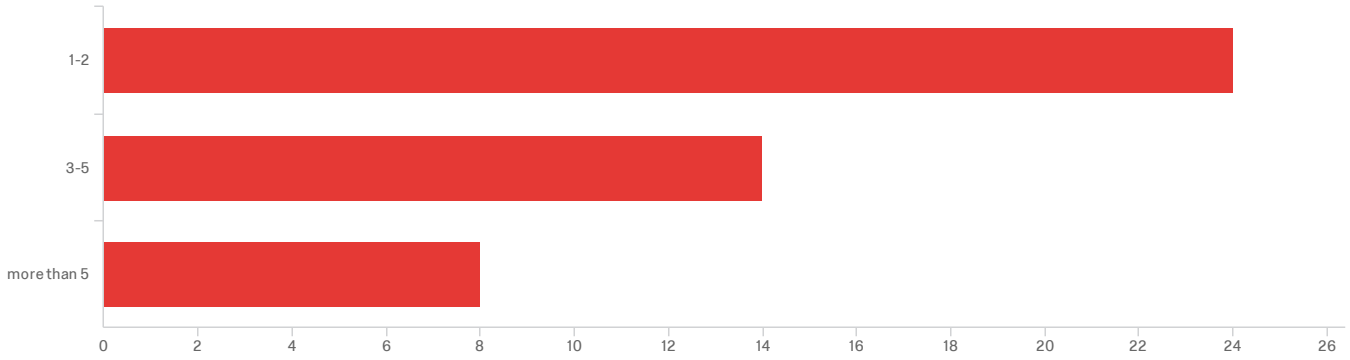


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Do you anticipate needing to hire additional/replacement CTE teachers in the next 3-10 years?	1.00	2.00	1.06	0.24	0.06	49

#	Field		Choice Count
1	Yes	93.88%	46
2	No	6.12%	3
			49

Showing rows 1 - 3 of 3

Q12 - If you answered yes to the previous question, how many do you anticipate needing to hire?

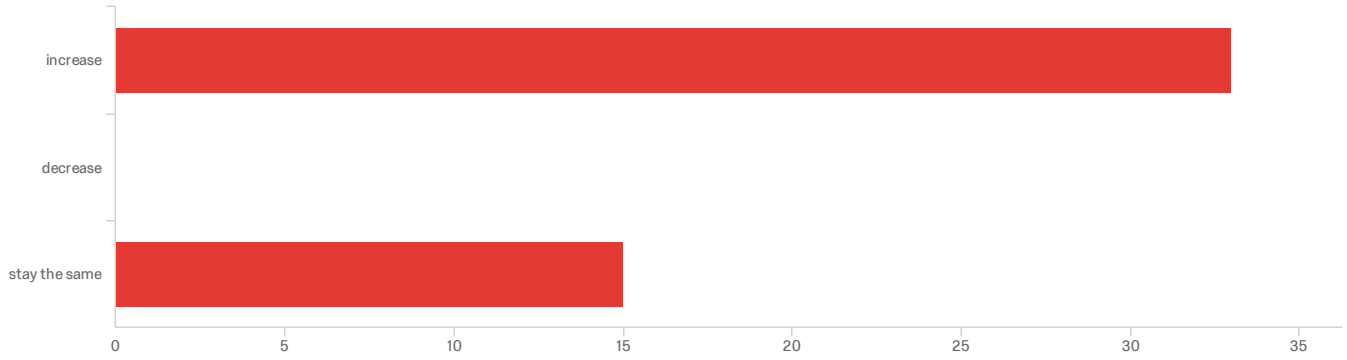


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	If you answered yes to the previous question, how many do you anticipate needing to hire?	1.00	3.00	1.65	0.76	0.57	46

#	Field		Choice Count
1	1-2	52.17%	24
2	3-5	30.43%	14
3	more than 5	17.39%	8
			46

Showing rows 1 - 4 of 4

Q13 - Given your knowledge of your local community, do you anticipate in the next 3-10 years, the need to hire CTE teachers will?

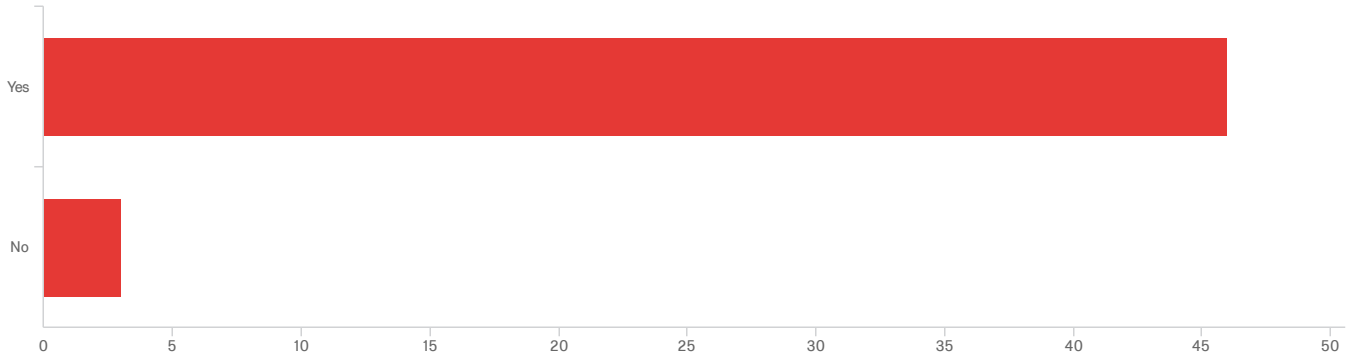


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Given your knowledge of your local community, do you anticipate in the next 3-10 years, the need to hire CTE teachers will?	1.00	3.00	1.63	0.93	0.86	48

#	Field		Choice Count
1	increase	68.75%	33
2	decrease	0.00%	0
3	stay the same	31.25%	15
			48

Showing rows 1 - 4 of 4

Q14 - Do you hear from employers that they would like more students to receive CTE training in secondary education?

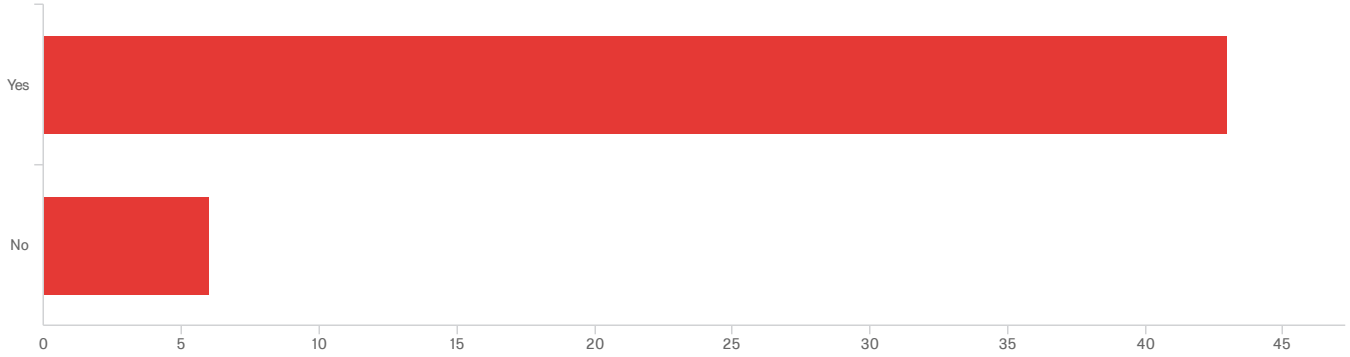


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Do you hear from employers that they would like more students to receive CTE training in secondary education?	1.00	2.00	1.06	0.24	0.06	49

#	Field		Choice Count
1	Yes	93.88%	46
2	No	6.12%	3
			49

Showing rows 1 - 3 of 3

Q15 - Does your school receive Perkins funding?

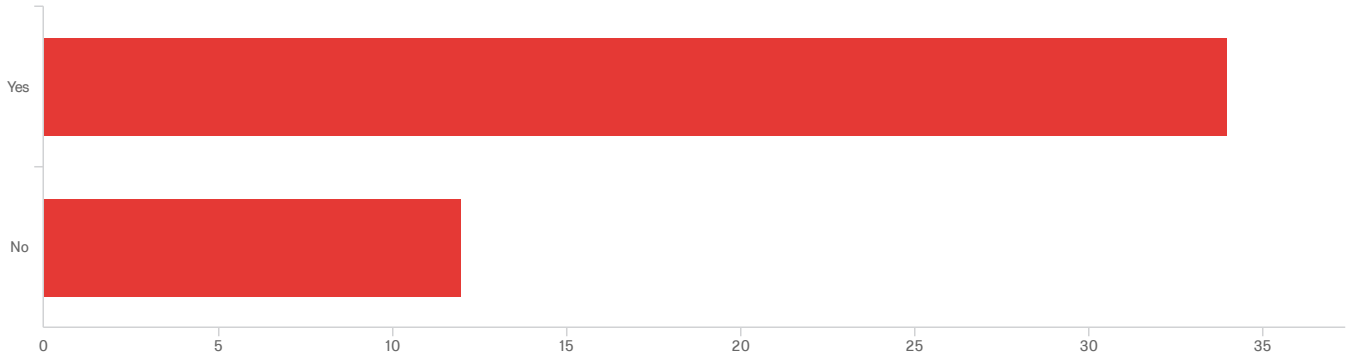


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Does your school receive Perkins funding?	1.00	2.00	1.12	0.33	0.11	49

#	Field		Choice Count
1	Yes	87.76%	43
2	No	12.24%	6
			49

Showing rows 1 - 3 of 3

Q16 - If the Perkins funding model were to change and your program(s) no longer received funding, would that or those programs continue?

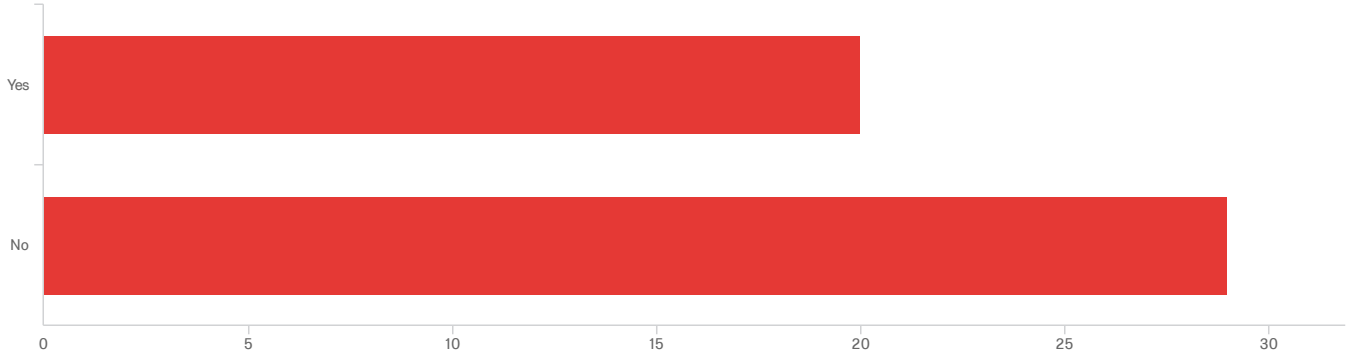


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	If the Perkins funding model were to change and your program(s) no longer received funding, would that or those programs continue?	1.00	2.00	1.26	0.44	0.19	46

#	Field		Choice Count
1	Yes	73.91%	34
2	No	26.09%	12
			46

Showing rows 1 - 3 of 3

Q17 - Have you had to close any programs because CTE teachers were not available?

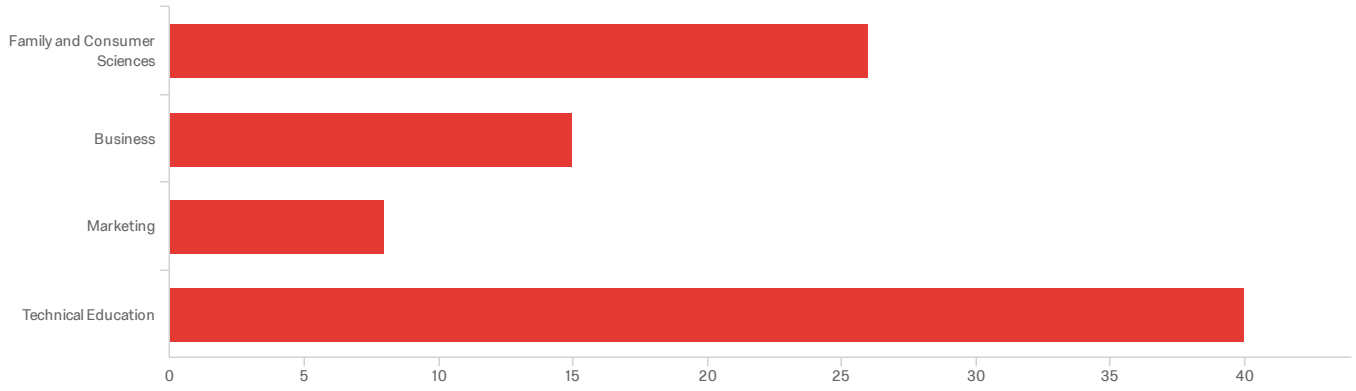


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Have you had to close any programs because CTE teachers were not available?	1.00	2.00	1.59	0.49	0.24	49

#	Field		Choice Count
1	Yes	40.82%	20
2	No	59.18%	29
			49

Showing rows 1 - 3 of 3

Q18 - Which CTE areas do you find it most difficult to find teachers?



Data source misconfigured for this visualization.

#	Field	Choice Count	
1	Family and Consumer Sciences	29.21%	26
2	Business	16.85%	15
3	Marketing	8.99%	8
4	Technical Education	44.94%	40
			89

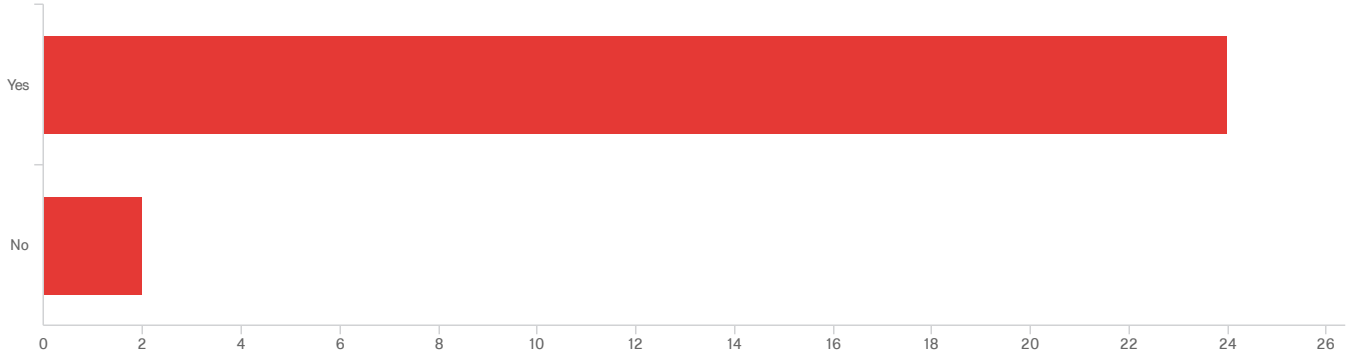
Showing rows 1 - 5 of 5

Q25 - What is the primary sector of your business?

What is the primary sector of your business?
Heavy Highway contractor
Construction
Heavy Civil Construction
Construction
Construction (Civil, Heavy/Highway, Commercial Building)
Construction
Construction
Construction
Powerline Construction
Construction
Highway and Commercial construction
Commercial construction
Landscape Contracting
road and street construction
Mining
Heavy / Highway Construction
Construction
Financial Services
Banking
Finance
Hotel
Non profit administration

What is the primary sector of your business?
Amazon - Materials Handling Equipment (MHE) Technicians and Technical Talent.
Education consultant (former high school business teacher)
Workforce training
Student organizations

Q20 - Is your sector expanding in workforce needs?

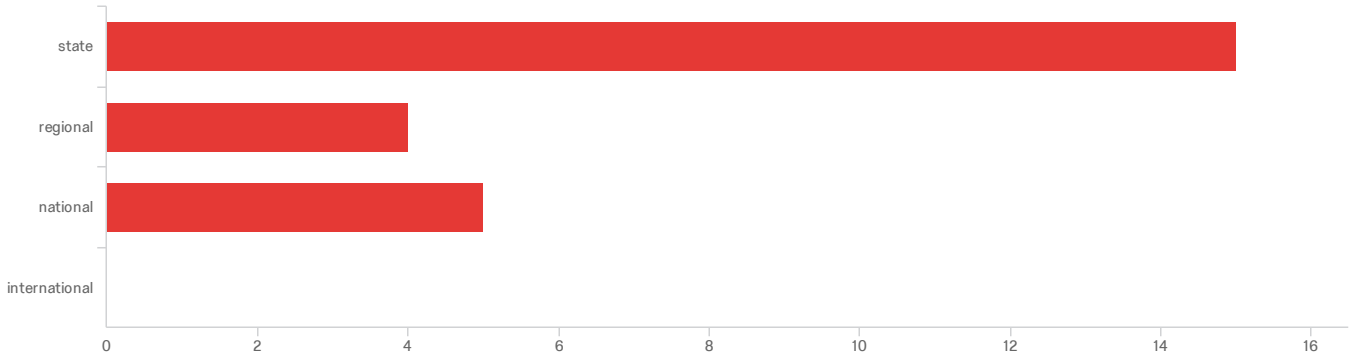


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Is your sector expanding in workforce needs?	1.00	2.00	1.08	0.27	0.07	26

#	Field		Choice Count
1	Yes	92.31%	24
2	No	7.69%	2
			26

Showing rows 1 - 3 of 3

Q21 - If your answer was yes to the previous question, that increase is expanding in which area?

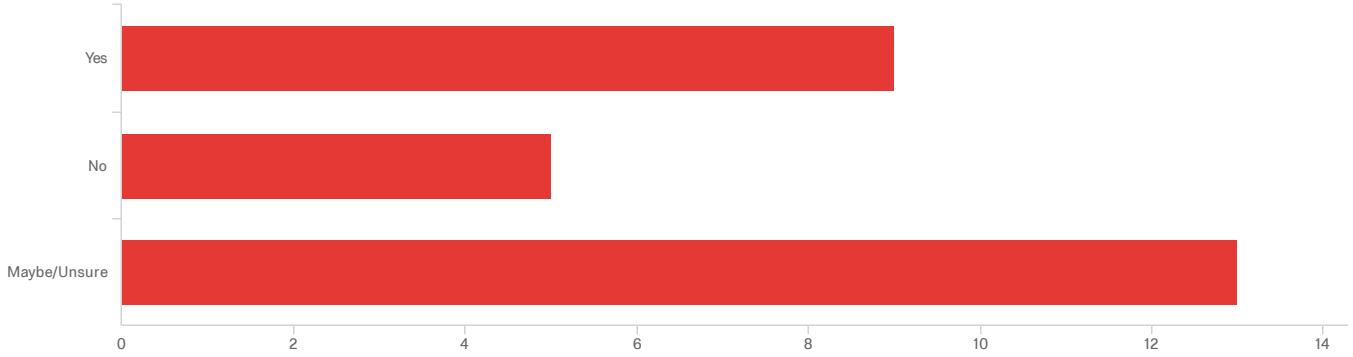


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	If your answer was yes to the previous question, that increase is expanding in which area?	1.00	3.00	1.58	0.81	0.66	24

#	Field		Choice Count
1	state	62.50%	15
2	regional	16.67%	4
3	national	20.83%	5
4	international	0.00%	0
			24

Showing rows 1 - 5 of 5

Q22 - Do CTE teachers in your sector understand the demand for your workforce needs?

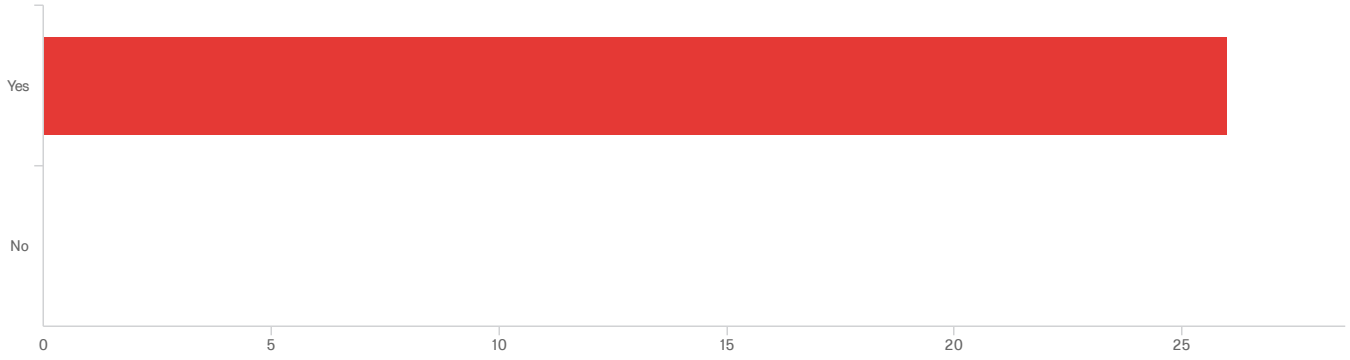


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Do CTE teachers in your sector understand the demand for your workforce needs?	1.00	3.00	2.15	0.89	0.79	27

#	Field		Choice Count
1	Yes	33.33%	9
2	No	18.52%	5
3	Maybe/Unsure	48.15%	13
			27

Showing rows 1 - 4 of 4

Q23 - If asked, would your organization provide feedback, input, and direction to the University of Wyoming's proposed CTE program to create an understanding of business and industry workforce needs and expectations?

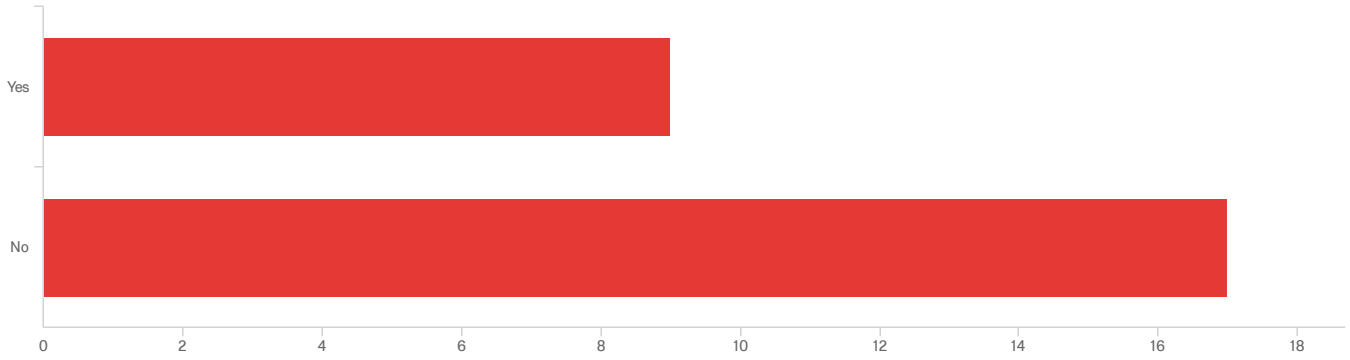


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	If asked, would your organization provide feedback, input, and direction to the University of Wyoming's proposed CTE program to create an understanding of business and industry workforce needs and expectations?	1.00	1.00	1.00	0.00	0.00	26

#	Field		Choice Count
1	Yes	100.00%	26
2	No	0.00%	0
			26

Showing rows 1 - 3 of 3

Q24 - Has your organization worked collaboratively with the University of Wyoming in other capacities?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Has your organization worked collaboratively with the University of Wyoming in other capacities?	1.00	2.00	1.65	0.48	0.23	26

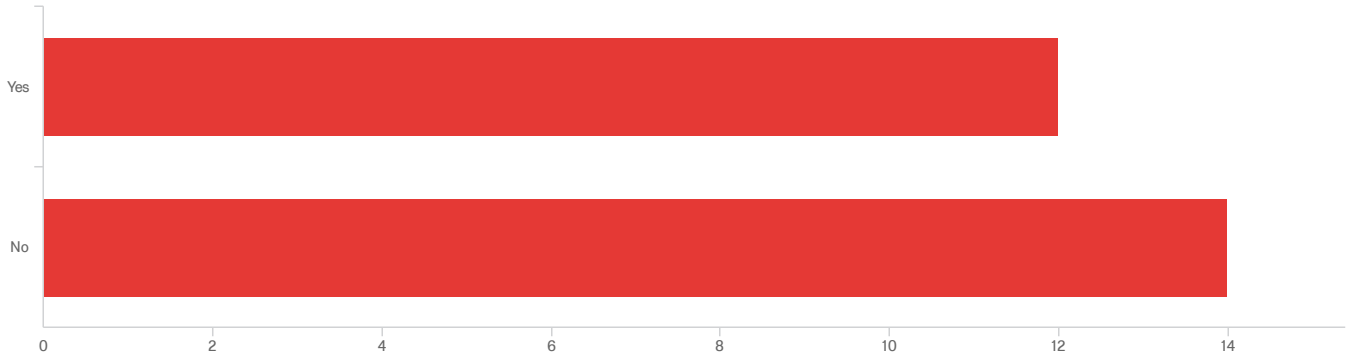
#	Field		Choice Count
1	Yes	34.62%	9
2	No	65.38%	17
			26

Showing rows 1 - 3 of 3

Q26 - If you answered yes to collaborating with the University, please provide some detailed information on that project or projects here.

If you answered yes to collaborating with the University, please provide so...
WCA
Interships
Somewhat... We have done a lot of work at the UW Campus in Laramie and have an annual contract for landscaping work there.
College of Engineering Construction Management Program
Many projects with the College of Business
President of our organization has worked as a mentor with finance-degree students.
Through Division of Tourism and WLRA membership
Evaluation is substance abuse prevention
Warehousing and Distribution sectors are in desperate need of skilled Technicians to maintain Mechanical, Electrical, and Robotic materials handling systems.
Conference planning and speakers

Q27 - Do you feel your organization understands the curriculum that will be required for a CTE teacher training program?

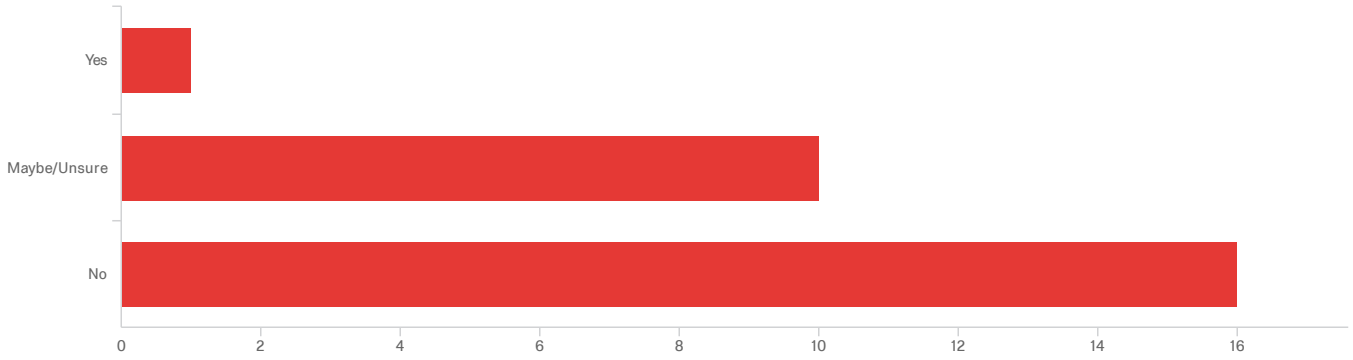


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Do you feel your organization understands the curriculum that will be required for a CTE teacher training program?	1.00	2.00	1.54	0.50	0.25	26

#	Field		Choice Count
1	Yes	46.15%	12
2	No	53.85%	14
			26

Showing rows 1 - 3 of 3

Q28 - Do you feel your industry is adequately represented in current University Technical Education curriculum?

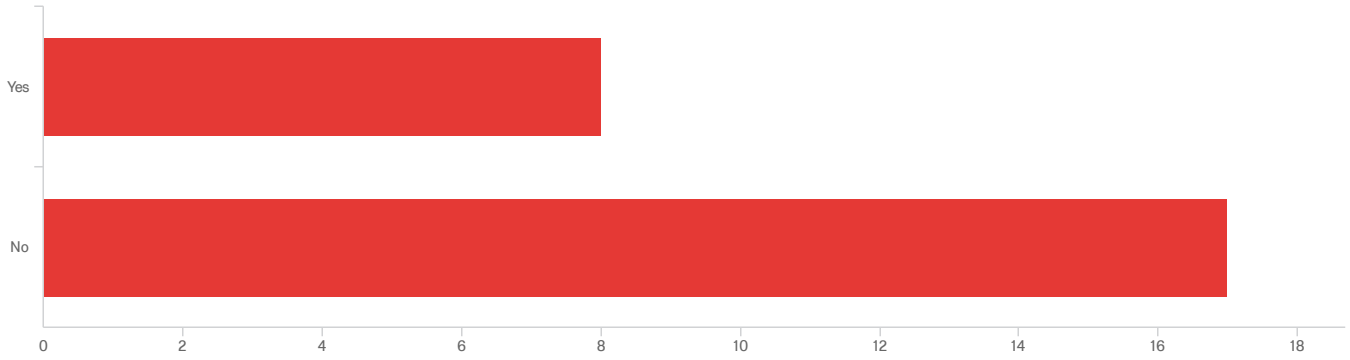


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Do you feel your industry is adequately represented in current University Technical Education curriculum?	1.00	3.00	2.56	0.57	0.32	27

#	Field		Choice Count
1	Yes	3.70%	1
2	Maybe/Unsure	37.04%	10
3	No	59.26%	16
			27

Showing rows 1 - 4 of 4

Q29 - Has your organization or members ever been consulted regarding CTE curriculum?

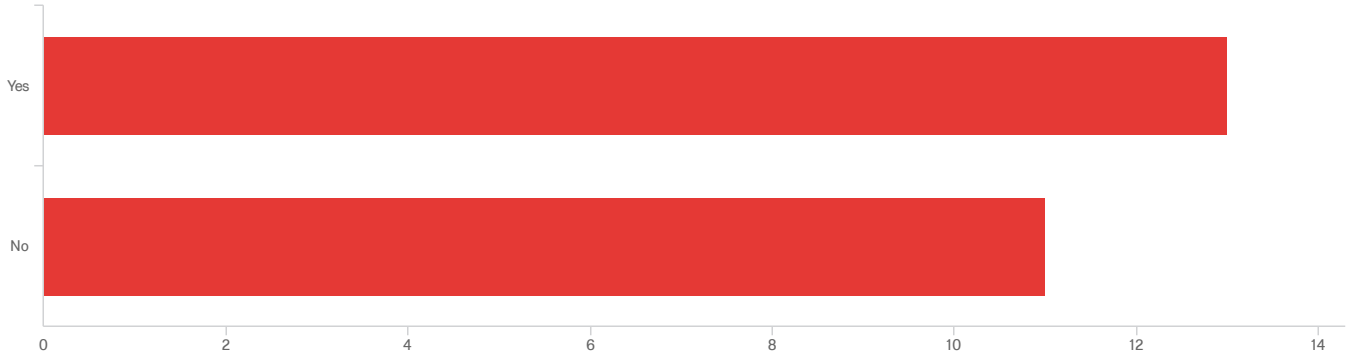


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Has your organization or members ever been consulted regarding CTE curriculum?	1.00	2.00	1.68	0.47	0.22	25

#	Field		Choice Count
1	Yes	32.00%	8
2	No	68.00%	17
			25

Showing rows 1 - 3 of 3

Q30 - Do you feel there is a link between what teacher candidates learn at the University of Wyoming Technical Education program and what programs are offered in public schools?

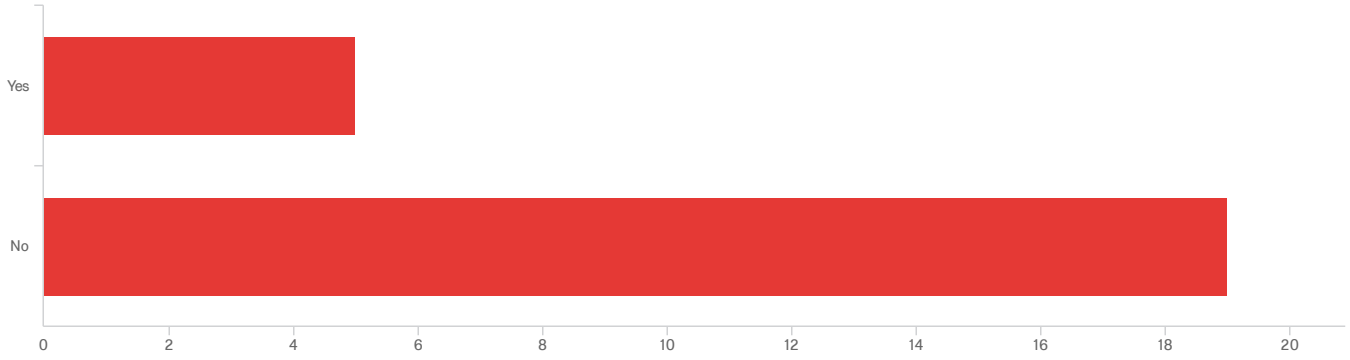


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Do you feel there is a link between what teacher candidates learn at the University of Wyoming Technical Education program and what programs are offered in public schools?	1.00	2.00	1.46	0.50	0.25	24

#	Field		Choice Count
1	Yes	54.17%	13
2	No	45.83%	11
			24

Showing rows 1 - 3 of 3

Q31 - Based on your knowledge of the University Technical Education program, are new teachers exposed to your sector's content and curriculum adequately enough to begin teaching in that area?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Based on your knowledge of the University Technical Education program, are new teachers exposed to your sector's content and curriculum adequately enough to begin teaching in that area?	1.00	2.00	1.79	0.41	0.16	24

#	Field		Choice Count
1	Yes	20.83%	5
2	No	79.17%	19
			24

Showing rows 1 - 3 of 3

Q32 - How can a new University CTE program better prepare teacher candidates to meet the needs of your industry ?

How can a new University CTE program better prepare teacher candidates to m...
Until the University starts recognizing the large demand for skilled works that don"t require a college degree (which comes with a large amount of debt) a CTE program will jsut be more lip service
Meet with local Contractors Associations around the state for what skills are required. Our company is active with multiple associations in the state and know there is a desire to engage with CTE programs to provide any assistance needed.
Understand the needs of the industry and tie the curriculum in the program to these specific areas of need.
To understand any industry well enough to even grasp how to teach in any industry, but especially in construction trades, experience is the greatest educator. A multi-year co-op or internship is very much needed to be able to understand the needs in the industry.
Know the hands on job requirements
Maximize interaction with industry.
It needs to start collaboratively at home and with the school counselors to get the potential students into the CTE classrooms so there is a demand again for current trained teachers.
Outreach to gain a better understanding of industry requirements.
by working together to meet the needs of industry since they are constantly changing
come understand what we do everyday...applicable learning to build the correct skills.
Awareness is key.
Education of functionality of hotels as it relates to tourism.
Offer and promote multiple tracks: Teaching, Training Management, Industrial Technical Management.
Offer instruction on how to teach the "employability" standards included in the WY standards. These are hard standards to teach and assess, so offering examples on how to do this would, or how to include it in the curriculum (no matter the content), would be helpful!
More awareness of the value of both technical and affective skills required of all future employees should be emphasized to all teachers, especially those teaching CTE courses. CTE teachers need to be required to have a minimum of 2000 work hours in their related teaching field and should be involved in , or at least aware of, the student organizations affiliated with their field (FBLA, DECA, VICA, FFA, etc.). Leadership and communication skills should be included in the curriculum to build the teacher's skill set and to encourage teaching those skills to the students in the classroom. There is an urgent need for qualified CTE teachers in Wyoming to build a stronger workforce in our state.
Identify current trends and local community needs.
Need to be trained extensively in trade skills. Pedagogy is important, but equally important is the need for a deep understanding of trade methods, and a strong command of hard skills.

End of Report

CIP Code	CIP Title	CIP Description		Ground WY					Online WY					Ground & Online WY					Ground Laramie 360					Online Laramie 360					Ground & Online Laramie 360					BA/BS; Laramie 360; Online & Onground	2017 Completions	Comments
				Student Demand	Employ Demand	Fit	Compet Intensity	Overall Score	Student Demand	Employ Demand	Fit	Compet Intensity	Overall Score	Student Demand	Employ Demand	Fit	Compet Intensity	Overall Score	Student Demand	Employ Demand	Fit	Compet Intensity	Overall Score	Student Demand	Employ Demand	Fit	Compet Intensity	Overall Score	Student Demand	Employ Demand	Fit	Compet Intensity	Overall Score			
CIP Category 13.13-Teacher Education and Professional Development, Specific Subject Areas																																			
13.1303	Business Teacher Education	A program that prepares individuals to teach vocational business programs at various educational levels.	BA BS	-4	2	2	9	9	1	2	2	10	15	1	2	2	10	15	-1	-2	2	3	2	2	-1	2	9	12	3	-2	2	3	6	2017 YoY Growth -27%; 2017 5-Year CAGR -18%	8	Chadron S, U of NE at Kearney, Utah SU, Utah Valley U, Johnson & Wales U-Denver, Black Hills SU, and Weber SU offer programs. Chadron program online and for nonresidents the tuition is less. Therefore, it will be difficult for UW to attract nonresidents to the program. All completions rates declining.
13.1308	Family and Consumer Sciences/Home Economics Teacher Education	A program that prepares individuals to teach vocational home economics programs at various educational levels.	BA BS	-4	2	2	7	7	-4	2	2	7	7	-4	2	2	7	7	-4	-4	2	1	-5	-4	-2	2	7	3	-4	-4	2	1	-5	2017 YoY Growth -38%; 2017 5-Year CAGR -12%	30	BYU, Utah SU, Chadron S. No online programs
13.1309	Technology Teacher Education/ Industrial Arts Teacher Education	A program that prepares individuals to teach technology education/industrial arts programs at various educational levels.	BA BS	-8	1	0	8	1	-4	1	0	7	4	-8	1	0	8	1	-2	-5	0	5	-2	-4	-4	0	7	-1	-2	-5	0	5	-2	N/A for Laramie 360	0	Utah SU, Black Hills SU, Chadron S, UW-had 4 completions in 2016 with 8 total completions for the region. No online programs
13.131	Sales and Marketing Operations/ Marketing and Distribution Teacher Education	A program that prepares individuals to teach vocational sales and marketing operations/marketing and distributive education programs at various educational levels.	BA BS	-4	-6	2	2	-6	-4	-6	2	2	-6	-4	-6	2	2	-6	-4	-6	2	2	-6	-4	-6	2	2	-6	-4	-6	2	2	-6	N/A for Laramie 360	0	Only one program listed at Johnson & Wales U in Denver. Do not be discouraged as I see some potential here. I would recommend a discussion with College of Business Dean Sprott and Mark Leach the Chair of the Frank and Barbara Mendicino Chair in Sales and Salesmanship & Professor of Marketing. Let me know if you want to chat further about this consideration.
13.1319	Technical Teacher Education	A program that prepares individuals to teach specific vocational technical education programs at various educational levels.	BA BS	-4	2	0	9	7	-4	2	0	9	7	-4	2	0	9	7	-4	-1	0	9	4	-4	-1	0	9	4	-4	-1	0	9	4	N/A for Laramie 360	N/A for Laramie 360	No programs in the region
13.132	Trade and Industrial Teacher Education	A program that prepares individuals to teach specific vocational trades and industries programs at various educational levels.	BA BS	-4	0	2	10	8	-4	0	2	10	8	-4	0	2	10	8	-4	-4	2	10	4	-4	-4	2	10	4	-4	-4	2	10	4	N/A for Laramie 360	N/A for Laramie 360	No programs in the region

Rod

The preference is to have a 'Fit' score of 4 instead of 0 (zero), 2, or a negative number. When a 0 (zero), 2, or a negative number appears it means that the award level is not matching or 'fitting' with the award level requested. This is a little strange given these are education degrees that should require at least a bachelor's degree. My only thought is that each of the CIP Descriptions mentions 'vocational' and this may signify why the fit score is not a 4.

The red zeros and negative numbers indicate low student demand, low employment demand and/or low overall academic program demand.

There is a preference for distance or online programs. So a 3+1 approach is good

Sadly, the overall data is not encouraging. The green highlighted areas show the best potential while the yellow highlight is a good second choice. Based on just the data presented and a little knowledge of potential future distance courses related to sales & marketing I think this may represent and interesting partnership or collaborative efforts between the College of Education and the College of Business. It certainly has political strength and may help garner state funding if necessary. It may also put UW on the national map. There are only a few (about 3) of these programs nationally and it may represent an interesting niche market for UW.

ACADEMIC AND STUDENT AFFAIRS

COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: Master List of Degrees (Alexander)

☒ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
- ☒ Yes
- ☐ No

FOR FULL BOARD CONSIDERATION:
- ☒ Yes (May 2020)
  [Note: If yes, materials will also be included in the full UW Board of Trustee report.]
- ☐ No

☒ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY:
Per UW Regulation 2-119, at its annual meeting in May, the Board of Trustees shall approve the master list of Academic Programs offered by the University of Wyoming. The list may be amended by the Board at any meeting.

WHY THIS ITEM IS BEFORE THE COMMITTEE:
To seek approval of the UW Master List of Degrees and Majors.

ACTION REQUIRED AT THIS COMMITTEE MEETING:
Approval of the 2020 Master List of Degrees and Majors, and recommendation of approval to the full Board.

PROPOSED MOTION:
"I move that we approve the 2020 Master List of Degrees and Majors, and that we recommend approval to the full Board."

UNIVERSITY OF WYOMING
MASTER LIST OF DEGREES AND MAJORS
as authorized by the Trustees
May 2020
Prepared by the Office of Academic Affairs

By way of explanation, the degree title is listed in ***bold italics*** (for example, ***Bachelor of Arts, Bachelor of Science in Chemical Engineering***). The list of majors for a specific degree in a specific college is listed below the degree title. Information in *italics* and parentheses ( ) following a major is explanatory data, and not part of the official major name. Majors with brackets {} require the insertion of a secondary program of study.
New Degrees and Certificates have been highlighted in green. Programs in red are listed as Inactive Admission Status. Their status will be determined at a later date, once departments are merged and curriculum is changed. Degrees and Certificates to be deleted from previous Master Lists are highlighted in yellow and crossed out. The deletions are programs that were duplicated in other departments or that UW has ceased to offer over time; all eliminated programs have gone through the process as outlined in the University regulations for eliminating programs. As such, the Master List of Degrees and Majors has been corrected to reflect current offerings.

COLLEGE OF AGRICULTURE & NATURAL RESOURCES

Bachelor of Science
- Agricultural Business
- Agricultural Communications
- Agroecology
- Animal and Veterinary Science
- Microbiology
- Molecular Biology
- Rangeland Ecology and Watershed Management

Bachelor of Science in Family and Consumer Sciences

Master of Arts
- Molecular Biology

Master of Science
- Agricultural and Applied Economics
- Animal and Veterinary Science
- Entomology
- Family and Consumer Sciences
- Food Science and Human Nutrition (*interdisciplinary*)
- Molecular Biology *
- Plant Sciences
- Rangeland Ecology and Watershed Management
- Soil Science

Doctor of Philosophy
- Animal and Veterinary Science
- Entomology
- Molecular Biology

* = Molecular Biology is listed under both the Master of Science and Master of Arts categories, but is only counted as one master's program.

COLLEGE OF AGRICULTURE & NATURAL RESOURCES (cont.)

Doctor of Philosophy (cont.)

Plant Sciences
Rangeland Ecology and Watershed Management
Soil Sciences

COLLEGE OF ARTS & SCIENCES

Bachelor of Arts

African American and Diaspora Studies
American Studies
Anthropology
Art
Art Education
Art History
Chemistry
Communication
Criminal Justice
English
French
Gender and Women's Studies
Geology and Earth Sciences
German
History
International Studies
Journalism
Mathematics
Music
Native American and Indigenous Studies
Philosophy
Physics
Political Science
Religious Studies
Sociology
Spanish
Statistics
Theatre and Dance

Bachelor of Fine Arts

Art @
Theatre and Dance @

Bachelor of Music

Jazz Performance
Music Education
Music Performance

Bachelor of Science

Astronomy/Astrophysics
Biology

@ = Bachelor of Fine Arts programs are previously counted under the Bachelor of Arts category in the College of Arts and Sciences.

COLLEGE OF ARTS & SCIENCES (cont.)

Bachelor of Science (cont.)

- Botany
- Chemistry *
- Chemistry (ACS approved) #
- Communication *
- Environmental Geology/Geohydrology
- Geography
- Geology
- Journalism *
- Mathematics *
- Physics *
- Physiology
- Political Science *
- Psychology
- Statistics *
- Wildlife and Fisheries Biology and Management (*professional*)
- Zoology

Master of Arts

- American Studies (*interdisciplinary*)
- Anthropology
- Communication
- English
- ~~Geography~~
- History
- International Studies (*interdisciplinary*)
- Mathematics
- Philosophy
- Political Science
- Psychology
- Sociology
- Spanish

Master of Arts in Teaching

- History &
- Mathematics &

Master of Fine Arts in Creative Writing

Master of Music

Master of Music Education

~~***Master of Planning (Community and Regional)***~~

Master of Public Administration

Master of Science

- Botany
- Chemistry
- Geology
- Geophysics
- Mathematics *
- Physics

***** = This major counted under a previously listed undergraduate Bachelor of Arts degree in the College of Arts & Sciences.
# = This listing not counted as a separate major
& = This major counted under a previously listed degree in the College of Arts & Sciences.

COLLEGE OF ARTS & SCIENCES (cont.)

Master of Science (cont.)
- Psychology *
- Statistics
- Zoology and Physiology

Master of Science in Teaching
- Chemistry *
- Mathematics *
- Natural Science (*interdisciplinary*) *
- Physics *

Doctor of Philosophy
- Anthropology
- Botany
- Chemistry
- Geology
- Geophysics
- Mathematics
- Physics
- Psychology
- Statistics
- Zoology and Physiology

* = This major counted under a previously listed degree in the College of Arts and Sciences.

COLLEGE OF BUSINESS

Bachelor of Science in Economics

Bachelor of Science in Business
- Accounting
- Business Administration (online only)
- Business Economics
- Entrepreneurship
- Finance
- Management of Human Resources
- Marketing
- Professional Selling

Master of Business Administration
- Business Administration
- Business Administration – Executive #
- Business Administration – Energy Management #
- Business Administration – Finance #

Master of Science
- Accounting
- Economics
- Finance

Doctor of Philosophy
- Economics
- Management and Marketing

= This listing not counted as a separate major

COLLEGE OF EDUCATION

Bachelor of Arts
- Elementary and Special Education
- Elementary Education
- Earth Science Education #
- Secondary Education
- Secondary Education – English Education #
- Secondary Education – Mathematics Education #
- Secondary Education – Modern Languages Education #
- Secondary Education – Science Education #
- Secondary Education – Social Studies Education #

Bachelor of Science
- Agricultural Education

Master of Arts
- Education
- Curriculum & Instruction ^
- Educational Leadership ^
- Higher Education Administration ^
- Special Education ^

Master of Science
- Counseling
- Education *
- Learning Design & Technology ^

Doctor of Education
- Education
- Curriculum & Instruction ^
- Educational Leadership ^
- Higher Education Administration ^
- Learning Design & Technology ^

Doctor of Philosophy
- Counselor Education and Supervision
- Curriculum and Instruction
- Education
- Educational Leadership ^
- Higher Education Administration ^
- Learning Design & Technology ^
- Curriculum Studies ^
- Literacy Education ^
- Mathematics Education ^
- Science Education ^

= This is not a separate major and is considered a concentration within that major (ex. Bachelor of Arts in Secondary Education with a concentration in Biological Sciences)
***** = This major counted under a previously listed degree in the College of Education
^ = This is not a separate major and is considered a concentration within that major (ex. Master of Arts with a concentration in Curriculum and Learning or a Doctor of Philosophy with a concentration in Curriculum Studies)

COLLEGE OF ENGINEERING AND APPLIED SCIENCE

Bachelor of Science in Architectural Engineering
Bachelor of Science in Chemical Engineering
Bachelor of Science in Civil Engineering
Bachelor of Science in Computer Engineering
Bachelor of Science in Computer Science
Bachelor of Science in Construction Management
Bachelor of Science in Electrical Engineering
Bachelor of Science in Energy Systems Engineering
Bachelor of Science in Mechanical Engineering
Bachelor of Science in Petroleum Engineering
Master of Science
- Architectural Engineering
- Atmospheric Science
- Chemical Engineering
- Civil Engineering
- Computer Science
- Electrical Engineering
- Environmental Engineering
- Mechanical Engineering
- Petroleum Engineering

Doctor of Philosophy
- Atmospheric Science
- Chemical Engineering
- Civil Engineering
- Computer Science
- Electrical Engineering
- Mechanical Engineering
- Petroleum Engineering

COLLEGE OF HEALTH SCIENCES

Bachelor of Science
- Kinesiology and Health Promotion
- Medical Laboratory Science
- Physical Education Teaching
- Speech, Language and Hearing Sciences

Bachelor of Science in Dental Hygiene
Bachelor of Science in Nursing
Bachelor of Social Work
Master of Science
- Health Services Administration
- Kinesiology and Health
- Nursing
- Speech-Language Pathology

Master of Social Work
Doctor of Nursing Practice
Doctor of Pharmacy

COLLEGE OF LAW

Juris Doctor

HAUB SCHOOL OF ENVIRONMENT & NATURAL RESOURCES

Bachelor of Science
- Environment and Natural Resources/ {affiliated major}
- Environmental Systems Science
- Outdoor Recreation & Tourism Management

SCHOOL OF ENERGY RESOURCES

Bachelor of Science
- Energy Resource Management and Development
- Energy Land and Water #
- Professional Land Management #

= This listing not counted as a separate major

CROSS-COLLEGE INTERDISCIPLINARY GRADUATE DEGREES

Juris Doctor/Master of Arts in Environment and Natural Resources #
Juris Doctor/Master of Public Administration #

= This listing not counted as a separate major

ACADEMIC AFFAIRS

Bachelor of General Studies
Master of Arts
- Geography/Water Resources #

Master of Science
- Agricultural and Applied Economics/Water Resources #
- Biomedical Sciences
- Botany/Water Resources #
- Civil Engineering/Water Resources #
- Economics/Water Resources #
- Geology/Water Resources #
- Natural Science (interdisciplinary)
- Rangeland Ecology and Watershed Management/Water Resources #
- Soil Science/Water Resources #
- Zoology and Physiology/Water Resources #

Master of {affiliated degree}/Environment and Natural Resources #

= This listing not counted as a separate major

ACADEMIC AFFAIRS (cont.)

Doctor of Philosophy

Biomedical Sciences
Ecology
Hydrologic Science
Molecular and Cellular Life Sciences
Neuroscience

UW CASPER

Bachelor of Applied Science

Organizational Leadership

Aggregate list of certificates offered at UW
May 2020

Graduate Certificates
American Studies
Community College Leadership
Early Childhood Mental Health
English as a Second Language
K-12 Special Education
Literacy
Music Performance
Online Instruction
Online Play Therapy
Reclamation and Restoration Ecology
School District Superintendent
School Principalship
School Social Work
Teachers of American Indian Children
Teaching Elementary School
Teaching Middle School Math
Teaching Middle School Science
Teaching Secondary Content

Undergraduate Certificates
American Sign Language
Cadastral Surveying
Computer Science Education
Construction Management
Cybersecurity
Early Childhood Program Director
Music Audio Technology Certificate
Music Entrepreneurship Certificate

ACADEMIC AND STUDENT AFFAIRS

COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: Existing Degree Program Change Request process (Alexander)

☒ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
- ☒ Yes
- ☐ No

FOR FULL BOARD CONSIDERATION:
- ☐ Yes (Date here)
  [Note: If yes, materials will also be included in the full UW Board of Trustee report.]
- ☒ No

☒ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY: This information item pertains to a process for changing existing degree program designations or CIP codes.

WHY THIS ITEM IS BEFORE THE COMMITTEE: To verify that the process meets the board's expectations.

ACTION REQUIRED AT THIS COMMITTEE MEETING: None

PROPOSED MOTION: None

University of Wyoming

Existing Degree Program Change Request
Title Change, Degree Designation, or CIP Change

Directions: Complete this form and proposal template to request a change to the title (name) of an existing degree program or to request a change to the Classification of Instructional Programs (CIP) code of an existing degree program. The degree program must already be on an institution's program inventory.

A degree program title consists of the following two parts:

1. degree designation, such as Bachelor of Science (BS), Master of Arts (MA), or Doctor of Philosophy (PhD); and,
2. name of the discipline, such as History, Mechanical Engineering, or Zoology.

The Classification of Instructional Programs (CIP) is the taxonomic coding scheme used for instructional programs in higher education. Its purpose is to facilitate the organization, collection, and reporting of fields of study and program completions. The academic unit should consult with the Office of the Registrar and Office of Institutional Analysis prior to submitting the proposal to determine whether a change to the CIP code used to classify the program is recommended.

Resources:

CIP Code Information

Process:

1. Faculty of the unit develop a rational for the change.
2. The dean of the academic unit approves the rationale and change and submits the proposal to the Provost.
3. The Provost routes the proposal to the Faculty Senate for consideration by the Graduate Council or Academic Planning Committee.
4. The Provost approves the rationale and change.
5. The Provost reports the proposal to the Academic and Student Affairs Committee of the Board of Trustees.
6. The Board's Academic and Student Affairs Committee will recommend the change to the full Board of Trustees for consideration and action.
7. The proposers hold an implementation meeting with the Registrar, Admissions, OIA, and Advising Managers, and other appropriate units to implement the change. Implementation meetings gather people from all of the units that will take part in ensuring a new or restructured academic program runs smoothly.

Administrative Information

1. Proposing Unit:

2. Current Degree Program Title – *Show how the program appears on the Coordinating Board's approval letter (e.g., Bachelor of Business Administration degree with a major in Accounting)*:

3. Current Degree Program CIP Code:

4. Contact Person: *Provide contact information for the person who can answer specific questions about the degree program and change proposal.*

Name:

Title:

E-mail:

Phone:

Guidance: Name and identity are closely related. A program "brand" as represented by the name has value and so careful planning for a name or designation change is a worthwhile investment. Programs with a long history and many alumni and past employees may find that these groups express strong attachment to the existing name. Thus, the rationale for the name change should be made with full consideration for the impact on the historic connections and with a view to the long-term future. New names should be designed to reflect the nature of the program for many years to come. Ideally, consultation with and support from the program's students in course and alumni should be evident in the proposal.

Programs should also demonstrate that they have consulted with other departments and colleges on campus that may be impacted by the change. Additionally, they should demonstrate they have discussed the change with their Wyoming community college colleagues.

Program names that narrow the program scope or reflect short-term sub-areas or trends in research tools or methodology should be avoided. Proposals should be explicit about all the academic programs and structures that are included in a name change request. For example, list all departments, majors, degrees, certificates, centers, subject listings, minors or other academic elements that are included in the request.

Some common justifications for a change in major name or CIP code are that the new name more accurately reflects the curriculum than the old name; that the activities of the program faculty and the training they offer are more accurately reflected by the new name; and that the name of the discipline has changed and consequently the major should be renamed to reflect this change in the discipline.

Request for Change in Degree Program Designation (e.g., Bachelor of Science (BS), Master of Arts (MA), or Doctor of Philosophy (PhD)

Current Degree Program Designation:

Proposed Degree Program Designation:

Proposed Implementation Date (MM/DD/YYYY):

Reason for Change:

- Background: An overview explanation of why the change(s) is being requested; how will it improve the degree program and benefit students and faculty?
- Proposed changes: List each proposed change and the specific rationale for that change.
- Logistics: When is the changed proposed to be effective. How will current students in the program be handled? (note: Generally changes are effective for the subsequent fall semester. Current students are assumed to be required to complete the requirements in place when they entered the program unless otherwise agreed upon by the student and program.) Document that you have consulted with alumni and current students when appropriate. Document that you have consulted with other departments and colleges that may be impacted by the change. Document that you have consulted with Wyoming community college colleagues.
- Comparison of current and proposed curriculum, if applicable

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Request Change in Name of Discipline (e.g., History, Mechanical Engineering, or Zoology)

Current Name:

Proposed Name:

Implementation Date (MM/DD/YYYY):

Reason for Change:

- Background: An overview explanation of why the change(s) is being requested; how will it improve the degree program and benefit students and faculty?
- Proposed changes: List each proposed change and the specific rationale for that change.
- Logistics: When is the changed proposed to be effective. How will current students in the program be handled? (note: Generally changes are effective for the subsequent fall semester. Current students are assumed to be required to complete the requirements in place when they entered the program unless otherwise agreed upon by the student and program.) Document that you have consulted with alumni and current students when appropriate. Document that you have consulted with other departments and colleges that may be impacted by the change. Document that you have consulted with Wyoming community college colleagues.
- Comparison of current and proposed curriculum, if applicable

Request Change in CIP Code

Current Code:

Proposed Code:

Implementation Date (MM/DD/YYYY):

Reason for Change:

- Background: An overview explanation of why the change(s) is being requested; how will it improve the degree program and benefit students and faculty?
- Proposed changes: List each program you are requesting the CIP code change for and the specific rationale for that change.
- Logistics: When is the changed proposed to be effective. How will current students in the program be handled? (note: Generally changes are effective for the subsequent fall semester. Current students are assumed to be required to complete the requirements in place when they entered the program unless otherwise agreed upon by the student and program.)

ACADEMIC AND STUDENT AFFAIRS

COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: **Food Insecurity Task Force update**, Chestnut

☒ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
- ☒ Yes
- ☐ No

FOR FULL BOARD CONSIDERATION:
- ☐ Yes Proposed meeting date May 2020
  [Note: If yes, materials will also be included in the full UW Board of Trustee report.]
- ☒ No

☒ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY:
The Task Force has made progress on many efforts, grant application, student survey, fall engagement planning, and more all is service of better meeting the needs of student food security. This update will provide a review of progress and current plans for efforts in the remainder of the calendar year.

WHY THIS ITEM IS BEFORE THE COMMITTEE:
Providing update to the AA/SA committee.

ACTION REQUIRED AT THIS COMMITTEE MEETING:
Welcoming input and feedback from the AA/SA committee.

PROPOSED MOTION: n/a

ACADEMIC AND STUDENT AFFAIRS

COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: **Green Dot Initiative update**, Chestnut

☒ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
- ☐ Yes
- ☒ No

FOR FULL BOARD CONSIDERATION:
- ☐ Yes Proposed meeting date May 2020
  [Note: If yes, materials will also be included in the full UW Board of Trustee report.]
- ☒ No

☒ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY:
The Green Dot Violence Prevention Strategy is a national program that trains students, faculty, and staff in bystander intervention to help prevent instances of power-based personal violence (PBPV). This includes dating violence, domestic violence, sexual assault, stalking, and harassment. In January 2020, UW had 38 faculty and staff from across campus along with 8 colleagues from the Northwest Community College District attend a week long Green Dot training. We were pleased to see such a broad cross-section of campus – faculty from different colleges, library staff, administrators, athletics staff and coaches - commit to support this program.

Overall, this program aims to communicate that at the University of Wyoming,

1. Violence is not tolerated and,
2. Everyone is expected to do their part.

Green Dot implementation requires intentional and coordinated efforts to facilitate and sustain culture change at UW. As we launch this program, faculty and staff all over campus play a critical role in this effort. Multiple open informational sessions for faculty and staff are scheduled for the week of April 6 – 10. Departments can also request presentations for their full teams.

WHY THIS ITEM IS BEFORE THE COMMITTEE:
Providing regular update to the AA/SA committee.

ACTION REQUIRED AT THIS COMMITTEE MEETING:
Welcoming input and feedback from the AA/SA committee.

PROPOSED MOTION: n/a