THE UNIVERSITY OF WYOMING

BOARD OF TRUSTEES' REPORT AND SUPPLEMENTAL MATERIALS

January 12-14, 2022

The final report can be found on the University of Wyoming Board of Trustees Website at http://www.uwyo.edu/trustees/

University of Wyoming Mission Statement (July 2017)

We honor our heritage as the state's flagship and land-grant university by providing accessible and affordable higher education of the highest quality; rigorous scholarship; the communication and application of knowledge; economic and community development; and responsible stewardship of our cultural, historical and natural resources.

In the exercise of our primary mission to promote learning, we seek to provide academic and co-curricular opportunities that will:

- Graduate students who have experienced the frontiers of scholarship and creative activity and who are prepared for the complexities of an interdependent world;
- Cultivate a community of learning energized by collaborative work among students, faculty, staff and external partners.
- Nurture an environment that values and manifests diversity, internationalization, free expression, academic freedom, personal integrity and mutual respect; and
- Promote opportunities for personal health and growth, physical health, athletic competition and leadership development for all members of the university community.

As Wyoming's only public university, we are committed to scholarship, outreach and service that extend our human talent and technological capacity to serve the people in our communities, our state, the nation and the world.

TRUSTEES OF THE UNIVERSITY OF WYOMING AGENDA
January 12-14, 2022
Marian H. Rochelle Gateway Center
Laramie, Wyoming

Note: Only topics that have support materials provided in advance of the meeting are contained within this report. Topics that will be discussed with only a verbal report do not have information included.

WORK SESSIONS

Trustee Committee Reports

Academic and Student Affairs Committee; Michelle Sullivan (Chair)

Consideration and Action:

Biennium Budget Committee; John McKinley (Chair)/Kean

Facilities Contracting Committee; John McKinley (Chair)

Consideration and Action:

Fiscal and Legal Affairs Committee; Macey Moore (Chair)

Legislative Relations Committee; Kermit Brown (Chair)

Trustee Research and Economic Development Committee; David Fall (Chair)

Vice President and Dean Search Committee; Laura Schmid-Pizzato (Chair)

UW Regulation Review Committee (ad hoc committee); Kermit Brown (Chair)

Business Meeting

Reports

ASUW
Staff Senate
Faculty Senate

Public Testimony
[Scheduled for Thursday, January 13, 2022, from 11:00 – 11:30 a.m.]

Committee of the Whole
Regular Business
Board Committee Reports

Trustee Committees - *[Note: Committees of the Board will provide reports during the regular work sessions and will not have a formal report to provide during the Business Meeting.]*

Liaison to Other Boards – *[Liaisons will provide a written report in advance of the regular Business Meeting.]*

- UW Alumni Association Board – Laura Schmid-Pizzato & Keener Fry
- Foundation Board – Jeff Marsh & David Fall
- Haub School of Environment & Natural Resources – Michelle Sullivan
- Energy Resources Council – Dave True
- Cowboy Joe – John McKinley

Proposed Items for Action:

I. Personnel – Academic Report – Carman/Benham-Deal
II. Contracts, agreements, procurements over $1 million or 5 years in length – Evans
III. Contracts and Grants Report – Hulme 104
IV. UW Regulations Housekeeping – Evans

Information Only Items: *[no action, discussion or work session]*

- Contracts and Procurement Report (per UW Regulation 7-2) – Evans 111
- Capital Construction Report – McKinley/Mai 117
- Foundation Monthly Giving Report – Blalock
- Annual Report: Faculty Workload (per UW Regulation 2-9*) [postponed from the November 2021 meeting]* – Carman/Benham-Deal 134

New Business

Date of Next Meeting: February 16, 2022 (conference call)

Adjourn Meeting

AGENDA ITEM TITLE: Faculty Athletics Representative's Report--Hagy

SESSION TYPE:
☐ Work Session
☒ Education Session
☐ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☐ Yes (select below):
- ☐ Driving Excellence
- ☐ Inspiring Students
- ☐ Impacting Communities
- ☐ High-Performing University

☒ No [Regular Business]

☐ *Attachments are provided with the narrative—refer to Supplemental Materials Report.*

EXECUTIVE SUMMARY:

Annual report from UW's Faculty Athletics Representative and chair of the Athletics Planning Committee, Alyson Hagy, on the oversight of academic, fiscal, equity/inclusion, and student-athlete well-being initiatives in Athletics.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS: N/A

WHY THIS ITEM IS BEFORE THE BOARD:

UW Regulation 3-1 establishes the Athletics Planning Committee, which is chaired by the Faculty Athletics Representative (FAR) in compliance with NCAA best practices and the recommendations of the Knight Commission to establish "institutional control" and proper oversight of Athletics. The FAR is invited to report to the Board of Trustees once a year.

ACTION REQUIRED AT THIS BOARD MEETING: None

PROPOSED MOTION: N/A

PRESIDENT'S RECOMMENDATION: N/A

AGENDA ITEM TITLE: COVID-19 Update, Seidel

SESSION TYPE:
☐ Work Session
☐ Education Session
☒ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☐ Yes (select below):
☐ Driving Excellence
☐ Inspiring Students
☐ Impacting Communities
☐ High-Performing University
☒ No [Regular Business]

☐ *Attachments are provided with the narrative—refer to Supplemental Materials Report.*

EXECUTIVE SUMMARY:
President Seidel will provide a brief update on UW's efforts to help mitigate the spread of COVID-19, including updated information on the omicron variant.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
At its May 2020 meeting, the Board authorized a preliminary plan to open the university campus for the Fall 2020 semester. At its July 2020 meeting, the Board moved to authorize modification to the university's plan to restart campus, to require face coverings, and allow administration to make further modifications to campus plans related to COVID-19 without Board approval. At its March 2021 meeting, the Board passed a resolution directing the university president authority to reopen the university campus consistent with heath policy guidelines and directives of the state and federal governments with regard to COVID-19. At its May 2021 meeting, the Board moved to not mandate COVID-19 vaccines, to follow CDC guidance with regard to social distancing and facial coverings, and sunset the university's mandatory surveillance program as of June 30, 2021. At its August 2021 meeting, the Board moved to approve the Fall 2021 COVID-19 Campus Plan to include a temporary mask mandate, and President Seidel's additions of a mandatory education program for employees and students, one-time COVID-19 testing of all students and employees prior to the start of the semester, a stronger public information campaign, and the formation of a COVID-19 Advisory Committee led by College of Health Science Dean David Jones. At its September 2021 meeting, the Board authorized the continuation of the current mask policy to be revisited at each subsequent Board meeting. On October 12, 2021 and again on November 18, 2021, the Board moved to continue the current mask policy as stated on page 8 of the updated COVID-19 Plan.

On December 15, 2021, the Board voted to approve the Spring 2022 COVID Policy, including continuing the current mask policy until its February 16, 2022, Board of Trustees conference call, at which time the mask policy will be revisited.

WHY THIS ITEM IS BEFORE THE BOARD:
Continued updates on UW's response to the COVID-19 pandemic.

ACTION REQUIRED AT THIS BOARD MEETING:
None.

PROPOSED MOTION:
N/A

PRESIDENT'S RECOMMENDATION:
The President recommends the university continue to follow the current mask policy.

AGENDA ITEM TITLE: **Annual Report: Sabbaticals/Leave**, Carman/Benham Deal/ Hutchens

SESSION TYPE:
☐ Work Session
☐ Education Session
☒ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☐ Yes (select below):
- ☐ Driving Excellence
- ☐ Inspiring Students
- ☐ Impacting Communities
- ☐ High-Performing University

☐ No [Regular Business]

☒ *Attachments are provided with the narrative.*

EXECUTIVE SUMMARY:
Information is provided to the Board about sabbatical and professional development leaves taken by faculty during Academic Year 2020-2021.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
The Board receives regular information about personnel matters, including but not limited to sabbatical and professional development leaves.

WHY THIS ITEM IS BEFORE THE BOARD:
Pursuant to University Regulation 2-16 (Sabbatical and Professional Development Leave), the Provost shall submit an annual report detailing the sabbatical and professional development leaves approved for the preceding academic year.

ACTION REQUIRED AT THIS BOARD MEETING:
No action required.

PROPOSED MOTION:
No motion required.

PRESIDENT'S RECOMMENDATION:
No recommendation required.

UNIVERSITY OF WYOMING | Office of Academic Affairs

REPORT ON 2020-2021 SABBATICAL AND PROFESSIONAL LEAVES

OVERVIEW

Any tenured member of the University faculty may apply for a sabbatical leave for the purpose of increasing the recipient's professional competence and usefulness to the University. Sabbatical leave time may be used for research, writing or study at a place of the recipient's choosing. University personnel holding tenured faculty rank whose duties are primarily administrative are also eligible for sabbatical leaves. A minimum of six years of academic service at the University must precede each period of sabbatical leave, although no right accrues automatically through lapse of time. Sabbatical leaves are not ordinarily available for the purpose of obtaining an advanced degree. A faculty member who fails to return to the University for at least one academic year immediately following a sabbatical leave is obligated to repay the amount of compensation received from the University during the period of his or her leave.

Pursuant to University Regulation 2-16 (Sabbatical and Professional Development Leave), this annual report details the sabbatical and professional development leaves approved for Academic Year (AY) 2020-2021.

A total of 29 faculty were approved by the Board of Trustees for sabbatical and professional development leaves. One (1) faculty cancelled his leave prior to the start date. Twelve (12) faculty members deferred their sabbatical to AY 2021-2022. A total of 16 sabbatical and professional development leaves were completed in the academic year.

Twelve (12) faculty completed semester-long or half-year projects and 4 faculty completed yearlong projects. Leaves for a semester or half-year for fiscal year employees are compensated at the annual rate for the limited period. Faculty on full year leaves are compensated at a rate equal to 60% of their annual salary; the remaining 40% of the annual salary is available to the College deans to redeploy for the purpose of ensuring that instructional and other department and college needs are met while the faculty member is on leave.

Below are statements provided by the faculty members that summarize their projects and the benefits and impacts of their work.

ABSTRACTS

College of Agriculture and Natural Resources

Ernest, Holly
Department of Veterinary Science
Academic Year Sabbatical Leave

Dr. Holly Ernest conducted sabbatical work as a Visiting Professor, hosted by the University of British Columbia (UBC), from August 2020 to May 2021. She was funded through a Fulbright Scholarship award and Flittie Scholarship award. In spite of severe impacts from the covid19 pandemic, Dr. Ernest accomplished achievements that benefit UW and her work: advanced training in bioinformatics and genomics; collaborative work with UBC professors and Canada provincial animal health veterinarians; provided talks about her Wyoming work; participated in the Fulbright Canada program; published six peer-review scientific papers and two pre-print publications; developed plans for a new UW 2022 course called Genomics of Animal Disease; remotely supervised her UW research lab, research scientists and graduate students and guided work on grant- and contract-funded research projects involving disease, genomics, and population ecology of Wyoming wildlife species. Sabbatical outcomes include her recent nomination to serve on the Canada BioGenomes Project; continuing collaborations with Canadian scientists and veterinarians, and, through a year immersed in another country's experiences, a deeper understanding of serious societal issues surrounding climate change (BC's severe floods, WY's drought) and challenges and solutions for indigenous people (over 200 First Nations in BC; damage due to residential school histories).

College of Arts & Sciences

Frye, Susan
Department of English
Spring 2021 Sabbatical Leave

Dr. Susan Frye used her sabbatical request, to complete a book proposal for the University of Pennsylvania Press, which has expressed strong interest in publishing my manuscript. Additionally, she gave three conference papers, have 3 additional peer-reviewed articles ready for publication, and a fourth in process. The impact of her research on her teaching is profound, since she now emphasize experiential learning with material objects, with the support of the Art Museum and the American Heritage Center, as well as encourage final projects in which students find a material community connection to the state of Wyoming.

Knievel, Michael
Department of English
Spring 2021 Sabbatical Leave

During Dr. Michael Knievel's sabbatical, he was able to make meaningful progress toward achieving anticipated outcomes regarding a book-length study of institutional police genres and public rhetoric surrounding policing. However, due to COVID-related restrictions on travel and research, as well as the emergence of some valuable project-related publication opportunities, some outcomes have been reframed. Consequently, the resulting output during the sabbatical includes a draft introduction and significant development of the proposed book project, three separate article or chapter manuscripts, and three conference presentations, all of which contribute to his ability to advance his research agenda, which focuses on public rhetorical activity as it relates to institutions

Knobloch, Frieda
Department of History and American Studies
Academic Year Sabbatical Leave

Dr. Frieda Knobloch's 2020-21 sabbatical award was intended to facilitate completion of two manuscripts: late-career-defining books on which she had been working for some time. Focus on her writing was not possible given the conditions of back-to-back phases of University Regulation 2-13 review of the American Studies Program in 2020-21 to eliminate degrees.

College of Arts & Sciences (cont.)

Person, Mark
Department of Modern and Classical Languages
Spring 2021 Sabbatical Leave

Mr. Mark Person used his sabbatical to translate from German to English the book WeltFraktale: Wege durch die Literaturen der Welt by Professor Ottmar Ette, a scholarly work of over 400 pages, and to begin work on a new English translation of Alexander von Humboldt's magnum opus, Kosmos, a five-volume work originally published in German over the course of 17 years, from 1845-1862. He successfully completed the Ette translation, and the Brill publishing house has already released his translation under the title Beyond World Literature: the Literatures of the World (ISBN: 978-90-04-39554-1; publication date: 30 Sep 2021). A review will soon appear in the The Rocky Mountain Review of Language and Literature. As planned, upon completion of the Ette book, he began translating the first volume Of Kosmos. Since his editors have already spoken informally with some of the people at the University of Chicago Press, they are confident that they will approve the project.

Chen, TeYu
Department of Physics and Astronomy
Fall 2020 Sabbatical Leave

There are two major intended outcomes proposed in Dr. TeYu Chen's sabbatical proposal: (1) developing new capabilities in his lab: SPSTM and laser enhanced STM; (2) form stronger scientific collaborations with scientists in ANL and UIC. The SPSTM is successfully developed through the assistance of the virtual discussions with scientists at ANL, while the laser enhanced STM is still under development. The collaborations are stronger with the regular virtual meetings. It was planned to have two of his students, Dinesh Baral and William Scougale, to visit ANL in November 2021 for conducting the SXSTM experiments. However, the trip was canceled due to the ongoing COVID-19 pandemic. This trip will be resumed in Spring 2022.

Clapp, Joshua
Department of Psychology
Spring 2021 Sabbatical Leave

Dr. Joshua Clapp's primary objectives of sabbatical leave involved the initiation of a multidisciplinary collaboration exploring local economic predictors of violent victimization and the impact of violence on individual-level functioning in restricted data maintained by the U.S. Census Bureau. Despite pandemic-related disruptions, primary objectives for this project including (a) developing proficiency with the management of large-scale data, (b) establishing expertise with quantitative methods used in population-based research, and (c) initiating on-site analysis through the Federal Research Data Center at CU Boulder were all successfully achieved. Additional benefits of leave included the development of three submissions for external research support (one funded, one unfunded, one under review); the publication of four peer-reviewed articles, four manuscripts under review, and five papers in development; and the acceptance of seven presentations at national-level research conferences incorporating both graduate and undergraduate authors.

College of Business

Albers, Heidi Jo
Department of Economics
Spring 2021 Sabbatical Leave

Although pandemic restrictions prevented much of Dr. Heidi Jo Albers' intended travel for fieldwork and collaborative work, she used a sabbatical term to push forward with research projects and outputs, including 11 new journal articles forthcoming and 5 submitted papers; to develop an international short course called "Conservation through Markets and Property Rights: Costa Rica"; undertake some professional regrouping and re-tooling; think and write about the big picture for migratory species conservation policy and for marine and terrestrial protected area policy; and conduct preliminary fieldwork and literature review for 3 new potential research topics. In addition, she continued to mentor junior researchers in Wyoming and all over the world and to speak out about gender inequities in academia.

College of Education

Bialostok, Steve
School of Teacher Education
Spring 2021 Sabbatical Leave

Dr. Steve Bialostok was able to complete all outcomes outlined in his sabbatical proposal for spring 2021. His five-year ethnographic research examined the relationship between Black space/place and race among elderly Black men in Denver. The leave allowed him to complete his scholarly monograph as well as to secure a book contract with University Press of Colorado (which is affiliated with the University of Wyoming). An article based on the data will be published this spring in *Transforming* Anthropology, the flagship journal of the Association of Black Anthropologists. The data from his research has also been used in two of his current courses (*Race and Racism* and *Sociolinguistics and Social Literacies*). Dr. Bialostok anticipates sharing the results of his project among interested UW scholars and students as well as in academic conferences.

College of Engineering and Applied Science

Ohara, Noriaki
Department of Civil and Architectural Engineering and Construction Management
Academic Year Sabbatical Leave

Dr. Noriaki Ohara spent his one-year-long sabbatical at the Interdisciplinary Centre for Complex System Science, University of Lisbon, Portugal, for exploring theoretical technologies with high transformative potential in the hydrological and cryospheric science. Main objectives were learning the non-Gaussian information metrics for snow process and hydroclimate system analysis and exploring the extended Fokker-Plank equation. The outcome can be summarized as 9 manuscripts for Journal publications (4 published, 1 accepted, 3 in review, 1 in prep), 1 seminar talk, 8 conference talks (4 completed, 4 upcoming), and 2-3 research proposals (1 rejected, 2 in prep).

Fan, Maohang
Department of Petroleum Engineering
Fall 2020 Sabbatical Leave

Dr. Maohang Fan took sabbatical leave in the Fall semester of 2021. In the semester, the COVID-19 pandemic was widely spread, however, he managed to overcome the significant challenges, achieved much more than that planned for the one-semester sabbatical leave. Within the semester, he as a PI or Co-PI prepared several proposals, and secured four new DOE R&D and NSF grants (~$1.7M in total) funded by NSF and DOE in the energy production and environmental protection technology areas, while he as a PI or Co-PI or UW team lead worked on the current $20M DOE projects (led by either UW or other universities). During his sabbatical leave, he was selected to be one of the globally highly cited researchers in 2020 by Web of Science, which aimed at "Recognizing the true pioneers in their fields over the last decade, demonstrated by the production of multiple highly-cited papers that rank in the top 1% by citations for field and year in the Web of Science™. Of the world's scientists and social scientists, Clarivate™ Highly Cited Researchers truly are one in 1,000". Moreover, significant progress of pilot demonstrations of the two novel CO2 capture technologies (two US patents) were made with his efforts in Wyoming and South Carolina during the sabbatical period. Also, he had 10 publications in internationally well recognized engineering journals. Furthermore, he used the sabbatical time for revising his teaching materials for two new courses he has opened: 1) Life Cycle Analysis, and 2) Energy Environment & Materials. The two courses have attracted a lot of students, and created great opportunities for them to secure the jobs in future energy areas. During the period, he also supervised 11 research scientists and graduate students. Due to the severity of Covid-19 pandemic, the initially scheduled visits to Georgia Tech and MIT for exploring research collaborations were canceled. In summary, Dr. Fan made significant contributions to the University of Wyoming as a leader in clean energy technology development areas.

College of Health Sciences

Thomas, Jenifer
School of Nursing
Spring 2021 Sabbatical Leave

Through this sabbatical, Dr. Jenifer Thomas made connections with diabetes prevention professionals and organizations in Wyoming (Department of Health, WyCOA, and Ms. Maggie Kougl) and Colorado (CU-Denver, Denver Health, and the Colorado Area Health Education Center). The results of her sabbatical include funding for a university-based Diabetes Prevention Program (DPP) and establishment of a community advisory board (CAB) consisting of university faculty, staff, and students. The expected benefits of her sabbatical experience include 1) a DPP for UW faculty, staff, and students, 2) CDC recognition for the UW DPP, 3) connections with and support for other DPPs in the state, and 4) future community-based DPP and connections with Laramie health care providers and organizations.

Nair, Sreejayan
School of Pharmacy
Spring 2021 Sabbatical Leave

Dr. Sreejayan Nair's sabbatical plan was to visit University College London (Dr. Mathew Todd's lab) and collaborate on open-source antidiabetic drug discovery, which could not be pursued due the COVID-19 pandemic. Rather, the time was used to complete the work on two research grants that were funded in November 2020, months before the planned sabbatical. The first grant was an NIH-STTR-Phase 1 grant ($220, 000), which aimed at developing a novel treatment for diabetic wounds. The second was a CARES Covid Innovative Grant ($44,500), which aimed at assessing a novel target to treat COVID-related complications. The data from both these projects have been submitted as abstracts at national meetings and will be used for the phase-2 grant application.

College of Law

Chestek, Kenneth
Academic Year Sabbatical Leave

Professor Kenneth Chestek's sabbatical project was to research and write a book about a concept called the "Myth of Divine Right." This myth holds that God favors one society over all others, giving that society the power (or even a divine duty) to spread its values over the whole world, imposing its values on the less-favored societies. During his sabbatical, he was able to complete about 2/3 of the book, but he also produced a major new law review article entitled Dimensions of Being and the Myth of Empirical Reasoning, a project which grew out of Chapter 2 of the book project. That article has been accepted for publication in the premier peer-reviewed journal in the field of legal rhetoric, the Journal of Legal Communication and Rhetoric: JALWD.

University Libraries

Hert, Tamsen
August 2020-Februrary 2021 Sabbatical Leave

Ms. Tamsen Hert's professional development leave took place from 8 September 2020 to 8 March 2020. The purpose of her leave was the continuing research and development of a manuscript on the history of tourist accommodations in Yellowstone National Park. While the global pandemic prevented travel to several repositories, she was able to visit three archives which contain important collections. A significant portion of the manuscript has been drafted and work is now underway to compose the remaining chapters. Once finalized the manuscript will be submitted to the University of Oklahoma Press as requested. It is currently being considered for the Public Lands History Series.

Hutchens, Chad
September 2020-March 2021 Sabbatical Leave

The purpose of Mr. Chad Hutchens' professional development leave request was to finish research begun under a Spring, 2019 Wyoming Institute of Humanities Research Fellowship Grant related to 3D, virtual reality (VR) , and augmented reality (AR) applications in digital humanities. He has performed 3D photogrammetry and reflectance transformation imagery (RTI) on a set of Native American petroglyph fragments removed from a cliff-face at BLM site 48BH92 near Greybull, WY in 1962. After their removal, they were lost and then subsequently rediscovered at the Buffalo Bill Cody Center of the West in 2017. Many of these fragments are now housed at UW, but some remain on display in Cody, WY. His proposed activities was to conduct primary research at the Buffalo Bill Cody Center of the West during the first month of his leave to ascertain whether or not there are any (more) extant photographs or written documentation about site 48BH92. The remainder of his leave was to finish digitally reconstructing site 48BH92 using augmented (AR) and virtual reality (VR) technologies. The intended measurable outcomes include (1) a large scale physical exhibit of the extant cliff-face at site 48BH92 utilizing AR to reconstruct the removed petroglyph fragments; (2) a web-deliverable, interactive VR application where one can interact with the fragments and piece them back together at the site as it stands today and; (3) the publication of this work in the form of a journal article and presentations about it at national academic conferences.

AGENDA ITEM TITLE: **Research and Economic Development Annual Report**, Hulme

SESSION TYPE:
☐ Work Session
☐ Education Session
☒ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☒ Yes (select below):
☒ Driving Excellence
☒ Inspiring Students
☒ Impacting Communities
☒ High-Performing University
☐ No [Regular Business]

☐ *Attachments are provided with the narrative—refer to Supplemental Materials Report.*

EXECUTIVE SUMMARY:
A review of FY21 Office of Research and Economic Development (ORED) accomplishments, challenges, and proposed future activities. Topics will focus on efforts to increase staffing in ORED, improve workflow systems, and update policies and procedures all aimed to provide improved research services to campus. The report will also include updates on on-going and new research and economic initiatives, including the Science Initiative occupancy, programs, and instrumentation; the AMK research facility; the NCAR Wyoming Supercomputer (NWSC); and the Wyoming Innovation Partnership (WIP). Finally, the report will tout faculty, student and program accomplishments in research and economic development in FY21.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
These items have not been discussed with the full Board.

WHY THIS ITEM IS BEFORE THE BOARD:
This is an annually scheduled discussion aimed at updating the Board on areas of critical importance to the research and economic development enterprise at UW. It will also set the stage for further discussions that we'd like to bring forward for information and possible action in the future.

ACTION REQUIRED AT THIS BOARD MEETING:
These items are presented for information and discussion. No action is requested beyond noting the presentation and discussions.

PROPOSED MOTION:
N/A

PRESIDENT'S RECOMMENDATION:
N/A

AGENDA ITEM TITLE: **Carnegie R1 Designation**, Fall/Carman

SESSION TYPE:
☐ Work Session
☐ Education Session
☒ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☒ Yes (select below):
- ☒ Driving Excellence
- ☒ Inspiring Students
- ☒ Impacting Communities
- ☒ High-Performing University

☐ No [Regular Business]

☐ *Attachments are provided with the narrative—refer to Supplemental Materials Report.*

EXECUTIVE SUMMARY:
As requested by Trustee Fall during the November 2021 Board of Trustees meeting, Provost Carman will provide a presentation on UW's goal to obtain Carnegie R1 status as presented during the November Research and Economic Development Committee.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
Provost Carman presented to the Board of Trustees Research and Economic Development Committee in November 2021.

WHY THIS ITEM IS BEFORE THE BOARD:
Requested presentation by Trustee Fall.

ACTION REQUIRED AT THIS BOARD MEETING:
N/A

PROPOSED MOTION:
N/A

PRESIDENT'S RECOMMENDATION:
N/A

AGENDA ITEM TITLE: **Discrimination and Harassment, Mandatory Reporting, and Bystander Intervention Training**, Osborn

SESSION TYPE:
☐ Work Session
☒Education Session
☐ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☐ Yes (select below):
☐ Driving Excellence
☐ Inspiring Students
☐ Impacting Communities
☐ High-Performing University
☒ No [Regular Business]

☐ *Attachments are provided with the narrative—refer to Supplemental Materials Report.*

EXECUTIVE SUMMARY:
Per the U.S. Department of Education's 2020 Title IX Regulations on Sexual Harassment, the University of Wyoming is required to take specific steps in response to notice of alleged sexual harassment. Per UW Regulation 4-2, all UW employees are required to report harassment and discrimination to the University's Equal Opportunity Report and Response unit and the Title IX Coordinator. This training session provides a brief overview of sexual harassment and discrimination, mandatory reporting, accommodations for a disability, implicit bias and bystander intervention.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
The Board of Trustees is periodically trained on Title IX Regulations and the University's related policies and procedures.

WHY THIS ITEM IS BEFORE THE BOARD:
Training about these topics is required for all UW employees. While Board members are not mandatory reporters, it is important for the Board to receive information about sexual harassment and discrimination, mandatory reporting, accommodations for a disability, implicit bias and bystander intervention.

ACTION REQUIRED AT THIS BOARD MEETING:
N/A

PROPOSED MOTION:
N/A

PRESIDENT'S RECOMMENDATION:
N/A

AGENDA ITEM TITLE: **School of Computing – Request for Authorization**, Carman, Shader, Allen

SESSION TYPE:
☐ Work Session
☒ Education Session
☐ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☐ Yes (select below):
☐ Driving Excellence
☐ Inspiring Students
☐ Impacting Communities
☒ High-Performing University
☐ No [Regular Business]

☒ *Attachments are provided with the narrative—refer to Supplemental Materials Report.*

EXECUTIVE SUMMARY:
This document is a Request for Authorization (RFA) to establish a School of Computing (SoC) at the University of Wyoming. It differs from the RFA submitted in early September in the following ways:

a. To minimize costs and administrative burden, it is proposed that the SoC initially be "incubated" in an existing college. Dean Wright and others have suggested the College of Engineering and Applied Sciences. This can aid in coordinated development of the SoC and further strengthening of the CS/ECE department. Efforts will need to be made to make sure that the SoC fulfills its campus-wide role of championing the "Digital for All" program during this incubation stage.
b. A complete budget for the first four years based solely upon the $3M internal funds targeted for the SoC is given. The annual ongoing operating budget at the end of the four years is $3M/year, and the total costs, which include one-time costs, over the four years are $12M.
c. The budget is designed to maximize benefits to student programs and faculty while minimizing administrative costs. The first four years focus on the creation of state-of-the-art applied computing labs, joint hires with existing UW departments, and new faculty affiliate programs that catalyze deep inter- and cross-disciplinary collaborations.
d. The curricular aspects will initially focus on enhancing and supporting UW's existing computing offerings, developing valued-added certificate courses, working with departments to develop computing minors, and working to help develop a Digital for All component in the new USP. As student and faculty needs evolve BA and BS curricula focused on applied computing can be developed in collaboration and in support of other campus units. Initial offerings will be prioritized in collaboration with ASUW and with the community colleges.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
The Notice of Intent for a School of Computing was approved by the Board of Trustees at their July 2021 meeting.

WHY THIS ITEM IS BEFORE THE BOARD:
University of Wyoming Regulation 2-119 requires that the Board approve all new degree programs and lays out the process for that approval. The Board's feedback, input, and support for the SoC and the Request for Authorization are critical.

ACTION REQUIRED AT THIS BOARD MEETING:
Consideration for approval of the Request for Authorization for the School of Computing.

PROPOSED MOTION:
"I move that the Request for Authorization for the School of Computing be approved."

PRESIDENT'S RECOMMENDATION:
The President recommends approval of the Request for Authorization.

University of Wyoming | College of Engineering and Applied Science

Cameron H. G. Wright, Ph.D., P.E.
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December 10, 2021

To: University of Wyoming Board of Trustees

Subject: Support for a School of Computing

Please accept this letter as a statement of support for establishment of a School of Computing (SoC) at the University of Wyoming (UW), beginning within the College of Engineering and Applied Science (CEAS).

Since it was first proposed by President Seidel, I have been involved in various committees charged with developing the concept and implementation of the SoC at UW. We explored a variety of approaches, collected ideas on ways in which the SoC could benefit both UW and the state, and solicited input from various stakeholders both on and off campus. While the SoC was originally conceived as a new stand-alone unit at UW, thoughtful feedback from students, faculty and staff, alumni, and industry representatives, combined with the reality of budgetary pressures, have led to a revised proposal for the SoC to be first "incubated" as a unit within CEAS.

I believe this approach provides the SoC with the best chance of flourishing, and becoming a unit that contributes to the advancement of computing across colleges and disciplines. The SoC will **not** be an "engineering only" entity (nor should it be); it will help a wide variety of both technical and nontechnical students, faculty, and staff... but having its home in CEAS provides an excellent supportive place for us to best see what works and what doesn't.

I fully support the establishment of a School of Computing at the University of Wyoming, beginning within the College of Engineering and Applied Science. If you have any questions regarding this letter, please feel free to contact me.

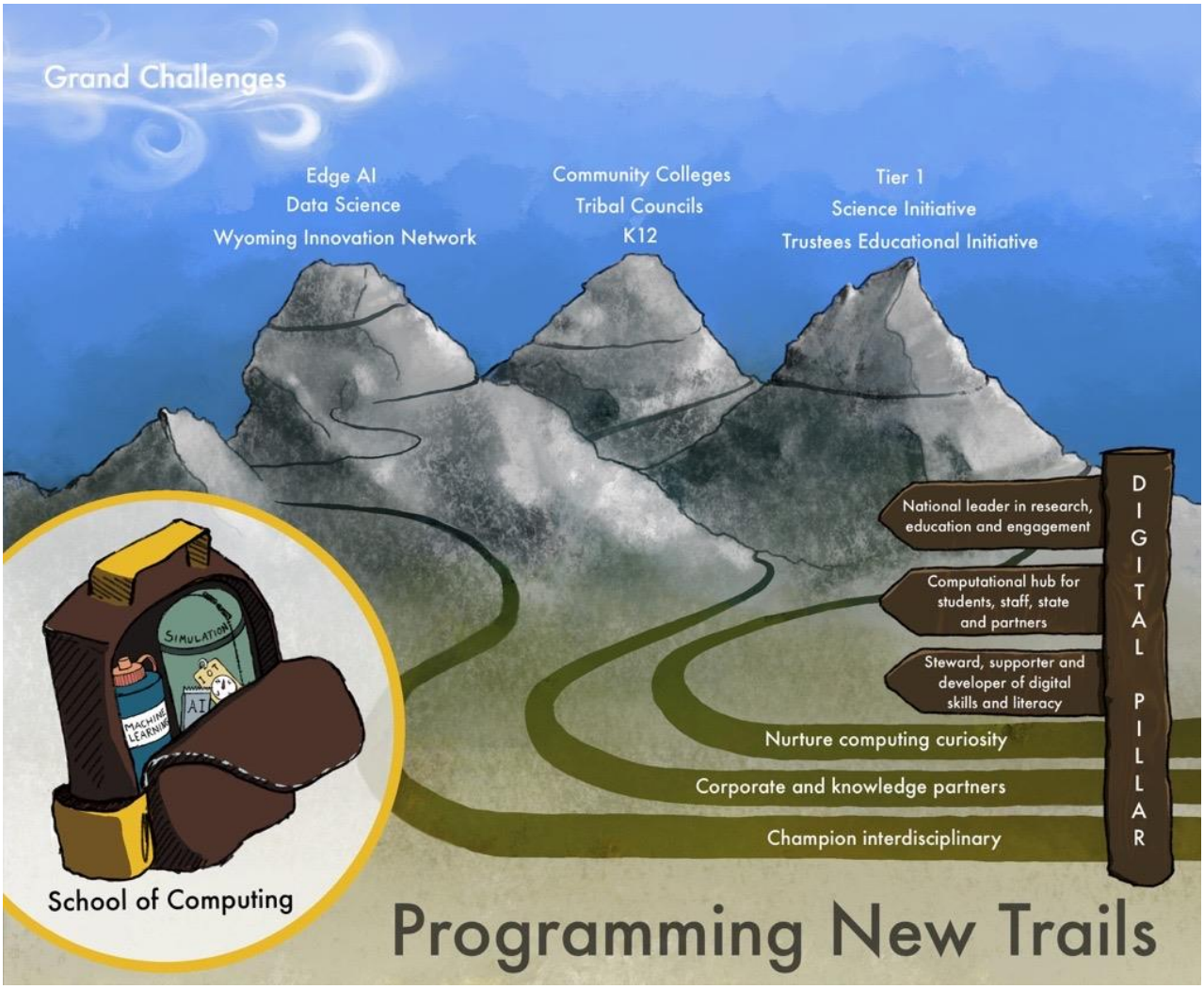
Respectfully submitted,

Cameron H. G. Wright
Dean
and Professor of Electrical and Computer Engineering

Authorization Request for the School of Computing (SoC)

Update

November 30, 2021



The vision of the School of Computing (SoC) is ambitious! Through the SoC, UW envisions forging new trails that will enable UW to become **a national leader in education, engagement and research**.

The SoC will be a hub of innovation and knowledge exchange providing UW students, faculty, and Wyoming businesses and citizens with a **"backpack" of computational tools and approaches to drive transformation**.

The SoC will champion the broader efforts aimed at **making UW more digital** through partnerships throughout UW and Wyoming.

1. Introduction

This document is an updated Request for Authorization (RFA) to establish a School of Computing (SoC) at the University of Wyoming. It differs from the RFA submitted in early September in the following ways:

a. To minimize costs and administrative burden, it is proposed that the SoC initially be "incubated" in an existing college. Dean Wright and others have suggested the College of Engineering and Applied Sciences. This can aid in coordinated development of the SoC and further strengthening of the CS/ECE department. Efforts will need to be made to make sure that the SoC fulfills its campus-wide role of championing the "Digital for All" program during this incubation stage.

b. A complete budget for the first four years based solely upon the $3M internal funds targeted for the SoC is given. The annual ongoing operating budget at the end of the four years is $3M/year, and the total costs, which include one-time costs, over the four years are $12M.

c. The budget is designed to maximize benefits to student programs and faculty while minimizing administrative costs. The first four years focus on the creation of state-of-the-art applied computing labs, joint hires with existing UW departments, and new faculty affiliate programs that catalyze deep inter- and cross-disciplinary collaborations.

d. The curricular aspects will initially focus on enhancing and supporting UW's existing computing offerings, developing valued-added certificate courses, working with departments to develop computing minors, and working to help develop a Digital for All component in the new USP. As student and faculty needs evolve BA and BS curricula focused on applied computing can be developed in collaboration and in support of other campus units. Initial offerings will be prioritized in collaboration with ASUW and with the community colleges.

The long-term vision for a highly inclusive SoC remains a central tenant to the proposed plan. The SoC will

e. be a cross-university school with joint appointments possible with any UW department,
f. have robust, multiple-pathway degree programs at both the graduate and undergraduate level,
g. leverage partnerships with corporations, national labs, and UW entities including the ARCC, WyGISC, Data Science Center, WIP and UW colleges, and Wyoming's community colleges.
h. ultimately be a separate unit led by a dean (to be recruited internationally).

The long-term vision includes programs and positions that are not in the initial $3M annual budget. These programs and positions, and plans for how to include them as the SoC is developed are given in Appendix 1. Such programs and positions will only be added when funding is available.

During the incubation period, the SoC curricular activities will focus on identifying and offering needed courses and certificate programs, working with ECE/CS and Wyoming's Community Colleges to develop and deliver an engaging, first three-semester sequence of courses for students interested in majoring in a computing-related program, and partnering with departments to create minors in computing. The SoC will then study, and if desirable develop, BA/BS programs in computing. This request describes characteristics of the envisioned BA and a BS degree in Computing. These degree programs will be developed in years two and three of the SoC and be informed by new hires and a SoC Curriculum Advisory Committee that will include faculty from UW and experts from outside UW.

Additionally, a description of the SoC's leadership role in the campus-wide effort to make UW more digital is given. All curricular programs (e.g., minors, MA, MS, and PhD degrees in Computing) will follow the approval process at the appropriate times in coming years.

This RFA references

a) A **feasibility study and market analysis** on the BS in Computing degree from the Education Advisory Board (EAB). While no new degree program is being requested at this time, the study does provide a description of the need for such programs.
b) The **School of Computing Preliminary Plan** provides a detailed description, analysis and tentative budget for all aspects (educational, economic and workforce development, research, partnerships, and enhanced funding opportunities).

   Note that the preliminary plan is a visionary plan. The incubation period will be the first step towards this vision, with an emphasis on hiring faculty with diverse perspectives on computing, recruiting UW faculty affiliates, and offering value-added courses for UW students. Reaching this vision will require a mix of additional funds (e.g., endowments, philanthropy, grants and indirect costs returns, corporate partnerships, and joint hires)
c) The **Notice of Intent** and the accompanying presentation to the Board of Trustees.
d) The **Digital Pillar Report** prepared in Spring 2021 by a committee of 19 UW faculty, staff, and students at the request of the UW Provost that gives a broad overview of the need, the benefits, and suggests actions for UW to become more digital.
e) **Various reports** from national organizations and think tanks on the need for computing.

For convenience, each of these documents is included in this package or can be accessed via the link: supporting files.

1. Purpose and need for the proposed SoC Academic Programs

The following quotes from two recent studies summarize the overarching needs for the proposed academic programs at UW.

> Computer science and information technologies have transformed all sectors of society, businesses, and government. Today, the transformation continues and much is driven by artificial intelligence, robotics, the Internet of Things, information security, and data science. A wide range of jobs in virtually all sectors demand computing skills to an unprecedented extent. And every academic discipline finds itself incorporating computing into its research and educational mission. [NAS 2018]

> Computing is and will continue to be an essential component in shaping the future for humanity. The computing disciplines need to attract quality students from a broad and diverse cross-section of the public and prepare them to be capable and responsible professionals. [CC2020]

These needs are even deeper at UW. Because of limited staffing and resources in UW's Computer Science department, computational education and research is far below that of our peers, and the needs of UW graduates.[1] Broader access to innovative research, world-class infrastructure, and workforce training in computing and data is therefore critical for Wyoming citizens, and most importantly for UW's students.

The primary purposes of the SoC curricular programs are to

- **provide more students with career pathways that utilize** the power of computing and technology,

[1] It is important to note the scale that is needed for UW to have impact, and what is common across the nation. UW's current CS department has 7 tenure-stream faculty (only 1 with an AI specialty) and the Advanced Research Computing Center (ARCC) has 4 current staff. Comparing relative sizes of CS departments is only one, very limited indicator, but it does give a sense of where UW is. Boise State, about twice UW's size, has 26 CS professors and plans to double in size. Notre Dame, a predominantly humanities and social sciences university, is almost exactly UWs size and has more than 4 times our CS faculty, and a unit like our ARCC with over 50 staff (almost entirely funded on soft money through grants). In all cases, these activities are a foundation for economic development in their region. [S20]

- provide new opportunities to **increase the diversity among UW students utilizing computing** in their disciplines and careers, and
- establish **a pipeline of tech-savvy graduates for Wyoming and the global economy**.

Additionally, the SoC will provide UW researchers with new tools and cutting-edge computational expertise to better address grand challenge problems of importance to Wyoming and the region that they are studying, and serve as a hub for Wyoming's innovation economy.

2. Proposed curriculum

The SoC is envisioned to house the following academic programs in the long term:

- Certificate programs, possibly stackable, in various aspects of computing
- Minors in computing
- Multi-pathway BA and BS programs in computing,
- MA/MS/PhD programs in computing.

When feasible, the programs will be offered online. The SoC will also work with Academic Affairs to help champion an envisioned "Digital for All" component of the USP.

The initial ideas of these programs are more fully discussed in the SoC Preliminary Plan, and the Digital Pillar report. The full development of these programs will involve Academic Affairs, Faculty Senate, the Graduate Council, the USP committee, faculty, and students, and will be advised by a SoC Curriculum Advisory Committee. All programs will be greatly informed by the recently released report "*Computing Curricula 2020: Paradigms for Global Computing Education* [CC2020] that was developed by a 50-member task force drawn from 20 countries. CC2020 outlines international recommendations for baccalaureate degrees in computing.

All programs will be fully evaluated and follow the UW process for approval and creation of new academic programs.

We briefly describe each of the envisioned curricular programs.

Digital for All Experiences.

The Digital Pillar report recommends that the university community consider the creation of a "digital course" requirement in the University Studies Program for all students. Their reasoning is that it is important that all UW undergraduate students learn how digital and computational methods/tools/approaches are increasingly part of their chosen discipline and all aspects of life. At a general level, students should be exposed to the variety of ways that digital tools can be used to accomplish computational tasks across all disciplines and gain introductory experience in using them. An overarching goal is that students gain an understanding of how to analyze the human, social, and scientific impacts the existence and use of these tools bring. More specifically, students should learn how to use the digital tools available in their fields of study as well as understand the theory of how digital approaches and computational methods will change their fields in the future.

Minors in Computing.

> Job prospects likely also contribute to the demand for CS courses from non-majors, but this portion of the enrollment increase is also driven by the impact of CS and computing in other fields. Computer science and its related endeavors such as data science have produced powerful tools and software systems that are used by and affect every discipline, giving rise to exciting subfields, such as computational biology, computational economics, computational chemistry, and digital humanities, with more emerging. These subfields require expertise in the traditional domain and a general fluency in tools and methods from computer science. The advantages of a deeper knowledge of computer science in many domains has also led to the recent emergence of new degree programs at several institutions that fuse curricula and formal requirements of CS with those for one of a range of disciplines (referred to as "X+CS"). [NAS 2018}

As the above quote from the National Academy of Sciences indicates, students in many disciplines increasingly find great value in incorporating computing classes into their studies. Having disciplinary minors in computing will give UW alums a competitive advantage throughout their careers, catalyze working partnerships between UW departments and the SoC faculty, and will be a valuable recruiting tool for students, graduate students, and faculty. All minors will be vetted and submitted for approval through the standard UW processes.

Certificates, Possibly Stackable, in Digital/Computing.
Even a couple of classes in a particular area can add excellent value to a student's education and their employability. The Digital Pillar Report describes the emerging mechanisms of certificates and stackable certificates in higher education. The SoC envisions partnering with entities like the CS/ECE department, Data Science Center, WyGISC, Ellbogen Center, Visualization Center, Innovation Wyrkshop, Advanced Research Computing Center, and UW Libraries to explore the feasibility of developing suites of (possibly stackable) certificate courses that enable a diverse audience of students, including non-traditional students and life-long learners, the opportunities to gain specific 21st-century skills through short-courses, and self-paced courses with competency exams.

Based on input from students, the value-added courses, certificate programs, and computing minors will be the initial focus of the SoC's curricular efforts.

Multi-pathway BA and BS Programs in Computing.
The BA and BS in Computing will ultimately be central to the SoC curricula. The BA/BS in Computing will be distinctly different than those in CS or ECE at UW, and thereby enable UW to serve a more diverse set of students.

Primary differences are that the BA and BS programs in Computing **will be more applied and contextualize**d in a broad range of disciplines**, will have less of a quantitative and engineering focus**, and will be accessible to a broad range of students. These differences can be seen in the draft programs found in Appendix 3.

It is anticipated that all degrees related to Computer Science or Computing at UW will share a highly common first year that will aid in recruiting, advising, costs, and most importantly give students the opportunity to discover their own areas of interest within computing.

Appendix 3 gives a proposed basic structure of UW's existing BS in Computer Science. and of the proposed BS and BA degrees in Computing.

Graduate degree programs.
After the SoC is stably established, it will evaluate the addition of MA and MS degrees in Computing. The focus on these programs will be the creation and use of innovative computing tools in the context of grand challenge problems in a wide range of disciplines. Desired characteristics of these programs will be diversity of student body in all aspects (e.g., ethnicity, gender, disciplines), various academic pathways for entrance, collaborative projects involving different disciplines and stakeholders, and ties through internships/externships with Wyoming and regional companies. A PhD in Computing will be considered in years 4 and 5. Other Schools of Computing support robust PhD programs through corporate partnerships, external funding, and partnerships with national labs. Initially, the graduate curricula will be operated using existing programs in the ongoing Interdisciplinary Graduate Minor in Scientific Computing.

Characteristics of SoC curricula

Focus on "computing in context."
This is the use of computers and related technologies to study complex real-world problems. It will require students to develop disciplinary expertise as well as computing expertise.

Common set of beginning courses to allow students to explore.
First-year courses will be designed with CS/ECE and other units as an on-ramp to expose students to the power of computing through diverse applications, practical and broad aspects of the development and use of application, and various career tracks in computing. The remainder of the curricula will be designed to offer many possible pathways to students, and to provide a platform for future minors from other disciplines to be offered.

Competency-based.

Competency = Knowledge + Skills + Dispositions… in Context

Following trends supported by educational research and best practices in leading computing programs, the curriculum will be designed around competencies and domains, that is, a curriculum that "focuses on an individual's capability to perform and to apply their computing education in a practical and professional service to society. A curriculum founded on students Knowing what, Knowing how, and Knowing Why. [CC2020]

"Competency-based curricula provide more pathways for students, the ability to quickly adjust to curricula to cover emerging topics, and provide the ability to "promote and clearly describe the practical benefits of computing programs to stakeholders: students, parents, employers, corporate partners, donors." [CC2020]

Core competencies (e.g. problem-formulation and solving, interpersonal skills, management and entrepreneurial skills, ethics, communication, working in interdisciplinary and multicultural teams), technical competencies (e.g. DevOps, software development, data_wrangling, modelling, and technical writing), and advanced competencies in selected areas of contemporary computing (e.g., security, artificial intelligence, Internet of Things, FinTech, contemporary database & interfaces, design tools, and human-computer interaction*s)* for the programs will be identified as required elements.

Each course offered by the SoC and its partners (including timely topics courses) will have an associated approved list of competencies. Students will be able to master core competencies in different ways based upon their interests and their strengths. Over the next year, a list of core competencies will be developed through consultation with an external advisory board and a SoC Curriculum Advisory Committee, which will include representatives from disciplines across UW as well as Wyoming companies.

Quantitative skills for computing.
Appropriate Mathematics and Statistics concepts will either be offered within existing quantitative courses, embedded within new SoC courses, or offered in freshly designed courses for SoC majors in mind. Different tracks within quantitative offerings will be available for students with different career interests.

Experiential and collaborative learning. This will be emphasized through class projects, internships, externships, and senior design projects.

Table 1. Characteristics of SoC undergraduate program

3. Anticipated enrollment increases in SoC BA/BS programs and CS-ECE programs

While SoC undergraduate major programs will not begin to be delivered until fall of 2024, we provide an assessment of expected enrollments in these programs here.

The following quote (emphasis added) from the recent report [NAS2018] help frame this discussion.

> The demand for employees with computer science and computing expertise is high and has grown steadily over time. According to data from the Bureau of Labor Statistics (BLS), employment in computer occupations grew by nearly a factor of 20 between 1975 and 2015, nearly twice as fast as production of CIS bachelor's degrees. BLS has projected that **demand for computer science workers will continue to grow over the next decade at a rate higher than that of overall job growth, particularly as computing becomes more central to a wider range of industrial sectors.** Employment demand is particularly intense in some specialty areas, including cybersecurity, data science, and machine learning**.**

Estimated enrollments in computing or CS programs in Table 2 are based on the above report and the data from market research performed by EAB. It is anticipated that enrollments for the BA in Computing program would attract about 100 majors.

Estimating enrollments is difficult for the following reasons: we are envisioning programs that have unique components (e.g., a focus on computing in the context of applications and interdisciplinarity) and that include emerging areas (e.g., data science) that are too young for EAB or the Bureau of Labor Statistics to include in their analyses. Additionally, the analyses tend to be too broad geographically to capture need in Wyoming and may underestimate demand for new types of occupations. Members of the committee that developed this report indicate that they have frequent inquiries from companies in Wyoming about the availability of computing-savvy graduates and that often we are unable to meet their needs. The anticipated growth in small-tech companies in Wyoming will only increase this demand. In addition to the demand in the marketplace for these types of graduates, there is also a demand among UW students for more opportunities to learn value-added computing skills. It is felt that the estimates are realistic, and perhaps on the conservative side, based on the available data.

2024-2025	2025-2026	2026-2027	2027-2028
36	66	91	116

Table 2. Estimated enrollments in BS in Computing in first 5 years of program

We note that in 2019 there were 262 CS majors and 243 ECE majors. Combining the estimated BA and BS in Computing programs, we estimate the SoC will have around 216 undergraduate majors (116 in the BS and 100 in the BA) five years after these programs commence.

The SoC's education impact down the road will also reach many students (estimated to be in the range of 240) through computing minors (many departments are already considering minor programs). The demand for these minors will be evaluated as the programs are developed and proposed.

4. Budget narrative, and existing or new resources required to deliver the Academic program

The UW leadership's plan is that there will be a $3M annual allocation from the UW budget for the SoC, of which $500K is earmarked for collaboration with the College of Engineering and Applied Sciences (CEAS). [2]

At the end of five years the plan targets having the following levels of personnel and programs:

- 10-13 FTE faculty in computing, each joint with another department
- 5 Graduate assistants
- 15 Undergraduate scholars

[2] Once the SoC is approved searches could commence with some joint SoC/CEAS faculty hires, presumably initially with the new ECE/CS unit in areas of mutual interest.

- 10 Faculty affiliates
- Director stipend
- Business manager and Office Manage
- Operational budget of $50K.

The total projected expenses over 4 years are slightly less than $12M. The ongoing expenses at the end of FY26 are $3M/year.

The following should be noted:

- The final envisioned size (approximately 24 faculty, including research scientists) of the SoC is designed to support the planned MS, MA, and PhD programs, as well as aggressive research programs. The initial budget will allow UW to hire 10-13 FTE faculty or research scientists. As indicated in Appendix 1, additional faculty will be added when justified through joint hires and the CPM process or endowments, and additional (non-extended term track) research scientists through the corporate partnership program, external funding, and endowments.
- To encourage collaborations and help support departments, all SoC faculty will be joint hires with other departments.
- All SoC faculty and research scientists will have significant expectations for securing external funding through grants and corporate partnerships. By the end of 5 years, the 10-13 SoC faculty and research scientists should generate ~$3.5 M/year in external funding.
- As with other such schools or centers, the SoC should provide excellent opportunities for investments from corporations and individuals. Fund-raising to support SoC programs will be a priority of the SoC administration and faculty.
- The Director's stipend provides for extra efforts in the initial part of the incubation period, and tapers off to a level similar to that of some department head's summer stipends.
- Faculty in the early years will enable faculty across the disciplines to become more computational in their disciplines, plan for minor programs, and explore new areas of computationally enabled scholarship.
- Most GAs in the early years will be awarded on a competitive basis to support computationally enabled research that benefits the State of Wyoming.
- Corporate partnerships will be used to maintain the levels of student scholarships in the later years of the budget.

Table 3: Proposed Budget for SoC

Expenses

Category		FY22	FY23	FY24	FY25	FY26	TOTAL
Administration	Director stipend	31,111	112,500	112,500	75,000	50,000	381,111
	Business Manager	50,000	100,000	100,000	100,000	100,000	450,000
	Office Manager	32,500	65,000	65,000	65,000	65,000	292,500
	Fringe Benefits	54,265	133,073	133,073	116,160	104,885	541,456
Subtotal		**167,876**	**410,573**	**410,573**	**356,160**	**319,885**	**1,665,067**
Personnel	*Faculty added in given year*		2 Faculty	2 Faculty, 1 Research Scientist	2 Faculty, 1 Research Scientist	2 Faculty, 1 Research Scientist	
	Faculty or research scientists		300,000	750,000	1,200,000	1,500,000	3,750,000
	Fringe Benefits		135,300	338,250	541,200	676,500	1,691,250
Subtotal		**0**	**435300**	**1088250**	**1741200**	**2176500**	**5,441,250**
Students & Affiliates	GAs 5/year, PhDs including summer		162,500	162,500	162500	162,500	650,000
	Undergrads 15 to 20 year		150,000	200,000	200,000	150,000	700,000
	12K/month per affiliate for		144,000	288,000	360,000	100,000	892,000
Subtotal		**0**	**456,500**	**650,500**	**722,500**	**412,500**	**2,242,000**
Operating expenses	Recruiting costs		45,000	30,000	45,000	30,000	150,000
	Start-up for labs		600,000	600,000	600,000	600,000	2,400,000
	Operational budget	37,500	60,000	60,000	60,000	60,000	277,500
Subtotal		**37,500**	**705,000**	**690,000**	**705,000**	**690,000**	**2,827,500**
Total annual expenses		**205,376**	**2,007,373**	**2,839,323**	**3,524,860**	**3,598,885**	**12,175,817**

Table 4: Summary of Revenue for first 4 years

Revenues

Category		FY22	FY23	FY24	FY25	FY26	TOTAL
ARP Phase 1		**205,376**					**205,376**
Internal Budget			**3,000,000**	**3,000,000**	**3,000,000**	**3,000,000**	**12,000,000**
		0					
Running total of Revenue – expenses		**0**	**992,627**	**1,153,304**	**628,444**	**29,559**	

5. Timeline for implementation

A detailed five year/two-phase plan for the roll-out of the SoC and its associated programs is given in Pages 21-29 of the SoC Preliminary Plan. The timeline for the development and roll-out of the BS and BA computing majors is given in Table 5.

Spring 2022	Appoint initial director and hire business and office manager. Conduct searches for initial faculty and research scientist positions. Establish corporate partnership programs. Establish/strengthen partnerships with national labs.
AY 2022-2023	Create a Curriculum Advisory Committee that includes international experts in computing education, UW alums using computing in their careers, Wyoming tech companies, UW CS/ECE and Math-Stat faculty to design the courses for the BA/BS. Offer several new SoC undergraduate courses of interest to a broad range of students. Work with CS/ECE on designing and delivering inviting, experiential, and interdisciplinary first-year computing courses. Conduct searches for second round of faculty and research scientist positions. Work with faculty to develop minors in computing programs. Initiate Undergraduate Internships program and Faculty Affiliates program.
AY 2023-2024	Secure authorization for BA/BS program, establish 2+2 agreements with CCs. Fully develop other SoC courses. Recruit first class of SoC majors. Conduct searches for third round of faculty and research scientist positions.
AY 2024-2025	Enroll first class of SoC Bachelors students. Continue work with other UW programs on development and assessment of computing minors. Conduct searches for fourth round of faculty and research scientist positions.
AY 2025-2026	Evaluate, assess, and make needed modifications to BA/BS programs. Consider creating MA/MS/PhD programs.
Spring 2028	Graduate first SoC class of undergraduate students.

Table 5. Project timeline of SoC roll-out

6. Plan to assess the SoC Academic Programs

Assessment of the proposed SoC programs will be based on student attainment of core competencies that are outlined in Section 3, the learning outcomes described in Section 8, and informed by an SoC Educational Board and the studies such as "Computing Curricula 2020" [CC2020].

Specific assessment activities for the BA/BS programs will include:

- Pre- and post-degree exams on core and technical computing competencies
- Capstone course with an assessment of final projects, including collaboration, critical thinking, and communication.
- Feedback from corporate and educational partners involved in internships or capstone projects
- Surveys with Wyoming companies employing SoC graduates
- Student course evaluations
- Exit interviews with graduates.

7. Plans for accreditation

Accreditation for the program will be established through the Higher Learning Commission (HLC) and informed by a SoC Curricular Advisory Committee. To enable training of a more diverse student population in computing the BS/BA programs will not be ABET accredited. ABET accreditation is more restrictive on the disciplinary courses

(e.g., must be science oriented) and the mathematics and statistics courses than would be the envisioned SoC programs. The SoC programs are not intended to be less rigorous, but to have more options in disciplinary content, and have mathematics and statistics courses more aligned with students' interests and with the computing classes. Students desiring an engineering degree can pursue a BS from the ABET-accredited program in CS/ECE and if desired use their elective courses to take courses in the SoC.

Tentative learning outcomes are:

- **Outcome 1 – Communication:** Students will be able to communicate in written and oral forms in such a way as to demonstrate their ability to work with a variety of stakeholders, and to present information clearly, logically, and critically.
- **Outcome 2 – Application:** Students will be able to utilize and modify state-of-the-art computing tools and concepts to explore and analyze disciplinary problems
- **Outcome 3 – Coding:** Students will be able to code efficient programs on their own to model phenomena.
- **Outcome 4 - Depth of Knowledge**: In a selected domain/concentrations students will demonstrate a depth of knowledge appropriate to graduate study and/or lifelong learning in that area. Students should be able to read for understanding materials in that area beyond those assigned in coursework.
- **Outcome 5 - Preparation for Career and Further Education**: Students will be prepared for a career in industry, government agencies, or non-profits or for graduate study in scientific or technical fields.

Continuous improvement of the program will be fostered through annual presentations and feedback with the SoC Curriculum Advisory Committee.

8. Benefits of the Academic Program to the University

The proposed School of Computing will position the University of Wyoming as

- A national leader in computational research, education, and engagement, providing academic excellence in teaching, intellectual distinction in research, and transformative innovation for entrepreneurship. The SoC will **champion interdisciplinarity** across campus by fusing computation, digital literacy, and data science curricula with all domains.
- A computational hub for students, faculty, staff, community, and our state, industrial, and academic partners. The SoC will skillfully l**everage corporate and knowledge partnerships** to unite learners, educators, entrepreneurs, and stakeholders, and create a sustainable robust digital ecosystem.
- A steward, supporter, and developer of digital skills/literacy and computational thinking for all. The SoC purpose is to **nurture computing curiosity across disciplines and backgrounds**, to enhance interdisciplinarity, and to capitalize upon emerging innovations for teaching, research, and economic diversification.

9. The ability of the University to carry out the Academic Program

UW is positioned well to successfully carry out this academic plan, as it will build upon past investments, existing strengths at UW, and can take advantage of many pending opportunities (such as the planned large increases of funding at national agencies, American Rescue Program funding, the Wyoming Innovation Partnership, innovative technologies, emerging businesses around blockchain, and enhanced corporate partnerships around technology). SoC courses and curricular programs will leverage partnerships and in particular co-development and delivery of courses whenever possible. The SoC be symbiotic with the envisioned "Digital for All" program aspect of the soon-to-be updated University Studies Program.

Wyoming has consistently sought to contribute to its future by investing in the education and training of its citizens through the University of Wyoming. Recent investments, including the Tier 1 Engineering Initiative (T-1), Science Initiative (SI), and Trustee's Education Initiative (TEI), along with capital investments in facilities provide a firm basis that focuses on the importance of Science, Technology, and Engineering and Mathematics (STEM). These strengths will support the interdisciplinary computing focus of the SoC.

In the past decade, computing has become an increasingly crucial tool for research and almost all sectors of the economy. The University of Wyoming has responded by hiring faculty who use computing in their discipline, establishing programs like the Data Science Center and the Advanced Research Computing Center, and by developing a partnership with the University Cooperation for Atmospheric Research (UCAR) and its NSF-funded National Center for Atmospheric Research (NCAR) around the NCAR-Wyoming Supercomputer Center (NWSC). These partnerships have supported new modes of faculty research and increased awareness of computing across the campus. The SoC will benefit as well as strengthen this existing computational ecosystem.

Today, computing's impact is found in virtually every discipline, and simulation and modeling are more important than ever. They are joined by new data science technologies like artificial intelligence (AI), machine learning, and blockchain that are starting to transform every academic discipline, every industry, and every aspect of modern society. Access to world-class infrastructure and workforce training in computing and data is therefore critical for Wyoming citizens and for UW's students.

The SoC, along with the broader Digital Pillar plan, outline a strategic response to the computational-related needs of UW and Wyoming Community College students, Wyoming's businesses, and state agencies. Through the SoC there are also great prospects for the University of Wyoming to emerge as a leader in rural computing and data.

10. The likely value to, and impact on, students and residents of Wyoming.

The SoC courses and programs will produce professionals fluent in the computing/digital arena. UW graduates interacting with the SoC via interdisciplinary initiatives with departments will benefit from knowledge and experience of the application of computing in their chosen domain, equipping them to be perceptive and cognizant graduates with experience in innovative applications of computing – and thus competitive in the workplace. Specific outcomes for the SoC courses and programs are given in Section 8.

The SoC curricular programs will provide Wyoming companies and agencies with employees who identify problems or opportunities for improvement, and successfully bring to bear computing and technology to resolve the problems (or help the company or agency advance through seizing the opportunity).

Citizens of Wyoming can benefit from having SoC graduates helping agencies analyze complex problems (e.g., wildfire management, rural health, etc.) of importance to local communities and to Wyoming.

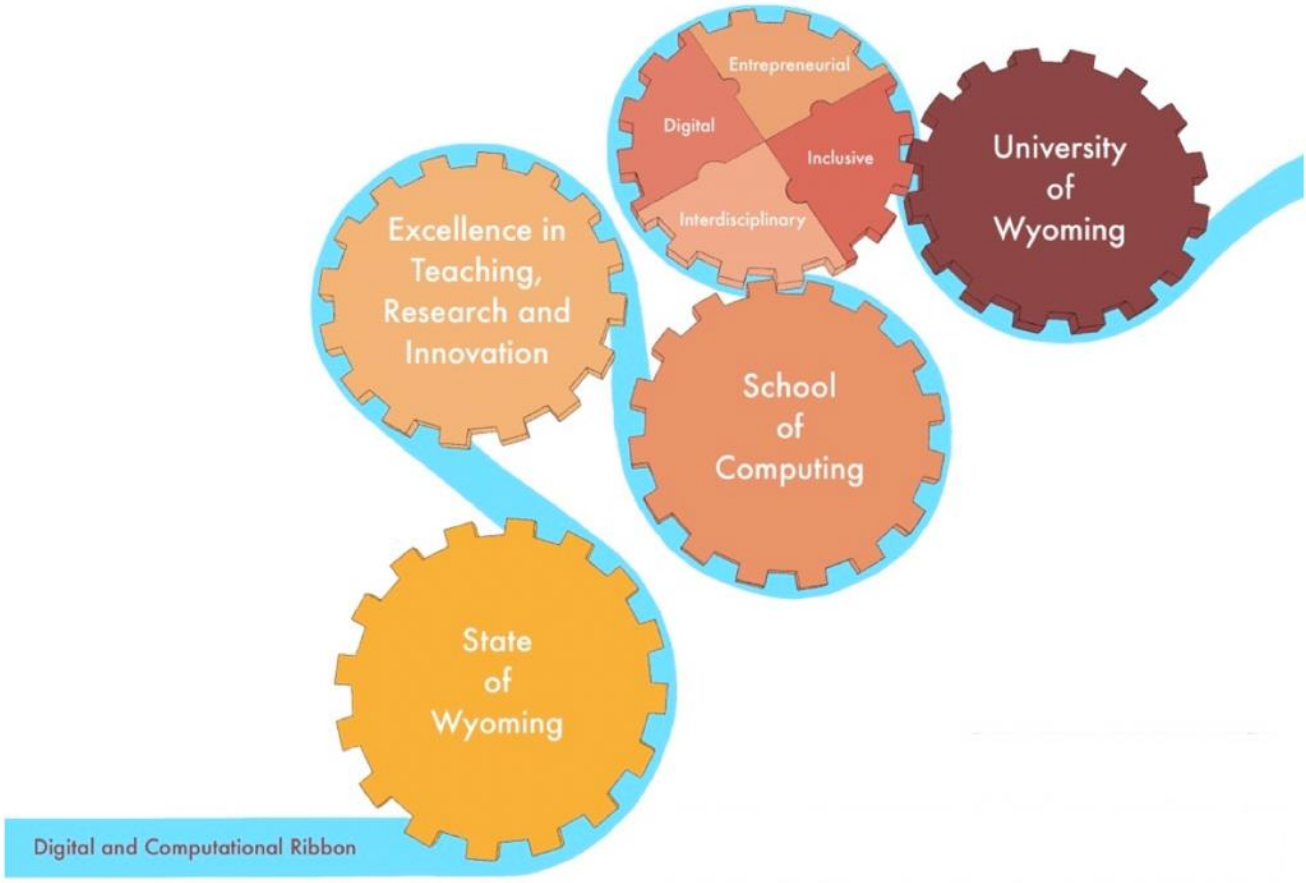
References

[ABET20] Criterion for accrediting computing programs 2020-2021.
https://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-computing-programs-2020-2021/

[CC2020]: *Computing Curricula 2020 (CC2020): Paradigms for Global Computing Education*, IEEE and ACM joint report, March 2021.

[NAS2018] Assessing and Responding to the Growth of Computer Science Undergraduate Enrollments, The National Academies Press, 2018.

[S20] E. Seidel, "Thoughts on a Broad Vision for Computing in UW and Wyoming", Fall 2020.



The School of Computing is designed to strategically mesh together existing resources and initiatives, the other pillars (more inclusive, more interdisciplinary, and more entrepreneurial), UW's existing strengths in research and teaching, and partnerships throughout UW and across Wyoming, into a system that drives UW to its vision of becoming a best in-class university true to Wyoming's roots.

Appendix 1.

Funding plans for future development for SoC

Position/Program	Role	Future funding sources
Dean	A high-quality Dean is critical to the SoC's long-term success. In particular in areas of partnerships, collaborations throughout UW, and fund-raising.	CPM request, endowment
Associate Dean for Partnerships and Research	Partnerships with corporations, national labs and other entities will be critical to provide UW students with experiential learning opportunities via capstone courses, interns opportunities, enable new academic-industry research partnerships, and facilitate corporate input to strengthen programs.	Internal candidate with summer stipend from IDCs or Corporate Partnership program
Assistant/Associate Dean for Curricula	Oversee development of curriculum, internship program, and Digital for all efforts at UW.	Internal candidate with summer stipend; possibly joint with AA
K-14 Education and Workforce Development Staff	The long-term impact of the SoC requires an ecosystem that gives students early and frequent experiences with computing, and a curriculum that produces UW graduates that meet the needs of Wyoming companies.	External funding. ARP requests include a position like this.
Special Projects Lead	This lead will help SoC faculty and faculty affiliates to pursue larger federal grants.	Indirect Cost Returns, Corporate partnership program, external grants.
Visiting Scholars Program	This program will enable UW faculty in any discipline to work with SoC faculty to identify a project to collaborate on.	Indirect Cost Returns, external grants. UW's ARP request includes this program.
7-10 additional Faculty or Research Scientist positions	This will give the SoC 20-23 faculty or research scientists, and dozens of affiliate faculty.	CPM requests, joint hires with departments. External funding for partial support of Research Scientists.

Appendix 2.
SWOT Analysis

Strengths

- There exists an increasingly high demand for computing across all disciplines.
- UW's on-going K-14 computing outreach programs and Wyoming's nascent Boot Up
- [3] initiative can provide UW and the Wyoming CCs with students with strong computing skills.
- There is an increased demand by Wyoming companies and agencies for these computing-related skills.
- The SoC will have strong partnerships with the CS/ECE department, WyGISC, ARCC, Data Science Center, Visualization Center, makerspaces, and NCAR Wyoming Supercomputing Center
- The SoC will build upon and enhance ongoing UW initiatives such as SER, the Engineering Initiative, the Science Initiative, and the Trustees' Education Initiative.
- The Wyoming Innovation Partnership will provide the platform and network for the SoC to make a statewide impact in economic and workforce development, education, and research of importance to Wyoming.

Weaknesses

- UW has very small CS & ECE departments that may make it difficult to attract faculty, and it will take longer for UW to reach competitive staffing levels. As a point of reference in 2013, Boise State University was in a comparable situation with just 7 faculty in CS. Through an investment by the State of Idaho, they have grown to 26 faculty, over 200 CS graduates/year, and over $3M/year in external funding (which represents a larger than 400 times increase in funding since 2013).
- Lack of a Dean early in the process may make it difficult to recruit faculty and raise funding.
- It may be costly to recruit high-caliber faculty to UW. Recruiting will be key.
- UW is starting late in the computing arena compared to some programs. However, UW has strong computational faculty throughout the university, has access to the NCAR Wyoming Supercomputing Center, and a strong core of faculty in the CS and ECE programs.
- Constrained budgets at UW may make it difficult to achieve SoC's vision quickly. This will make the raising funds for the SoC through corporate partnerships, philanthropy, and external grants more critical.
- Expertise in levels of the K-16 pipeline can be difficult to establish and maintain.

Opportunities

- Possible **one-time f**unding for SoC through America Recovers Program (ARP) include:

  2022: $1.15 M confirmed for:
  Software Design Program[4] training with CCs,
  Wyoming Innovation Partnership (WIP) administration,
  Visiting Scholars Program,
  1 Research Scientist, 5 graduate students.

  2023-2026: $23M + (pending) for

[3] https://edu.wyoming.gov/blog/2018/04/02/boot-up-wyoming-2022-aims-to-implement-computer-science/
[4] The Software Design Program is an associate's degree that has been designed through a collaboration with UW, Cardiff University and Wyoming Community Colleges. Students will be matriculating in the program starting Fall 2022. The CC's finding a pathway for students with this associate's degree to continue towards a 4-year degree, preferably at UW. The confirmed ARP funding will help implement the associate's degree and explore the development of a 4-year degree at UW.

WIP Training $3.85 M (includes 3 UW FTEs for 3 years)
Upgrades to UW's Advanced Research Computing Center $10M
Additional start-up funds to build out computing labs $3M
Visiting Scholars program for departments $2M
3 Research Scientists for 3 years
15 graduate research assistants for 3 years available to work on projects for UW faculty

None of this funding is part of the $3M budget given above. This funding, if realized, will be treated as an external grant to the SoC and used only for one-time or short-term commitments.

- Proposed increases in federal funding in general, and specifically around AI, high-performance computing, and quantum computing position the SoC well for external funding.
- The UW Foundation is already in conversation around major donations to UW to support computing efforts around blockchain and smart contracts and the SoC in general.
- Wyoming is a leader in developing the Mountain States Research Partnership with Montana, Idaho, South Dakota, and North Dakota. This partnership will afford many opportunities around computing.
- On-going activities are occurring to develop/strengthen partnerships with national labs and research centers around computing including Pacific Northwest National Lab, Idaho National Lab, Argonne National Lab, and the National Center for Atmospheric Research.
- Wyoming currently has a growing tech sector with demands for well-prepared computing graduates and an interest in corporate partnerships with the SoC.
- Defense agencies such as the National Security Agency have expressed interest in working with the SoC to develop internships for UW students and programs in high-performance computing.

Threats

- Another economic downturn for Wyoming could hamper future growth of the SoC. This can be mitigated by corporate partnership programs, active pursuit of philanthropic support, and external funding.
- Competitor schools may attract Wyoming students. This emphasizes the need for strong internship programs, engaging, hands-on curricula, and early and frequent recruitment of Wyoming students.
- External funding not coming through at expected levels would put a damper on future growth of the SoC.
- The quality of graduates does not meet Wyoming companies' expectations. UW has a great opportunity to highlight the talents and abilities of its students to Wyoming companies. To have this be successful, it is imperative that while at UW, students learn how to pose and solve complex problems, innovate, and work with various stakeholders.
- The SoC curriculum is not agile enough to provide multiple pathways for students. This can be mitigated by having SoC faculty actively working with departments to develop minors, and by working with students and corporate partners to identify needed topics and courses.

Appendix 3
A comparison of envisioned SoC BA/BS in computing and existing BS in CS programs

	BS in Computer Science	**BS in Computing**	**BA in Computing**
USP outside major	18 hours	18 hours	18 hours
Quantitative	18 hours Calculus based	15 hours math/stats for computing (modeling, optimization, and data)	9 hours math/stat for arts/humanities/social science applications of computing
Math Science electives	12 hours		
CS core	42 hours	16 hours	16 hours
SoC core competency courses		12 hours (Computing in context, experiential and project based))	12 hours (Computing in context, experiential and project based))
Disciplinary concentration		12 hours (in agriculture, science, math, statistics, or engineering)	18 hours (in education, arts, humanities, social sciences)
CS electives	12-21 hours		
General electives	15 hours	12 hours	12 hours
SoC advanced competencies based on interests		15 hours	15 hours
SoC electives		12 hours	12 hours
Capstone project		8 hours	8 hours
Total hours	120-128 (depending on concentration)	120 hours	120 hours

Appendix 4
FAQs

- **Did we look at other models, e.g., a department in Engineering…why create an entire "school"?**
  Several models were considered, including an institute, a department within a college, a school within a college. Institutes tend to focus on research and would not support the SoC's educational vision. A department within a college would not support the interdisciplinary nature and desired campus-wide impact of the envisioned SoC. A school, like UW's SER, allows for an outward-facing organization that can work with companies and more easily work with donors and respond to the strategic needs of the university.

- **Why do we need both a school and a department of Computer Science & Electrical and Computer Engineering?**
  This will allow UW to address the need for a more robust computing community more quickly, better position itself for the projected funding opportunities around computing, provide UW students multiple pathways to computing-enabled careers, produce graduates with a more diverse set of backgrounds and experiences (e.g., business analytics and computing, digital humanities, digital forensics, AI-enabled human resource management)

  A separate school better provides an entity to be a hub of computing across UW and the State. Much as a School of Energy Resources provides a hub for energy-related research, and the Haub School for environmental studies and natural resources.

- **Why are the salaries so high?**
  As noted in the preliminary plans, the numbers for the salaries included fringe benefits, which are 45.1% for faculty. The budget in this proposal separates the salary and fringe. The budget used a target of an average salary of $150K/FTE. For faculty in some disciplines (AI), or faculty with industry experiences can be significantly higher. Additionally, to get the SoC established it is preferable to target proven faculty or rising stars. This type of quality and experience costs. At established schools of computing, salaries for associate professors are in the range of $200K, and full professors in command approximaely $250K. At schools more like UW, with strong computing programs, salaries for associate professors are in the $140K range and full professors in the $160K range .

  It should also be noted that the expectations of securing external grants for faculty and for research scientists are significant.

  The preliminary plan targeted a salary of $350K for a dean. UW Deans currently make in the $250-270K range. Deans of established SoC make in the $400K range. It was intended that part of this salary would be covered by endowments. Note this updated plan does not include a Dean during the incubation period. UW and the SoC will need to consider the need for a Dean as the SoC matures.

- **Where is the funding for the SoC coming from?**
  As part of discussions related to the most recent budget cut, the Governor and UW leadership agreed to set aside $5.5M/year for strategic initiatives for the State. These include the Wyoming Innovation Partnership (WIP), the Wyoming Outdoor Recreation and Hospitality (WORTH) initiative, the Center for Entrepreneurship and Innovation (CEI), and the School of Computing (SoC). Of the $5.5M, UW leadership targeted $3M/year for the School of Computing.

- **Why does the original plan for the SoC appear to be so top-heavy?**
  The preliminary plan for the SoC included a Dean, 2 Associate Deans, and two project leads. As has been done elsewhere, one way to jump-start a new initiative is to recruit and hire a highly regarded Dean, and then use the Dean's reputation to recruit faculty and the Dean's expertise to shape the new programs. To initially focus on students, faculty, and the State, it was decided to incubate the SoC and forego a Dean until the SoC has matured and external funding has been secured.

One of the Associate Deans was to be heavily involved in the proposed campus-wide "Digital for All" effort, and the other in developing corporate, academic, and agency partnerships for all of UW. The budgets for the Associate Deans were full salaries, with the intent to provide the Associate Dean a small stipend and use the rest of the salary in his/her home department to cover their responsibilities there while they were in the associate deanship.

One of the staff was targeted to be leading the development of an internship program and UW's connections to Wyoming's K-14 efforts in computing.

- **Where will the SoC be physically located?**
  In the short term, the plan to incubate the SoC in an existing college facilitates the use of existing spaces in that college. As the SoC matures, a permanent location will need to be determined. Identifying such space within existing UW buildings will need to be considered early in the SoC's development.

- **What is in it for faculty?**
  The budget presented in this RFA would yield 10-13 FTE faculty/research scientists, depending on the market for chosen expertise and experience of hires. The long-term vision for the SoC targets 20-25 [OBJ] faculty/research scientists. All faculty will have joint appointments with a department outside of the SoC. It is anticipated that there will be dozens of SoC affiliate faculty who are working with SoC faculty and students on projects.

  All SoC faculty positions are intended to be joint appointments with other departments and programs at UW and should help meet departments' computational curricular and research needs.

  A Visiting Scholars program will (on a competitive basis) allow faculty to invite computational scholars in their disciplines to UW to explore collaborations, identify ways that a program or department become "more digital" to enhance their scholarship, and add value to their students' education.

  A New Faculty Affiliates program will provide faculty in any discipline having a desire to more fully incorporate computing into their scholarship or teaching to work with the SoC faculty (and in particular one-on-one with a Research Scientist) for a couple of months to identify computational projects in their discipline to that provide fruitful opportunities for collaborate.

  Through student internships and the SoC curricular programs, UW will have a larger number of tech-savvy students with diverse disciplinary internships. It is anticipated that these students can serve as "computational" enablers in projects with faculty outside of the SoC.

- **What is in it for staff?**
  Staff can utilize certificate and short courses in areas such as visualization, data-mining, and artificial intelligence either to gain emerging skills needed in their positions, advance within the UW system, or position them for a different career.

- **What is in it for students?**
  Majors will have multiple pathways towards careers that utilize computing.Their courses will focus on learning-in-context in collaborative settings with a rich set of internship opportunities. All students will have access to value-added courses and certificate programs.

Table 3: Proposed Budget for SoC

Expenses

Category		FY22	FY23	FY24	FY25	FY26	TOTAL
Administration	Director stipend	31,111	112,500	112,500	75,000	50,000	381,111
	Business Manager	50,000	100,000	100,000	100,000	100,000	450,000
	Office Manager	32,500	65,000	65,000	65,000	65,000	292,500
	Fringe Benefits	54,265	133,073	133,073	116,160	104,885	541,456
Subtotal		**167,876**	**410,573**	**410,573**	**356,160**	**319,885**	**1,665,067**
Personnel	*Faculty added in given year*		2 Faculty	2 Faculty, 1 Research Scientist	2 Faculty, 1 Research Scientist	2 Faculty, 1 Research Scientist	
	Faculty or research scientists		300,000	750,000	1,200,000	1,500,000	3,750,000
	Fringe Benefits		135,300	338,250	541,200	676,500	1,691,250
Subtotal		**0**	**435300**	**1088250**	**1741200**	**2176500**	**5,441,250**
Students & Affiliates	GAs 5/year, PhDs including summer		162,500	162,500	162500	162,500	650,000
	Undergrads 15 to 20 year		150,000	200,000	200,000	150,000	700,000
	12K/month per affiliate for		144,000	288,000	360,000	100,000	892,000
Subtotal		**0**	**456,500**	**650,500**	**722,500**	**412,500**	**2,242,000**
Operating expenses	Recruiting costs		45,000	30,000	45,000	30,000	150,000
	Start-up for labs		600,000	600,000	600,000	600,000	2,400,000
	Operational budget	37,500	60,000	60,000	60,000	60,000	277,500
Subtotal		**37,500**	**705,000**	**690,000**	**705,000**	**690,000**	**2,827,500**
Total annual expenses		**205,376**	**2,007,373**	**2,839,323**	**3,524,860**	**3,598,885**	**12,175,817**

Table 4: Summary of Revenue for first 4 years

Revenues

Category		FY22	FY23	FY24	FY25	FY26	TOTAL
ARP Phase 1		**205,376**					**205,376**
Internal Budget			**3,000,000**	**3,000,000**	**3,000,000**	**3,000,000**	**12,000,000**
		0					
Running total of Revenue – expenses		**0**	**992,627**	**1,153,304**	**628,444**	**29,559**	

Office of Academic Affairs
Dept. 3302 1000 E. University Avenue
Laramie, WY 82701
(307) 766-4286 – (307) 766-6476 – fax (307) 766-2606
www.uwyoedu/acadaffairs

November 8, 2021

To: UW Board of Trustees
From: Kevin R. Carman, Provost and Executive Vice President
Re: Letter of Commitment – School of Computing

Colleagues,

This letter serves as a Letter of Commitment for the establishment of a School of Computing (SoC) at the University of Wyoming. The primary purposes of the SoC curricular programs are to provide more students with career pathways that utilize the power of computing and technology, provide new opportunities to increase the diversity among UW students utilizing computing in their disciplines and careers, and establish a pipeline of tech-savvy graduates for Wyoming's and the global economy. The School of Computing will be a cross-university school with joint appointments possible with any UW department, will eventually have robust, multiple pathway degree programs at both the undergraduate and graduate level, will leverage partnerships with industry, national laboratories and units across UW and will ultimately be a separate unit led by a dean (to be recruited internationally). The SoC will initially be "incubated" in the College of Engineering and Applied Sciences. During the initial incubation period the SoC will focus on identifying and offering needed courses and certificate programs, including partnering with departments to create minors in computing.

Needs
The growth and importance of computing is emphasized in multiple studies, for example the National Academy of Sciences (2018) reported that "A wide range of jobs in virtually all sectors demand computing skills to an unprecedented extent. And every academic discipline finds itself incorporating computing into its research and educational mission." Market research data from the Educational Advisory Board (EAB) has provided estimates for new computing degrees.

Requirements
New academic programs will be established in coordination with the community colleges. All new programs will go through the usual UW review process.

Resources
The new school will be incubated in CEAS to minimize costs and administrative burden, and provide robust scaffolding to quickly establish itself. Core operations of the new school will be funded through a $3M annual allocation from the UW budget (of which $500K is earmarked for collaboration with the College of Engineering and Applied Sciences). Table 1 provides a proposed four-year budget for the SoC and Table 2 provides a summary of revenue for the first for years of SoC operation.

- **Faculty and instructional staffing:** A Director for the School will be appointed. Additionally, 10-13 FTE tenure-track faculty in computing are proposed to be hired in the first five years, predominantly in joint positions with other departments. Typically, these joint positions will have the majority of their responsibilities in the SoC, appointments and job descriptions, along with MOU with affected departments will reflect this. All rules, regulations and advice concerning joint appointments will be carefully followed.
- **Staff:** A business manager and officer manager will be appointed. Additional staff hires are anticipated through external funding, including the America Rescue Plan.
- **Programs:** The SoC will have programs to support graduate assistants (5 from core funds), undergraduate students (15 from core funds) and faculty affiliates (10 from core funds).
- **Technology:** UW already has significant computing resources via the ARCC, NWSC, and the campus is well connected via the Front Range GigaPop. Additional investments are being made in a Wyoming DataHub to support data science. Potential ARP funding will be used for faculty startup where new technology resources are needed. School of Computing faculty and research staff will be expected to secure external funding to improve technological infrastructure for the SoC, UW and the state.
- **Library and digital resources:** The Dean of Libraries and the interim VP for Research and Economic Development have indicated support of the new School, and are ready to work with the SoC on additional resources that may be needed.

Timeline

SoC will commence operations immediately, including appointing an interim director, identifying and hiring initial staff, advertising for an appointing faculty including both core School of Computing faculty and affiliate faculty. The first search for external tenure track faculty will start in Fall 2022.

Campus Review

I affirm that the university community, including the Executive Team, Deans and Directors, Faculty Senate, Staff Senate and ASUW, have been provided the opportunity to review and present feedback on the proposed certificate program. Documents of support from ASUW, the Faculty Senate's Graduate Council, and the Faculty Senate's Academic Program Committee are at Attachments 1-3.

Regards,

Kevin R. Carman
Provost and Executive Vice President

3 Attachments

1. ASUW SR #2765
2. Graduate Council SoC Review
3. APC Review of the SoC

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Running total of Revenue – expenses		**0**	**992,627**	**1,153,304**	**628,444**	**29,559**	

ASUW PASSED Student Government

SENATE RESOLUTION #2765

TITLE: ASUW's Updated Recommendation Regarding the Creation of a School of Computing

DATE INTRODUCED: November 30, 2021

AUTHORS: President Swilling and Director of Governmental and Community Affairs Brown

SPONSORS: Senators Castronovo and Smith; Vice President Anderson

1. WHEREAS, the purpose of the Associated Students of the University of Wyoming
2. (ASUW) Student Government is to serve our fellow students in the best manner
3. possible; and,
4. WHEREAS, the creation of a School of Computing (SoC) was proposed to the
5. University of Wyoming; and,
6. WHEREAS, according to the University of Wyoming's SoC Preliminary Plan the vision
7. of the SoC is "to create a unique and inspirational School of Computing with national
8. impact and global reach, providing Wyoming and the world with agile and ethical
9. professionals, empowered to address societal challenges that are inherently
10. interdisciplinary;" as stated on page one (1) of the Request for Authorization (RFA)
11. (Aug. 2021) for the SoC as shown in Addendum C; and,
12. WHEREAS, the ASUW passed SR #2757 "ASUW's Recommendation Regarding the
13. Creation of a School of Computing" unanimously on October 19, 2021; and,
14. WHEREAS, SR #2757 states, "be it resolved that the
15. Associated Students of the University of Wyoming (ASUW) Student Government
16. understands and supports the vision of the University of Wyoming School of
17. Computing as outlined in both the Preliminary Plan and the Request for
18. Authorization; and, … be it further resolved that although the ASUW supports this
19. vision, the ASUW cannot support the creation of a School of Computing as outlined in

the Preliminary Plan due to lack of clarity [in] proposed execution strategies, lack of communication and transparency with the UW community, and exorbitant additional cost in a time of significant budget reductions; and, … be it further resolved that the ASUW will offer support for the creation of this school once communication increases, transparency is seen, alternatives have been transparently assessed, and the aforementioned concerns have been addressed."; and,

WHEREAS, the ASUW Ad-Hoc Restructuring Committee after the passing of this resolution was invited to meet with President Seidel; and,

WHEREAS, when meeting with President Seidel, the committee posed the concerns voiced in SR#2757; and,

WHEREAS, the ASUW Ad-Hoc Restructuring Committee presented President Seidel with additional concerns to be addressed; and,

WHEREAS, President Seidel engaged in repeated discussions to alleviate concerns and clarify areas of uncertainty that were voiced about the SoC in SR #2757; and,

WHEREAS, members of the ASUW Ad-Hoc Restructuring Committee continued to meet with President Seidel and SoC stakeholders to address concerns; and,

WHEREAS, President Seidel responded to aforementioned concerns in a letter to the ASUW as seen in Addendum A; and,

WHEREAS, the updated RFA (Nov. 2021) as shown in Addendum B addresses previous concerns from SR #2757 and the ASUW Ad-Hoc Restructuring Committee including the following changes:

SoC to be "incubated" in the College of Engineering & Applied Science, SoC certificates and minors, communication with the student body regarding SoC, state-

43. funding for SoC, and the joint SoC faculty hiring process; and,

44. WHEREAS, the RFA (Nov. 2021) provides further explanations and clarifications from

45. the original RFA (Aug. 2021).

46. THEREFORE, be it resolved the Associated Students of the University of Wyoming

47. (ASUW) Student Government supports the creation of a School of Computing (SoC) as it

48. is detailed in the Request for Authorization (RFA) (Nov. 2021) due to changes to the SoC

49. RFA (Aug. 2021) that adequately address the concerns of students and ASUW; and,

50. THEREFORE, be it further resolved the ASUW will continue to work with President

51. Seidel and relevant stakeholders to ensure the development of the SoC is sufficiently

52. communicated to students and will be created with intentions for the betterment of

53. academic development and opportunities for all students at the University of Wyoming;

54. and,

55. THEREFORE, be it further enacted that ASUW hopes and expects that the excellent

56. communication and transparency that has been displayed since the passage of Senate

57. Resolution #2757 will be continued throughout subsequent creation and development of

58. the School of Computing.

Referred to: Ad-Hoc Restructuring; Advocacy Diversity and Policy; Program and Institutional Development

Date of Passage: December 7th, 2021 Signed: _____

(ASUW Chairperson)

"Being enacted on , December 7th, 2021 I do hereby sign my name hereto and **approve this Senate action."** _____

ASUW President

Addendum A

UNIVERSITY OF WYOMING

November 17, 2021

Associated Students of the University of Wyoming
Electronic delivery: ASUWPRES@UWYO.EDU

President Swilling and members of the ASUW on Restructuring,

Let me begin by thanking you for your willingness to have a sequence of discussions around the School of Computing, and more generally the UW re-organization. Your thoughts and comments were well-thought out, and catalyzed useful discussions that ultimately have improved the plans.

Each paragraph below addresses one of the areas of concerns laid out in your document provided to the SoC planning committee on November 11. References are to the revised Request for Authorization that was provide to you on November 10.

As indicated on page 2, paragraph 2, the SoC will be initially be "incubated" in an existing college, most likely the College of Engineering and Applied Sciences. I believe that this will enable a coordinated development of the SoC and further strengthening of the CS/ECE department.[1] Cam Wright, Dean of CEAS, is willing and in agreement with the benefits of this arrangement.

To benefit UW students as quickly as possible, the SoC's initial curricular efforts will be on shoring up UW's existing computing offerings, developing valued-added certificate courses, and working with departments to develop computing minors (see page 2 paragraph 5. 8 and 9; page 5 paragraph 3, Page 12, table 5

My office is committed to strengthen communications with the UW student body. In particular, my office is working with ASUW's Media office to produce a podcast around UW's new initiatives and the reorganization. My office is also working to schedule monthly events starting next semester where I can informally chat with students about on-going activities at UW and listen to their ideas about how to improve UW and their collegiate experience.

UW leaders presented a Q&A session just for students around the new initiatives: Center for Entrepreneurship and Innovation, School of Computing, Wyoming Innovation Partnership, and the Wyoming Outdoor Recreation Tourism and Hospitality initiative on October 28. Video of this is available at:

https://wyocast.uwyo.edu/WyoCast/Play/52ac1cd293174ab9a00cc74320154b0b1d?catalog=b3edf27df1a34752b149e95d7c7dd95621

Funding for these initiatives totals $5.5M/year, and this past summer the Governor and I agreed to target these funds towards strategic areas that would help the State of Wyoming, UW students, and UW faculty. Of this $3M/year has been targeted for the School of Computing (page 2, paragraphs 3-4, and the yearly budget on page 12).

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In its first four years, the SoC plans to hire 8-10 faculty and 2-3 research scientists. To promote interdisciplinarity and to enhance the impact of the SoC across campus, each of the SoC faculty will have a joint appointments with a disciplinary department. Their primary appointment will be in the SoC. UW regulation 2-1 outlines how joint appointments function at UW. The affected departments for each SoC faculty member will develop an MOU regarding how the joint appointment will be handled, Joint appointments are not uncommon at UW; e.g. faculty in the School of Energy resources, and other interdisciplinary faculty have joint appointments. I do note that with the SoC, many of the teaching responsibilities may easily serve both the SoC and the disciplinary department; and thus joint appointments within the SoC should be fairly easy in regards to a faculty's teaching.

I and my office look forward to continuing to work with ASUW and UW students on important initiatives like the School of Computing.

Sincerely,

Ed Seidel
President

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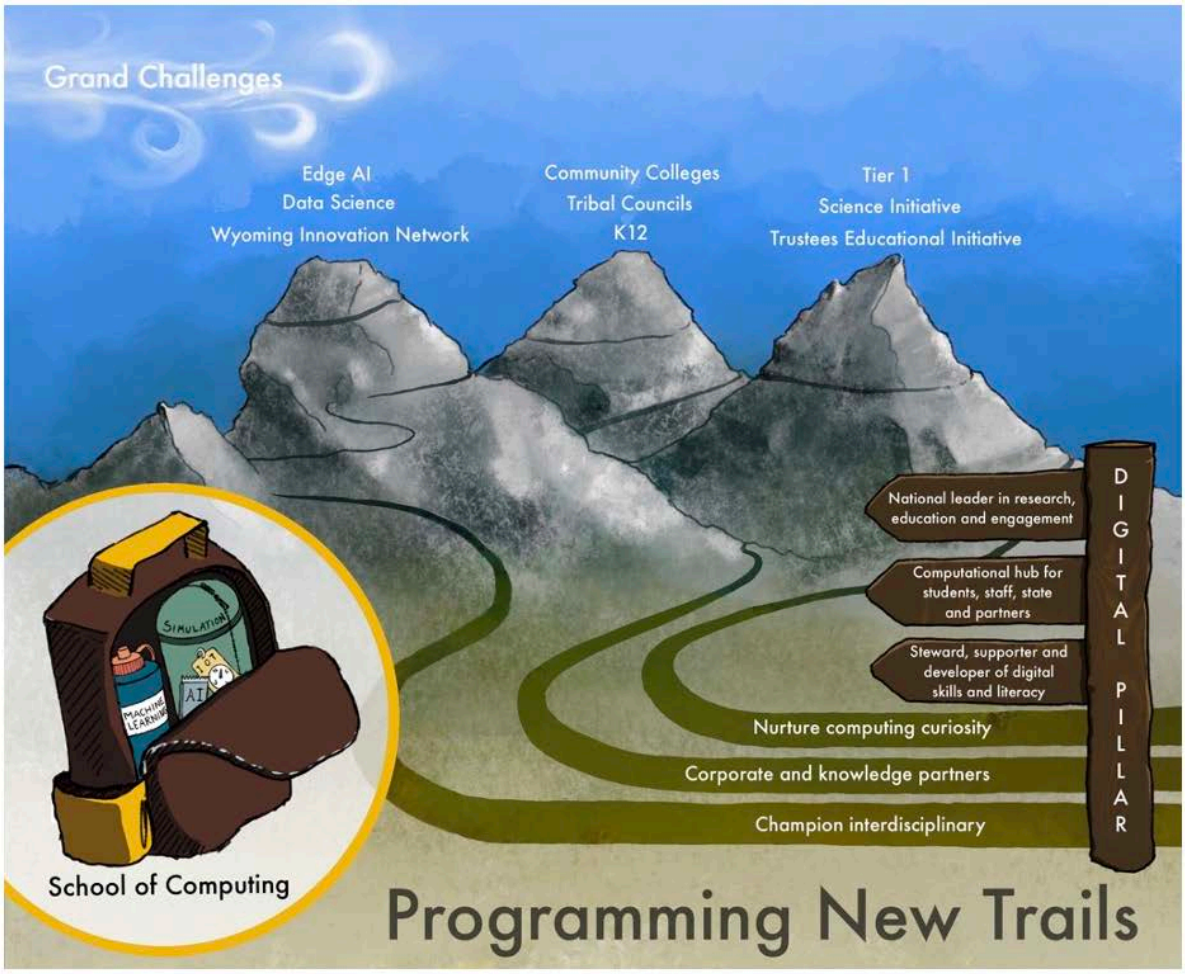
Addendum B

Authorization Request for the School of Computing (SoC)

Update

November 2021



The vision of the School of Computing (SoC) is ambitious! Through the SoC, UW envisions forging new trails that will enable UW to become **a national leader in education, engagement and research**.

The SoC will be a hub of innovation and knowledge exchange providing UW students, faculty and Wyoming businesses and citizens with a **"backpack" of computational tools and approaches to drive transformation**.

The SoC will champion the broader efforts aimed at **making UW more digital** through partnerships throughout UW and Wyoming.

1. Introduction

This document is an updated Request for Authorization (RFA) to establish a School of Computing (SoC) at the University of Wyoming. It differs from the RFA submitted in early September in the following ways;

a. To minimize costs and administrative burden, it is proposed that the SoC initially be "incubated" in an existing college. Dean Wright and others have suggested the College of Engineering and Applied Sciences. This can aid in a coordinated development of the SoC and further strengthening of the CS/ECE department.[1] Efforts will need to be made to make sure that the SoC fulfills its campus-wide role of championing the "Digital for All" program during this incubation stage.

b. A complete budget for the first four years based solely upon the $3M internal funds targeted for the SoC is given. The annual on-going operating budget at the end of the four years is $3M/year, and the total costs, which include one-time costs, over the four years is $12M.

c. The budget is designed to maximize benefits to student programs and faculty while minimizing administrative costs. The first four years focus on the creation of state-of-the art applied computing labs, joint hires with existing UW departments, and new faculty affiliate programs that catalyze deep inter- and cross-disciplinary collaborations.

d. The curricular aspects will initially focus on enhancing and supporting UW's existing computing offerings, while developing valued-added certificate courses, and working with departments to develop computing minors, and working to help develop a Digital for All component in the new USP. As student and faculty needs evolve BA and BS curriculums focused on applied computing can be developed in collaboration and in support of other campus units. Initial offerings will be prioritized in collaboration with ASUW and with the community colleges.

The long-term vision for a highly inclusive SoC remains a central tenant to the proposed plan. The SoC will

e. be a cross university school with joint appointments possible with any department UW,
f. have robust, multiple pathway degree programs at both the graduate and undergraduate level,
g. leverage partnerships with UW's corporations, national labs, and UW entities,
h. ultimately be a separate unit led by a dean (to be recruited internationally).

The long-term vision includes programs and positions that are not in the initial $3M annual budget. These, and plans for how to include these as the SoC is developed are given in Appendix 1. Such positions and programs will only be added when funding is available.

During the incubation period, the SoC curricular activities will focus on identifying and offering needed courses and certificate programs, working with ECE/CEAS and Wyoming's Community Colleges to develop and deliver an engaging, first three semester sequence of courses for students interested in majoring in a computing related program, and partnering with departments to create computing minor programs. Then the SoC will study, and if desirable develop, BA/BS programs in computing. This request describes characteristics of the envisioned BA and a BS degree in Computing. These degree programs will be developed in years two and three of the SoC and informed by new hires and a SoC Curriculum Advisory Committee that will include faculty from UW and experts from outside UW.

Additionally, a description of the SoC's leadership role in the campus-wide effort to make UW more digital is given. All curricular programs (e.g., minors, MA, MS, and PhD degrees in Computing) will follow the approval process at the appropriate times in coming years.

This RFA references

a) A **feasibility study and market analysis** on the BS in Computing Degree from the Education Advisory Board (EAB). While no new degree program is being requested at this time, the study does provide some idea of the need for such programs.
b) The **School of Computing Preliminary Plan** provides a detailed description, analysis and tentative budget for all aspects (Educational, Economic and Workforce Development, Research, Partnerships, and enhanced funding opportunities).

   Note that the preliminary plan is a visionary plan. The incubation period will be first steps towards this vision, with an emphasis on hiring high-quality faculty, recruiting UW faculty affiliates, and offering value-added courses for UW students. Reaching this vision will require a mix of additional funds (endowments, philanthropy, grants and indirect costs returns, corporate partnerships, joint hires)
c) The **Notice of Intent** and the accompanying presentation to the Board of Trustees.
d) The **Digital Pillar Report** prepared in Spring 2021 by a committee of 19 UW faculty, staff and students at the bequest of the UW Provost that gives a broad overview of the need, the benefits and suggest actions for UW to become more digital.
e) **Various reports** from national organizations and think-tanks on the need for computing.

For convenience each of these is included in the package for this request, or can be accessed via the link: supporting files.

2. Purpose and need for the proposed SoC Academic Programs

The following quotes from two recent studies summarize the overarching needs for the proposed academic programs at UW.

> Computer science and information technologies have transformed all sectors of society, businesses, and government. Today, the transformation continues and much is driven by artificial intelligence, robotics, the Internet of Things, information security, and data science. A wide range of jobs in virtually all sectors demand computing skills to an unprecedented extent. And every academic discipline finds itself incorporating computing into its research and educational mission. [NAS 2018]

> Computing is and will continue to be an essential component in shaping the future for humanity. The computing disciplines need to attract quality students from a broad and diverse cross-section of the public and prepare them to be capable and responsible professionals. [CC2020]

These needs are even deeper at UW. Because of limited staffing and resources in UW's Computer Science department, computational education and research is far below that of our peers, and the needs of UW graduates.[2] Broader access to innovative research, world-class infrastructure and workforce training in computing and data is therefore critical for Wyoming citizens, and most importantly for UW's students.

The primary purposes of the SoC curricular programs are to

- **provide more students with career pathways that utilize** the power of computing and technology,
- provide new opportunities to **increase the diversity among UW students utilizing computing** in their disciplines and careers, and
- establish **a pipeline of tech-savvy graduates for Wyoming's and the global economy**.

[2] It is important to note the scale that is needed for UW to have impact, and what is common across the nation. UW's current CS department has 7 professors (only 1 with an AI specialty) and the Advanced Research Computing Center (ARCC) has 4 current staff. Comparing relative sizes of CS departments is only one, very limited indicator, but it does give a sense of where UW is. Boise State, about twice UW's size, has 26 CS professors and plans to double in size. Notre Dame, a predominantly humanities and social sciences university, is almost exactly UWs size and has more than 4 times our CS faculty, and a unit like our ARCC with over 50 staff (almost entire funded on soft money through grants). In all cases these activities are a foundation for economic development in their region. [S20]

Additionally, the SoC will provide UW researchers with new tools and cutting-edge computational expertise to better address grand challenge problems of importance to Wyoming and region that they are studying, and serve as a hub for Wyoming's innovation economy.

3. Proposed curriculum

The SoC is envisioned to house the following academic programs in the long-term:

- Certificate programs, possibly stackable, in various aspects of computing
- Minors in computing
- Multi-pathway BA and BS programs in computing,
- MA/MS/PhD in Computing.

When feasible, all parts of the curricula will be offered online. The SoC will also work with Academic Affairs to help champion an envisioned "Digital for All" component of the USP.

The initial ideas of these programs are more fully discussed in the SoC Preliminary Plan, and the Digital Pillar report. The full development of these programs will involve Academic Affairs, Faculty Senate, the Graduate Council, the USP committee, faculty and students, and will be overseen by a SoC Curriculum Advisory Committee. All programs will be greatly informed by the recently released report "*Computing Curricula 2020: Paradigms for Global Computing Education* [CC2020] that was developed by a 50-member task force drawn from 20 countries, CC2020 outlines international recommendations for baccalaureate degrees in computing.

All programs will be fully evaluated and follow the process for approval and creation of new academic programs.

We briefly describe each of the envisioned curricular programs.

Digital for All Experiences.

The Digital Pillar report recommends that the university community consider the creation of a "digital course" requirement in the University Studies Program for all students. Their reasoning is that it is important that all UW undergraduate students learn how digital and computational methods/tools/approaches are increasingly part of their chosen discipline and all aspects of life. At a general level, students should be exposed to the variety of ways that digital tools can be used to accomplish task (many of them are new tasks never before possible in areas from medicine to art and music to engineering and society) and gain introductory experience in using them. Students should gain understanding of how to analyze the human, social and scientific impacts the existence and use of these tools bring. At a specific level, students should learn in greater detail and expertise how to use the digital tools available in their fields of study and understand the theory of how digital approaches and computational methods will change their fields in the future.

Minors in Computing.

> Job prospects likely also contribute to the demand for CS courses from non-majors, but this portion of the enrollment increase is also driven by the impact of CS and computing in other fields. Computer science and its related endeavors such as data science have produced powerful tools and software systems that are used by and affect every discipline, giving rise to exciting subfields, such as computational biology, computational economics, computational chemistry, and digital humanities, with more emerging. These subfields require expertise in the traditional domain and a general fluency in tools and methods from computer science. The advantages of a deeper knowledge of computer science in many domains has also led to the recent emergence of new degree programs at several institutions that fuse curricula and formal requirements of CS with those for one of a range of disciplines (referred to as "X+CS"). [NAS 2018}

As the above quote indicates, increasingly students in many disciplines find great value-added in incorporating computing classes into their studies. Having disciplinary minors in computing will give UW Alums a competitive advantage throughout their careers, catalyze working partnerships between UW departments and the SoC faculty, and

will be a valuable recruiting tool for students, graduate students and faculty. All minors will be vetted and submitted through approval through the standard UW processes.

Certificates, Possibly Stackable, in Digital/Computing.
Even a couple of classes in a particular area can add excellent value to a student's education and their employability. The Digital Pillar Report describes the emerging mechanisms of certificates and stackable certificates in higher education. The SoC envisions partnering with entities like the CS/ECE department, Data Science Center, WyGISC, Ellbogen Center, Visualization Center, Innovation Wyrkshop, Advanced Research Computing Center and UW Libraries to explore the feasibility of developing suites of (possibly stackable) certificate courses that enable a diverse audience of students, including non-traditional students and life-long learners, the opportunities to gain specific 21-st century skills through short-courses, self-paced courses with competency exams.

Based on input from students, the value-added courses, certificate programs and computing minors will be the initial focus of the SoC's curricular efforts.

Multi-pathway BA and BS Programs in Computing.
The BA and BS in Computing will ultimately be central to the SoC curricula. The BA/BS in Computing will be distinctly different than those in CS or ECE at UW, and thereby enable UW to serve a more diverse set of students.

It is anticipated that all Computer Science related degrees at UW will share a highly common first year which will aid in recruiting, advising, costs, and most importantly give students the opportunity to discover their own areas of interest within computing.

Appendix 3 gives a proposed basic structure of UW's existing BS in Computer Science. and of the proposed BS and BA degrees in Computing.

Graduate degree programs.
After the SoC is stably established, it will evaluate the addition of MA and MS degrees in Computing. The focus on these programs will be the creation and use of innovative computing tools in the context of grand challenge problems in a wide range of disciplines. Desired characteristics of these programs will be diversity of student body, various academic pathways for entrance, collaborative projects involving different disciplines and stakeholders, ties through internships/externships with Wyoming and regional companies. A PhD in Computing will be studied and considered in years 4 and 5; other Schools of Computing support robust PhD programs through corporate partnerships, external funding, and partnerships with national labs. Initially, the graduate curricula will be operated using existing programs in the ongoing Interdisciplinary Graduate Minor in Scientific Computing.

Characteristics of SoC curricula

Focus on "computing in context."
This is the use of computers and related technologies to study complex real-world problems. This will require students to develop disciplinary expertise as well as computing expertise.

Common set of beginning courses to allow students to explore.
First year courses will be designed with CS/ECE and other units as an on-ramp to expose students to the power of computing through diverse applications, practical and broad aspects of the development and use of application, and various career tracks in computing. The remainder of the curricula will be designed to offer many possible pathways to students, and to provide a platform for future minors from other disciplines to be offered.

Competency-based.

Competency = Knowledge + Skills + Dispositions… in Context

Following trends supported by educational research and best practices in leading computing program, the curriculum will be designed around competencies and domains, that is, a curriculum that "focuses on an individual's capability to perform and to apply their computing education in a practical and professional service to society. A curriculum founded on students Knowing what, Knowing how and Knowing Why. [CC2020]

"Competency-based curricula provide more pathways for students, the ability to quickly adjust to curricula to cover emerging topics, and provide the ability to "promote and clearly describe the practical benefits of computing programs to stakeholders: students, parents, employers, corporate partners, donors." [CC2020]

Core competencies (e.g. problem-formulation and solving, interpersonal, management and entrepreneurial skills, ethics, collaborating, communicating, working in interdisciplinary and multicultural teams), technical competencies (e.g. DevOps, Software Development, Data_Wrangling, Modelling, Technical Writing), and advanced competencies in selected areas of contemporary computing (e.g. Security, Artificial Intelligence, Internet of Things, FinTech, Contemporary Database & Interfaces, Design Tools, Human Computer Interaction*s)* for the programs will be identified as required elements.

Each course offered by the SoC, and its partners including timely topics courses) will have an associated approved list of competencies. Students can master core competencies in different ways based upon their interests and their strengths. Over next year, a list of core competencies will be developed through consultation with an external advisory board, and a SoC Curriculum Advisory Committee that will include representatives from disciplines across UW, and from Wyoming companies.

Quantitative skills for computing.
Appropriate Mathematics and Statistics concepts will either be offered within existing quantitative courses, embedded within new SoC courses, or offered in freshly designed courses for SoC majors in mind. Different tracks within quantitative offerings will be available for students with different career interests.

Experiential and collaborative learning. This will be emphasized through class projects, internships, externships and senior design projects.

Table 1. Characteristics of SoC undergraduate program

4. Anticipated enrollment increases in SoC BA/BS programs and CS-ECE programs

While SoC undergraduate major programs will not begin to be delivered until 2024, we provide an assessment of expected enrollments in these programs here.

The following quote (emphasis added) from the recent report [NAS2018] help frame this discussion.

> The demand for employees with computer science and computing expertise is high and has grown steadily over time. According to data from the Bureau of Labor Statistics (BLS), employment in computer occupations grew by nearly a factor of 20 between 1975 and 2015, nearly twice as fast as production of CIS bachelor's degrees. BLS has projected that **demand for computer science workers will continue to grow over the next decade at a rate higher than that of overall job growth, particularly as computing becomes more central to a wider range of industrial sectors.** Employment demand is particularly intense in some specialty areas, including cybersecurity, data science, and machine learning**.**

Estimated increased enrollments in computing or CS program given in Table 2 are based on the above report and the data from market research performed by EAB. It is anticipated that enrollments for the BA in Computing program would attract about 100 majors.

Estimating enrollments is difficult for the following reasons: we are envisioning programs that have unique components (e.g., a focus on computing in context of applications and interdisciplinarity) and which include emerging areas (e.g., data science) that are too young for EAB or the Bureau of Labor Statistics to include in their analyses. Additionally, the analyses tend to be too broad geographically to capture need in Wyoming and may underestimate demand for new types of occupations. Members of the committee that developed this report indicate that they have frequent inquiries from companies in Wyoming about the availability of computing savvy graduates, and that often we are unable to meet their needs. The growth in small tech companies in Wyoming will only increase this demand. In addition to the demand in the marketplace for these types of graduates, there is also a demand among UW students for more opportunities to learn value-added computing skills. It is felt that the estimates are realistic, and perhaps on the conservative side, based on the available data.

2024-2025	2025-2026	2026-2027	2027-2028
36	66	91	116

Table 2. Estimated enrollments in BS in Computing in first 5 years of program

We note that in 2019, there were 262 CS majors, and 243 ECE majors. Combining the estimated BA and BS in Computing programs, we estimate the SoC will have around 216 undergraduate majors (116 in the BS and 100 in the BA) five years after these programs commence.

SoC's education impact down the road will also reach many students (in the range of 240) through computing minors many departments already considering minor programs). The demand for these will be evaluated as the programs are developed and proposed.

5. Budget narrative, and existing or new resources required to deliver the Academic program

The UW leadership's plan is and has been for a long time that there will be a $3M annual allocation from the UW budget for the SoC, of which $500K is earmarked for collaboration with the College of Engineering and Applied Sciences (CEAS). [3]

At the end of five years the plan targets having the following levels of personnel and programs:

- 10-13 FTE faculty in computing, each joint with another department
- 5 Graduate assistants

[3] Once the SoC is approved searches could commence with some joint SoC/CEAS faculty hires, presumably initially with the new ECE/CS unit in areas of mutual interest.

- 15 Undergraduate scholars
- 10 Faculty affiliates
- Director stipend
- Business manager and Office Manage
- Operational budget of $50K.

The total projected expenses over 4 years are slightly less than $12M. The on-going expenses at the end of FY26 are $3M/year.

The following should be noted:

- The final envisioned size (approximately 24 faculty or research scientists) of the SoC is designed to support the planned MS, MA and PhD programs, as well as aggressive research programs. This initial budget hiring 10-13 FTE faculty or research scientists. As indicated in Appendix 1, additional faculty will be added when justified through joint hires and the CPM process or endowments, and additional (non-extended term track) research scientists through the corporate partnership program, external funding and endowments.
- To encourage collaborations, help support departments, all SoC faculty will be joint hires with other departments.
- All SoC faculty and research scientists will have significant expectations for securing external funding through grants and corporate partnerships; by the end of 5 years SoC faculty and research scientists should bring in an additional $3.5 M/year in external funding.
- As with other such schools or centers, the SoC should provide excellent opportunities for investments from corporations, and individuals. Fund-raising to support SoC programs will be a priority of the SoC administration and faculty.
- The SoC will work closely with the UW Search Equity Advisors initiative to ensure that the net is cast wide to encourage a large pool of talented diverse candidates. fund for undergraduates, and a visiting scholar program.

Expenses		FY22	FY23	FY24	FY25	FY26	TOTAL
Category							
Administration							
	Director	50,000	112,500	112,500	75,000	50,000	400,000
	Business Manager	30,000	120,000	120,000	120,000	120,000	510,000
	Office Manager	11,250	45,000	45,000	45,000	45,000	191,250
	Fringe Benefits	43,134	133,073	133,073	116,160	104,885	530,324
Subtotal		**134,384**	**410,573**	**410,573**	**356,160**	**319,885**	**1,631,574**
Personnel							
	Faculty added in given year		2 Faculty	2 Faculty, 1 Research Scientist	2 Faculty, 1 Research Scientist	2 Faculty, 1 Research Scientist	
	Faculty		300,000	750,000	1,200,000	1,500,000	3,750,000
	Fringe Benefits		135,300	338,250	541,200	676,500	1,691,250
Subtotal			**435,300**	**1,088,250**	**1,741,200**	**2,176,500**	**5,441,250**
Students & Affiliates							
	GAs 5/year		175,000	175,000	175,000	175,000	700,000
	Undergrads 15/year		150,000	150,000	150,000	150,000	600,000
	12K/month per affiliate		240,000	240,000	240,000	120,000	840,000
Subtotal			**565,000**	**565,000**	**565,000**	**445,000**	**2,140,000**
Operating expenses							
	Recruiting costs		45,000	30,000	45,000	30,000	150,000
	Start-up for labs		600,000	600,000	600,000	600,000	2,400,000
	Operational budget	16,667	50,000	50,000	50,000	50,000	216,667
Subtotal		**16,667**	**695,000**	**680,000**	**695,000**	**680,000**	**2,766,667**

Expenses		FY 22	FY 23	FY 24	FY 25	FY 26	Total
	Total on-going expenses	151,050	1,460,873	2,113,823	2,712,360	2,991,385	2,991,385
	Total one-time expenses	-	645,000	630,000	645,000	630,000	2,550,000
Total expenses per year		**151,050**	**2,105,873**	**2,743,823**	**3,357,360**	**3,621,385**	**11,979,490**

Table 3: Projected Expenses of SoC for first 4 years

Revenues							
	Internal Budget	**-**	**3,000,000**	**3,000,000**	**3,000,000**	**3,000,000**	**12,000,000**
Running total of Revenue – expenses		**(151,050)**	**743,077**	**999,255**	**641,895**	**20,510**	

Table 4: Summary of Revenue for first 4 years

6. Timeline for implementation

A detailed five year/two-phase plan for the roll-out of the SoC and its associated programs is given in Pages 21-29 of the SoC Preliminary Plan. The timeline for the development and roll-out of the BS and BA computing majors is given in Table 5.

Spring 2022	Appoint initial director and hire business and office manager Conduct searches for initial faculty and research scientist positions Establish corporate partnership programs Establish/strengthen partnerships with national labs
AY 2022-2023	Create a Curriculum Advisory Committee that includes international experts in computing education, UW alums using computing in their careers, Wyoming tech companies, UW CS/ECE and Math-Stat faculty to design the courses for the BA/BS. Offer several new SoC undergraduate courses of interest to a broad range of students. Work with CS/ECE on designing and delivering inviting, experiential, and interdisciplinary first year computing courses. Conduct searches for second round of faculty and research scientist positions Work with faculty to develop minors in computing programs Initiate Undergraduate Internships program and Faculty Affiliates program
AY 2023-2024	Secure authorization for BA/BS program, establish 2+2 agreements with CCs Fully develop other SoC courses Recruit first class of SoC majors. Conduct searches for third round of faculty and research scientist positions
AY 2024-2025	Enroll first class of SoC Bachelors students Continue work with other UW programs on development and assessment of computing minors. Conduct searches for fourth round of faculty and research scientist positions
AY 2025-2026	Evaluate, assess, and make needed modifications to BA/BS programs. Consider creating MA/MS/PhD programs
Spring 2028	Graduate first SoC class of undergraduate students

Table 5. Project timeline of SoC roll-out

7. Plan to assess the SoC Academic Programs

Assessment of the proposed SoC programs will be based on student attainment of core competencies that are outlined in Section 3, the learning outcomes described in Section 8, and informed by an SoC Educational Board and the studies such as "Computing Curricula 2020" [CC2020].

Specific assessment activities for the BA/BS programs will include:

- Pre- and post-degree exams on core and technical computing competencies
- Capstone course with assessment of final projects, including collaboration, critical thinking and communication.

- Feedback from corporate and educational partners involved in internships or capstone projects
- Surveys with Wyoming companies employing SoC graduates
- Student course evaluations
- Exit interviews with graduates.

8. Plans for accreditation

Accreditation for the program will be established through the Higher Learning Commission (HLC) and informed by a SoC Curricular Advisory Committee. To enable training of a more, diverse student population in computing the BS/BA programs will not be ABET accredited–ABET accreditation is more restrictive on the disciplinary courses (e.g., must be science oriented) and the mathematics and statistics courses than the envisioned SoC programs. The SoC programs are not intended to be less rigorous, but to have more options in disciplinary content, and have mathematics and statistics courses more aligned with students' interests and with the computing classes. Students desiring an engineering degree can pursue a BS from the ABET accredited program in CS/ECE, and if desired use their elective courses to take courses in the SoC.

Tentative learning outcomes are:

- **Outcome 1 – Communication:** Students will be able to communicate in written and oral forms in such a way as to demonstrate their ability to work with a variety of stakeholders, and to present information clearly, logically, and critically.
- **Outcome 2 – Application:** Students will be able to utilize and modify state-of-the-art computing tools and concepts to explore and analyze disciplinary problems
- **Outcome 3 – Coding:** Students will be able to code efficient programs on their own to model phenomena.
- **Outcome 4 - Depth of Knowledge**: In a selected domain/concentrations students will demonstrate a depth of knowledge appropriate to graduate study and/or lifelong learning in that area. Students should be able to read for understanding materials in that area beyond those assigned in coursework.
- **Outcome 5 - Preparation for Career and Further Education**: Students will be prepared for a career in industry, government agencies or non-profits or for graduate study in scientific or technical fields.

Continuous improvement of the program will be fostered through annual presentations and feedback with the SoC Curriculum Advisory Committee.

9. Benefits of the Academic Program to the University

The proposed School of Computing will position Wyoming's land grant institution as

- A national leader in computational research, education, and engagement, providing academic excellence in teaching, intellectual distinction in research, and transformative innovation for entrepreneurship. The SoC will **champion interdisciplinarity** across campus by fusing computation, digital, and data science curricula with all domains.
- A computational hub for students, faculty, staff, community and our state, industrial and academic partners. The SoC will skillfully l**everage corporate and knowledge partnerships** to unite learners, educators, entrepreneurs, and stakeholders, and create a sustainable robust digital ecosystem.
- A steward, supporter, and developer of digital skills/literacy and computational thinking for all. The SoC purpose is to **nurture computing curiosity across disciplines and backgrounds**, to enhance interdisciplinarity, and to capitalize upon emerging innovations for teaching, research, and economic diversification.

10. The ability of the University to carry out the Academic Program

UW is positioned well to successful carry out this academic plan, as it will build upon past investments, existing strengths at UW, and can take advantage of many pending opportunities (such as the planned large increases of funding at national agencies, American Rescue Program funding, the Wyoming Innovation Partnership, innovative technologies, and businesses around blockchain, and enhanced corporate partnerships around technology). SoC courses and curricular programs will leverage partnerships and in particular co-development and delivery of courses

whenever possible. The SoC be symbiotic with the envisioned "Digital for All" program aspect of the soon-to-be crafted University Studies Program.

Wyoming has consistently sought to contribute to its future by investing in the education and training of its citizens through the University of Wyoming. Recent investments, including the Tier 1 Engineering Initiative (T-1), Science Initiative (SI), and Trustee's Education Initiative (TEI), along with capital investments in facilities provide a firm basis that focuses on the importance of Science, Technology, Engineering and Mathematics (STEM). These strengths will support the interdisciplinary, computing in context focus of the SoC.

In the past decade, computing has become an increasingly crucial tool for research, for our graduates, and for almost all sectors of the economy. The University of Wyoming has responded by hiring faculty who use computing in their discipline, establishing programs like the Data Science Center and the Advanced Research Computing Center, and by developing a partnership with the University Cooperation for Atmospheric Research (UCAR) and its NSF-funded National Center for Atmospheric Research (NCAR) around the NCAR-Wyoming Supercomputer Center (NWSC). These have supported new modes of faculty research and increased awareness of computing across the campus. The SoC will benefit as well as strengthen this existing computational ecosystem.

Today, computing's impact is found in virtually every discipline, and simulation and modeling are more important than ever, but are joined by new data science technologies like artificial intelligence (AI), machine learning and blockchain that are starting to transform every academic discipline, every industry, and every aspect of modern society. Access to world-class infrastructure and workforce training in computing and data is therefore critical for Wyoming citizens, and for UW's students.

The SoC, along with the broader Digital Pillar plan, outline a strategic response to the computational-related needs of UW and Wyoming Community College students, Wyoming's businesses, and agencies. Through the SoC there are also great prospects for the University of Wyoming to emerge as a leader in rural computing and data.

11. The likely value to, and impact on, students and residents of Wyoming.

The SoC courses and programs will produce professionals fluent in the computing/digital arena. UW graduates interacting with the SoC via interdisciplinary initiatives with departments will benefit from knowledge and experience of the application of computing in their chosen domain, equipping them to be perceptive and cognizant graduates with experience in innovative applications of computing – and thus competitive in the workplace. Specific outcomes for the SoC courses and programs are given in Section 8.

The SoC curricular programs will provide Wyoming companies and agencies with employees who identify problems (or opportunities for improvement, and successfully bring to bear computing and technology to resolve the problem (or help the company or agency advance through seizing the opportunity).

Citizens of Wyoming can benefit from having SoC graduates helping agencies analyze complex problems (e.g., wildfire management, rural health, etc.) of importance to local communities and to Wyoming.

References

[ABET20] Criterion for accrediting computing programs 2020-2021.
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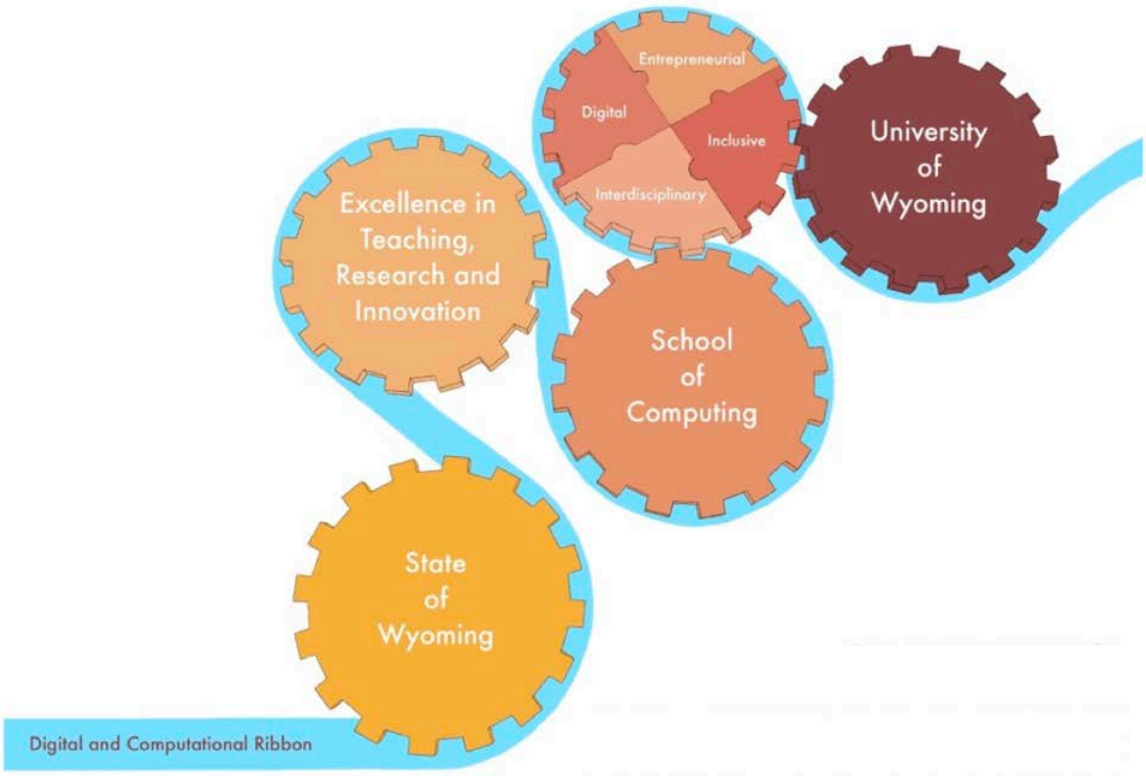

The School of Computing is designed to strategically meshtogether existing resources and initiatives, the other pillars (more inclusive, more interdisciplinary, and more entrepreneurial), UW's existing strengths in research and teaching, and partnerships throughout UW and across Wyoming, into a system that drives UW to its vision of becoming a best in-class university true to Wyoming's roots.

Appendix 1.
Funding plans for future development for SoC

Position/Program	Role	Future funding sources
Dean	A high-quality Dean is critical to the SoC's long-term success. In particular in areas of partnerships, collaborations throughout UW, and fund-raising.	CPM request, endowment
Associate Dean for Partnerships and Research	Partnerships with corporations, national labs and other entities will be critical to provide UW students with experiential learning opportunities via capstone courses, interns opportunities, enable new academic-industry research partnerships, and facilitate corporate input to strengthen programs.	Internal candidate with summer stipend from IDCs or Corporate Partnership program
Assistant/Associate Dean for Curricula	Oversee development of curriculum, internship program, and Digital for all efforts at UW.	Internal candidate with summer stipend; possibly joint with AA
K-14 Education and Workforce Development Staff	The long-term impact of the SoC requires an ecosystem that gives students early and frequent experiences with computing, and a curriculum that produces UW graduates that meet the needs of Wyoming companies.	External funding. ARP requests include a position like this.
Special Projects Lead	This lead will help SoC faculty and faculty affiliates to pursue larger federal grants.	Indirect Cost Returns, Corporate partnership program, external grants.
Visiting Scholars Program	This program will enable UW faculty in any discipline to work with SoC faculty to identify a project to collaborate on.	Indirect Cost Returns, external grants. UW's ARP request includes this program.
7-10 additional Faculty or Research Scientist positions	This will give the SoC 20-23 faculty or research scientists, and dozens of affiliate faculty.	CPM requests, joint hires with departments. External funding for partial support of Research Scientists.

Appendix 2.
SWOT Analysis

Strengths

- There exists an increasingly high demand for computing across all disciplines.
- UW's on-going K-14 computing outreach programs and Wyoming's nascent Boot Up initiative can provide UW and the Wyoming CCs with students with strong computing skills.
- There is an increased demand by Wyoming companies and agencies for these computing related skills.
- The SoC will have strong partnerships with the CS/ECE department, WyGiSC, ARCC, Data Science Center, Visualization Center, Makerspaces, and NCAR Wyoming Supercomputing Center
- The SoC builds upon and will enhance ongoing UW initiatives such as SER, the Engineering Initiative, the
- Science Initiative, and the Trustees' Education Initiative.
- The Wyoming Innovation Partnership will provide the platform and network for the SoC to make a statewide impact in economic and workforce development, education, and research of importance to Wyoming.

Weaknesses

- UW has very small CS & ECE departments which may make it difficult to attract faculty, and it will take longer for UW to reach competitive staffing levels. As a point of reference in 2013, Boise State University was in a comparable situation with just 7 faculty in CS. Through an investment by the State of Idaho, they have grown to 26 faculty, over 200 CS graduates/year, and over $3M/year in external funding (which represents a larger than 400 times increase in funding since 2013).
- Lack of a Dean early in the process may make it difficult to recruit faculty and raise funding.
- It may be costly to recruit high-caliber faculty to UW. Recruiting will be key.
- UW is starting late in the computing arena compared to some programs. However, UW has strong computational faculty throughout the university, has access to the NCAR Wyoming Supercomputing Center, and a strong core of faculty in the CS and ECE programs.
- Constrained budgets at UW may make it difficult to achieve SoC's vision quickly. This will make the raising funds for the SoC through corporate partnerships, philanthropy, and external grants more critical.
- Expertise in levels of the K-16 pipeline can be difficult to establish and maintain.

Opportunities

- Possible **one-time f**unding for SoC through America Recovers Program (ARP) include:

  2022: $1.15 M confirmed for:
  Software Design Program[4] training with CCs,
  Wyoming Innovation Partnership (WIP) administration,
  Visiting Scholars Program

[4] The Software Design Program is an associate's degree that has been designed through a collaboration with UW, Cardiff University and Wyoming Community Colleges. Students will be matriculating in the program starting Fall 2022. The CC's finding a pathway for students with this associate's degree to continue towards a 4-year degree, preferably at UW. The confirmed ARP funding will help implement the associate's degree and explore the development of a 4-year degree at UW.

1 Research Scientist, 5 graduate students.

2023-2026: $23M + (pending) for

WIP Training $3.85 M (includes 3 UW FTEs for 3 years)
Upgrades to UW's Advanced Research Computing Center $10M
Additional start-up funds to build out computing labs $3M
Visiting Scholars program for departments $2M
3 Research Scientists for 3 years
15 graduate research assistants for 3 years available to work on projects for UW faculty

None of this funding is part of the $3M budget given above. This funding, if realized, will be treated as an external grant to the SoC and used only for one-time or short-term commitments.

- Proposed increases federal funding in general, and in specific around AI, high-performance computing, and quantum computing position the SoC well for external funding.
- The UW Foundation is already in conversation around major donations to UW to support computing efforts around blockchain and smart contracts, and the SoC in general.
- Wyoming is a leader in developing the Mountain States Research Partnership with Montana, Idaho, South Dakota, and North Dakota. This partnership will afford many opportunities around computing.
- On-going activities are occurring to develop/strengthen partnerships with national labs and research centers around computing including Pacific Northwest National Lab, Idaho National Lab, Argonne National Lab, and the National Center for Atmospheric Research.
- Wyoming currently has a growing tech-sector with demands for well-prepared computing graduates, and an interest in corporate partnerships with the SoC
- Defense agencies such as the National Security Agency have expressed interest in working with the SoC to develop internships for UW students and programs in high-performance computing

Threats

- Another economic downturn for Wyoming could hamper future growth of the SoC. This can be mitigated by corporate partnership programs, active pursuit of philanthropic support and external funding.
- Competitor schools may attract Wyoming students. This emphasizes the need for strong internship programs, engaging, hands-on curricula, and early and frequent recruitment of Wyoming students.
- External funding not coming through at expected levels would put a damper on future growth of the SoC.
- The quality of graduates does not meet Wyoming companies' expectations. UW has a great opportunity to highlight the talents and abilities of its students to Wyoming companies. To have this be successful, it is imperative that while at UW, students learn how to pose and solve complex problems, innovate, and work with various stakeholders.
- The SoC curriculum is not agile enough to provide multiple pathways for students. This can be mitigated having SoC faculty actively working with departments to develop minors, and by working with students and corporate partners to identify needed topics and courses.

Appendix 3
A comparison of envisioned SoC BA/BS in computing and existing BS in CS programs

	BS in Computer Science	**BS in Computing**	**BA in Computing**
USP outside major	18 hours	18 hours	18 hours
Quantitative	18 hours Calculus based	15 hours math/stats for computing (modeling, optimization, and data)	9 hours math/stat for arts/humanities/social science applications of computing
Math Science electives	12 hours		
CS core	42 hours	16 hours	16 hours
SoC core competency courses		12 hours (Computing in context, experiential and project based))	12 hours (Computing in context, experiential and project based))
Disciplinary concentration		12 hours (in agriculture, science, math, statistics, or engineering)	18 hours (in education, arts, humanities, social sciences)
CS electives	12-21 hours		
General electives	15 hours	12 hours	12 hours
SoC advanced competencies based on interests		15 hours	15 hours
SoC electives		12 hours	12 hours
Capstone project		8 hours	8 hours
Total hours	120-128 (depending on concentration)	120 hours	120 hours

Appendix 4
FAQs

- **Did we look at other models, e.g., a department in Engineering…why create an entire "school"?**
  Several models were considered, including an institute, a department within a college, a school within a college. Institutes tend to focus on research and would not support the SoC's educational vision. A department within a college would not support the interdisciplinary nature and desired campus-wide impact of the envisioned SoC. A school, like UW's SER, allows for an outward facing organization that can work with companies and more easily work with donors and respond to strategic needs of the university.

- **Why do we need both a school and a department of Computer Science & Electrical and Computer Engineering?**
  This will allow UW to address the need for a more robust computing community more quickly, better position itself for the projected funding opportunities around computing, provide UW students multiple pathways to computing-enabled careers, produce graduates with a more diverse set of backgrounds and experiences (e.g., business analytics and computing, digital humanities, digital forensics, AI-enabled human resource management)

  A separate school better provides an entity to be a hub of computing across UW and the State. Much as a School of Energy Resources provides a hub for energy related research, and the Haub School for environment and natural resources.

- **Why are the salaries so high?**
  As noted in the preliminary plans, the numbers for the salaries included fringe benefits, which are 45.1% for faculty. The budget in this proposal separates the salary and fringe. The budget used a target of an average salary of $150K/FTE. For faculty in some disciplines (AI), or faculty with industry experiences can be significantly higher. Additionally, to get the SoC established it is preferable to target proven faculty or rising stars. This type of quality and experience costs. At established schools of computing, salaries for associate professors are in the $200K range, and full professors in the $250K range. At schools more like UW, with strong computing programs, salaries for associate professors are in the 140K range and full professors in the $160K range are in the 140K range and full professors in the $160K range.

  It should also be noted that the expectations of securing external grants for faculty and for research scientists are significant.

  The preliminary plan targeted a salary of $350K for a dean. UW Deans currently make in the $250-270K range. Deans of established SoC make in the $400K range. It was intended that part of this salary would be covered by endowments. Note this updated plan does not include a Dean during the incubation period. UW and the SoC will need to consider the need for a Dean as the SoC matures.

- **Where is the funding for the SoC coming from?**
  As part of discussions related to the most recent budget cut, the Governor and UW leadership agreed to set aside $5.5M/year for strategic initiatives for the State. These include the Wyoming Innovation Partnership, the Wyoming Outdoor Recreation and Hospitality initiative, the Center for Entrepreneurship and Innovation, and the School of Computing. Of the $5.5M, UW leadership targeted $3M/year for the School of Computing.

- **Why does the original plan for the SoC appear to be so top-heavy?**
  The preliminary plan for the SoC included a Dean, 2 Associate Deans, and two project leads. As has been done elsewhere, one way to jump-start a new initiative is to recruit and hire a highly regarded Dean, and then use the Dean's reputation to recruit faculty and the Dean's expertise to shape the new programs. To initially focus on students, faculty and the State, it was decided to incubate the SoC and forego a Dean until the SoC has matured and external funding has been secured.

One of the Associate Deans was to be heavily involved in the proposed campus-wide "Digital for All" effort, and the other in developing corporate, academic and agency partnerships for all of UW. The budgets for the Associate Deans were full salaries, with the intent to provide the Associate Dean a small stipend and use the rest of the salary in his/her home department to cover their responsibilities there while they were in the associate deanship.

One of the staff was targeted to be leading the development of an internship program and UW's connections to Wyoming's K-14 efforts in computing.

- **Where will the SoC be physically located?**
  In the short term, the plan to incubate the SoC in an existing college facilitates the use of existing spaces in that college. As the SoC matures, a permanent location will need to be determined. Identifying such space within existing UW buildings will need to be considered early in the SoC's development.

- **What is in it for faculty?**
  The budget presented in this RFA would yield 10-13 FTE faculty/research scientists, depending on the market for chosen expertise and experience of hires. The long-term vision for the SoC targets 20-25 □ faculty/research scientists. All faculty will have joint appointments with a department outside of the SoC. It is anticipated that there will be dozens of SoC affiliate faculty who are working with SoC faculty and students on projects.

  All SoC faculty positions are intended to be joint appointments with other departments and programs at UW and should help meet departments' computational curricular and research needs.

  A Visiting Scholars program will (on a competitive bases) allow faculty to invite computational scholars in their disciplines to UW to explore collaborations, identify ways that a program or department become "more digital" to enhance their scholarship and add value to their students' education.

  A New Faculty Affiliates program will provide faculty in any discipline having a desire to more fully incorporate computing into their scholarship or teaching to work with the SoC faculty (and in particular one-on-one with on Research Scientist) for a couple of months to identify computational projects in their discipline to collaborate on.

  Through student internships and the SoC curricular programs, UW will have a larger number of tech-savvy students with diverse disciplinary internships. It is anticipated that these students can serve as "computational" enablers in projects with faculty outside of the SoC.

- **What is in it for staff?**
  Staff can utilize certificate and short courses in areas such as visualization, data-mining, and artificial intelligence either to gain emerging skills needed in their positions, advance within the UW system, or position them for a different career.

- **What is in it for students?**
  Majors will have multiple pathways towards careers that utilize computing; and their courses will focus on learning-in-context in collaborative settings with a rich set of internship opportunities. All students will have access to value-added courses and certificate programs.

Addendum C

Authorization Request for the School of Computing (SoC)

August 2021

The vision of the School of Computing (SoC) is ambitious! Through the SoC, (and each of the other pillars), UW envisions forging new trails that will enable UW to become **a national leader in education, engagement and research**.

The SoC will be a hub of innovation and knowledge exchange providing UW students, faculty and Wyoming businesses and citizens with a "**backpack" of computational tools and approaches to drive transformation**.

The SoC will champion the broader efforts aimed at **making UW more digital** through partnerships throughout UW and Wyoming.

1. Introduction

This document is a Request for Authorization (RFA) to establish a School of Computing (SoC) at the University of Wyoming. The request describes characteristics of a BA and a BS degree in Computing that will be SoC's initial curricular foci and will provide the foundation and structure for future minors to be developed and offered with other departments and programs across the campus. These degree programs will be fully developed in the first 18 months of the SoC, and informed by a new Dean and new hires and a SoC Curriculum Advisory Committee that will include faculty from UW and experts from outside UW. Additionally, a description of the SoC's leadership role in the campus-wide effort to make UW more digital is given. The BA and BS, as well as future curricular programs (e.g. minors, MA, MS and PhD degrees in Computing) will follow the approval process at the appropriate times in coming years.

This RFA references

a) A **feasibility study and market analysis** on the BS in Computing Degree from the Education Advisory Board (EAB).
b) The **School of Computing Preliminary Plan** that provides a detailed description, analysis and tentative budget for all aspects (Educational, Economic and Workforce Development, Research, Partnerships, and enhanced funding opportunities).
c) The **Notice of Intent** and the accompanying presentation to the Board of Trustees.
d) The **Digital Pillar Report** prepared in Spring 2021 by a committee of 19 UW faculty, staff and students at the bequest of the UW Provost that gives a broad overview of the need, the benefits and suggest actions for UW to become more digital.
e) **Various reports** from national organizations and think-tanks on the need for computing.

For convenience each of these is included in the package for this request, or can be accessed via the link: supporting files.

2. Purpose and need for the proposed Academic Program

The following quotes from two recent studies summarize the overarching needs for the proposed academic programs at UW.

> Computer science and information technologies have transformed all sectors of society, businesses, and government. Today, the transformation continues and much is driven by artificial intelligence, robotics, the Internet of Things, information security, and data science. A wide range of jobs in virtually all sectors demand computing skills to an unprecedented extent. And every academic discipline finds itself incorporating computing into its research and educational mission. [NAS 2018]

> Computing is and will continue to be an essential component in shaping the future for humanity, The computing disciplines need to attract quality students from a broad and diverse cross-section of the public and prepare them to be capable and responsible professionals. [CC2020]

These needs are even deeper at UW. The productivity across UW in computational education and research is far below that of our peers, and the needs of UW graduates.[1] Access to cutting-edge research, world-class infrastructure and

[1] "It is important to note the scale that is needed for UW to have impact, and what is common across the nation. UW's current CS department has 8 professors (only 2 with an AI specialty) and the Advanced Research Computing Center (ARCC) has 4 current staff. Comparing the relative sizes of CS departments is only one, very limited indicator, but it does give a sense of where UW is. In 2020 UIUC, about three times UW's size, hired 23 new faculty in CS alone. Boise State, about twice UW's size, has more than 20 CS professors and plans to double in size. Notre Dame, a predominantly humanities and social sciences university, is almost exactly UWs size and has more than 4 times our CS faculty, and a unit like our ARCC with over 50 staff (almost entire funded on soft money through grants). In all cases these activities are a foundation for economic development in their region." [S20]

workforce training in computing and data is therefore critical for Wyoming citizens, and most importantly for UW's students.

The primary purposes of the SoC curricular programs are to

- lead UW in the incorporation of value-added, disciplinary-specific **digital experiences in all** disciplines,
- **provide more students with career pathways that utilize** the power of computing and technology,
- provide new opportunities to **increase the diversity among UW students utilizing computing** in their disciplines and careers, and
- establish **a pipe-line of tech-savvy graduates for Wyoming's and the global economy**.

Additionally, the SoC will provide UW researchers new tools and cutting-edge computational expertise to better address grand challenge problems of importance to Wyoming and region that they are studying, and serve as a hub for Wyoming's innovation economy.

3. Proposed curriculum

The SoC is envisioned to ultimately house the following academic programs:

- Multi-pathway BA and BS programs in Computing,
- Minors in Computing,
- Certificates, possibly stackable, in Digital/Computing,
- MA/MS/PhD in Computing.

When feasible, all parts of the curricula will be offered online. The SoC will also work with Academic Affairs to be the champion for the envisioned "Digital for All" component of the USP.

The initial ideas of these programs are more fully discussed in the SoC Preliminary Plan, and the Digital Pillar report. The full development of these programs will involve Academic Affairs, Faculty Senate, the USP committee, faculty and students, and will be overseen by a SoC Curriculum Advisory Committee. All will be fully studied and follow the process for approval and creation of new academic programs.

Here we focus primarily on the characteristics and vision for the BA and BS in Computing programs; as they are the most critical for UW students and for Wyoming, and will be the first developed. Before that we will briefly describe the vision and plans for the other programs. All programs will be greatly informed by the recently released report "*Computing Curricula 2020: Paradigms for Global Computing Education* [CC2020] that was developed by a 50-member task force drawn from 20 countries, CC2020 outlines international recommendations for baccalaureate degrees in computing.

Digital For All Experiences.

The Digital Pillar report recommends that the university community consider the creation of a "digital course" requirement in the University Studies Program for all students. Their reasoning is that it is important that all UW undergraduate students learn how digital and computational methods/tools/approaches are increasingly part of their chosen discipline and all aspects of life. At a general level, students should be exposed to the variety of ways that digital tools can be used to accomplish task (many of them are new tasks never before possible in areas from medicine to art and music to engineering and society) and gain introductory experience in using them. Students should gain understanding of how to analyze the human, social and scientific impacts the existence and use of these tools bring. At a specific level, students should learn in greater detail and expertise how to use the digital tools available in their fields of study and understand the theory of how digital approaches and computational methods will change their fields in the future. The SoC plan proposes an Associate Dean with joint appointment between the SoC and Academic Affairs tasked with leading efforts to make UW more digital through the proposed digital curriculum embedded in the USP.

Minors in Computing.

> Job prospects likely also contribute to the demand for CS courses from non-majors, but this portion of the enrollment increase is also driven by the impact of CS and computing in other fields. Computer

> science and its related endeavors such as data science have produced powerful tools and software systems that are used by and affect every discipline, giving rise to exciting subfields, such as computational biology, computational economics, computational chemistry, and digital humanities, with more emerging. These subfields require expertise in the traditional domain and a general fluency in tools and methods from computer science. The advantages of a deeper knowledge of computer science in many domains has also led to the recent emergence of new degree programs at several institutions that fuse curricula and formal requirements of CS with those for one of a range of disciplines (referred to as "X+CS"). [NAS 2018}

As the above quote indicates, increasingly students in many disciplines find great value-added in incorporating computing classes into their studies. Having disciplinary minors in computing will give UW Alums a competitive advantage throughout their careers, catalyze working partnerships between UW departments and the SoC faculty, and will be a valuable recruiting tool for students, graduate students and faculty. All minors will be vetted, and submitted through approval through the standard UW processes.

Certificates, Possibly Stackable, in Digital/Computing.
The Digital Pillar Report mentions the emerging mechanisms of certificates and stackable certificates in higher education. The SoC envisions partnering with entities like the Ellbogen Center, the Visualization Center, the Innovation Wyrkshop, the Advanced Research Computing Center and UW Libraries to explore the feasibility of developing suites of (possibly stackable) certificate courses that enable a diverse audience of students, including non-traditional students and life-long learners, the opportunities to gain specific 21st-century skills through short-courses, self-paced courses with competency exams.

Graduate degree programs.
In years 2 and 3, the SoC will plan and developing MA and MS degrees in Computing, with a focus on creation and use of innovative computing tools in the context of grand challenge problems in a wide range of disciplines. Desired characteristics of these programs will be diversity of student body, various academic pathways for entrance, collaborative projects involving different disciplines and stakeholders, ties through internships/externships with Wyoming and regional companies. A PhD in Computing will be studied and considered in years 4 and 5; other Schools of Computing support robust PhD programs through corporate partnerships, external funding, and partnerships with national labs. Initially, the graduate curricula will be operated using existing programs in the ongoing Interdisciplinary Graduate Minor in Scientific Computing.

We now return attention to the most critical programs in the SoC, the BA and BS programs in computing.

Multi-pathway BA and BS Programs in Computing.
The BA and BS in Computing will be the initial and central part of the SoC curricula, and form the backbone for multiple minors. The BA/BS in Computing will be distinctly different than those in CS or ECE at UW, and thereby enable UW to serve a more diverse set of students.

The BS and BA programs will be more fully developed during the first 18 months of the SoC and informed and developed by SoC hires and the SoC Curricular Advisory Committee, and be symbiotic with the "new" CS/ECE BS and graduate programs.

It is anticipated that all Computer Science related degrees at UW will share a highly common first year which will aid in recruiting, advising, costs, and most importantly give students the opportunity to discover their own areas of interest within computing.

Characteristics of the proposed undergraduate degrees in computing are described in Table 1. Table 2 gives the basic structure of UW's existing BS in Computer Science. and of the proposed BS and BA degrees in Computing.

Characteristics of the BA and BS programs in Computing

Focus on "computing in context."
This is the use of computers and related technologies to study complex real-world problems. This will require students to develop disciplinary expertise as well as computing expertise.

Common set of beginning courses to allow students to explore.
First year courses will be designed with CS/ECE and other units as an on-ramp to expose students to the power of computing through diverse applications, practical and broad aspects of the development and use of application, and various career tracks in computing. The remainder of the curricula will be designed to offer many possible pathways to students, and to provide a platform for future minors from other disciplines to be offered.

Competency-based.

Competency = Knowledge + Skills + Dispositions… in Context

Following trends supported by educational research and best practices in leading computing program, the curriculum will be designed around competencies and domains, that is, a curriculum that "focuses on an individual's capability to perform and to apply their computing education in a practical and professional service to society. A curriculum founded on students Knowing what, Knowing how and Knowing Why. [CC2020]

"Competency-based curricula provide more pathways for students, the ability to quickly adjust to curricula to cover emerging topics, and provide the ability to "promote and clearly describe the practical benefits of computing programs to stakeholders: students, parents, employers, corporate partners, donors." [CC2020]

Core competencies (e.g. problem-formulation and solving, interpersonal, management and entrepreneurial skills, ethics, collaborating, communicating, working in interdisciplinary and multicultural teams), technical competencies (e.g. DevOps, Software Development, Data Wrangling, Modelling, Technical Writing), and advanced competencies in selected areas of contemporary computing (e.g. Security, Artificial Intelligence, Internet of Things, FinTech, Contemporary Database & Interfaces, Design Tools, Human Computer Interaction*s)* for the programs will be identified as required elements.

Each course offered by the SoC, and its partners including timely topics courses) will have an associated approved list of competencies. Students can master core competencies in different ways based upon their interests and their strengths. Over next year, a list of core competencies will be developed through consultation with an external advisory board, and a SoC Curriculum Advisory Committee that will include representatives from disciplines across UW, and from Wyoming companies.

Quantitative skills for computing.
Appropriate Mathematics and Statistics concepts will either be offered within existing quantitative courses, embedded within new SoC courses, or offered in freshly designed courses for SoC majors in mind. Different tracks within quantitative offerings will be available for students with different career interests.

Experiential and collaborative learning. This will be emphasized through class projects, internships, externships and senior design projects.

Table 1. Characteristics of SoC undergraduate programs

	BS in Computer Science	BS in Computing	BA in Computing
USP outside major	18 hours	18 hours	18 hours
Quantitative	18 hours Calculus based	15 hours math/stats for computing (modeling, optimization and data)	9 hours math/stat for arts/humanities/social science applications of computing
Math Science electives	12 hours		
CS core	42 hours	16 hours	16 hours
SoC core competency courses		12 hours (Computing in context, experiential and project based))	12 hours (Computing in context, experiential and project based))
Disciplinary concentration		12 hours (in agriculture, science , math, statistics or engineering)	18 hours (in education, arts, humanities, social sciences)
CS electives	12-21 hours		
General electives	15 hours	12 hours	12 hours
SoC advanced competencies based on interests		15 hours	15 hours
SoC electives		12 hours	12 hours
Capstone project		8 hours	8 hours
Total hours	120-128 (depending on concentration)	120 hours	120 hours

Table 2. A comparison of the different bachelor's programs.

4. Anticipated enrollment in BA/BS programs

The following quote (emphasis added) from the recent report [NAS2018] help frame this discussion.

> The demand for employees with computer science and computing expertise is high and has grown steadily over time. According to data from the Bureau of Labor Statistics (BLS), employment in computer occupations grew by nearly a factor of 20 between 1975 and 2015, nearly twice as fast as production of CIS bachelor's degrees. BLS has projected that **demand for computer science workers will continue to grow over the next decade at a rate higher than that of overall job growth, particularly as computing becomes more central to a wider range of industrial sectors.** Employment demand is particularly intense in some specialty areas, including cybersecurity, data science, and machine learning.

Estimated enrollments for the BS in Computing program given in Table 3 are based on the above report and the data from market research performed by EAB. It is anticipated that enrollments for the BA in Computing program would be similar. Once the BA and BS programs are more fully designed, a market analysis, as well as an evaluation of credential design and curricular recommendations for both programs will be performed.

Estimating enrollments is difficult for the following reasons: we are envisioning programs that have unique components (e.g., a focus on computing in context of applications and interdisciplinarity) and which include emerging areas (e.g., data science) that are too young for EAB or the Bureau of Labor Statistics to include in their analyses. Additionally, the analyses tend to be too broad geographically to capture need in Wyoming and may underestimate demand for new types of occupations. Members of the committee that developed this report, indicate that they have

frequent inquiries from companies in Wyoming about the availability of computing savvy graduates, and that often we are unable to meet their needs. The growth in small tech companies in Wyoming will only increase this demand. In addition to the demand in the marketplace for these types of graduates, there is also a demand among UW students for more opportunities to learn value-added computing skills. It is felt that the estimates are realistic, and perhaps on the conservative side, based on the available data.

2023-2024	2024-2025	2025-2026	2026-2027
36	66	91	116

Table 3. Estimated enrollments in BS in Computing in first 5 years of program

We note that in 2019, there were 262 CS majors, and 243 ECE majors. Combining the estimated BA and BS in Computing programs, we estimate the SoC will have around 232 undergraduate majors five years after the program is started.

SoC's education impact down the road will also reach a large number of students (in the range of 240) through computing minors (there are at least 6 departments already considering minor programs). Through its role as champion for "digital for all" the SoC will impact every undergraduate at Wyoming. The demand for these will be evaluated as the programs are developed and proposed.

5. Budget Narrative and existing or new resources required to deliver the Academic program

A detailed five year/two-phase plan for the roll-out of the SoC and its associated programs is given in Pages 21-29 of the SoC Preliminary Plan. Table 4 below gives the projected expenses. The full version of this table was presented to the Trustees in their July 2021 meeting. Some notes are the following.

- There are some differences between this table and budget presented in the preliminary SoC plan, and the notice of intent. This is due to a combining of Phase 0 (the initial 6 months) and Phase 1, The budget below should be taken as the formal proposed budget.

- UW administration has identified several possible funding sources for the SoC, including America Recovers Program (ARP) funding for one-time costs. The details of how the State will distribute ARP funding are still being discussed. Thus, details of funding sources for the SoC are not provided at this time. Once the ARP funding and other infrastructure funding is settled, the UW administration will provide a detailed fiscally solid plan for where the SoC funding for its first 5 years comes from.

At the end of five years the plan targets having the following levels of personnel and programs:

- Dean
- 2 Associate Deans (one devoted to curricula, Digital for All efforts, and programs with community colleges, and one devoted to industry/research lab partnerships and workforce and economic development.
- 1 business manager, 1 office manager, 1 workforce development lead, 1 special projects lead
- a position devoted to working with community colleges
- 21 faculty (3-4 being existing faculty, remaining will new hires with joint appointments in other departments)
- 4 research scientists (it is expected that another 4-5 research scientist will be supported by external grants secured by SoC faculty and research scientists)
- 27 graduate assistants.
- Operating budget
- Start-up funds to be devoted to equipping specialized labs for students, or special computing equipment
- A Visiting Faculty Program
- A Computing Scholars Program for undergraduates

Total projected costs at the end of year 5 are $10.4 M per year.

The following should be noted:

- The projected costs are the anticipated all-in costs, and include programmatic elements such as a scholarship fund for undergraduates, and a visiting scholar program;
- The targeted size of the SoC is designed to ultimately support the planned MS, MA and PhD programs, as well as aggressive research programs.
- To encourage collaborations, help support departments, all SoC faculty will be joint hires with other departments.
- All SoC faculty and research scientists will have significant expectations for securing external funding through grants and corporate partnerships; by the end of 5 years SoC faculty and research scientists should bring in an additional $7.5 M/year in external funding.
- As with other such schools or centers, the SoC should provide excellent opportunities for investments from corporations, and individuals. Fund-raising to support SoC programs will be a priority of the SoC administration and faculty.
- The SoC will work closely with the UW Search Equity Advisors initiative to ensure that the net is cast wide to encourage a large pool of talented diverse candidates.

EXPENSES			FY22	FY23	FY24	FY25	FY26
Administration			**934,760**	**934,760**	**1,743,450**	**1,743,450**	**1,743,450**
Faculty Compensation			**319,500**	**1,739,500**	**3,017,500**	**3,656,500**	**4,295,500**
Start-up Funds			**900,000**	**3,500,000**	**3,000,000**	**1,500,000**	**1,500,000**
Visiting Faculty/Computing Scholars			**500,000**	**660,000**	**740,000**	**570,000**	**570,000**
Research Scientists			**426,000**	**639,000**	**852,000**	**852,000**	**852,000**
Graduate Research Students			**168,034**	**436,889**	**672,137**	**806,564**	**907,385**
Operating expenses			**300,000**	**375,000**	**500,000**	**500,000**	**500,000**
TOTAL			**3,548,294**	**8,285,149**	**10,525,087**	**9,628,514**	**10,368,335**
Funding sources (TBD once ARP, WIP funding is settled)							

Student Tuition			**192,000**	**350,000**	**728,514**	**768,335**

Table 4. Projected expenses, and tuition revenues for first 5 years

6. Timeline for implementation

A detailed five year/two-phase plan for the roll-out of the SoC and its associated programs is given in Pages 21-29 of the SoC Preliminary Plan. The timeline for the development and roll-out of the BS and BA computing majors is given in Table 5.

Spring 2022	Interim Dean and Associate Deans, and initial SoC faculty will create a Curriculum Advisory Committee that includes international experts in computing education, UW alums using computing in their careers, Wyoming tech companies, UW CS/ECE and Math-Stat faculty to design the courses for the BA/BS.
Fall 2022-Spring 2023	Offer a few trial SoC undergrad courses, fully develop other SoC courses, secure accreditation of BA/BS program, and work through UW's CARF process for pertinent courses, establish 2+2 agreements with Wyoming Community Colleges, recruit first class of SoC undergraduates.
Fall 2023	Enroll inaugural SoC class of undergraduates
Fall 2023 and Spring 2024	Design, develop and seek approval to offer MS and PhD programs in Computing. Evaluate, assess and make needed modifications to BA/BS programs. Work with other UW programs on developing computing minors.
Fall 2024	Enroll inaugural SoC class of graduate students
Spring 2027	Graduate first SoC class

Table 5. Project timeline of SoC roll-out

7. Plan to assess the Academic Program

Assessment of the proposed BA and BS programs will be based on student attainment of core competencies that outline in Section 3, the learning objectives described in Section 8, and informed by the SoC Educational Board and the studies such as "Computing Curricula 2020" [CC2020].

Specific assessment activities for the BA/BS programs will include:

- Pre- and post-degree exams on core and technical computing competencies
- Capstone course with assessment of final projects, including collaboration, critical thinking and communication;
- Feedback from corporate and educational partners involved in internships or capstone projects
- Surveys with Wyoming companies employing SoC graduates
- Student course evaluations
- Exit interviews with graduates

8. Plans for accreditation

Accreditation for the program will be established through the Higher Learning Commission (HLC), and informed by a SoC Curricular Advisory Committee. In order to enable to train a more, diverse student population in computing the BS/BA programs will not be ABET accredited–ABET accreditation is more restrictive on the disciplinary courses (e.g. must be science oriented) and the mathematics and statistics courses than the envisioned SoC programs. The SoC programs are not intended to be less rigorous, but to have more options in disciplinary content, and have mathematics and statistics courses more aligned with students' interests and with the computing classes. Students desiring an engineering degree can pursue a BS from the ABET accredited program in CS/ECE, and if desired use their elective courses to take courses in the SoC.

Tentative learning outcomes are:

- **Outcome 1 – Communication:** Students will be able to communicate in written and oral forms in such a way as to demonstrate their ability to work with a variety of stakeholders, and to present information clearly, logically, and critically.
- **Outcome 2 – Application:** Students will be able to utilize and modify state-of-the-art computing tools and concepts to explore and analyze disciplinary problems

- **Outcome 3 – Coding:** Students will be able to code efficient programs on their own to model phenomena.
- **Outcome 4 - Depth of Knowledge**: In a selected domain/concentrations students will demonstrate a depth of knowledge appropriate to graduate study and/or lifelong learning in that area. Students should be able to read for understanding materials in that area beyond those assigned in coursework.
- **Outcome 5 - Preparation for Career and Further Education**: Students will be prepared for a career in industry, government agencies or non-profits or for graduate study in scientific or technical fields.

Continuous improvement of the program will be fostered through annual presentations and feedback with the SoC Curriculum Advisory Committee.

9. Benefits of the Academic Program to the University

The proposed School of Computing will position Wyoming's land grant institution as

- A national leader in computational research, education, and engagement, providing academic excellence in teaching, intellectual distinction in research, and transformative innovation for entrepreneurship. The SoC will **champion interdisciplinarity** across campus by fusing computation, digital, and data science curricula with all domains.
- A computational hub for students, faculty, staff, community and our state, industrial and academic partners. The SoC will skillfully l**everage corporate and knowledge partnerships** to unite learners, educators, entrepreneurs, and stakeholders, and create a sustainable robust digital ecosystem.
- A steward, supporter, and developer of digital skills/literacy and computational thinking for all. The SoC purpose is to **nurture computing curiosity across disciplines and backgrounds**, to enhance interdisciplinarity, and to capitalize upon emerging innovations for teaching, research, and economic diversification.

10. The ability of the University to carry out the Academic Program

UW is positioned well to successful carry out this academic plan, as it will build upon past investments, existing strengths at UW, and can take advantage of many pending opportunities (such as the planned large increases of funding at national agencies, American Rescue Program funding, the Wyoming Innovation Partnership, new technologies and businesses around blockchain, and enhanced corporate partnerships around technology). The new BA/BS curricula will leverage partnerships and in particular in the co-development and delivery of courses whenever possible. The "Digital for All" program is envisioned to be a central part of a newly crafted University Studies Program.

Wyoming has consistently sought to contribute to its future by investing in the education and training of its citizens through the University of Wyoming. Recent investments, including the Tier 1 Engineering Initiative (T-1), Science Initiative (SI), and Trustee's Education Initiative (TEI), along with capital investments in facilities provide a firm basis that focuses on the importance of Science, Technology, Engineering and Mathematics (STEM). These strengths will support the interdisciplinary, computing in context focus of the SoC.

In the past decade, computing has become an increasingly crucial tool for research, for our graduates, and for almost all sectors of the economy. The University of Wyoming has responded by hiring faculty who use computing in their discipline, establishing programs like the Data Science Center and the Advanced Research Computing Center, and by developing a partnership with the University Cooperation for Atmospheric Research (UCAR) and its NSF-funded National Center for Atmospheric Research (NCAR) around the NCAR-Wyoming Supercomputer Center (NWSC). These have supported new modes of faculty research and increased awareness of computing across the campus. The SoC will benefit from as well as greatly strengthen this existing computational ecosystem

Today, computing's impact is found in virtually every discipline, and simulation and modeling are more important than ever, but are joined by new data science technologies like artificial intelligence (AI), machine learning and blockchain that are starting to transform every academic discipline, every industry, and every aspect of modern society. Access to world-class infrastructure and workforce training in computing and data is therefore critical for Wyoming citizens, and for UW's students.

The SoC, along with the broader Digital Pillar plan, outline a strategic response to the computational-related needs of UW and Wyoming Community College students, Wyoming's business and agencies. Through the SoC there are also great prospects for the University of Wyoming to emerge as a leader in rural computing and data, drive opportunities such as those anticipated via the Endless Frontiers Act and the Wyoming Innovation Partnership.

11. The likely value to, and impact on, students and residents of Wyoming.

The BA/BS in Computing will produce professionals fluent in the computing/digital arena. UW graduates interacting with the SoC via interdisciplinary initiatives with departments will benefit from knowledge and experience of the application of computing in their chosen domain, equipping them to be perceptive and cognizant graduates with experience in innovative applications of computing – and thus competitive in the workplace. Specific outcomes for the BA/BS degree are given in Section 8.

The SoC undergraduate programs will provide Wyoming companies and agencies with employees who identify problems (or opportunities for improvement, and successfully bring to bear computing and technology to re-solve the problem (or help the company or agency advance through seizing the opportunity).

Citizens of Wyoming can from having SoC graduates helping agencies analyze complex problems (e.g. wildfire management, rural health, etc) of importance to local communities and to Wyoming.

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[S20] E. Seidel, "Thoughts on a Broad Vision for Computing in UW and Wyoming", Fall 2020.

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December 6, 2021

To: Dr. Adrienne Freng, Faculty Senate Chair, University of Wyoming
From: Dr. Tucker Readdy, Graduate Council Chair, University of Wyoming
Re: Review of *Revised* School of Computing Proposal

Dear Chair Freng,

Please consider the following report as formal communication of the assessment performed by the Graduate Council in response to the *revised* School of Computing (SoC) proposal (provided by you to me on November 10th, 2021). Note that members of the Graduate Council reviewed and discussed the initial proposal during our meeting on November 3rd. Upon receiving the *revised* version and supporting documents (i.e., PowerPoint presentation to Faculty Senate and letter from Dr. Bryan Shader to you as Faculty Senate Chair), the Council again reviewed and discussed the matter during our meeting on November 17th. Dr. Bryan Shader joined us for that visit, during which he responded to questions and listened to recommendations.

Overall, the feedback regarding the *revised* proposal is more supportive than critical. The discussion among members of the Graduate Council focused primarily on three aspects:

1. Immediate impact on graduate education: At the current time, the proposal includes the statements that, "After the SoC is stably established, it will evaluate the addition of MA and MS degrees in Computing" and "A Ph.D. in Computing will be studied and considered in years 4 and 5." Thus, the Graduate Council simply requests that those who are charged with developing such degrees follow the appropriate University of Wyoming procedures for establishing new degrees. In addition, it may be valuable to include a member of the Graduate Council in the planning and assessment phases. Of note:

- The Council visited about whether new degree programs would negatively influence the enrollment in current degree programs in related academic units. As such, an analysis of creating an MA, MS, and/or Ph.D. should consider this concern.
- The "incubation" approach (i.e., working from new classes, to a minor, to certificate programs, to undergraduate degrees, to graduate degrees) seems viable and allows for the necessary time to make sure that new SoC degrees are distinct from, and do not negatively impact, degrees in other relevant academic units.

2. Administrative structure and overall cost: The *revised* SoC proposal shifted to a model that includes a "Director" rather than a Dean (and Associate Deans), which meaningfully reduces the amount of administrative expenditures. This change was reviewed positively by members of the Graduate Council. Of note:

- The overall 4-year cost of the SoC is projected to be less than $12 million, which falls within the proposal's statement that "The UW leadership's plan is and has been for a long time that there will be a $3M annual allocation from the UW budget for the SoC, of which $500K is earmarked for collaboration with the College of Engineering and Applied Sciences (CEAS)." While some members of the Council initially expressed concern regarding the "optics" of establishing the SoC in light of the current 2-13 academic program reviews, at least some of those considerations have been effectively addressed in changing the administrative structure and the potential for external funding opportunities.

3. Interdisciplinary Nature of the SoC: Members of the Council felt that the interdisciplinary nature of faculty hires is a signature strength of the SoC proposal that may encourage collaboration across academic units accordingly. As such, it is worth considering whether a certain number of faculty lines could be set aside within Central Position Management that academic units could submit proposals for (i.e., demonstrating how computing fits within that discipline and the benefit of a faculty member with specialization in computing knowledge).

Not all elements of the SoC proposal were received without critique by Graduate Council members or the constituents they represent. Included in the Appendix is a communication made available by one of the representatives from the College of Engineering and Applied Sciences (CEAS). Certainly, it is worth noting that academic units within CEAS may be most immediately affected by the creation of the SoC. Note that the feedback was provided before the *revised* proposal became available to the Graduate Council; as such, some of the concerns may have been alleviated. Overall, it would be inaccurate to suggest that such concerns were expressed by all Council members; rather, I view the information as a "dissenting option" that deserves further discussion as the SoC proposal moves forward.

All members of the Graduate Council have had the opportunity to review this report in its entirety. Additionally, members were able to provide feedback during our meetings on November 17th and December 1st, as well as by email. As such, given the information available, I have made a *good faith effort* to represent a consensus of belief from the group. My sincere appreciation is extended to all members of the Graduate Council (listed below).

Sincerely,

Tucker Readdy

Tucker Readdy, Ph.D.
Associate Professor, Sport & Exercise Psychology
Division of Kinesiology & Health
UW Graduate Council Chair, AY 2021-22

University of Wyoming Graduate Council, AY 2021-22

Saman Aryana, Chemical Engineering
Chaley Dimoff, Communication & Journalism (student member)
Alison Doherty, WWAMI
Andrew Garner, School of Politics, Public Affairs & International Studies
Elliot Hulley, Chemistry
Eric Johnson, Accounting & Finance
John Kambutu, School of Teacher Education
Daniel Levy, Molecular Biology
Jennifer Malmberg, Veterinary Sciences
Kam Ng, Civil & Architectural Engineering
Debora Person, Law Library
Linda Price, Management & Marketing
Tucker Readdy, Kinesiology & Health
Crystal Sieger, Music
Jenna Shim, School of Teacher Education
Rashmi Thapa, Neuroscience (student member)
Arielle Zibrak, Anthropology

Appendix

A. Feedback from College of Engineering and Applied Science Faculty [Note: this feedback was provided based on the initial SoC proposal rather than the *revised* version; as such, some statements may no longer be accurate.]

SoC Proposal - CEAS faculty feedback

In concept, the faculty appreciate the need to strengthen the Scientific Computing dimension on campus. As such, they are generally supportive of housing such as initiative in CEAS (or CEPS). The new SoC has the potential to offer exciting opportunities for many engineering and physical science faculty to teach and do research at a computationally more advanced level through collaborations, affiliations, and joint faculty positions, as well as through more ready access to the NWSC supercomputer(s) in disciplines other than atmospheric science. In addition, engineering and physical science discipline graduate programs would benefit from a homegrown pool of computationally advanced potential graduate students.

There are, however, myriad of well-founded concerns that adversely affect support for the current proposal.

1. Except for those of us who love the theory, computing is a means, not an end, so the emphasis on its application to other fields and enterprises is welcome. However, the Digital for All section invokes the grim vision of campus-wide faculty forcing computing inappropriately into all their courses, fulfilling another mandate that takes time and energy away from inquiry and teaching.

2. Computing in not likely to meet all the world's, or the state's, challenges. Blockchain is a (technically masterful) solution in search of a problem, virtual reality has not taken off, electronic health records are not working out well, machine learning serves marketing (along with other applications of greater social benefit), and social media is the producer of products not clearly solving their own self-generated problems. Is our 3d visualization center in high demand? How about our high-tech classrooms, makerspaces, and media studios?

3. Some of the most concerning aspects of the current proposal include the fund-raising and building plans, and the high-profile positions, when what we really need is staff, well-paid and supported staff, to take care of the diverse and innumerable tasks involved in future (and current!) programs and facilities. For some years, this institution (and others) has suffered from a proliferation of new Centers, Institutes, and other initiatives with admirable goals but weak integration and little buy-in, support, or follow-through. Many of these initiatives could have been realized by faculty and staff if they had the time, energy, and attention that they enjoyed in the era before productivity reigned. Many of the worthy plans outline in this proposal could be handled in existing academic and administrative structures.

4. The proposed BSc/BA degree could be run out of the new CS-ECE department, which is well-equipped to serve as the custodian of this degree program.

5. What is the difference / overlap between the existing undergraduate and graduate degrees in Computer Science, and the proposed new degree in Computing? A detailed curriculum, even tentative, should be shared, so that we can ascertain that the two majors are materially different.

6. It is not clear what the market is for these programs, particularly in Wyoming. In this sense, was there any market analysis? If yes, perhaps the data should be made widely available and if no, perhaps this dimension should be considered in the decision-making process. If the market is outside Wyoming, then this further validates existing departments and programs that have markets predominantly outside of the state.

7. How is the affiliation with SoC decided? There is a need for a fair and transparent process for resource distribution around this initiative. In addition, any joint appointments must be carefully considered as the University has struggled to properly evaluate faculty in joint positions as part of T&P.

8. Why does the school need a Dean and two Associate Deans? This will likely be an expensive operation. Rather than a school, an institute might be more effective and cost-efficient (no Deans and Associate Deans needed). By all accounts, we seem to not have the money to support existing programs across the campus. Given that the legislature did not express support for directly funding SoC, the proposed initiative will likely be at a steep expense

to current departments and programs. Individual departments are faced with reduced support (e.g., staff and graduate lines), and this effort will further divert additional resources.

9. Accreditation for the proposed degree programs will possibly be an issue. Will they be accredited by ABET or another formal accreditation organization that is concerned with Computer Science or Engineering? This needs to be clearly addressed and stated as a goal.

10. The current plan seems to give no thought to how we can leverage these funds to retain current faculty who are doing computing across campus. The current proposal seems to not recognize existing programs that have pushed computing in the past, many of which are in trouble due to lack of resources. There is concern that UW will lose good current faculty and the new faculty that will be brought in using the resources that are stripped from existing programs will not be reaching out to other departments. It would seem wise to utilize the resources to support existing faculty active in Computing instead of using them entirely to bring in new faculty, and to support departments that seek to add computational faculty expertise to their units. Given the current scarcity of resources, it would be more productive to hire grant writers and support staff and give the existing faculty postdocs or research scientists or graduate lines without additional teaching requirements. It might be wise to consider strengthening the remaining programs (after the proposed degree program elimination) and start to build new capabilities like this with new funds.

11. In practice, SoC is likely to "cannibalize" existing graduate programs. That is, prospective graduate students might want to do a computing degree with a focus in their area of interest and be part of the new (and well-funded!) SoC rather than a department (some of which have recently been singled out and punished for "low scholarly productivity"). The projections of student numbers for the SoC seem to assume that these are new students that otherwise would not have chosen to attend UW. The problem with this assumption is that some of our graduate programs already have low enrollment, in part due to inadequate support, and further decreases to their enrollment numbers may eventually lead to a discontinuation of their graduate degrees/programs. University GTA support for SoC would only exacerbate this problem by stripping positions from existing colleges and departments. This may in turn lead to more department mergers/discontinuations.

In summary, the faculty recognize that UW should be forward looking and adapt to financial realities, but such an adaptation requires an intentional strategy that values and prioritizes leveraging existing resources (i.e., faculty, staff, and students) and creates an equitable environment for UW to flourish. Creating equitable access to all major equipment across campus and providing support staff, grant writers, and graduate lines using a fair and transparent process would go a long way to healing the current fractures in the social fabric of the UW community and is likely to lead to additional externally funded grants and initiatives that serve the state of Wyoming.

Academic Planning Committee Review of the School of Computing Proposal
November 18, 2021

The Academic Planning Committee (APC) met twice this semester to review the proposal for the School of Computing. The APC is supportive of the revised proposal dated November 2021. The revised proposal addressed the concerns that the committee had with the original proposal. The revised proposal has a more reasonable budget with identified funds. Having the School of Computing "incubated" in the College of Engineering and Applied Sciences was viewed as an excellent way to begin the new school.

The committee is concerned that there will be addition demands on University resources that the proposal has not addressed. To name a few: The Libraries, The Office of Research and The Advanced Research Computing Center will have additional demands on their resources that are not addressed in the proposal.

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AGENDA ITEM TITLE: <u>FY23 Fee Book,</u> McKinley

SESSION TYPE:
☐ Work Session
☐ Education Session
☒ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☐ Yes (select below):
- ☐ Driving Excellence
- ☐ Inspiring Students
- ☐ Impacting Communities
- ☐ High-Performing University

☒ No [Regular Business]

☒ *Materials will be provided as a supplemental.*

EXECUTIVE SUMMARY:
The Central Fee Book Committee chairs will introduce the proposed changes to the FY23 Fee Book for board consideration.

Pursuant to the ByLaws of the Trustees, Article VIII. Section 2 (STUDENTS):

> *All student fees, charges, refunds, and deposits shall be fixed by resolution of the Trustees and shall be published in the appropriate university publications.*

The Central Fee Book Committee convened on October 1, 2021, and took fee book requests from campus constituents during the month of October. The Committee has collectively determined the proposed changes are reasonable and needed to support various operations around campus. These changes have been organized and included in the supplemental materials. For the Board's reference, the document includes the impact on revenue, where applicable. It also includes the page number from the FY22 approved Fee Book.

Please note: Course fees and ghost fees were not allowed, due to the Programmatic Fee structure.

The Committee Chairs will make a recommendation to the Board with respect to acceptance and approval of the reports.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
Annually-The Board accepts and approves the Fee Book each year.

WHY THIS ITEM IS BEFORE THE BOARD:
The Board of Trustees is responsible for the establishment of all fees, charges, and deposits assessed, and refunds afforded to individuals applying for admission to the university, enrolled students, university employees, and the general public. Such fees shall be reasonable and prudent for the adequate protection and control of university funds, equipment, facilities services and materials.

ACTION REQUIRED AT THIS BOARD MEETING:
N/A

PROPOSED MOTION:
N/A

PRESIDENT'S RECOMMENDATION:
The President recommends approval of the Fee Book changes presented in the supplemental document.

AGENDA ITEM TITLE: **Upcoming Fiscal Year Operating Budget Assumptions**, McKinley (Chair), Kean

SESSION TYPE:
☐ Work Session
☐ Education Session
☒ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☒ Yes (select below):
☒ Driving Excellence
☒ Inspiring Students
☒ Impacting Communities
☒ High-Performing University
☐ No [Regular Business]

☐ *Attachments are provided with the narrative—refer to Supplemental Materials Report.*

EXECUTIVE SUMMARY:
The Administration is currently developing the University's FY 2023 Operating Budget. The BOT Budget Committee is scheduled to hold budget hearings with the Leadership of the University's Divisions and Colleges on May 9th – 10th 2022, and deliver an update on the FY 2023 budget to the full BOT on May 12th 2022, conduct follow-up hearings (if necessary) in late May through early June, and then when prepared, recommend to the full BOT a final FY 2023 Operating Budget for approval and adoption prior to the start of FY 2023 on July 1, 2022.

The Administration presented the University's request for State funding to the Joint Appropriations Committee on December 14, 2021. Initial discussions indicate the University will likely receive state funding for compensation increases for FY2023. Final funding will not be known until the conclusion of the 2022 Wyoming Legislative Session, scheduled to begin in February 2022.

Some preliminary budget assumptions by the Administration in the FY2023 budget are:

State Appropriations	Standard Budget plus exception requests as recommended by the Governor.
Gross Tuition Increase	4% resident and non-resident
Net Tuition Revenue (net of financial aid)	$3,000,000
Fringe Benefit Rates (non-sponsored)	45.1% Faculty, 49.9% Staff, 2.8% Non-Benefited
Salary Increase	The Governor has recommended funding for compensation increases at the University equating to roughly 3% salary pool with fringe. The actual allocation of the increases will be determined through the budget process.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS: NA

WHY THIS ITEM IS BEFORE THE BOARD:
The President of the University shall develop an annual Operating Budget for the University each fiscal year. On or before April 15, the President shall submit her proposed Operating Budget for the fiscal year beginning on the following July 1 to the University's Board of Trustees. The Budget Committee of the Board of Trustees shall hold hearings where each of the University's Administrative Officers shall present the proposed budget for their Division/Unit (Organization)

for the upcoming fiscal year. The final approval of the Operating Budget rests with the Board prior to the beginning of the fiscal year.

ACTION REQUIRED AT THIS BOARD MEETING: N/A

PROPOSED MOTION: N/A

PRESIDENT'S RECOMMENDATION: N/A

AGENDA ITEM TITLE: Presentation of Six-Month Budget v. Actual of Annual Operating Budget: McKinley/Kean

SESSION TYPE:
☐ Work Session
☐ Education Session
☒ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☐ Yes (select below):
- ☐ Driving Excellence
- ☐ Inspiring Students
- ☐ Impacting Communities
- ☐ High-Performing University

☒ No [Regular Business]

☒ *Materials will be provided as a supplemental.*

EXECUTIVE SUMMARY: Prior to submitting the President's proposed FY 2023 Operating Budget to the BOT on April 15, 2022, the Administration would like to provide the board with an analysis of actual FY 2022 expenditures through six months compared to the approved FY 2022 Operating Budget. The analysis is prepared at the subdivision level and identifies significant variances between actual expenditures and budgeted levels.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
This analysis is provided annually.

WHY THIS ITEM IS BEFORE THE BOARD:
The President of the University shall develop an annual Operating Budget for the University each fiscal year. On or before April 15, the President shall submit his proposed Operating Budget for the fiscal year beginning on the following July 1 to the University's Board of Trustees. The Budget Committee of the Board of Trustees shall hold hearings where each of the University's Administrative Officers shall present the proposed budget for their Division/Unit (Organization) for the upcoming fiscal year. The final approval of the Operating Budget rests with the Board prior to the beginning of the fiscal year.

ACTION REQUIRED AT THIS BOARD MEETING: N/A

PROPOSED MOTION: N/A

PRESIDENT'S RECOMMENDATION: N/A

AGENDA ITEM TITLE: **Amendment Approval -Hot Water Extension Hot Water Expansion and Tunnel Abandonment,** Mai

SESSION TYPE:
☐ Work Session
☐ Education Session
☐ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☐ Yes (select below):
☐ Driving Excellence
☐ Inspiring Students
☐ Impacting Communities
☐ High-Performing University
☒ No [Regular Business]

☐ *Attachments are provided with the narrative—refer to Supplemental Materials Report.*

EXECUTIVE SUMMARY:
The Hot Water Expansion and Tunnel Abandonment project extends the hot water system from the new West Campus Energy Plant (WCEP) and allows for the retirement of a portion of the tunnel system. The project includes extending the main distribution lines and converting 10 campus buildings from steam heating to hot water heating. This project will provide improved energy benefits and safety, while reducing maintenance. Design and engineering for this work is currently underway.

Early review of the piping material supply chain shows a minimum of 12 weeks from order to delivery. Based on that analysis administration is recommending approval of an agreement that incorporates a not to exceed iGMP with GE Johnson Construction of Wyoming. This allows GE Johnson to procure the material ordered for a spring/summer 2022 installation. The final GMP amendment would follow drawing development and understanding of project requirements anticipated to be early spring 2022.

The budgeted amount for this project is $4,500,000 and the funds for this project will come from major maintenance. The initial iGMP for piping material is $950,000.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
- September, 2021 – Board authorized administration to proceed with the design contract with ST & B of Colorado for $650,000 and GE Johnson to bid work for the Hot Water Expansion and Tunnel Abandonment project funded via Major Maintenance with a budget of $4,500,000.

WHY THIS ITEM IS BEFORE THE BOARD:
Pursuant to UW Regulation 6-9, the Board of Trustees shall approve projects over $500,000.00.

ACTION REQUIRED AT THIS BOARD MEETING:
Board authorization for administration to execute an amendment to the agreement with GE Johnson.

PROPOSED MOTION:
“I move to authorize administration to execute an amendment for an iGMP for material only with GE Johnson Construction of Wyoming in the amount of $950,000.”

PRESIDENT’S RECOMMENDATION:

The President recommends approval.

AGENDA ITEM TITLE: <u>Student Housing – Landscaping Design</u>, Mai

SESSION TYPE:
☐ Work Session
☐ Education Session
☐ Information Item
☒ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☐ Yes (select below):
- ☐ Driving Excellence
- ☐ Inspiring Students
- ☐ Impacting Communities
- ☐ High-Performing University

☒ No [Regular Business]

☒ *Attachments are provided with the narrative.*

EXECUTIVE SUMMARY:
University Regulation 6-9 requires an Exterior Design Advisory Committee (EDAC) to be developed for capital construction projects. The committee is chaired by a Trustee and is charged with ensuring the design of the facility is consistent with the architectural context of the University and that the project conforms to the Campus Master Plan and Historic Preservation Plan. Once the process is complete, the EDAC makes a recommendation to the Board's Facilities Contracting Committee, who upon approval makes a recommendation to the full Board for approval. After approval, any modifications to the exterior design shall be approved by the full Board.

During the December 13, 2021 meeting of the Student Housing Landscaping Exterior Design Advisory Committee, the Committee voted to submit a recommendation of approval to the Facilities Contracting Committee for the Student Housing and Dining landscaping design as presented in the December 13, 2021 EDAC meeting material. The proposed exterior design is provided in the materials. Administration requests approval or disapproval of the recommendation of the proposed exterior landscaping design for the Student Housing and Dining project and authorization to proceed with the design and construction documents.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
- May, 2021 – Board approved the interior and exterior design of the Student Housing and Dining project and authorized Administration to proceed with design and construction documents.
- October, 2020 – Board approved the building footprints of the Student Housing and Dining project.
- August, 2020 – Board approved the construction contract for the deconstruction of Wyoming Hall and installation of new utilities to accommodate the new Student Housing and Dining project.
- May, 2020 – Board approved the Campus Master Plan.
- July, 2020 – Trustee McKinley moved the Facilities Contracting Committee convene a special meeting for the purpose of reconsidering the pros and cons of various possible locations for the proposed student housing and dining facilities as well as recommendations, including the proposed locations by the architects, and receipt of public input
- March, 2020 – Board authorized administration to execute an agreement with the design consultant for Level 3 design and construction administration services for Phase 1 of the Student Housing project.

WHY THIS ITEM IS BEFORE THE BOARD:

Pursuant to University Regulation 6-9, the exterior design of all new or renovated facilities and landscaping projects exceeding $500k requires Board of Trustee approval prior to proceeding with subsequent design phases. Any modifications to the exterior design must be approved by the Board of Trustees.

ACTION REQUIRED AT THIS BOARD MEETING:
Board approval or disapproval of the landscaping design as recommended by the Exterior Design Advisory Committee and authorization for Administration to proceed with the design and construction documents.

PROPOSED MOTION:
"I move to approve the landscaping design for the Student Housing and Dining project as recommended by the Landscaping Exterior Design Advisory Committee and authorize Administration to proceed with the design and construction documents".

PRESIDENT'S RECOMMENDATION:
The President recommends approval.

Site Plan

2021.12.13

AGENDA ITEM TITLE: IMPACT 307 Site Visit, Schmechel

SESSION TYPE:
☐ Work Session
☐ Education Session
☒ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☒ Yes (select below):
- ☐ Driving Excellence
- ☐ Inspiring Students
- ☒ Impacting Communities
- ☐ High-Performing University

☐ No [Regular Business]

☒ *Attachments are provided with the narrative.*

EXECUTIVE SUMMARY:
IMPACT Directors Fred Schmechel (Interim, Laramie) Scot Rendall (Sheridan), and Eric Schlidt (Casper) will provide an overview of this program including the brief history, methods, community driven focus, how a recent EDA grant is catalyzing the creation of innovative and scalable startup companies across the state, and how these growing efforts are being pushed even further with recent WIP investments. The board will then do breakout sessions with IMPACT Laramie clients including UW connected companies Resono & Evoseer, recent Fisher Innovation Launchpad winners Gigachar & Insurexcel, as well as recently venture capital backed company Theraneutrics and repeat IMPACT client Chet Lockard.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
N/A

WHY THIS ITEM IS BEFORE THE BOARD:
N/A

ACTION REQUIRED AT THIS BOARD MEETING:
N/A

PROPOSED MOTION:
N/A

PRESIDENT'S RECOMMENDATION:
N/A

IMPACT 307 Site Visit/Presentation/Tour Agenda
Friday, January 22, 2022 @ 7:00 AM
WTBC Conference Room

Welcome/Introductions – Diana and Fred (15 Minutes)
Overview of IMPACT 307 – Fred, Scot, & Eric (45 Minutes)
Breakout tours with clients (25 Minutes)

- Resono
- Theraneutrics
- Evoseer & Gigachar
- Insurexcel
- Chet Lockard, Architect

Regroup & questions (20 Minutes)

Tentative presentation outline:
Intro & brief history – Fred
Methods (Lean & TRL/BRLs) – Fred
Sheridan overview (to include funding model) – Scot
Casper overview (to include funding model) – Eric
EDA expansion – Eric
Startup challenges – Scot
WIP fueled expansion – Fred, Scot, & Eric, Steve

Attendees to include: Board of Trustees, RoseMarie London, President Seidel, Mary Ivanoff, VP Diana Hulme, AVP Steve Farkas, Penelope Shihab, Fred Schmechel, Scot Rendall, Eric Schlidt, IMPACT 307 client representatives

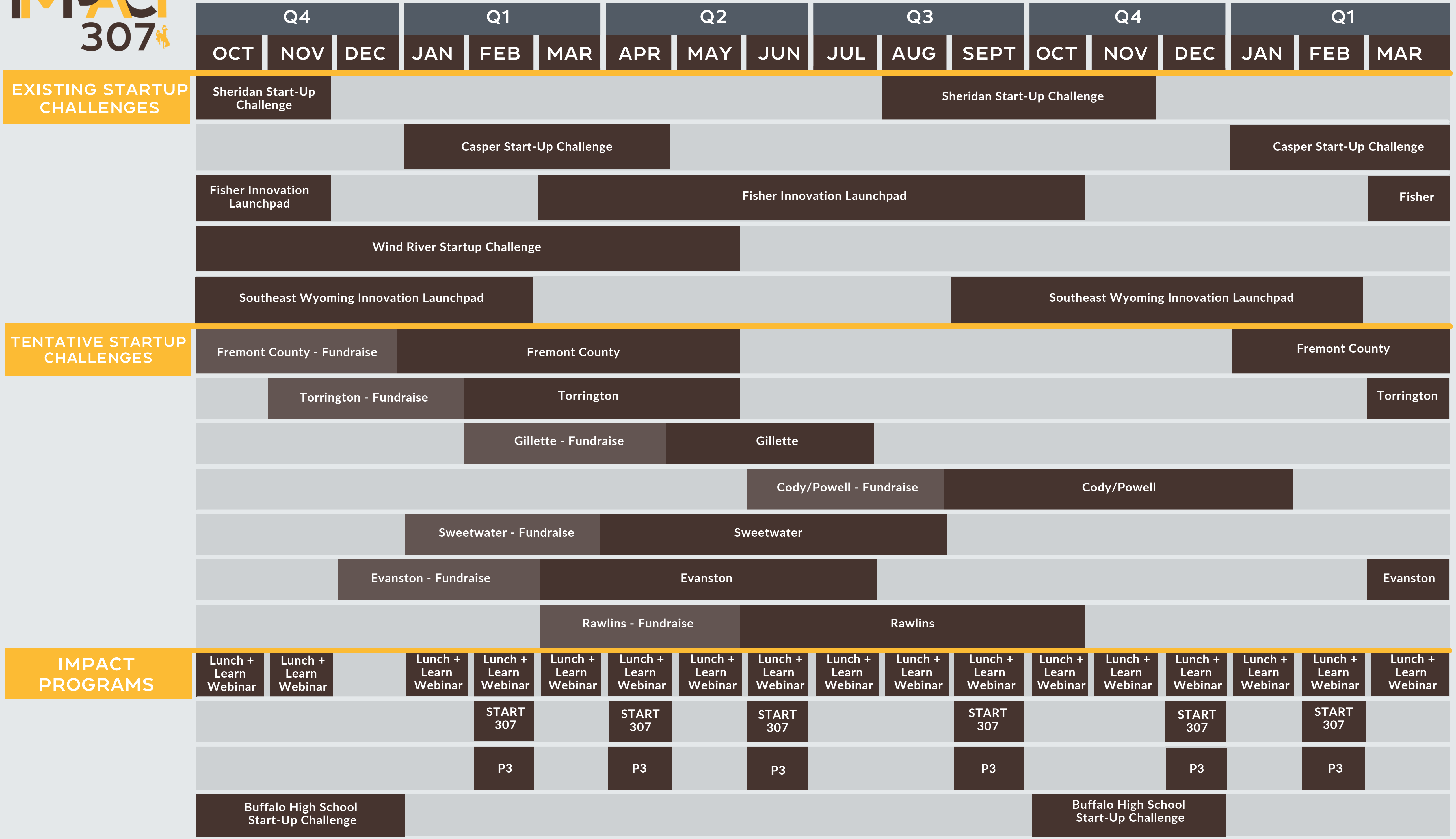
Executive Summary:
IMPACT Directors Fred Schmechel (Interim, Laramie) Scot Rendall (Sheridan), and Eric Schlidt (Casper) will provide an overview of this program including the brief history, methods, community driven focus, how a recent EDA grant is catalyzing the creation of innovative and scalable startup companies across the state, and how these growing efforts are being pushed even further with recent WIP investments. The board will then do breakout sessions with IMPACT Laramie clients including UW connected companies Resono & Evoseer, recent Fisher Innovation Launchpad winners Gigachar & Insurexcel, as well as recently venture capital backed company Theraneutrics and repeat IMPACT client Chet Lockard.

Brief Background:
Launched as a program in 2005 and moved into the Wyoming Technology Business Center upon its completion in 2006, IMPACT 307 has helped to launch more than 200 companies across the state in the past sixteen years. Critical to this effort has been the community driven startup challenge model with a dramatic increase in this activity since 2016. IMPACT specializes in working with companies that are both innovative & scalable and includes notable graduates Bright Agrotech (Plenty), McGinley Orthopedics, and Frog Creek Partners.

Since the beginning of the pandemic, the trajectory of IMPACT has accelerated with the awarding of a three-year $2.4M EDA grant to expand the program across the state through partnerships with Wyoming's community colleges and further planned expansion of program and facilities using investments from the WIP.

IMPACT 307

PROGRAM SCHEDULE



IMPACT MAP LEGEND

EXISTING HUB

BUSINESS COUNSELING AVAILABLE

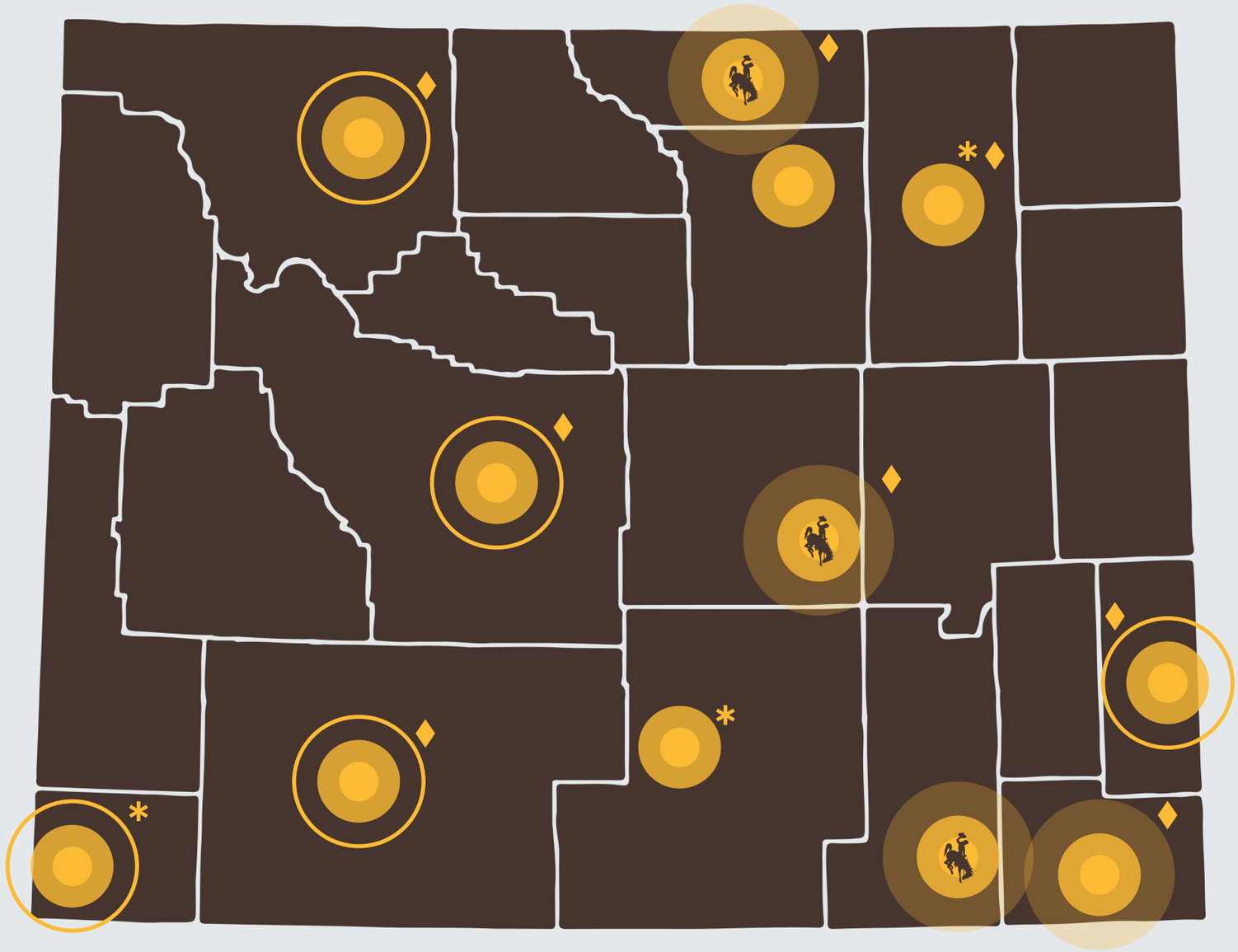
STARTUP CHALLENGE

EDA SITES

FACILITY

FACILITY IN DEVELOPMENT

PARTNERING WITH COMMUNITY INCUBATOR



IMPACT 307
WHERE FOUNDERS & INNOVATION THRIVE
A UNIVERSITY OF WYOMING PROGRAM

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IMPACT 307

TECHNOLOGY AND BUSINESS READINESS LEVELS FOR IMPACT 307 AND UWYO

TRL/ BRL	Technology Readiness Description[1]	Business Readiness Description[2]
1	Basic principals observed and reported. Scientific or engineering knowledge defines a plausible product concept. Scientific research begins to be translated into applied research and development. Examples might include paper studies of a technology's basic properties.	Exploration begins considering new business or product concepts without a defined outcome. A plausible problem is identified that might translate to a viable business. A market, "Problem Statement," and proposed, "Solutions," are proposed.
2	Invention begins – Once basic principles are observed, practical applications can be invented. Applications are speculative and there may be no proof or detailed analysis to support the assumptions. Examples are limited to analytic studies.	The "Problem" statement is validated with potential users/customers. Evaluation of a general market, customers, product target, and scale of potential business begins to be objectively examined.
3	Active research and development targeted at a defined outcome is initiated. This includes analytical studies and laboratory studies to physically validate analytical predictions of separate elements of the technology. Examples include components that are not yet integrated or representative. Intellectual Property (IP) protection is examined.	Customer and market segments are identified and validation of those segments commences. IP licensing (if appropriate) is evaluated.
4	Basic technological components are integrated to establish that the pieces will work together in a working Proof of Concept device, breadboard, or code. Provisional patent protection is considered.	Validation of the market and/or customer segments for a defined business offering is completed. The product/offering is generally defined. A preliminary *pro forma* P&L is built based on initial customer/market validation data (Question: Can this make money?).
5	Fidelity of technology improves significantly – The basic technological components are integrated with reasonably realistic supporting elements so it can be tested in a simulated environment.	The Market Requirements Spec (MRS) defining customer/user requirements for a final product is begun. Market price point is examined objectively based on both value proposition and validation data. A cash flow analysis is completed. The complete Business Model is defined. The company (LLC, etc.) is established.
6	Representative model or prototype system is tested in a relevant environment. Represents a major step up in a technology's demonstrated readiness. An Engineering Requirements Specification (ERS) defining the relevant final concept is begun, modeled directly from the MRS (from BRL). Design for Manufacturing and Maintenance (DFM) and Design for Six Sigma (DFSS) concepts are considered. Non-Provisional patent and/or copyright (for software) filings are determined.	The Market Requirements Specification (MRS) defining the customer/user experience is completed. Market price point is validated and the MRS and ERS are examined against one another. An alpha product test plan is built and executed, one that challenges the "first article" or prototype test units in relevant environments. Sales channels are defined.
7	An Engineering Requirements Specification (ERS) is completed and implemented which defines the final product design. Prototype operational system or product demonstrated in an operational environment. Manufacturing/Operations models, building the product, are exercised and validated.	Any differences in the MRS and ERS deliverables are fully reconciled, including target gross margins, dependent on both required vs. wanted features and inclusive costs to design and build. A beta test plan of the "final article" in actual customer environments is implemented. IP licensing is finalized. Final pricing is determined along with gross and net margins. Financial controls are put in place.
8	Technology is proven to work – Actual technology completed and qualified through test and demonstration. The product is put under Change Management control in Engineering – the final form is rigorously defined and controlled.	Beta test plan is completed validating the product meets or exceeds both operational and customer requirements. A product lifecycle plan is examined. A Product portfolio, defined by features, function, and customer segments is built, examining the need to expand the product offering.
9	Technology/product proven through successful operations and user experience.	Product is launched and is in rigorous change management control. Changes outside of safety and health or obsolete subcomponents are only allowed through defining new external product names/numbers. Marketing strategy is fully launched. Sales channels are fully implemented. Initial sales growth is seen.

These TRL and BRL criteria run in parallel, not sequentially.

(Footnotes) 1 Adapted from DOE, NASA, and DoD Technology Readiness Level (TRL) guidelines. 2 Adapted from Lean Launchpad, Business Model Canvas, Product Lifecycle, and experiential learning.

IMPACT 307/FISHER/SEWYIL BUSINESS MODEL OVERVIEW

1. Problem (1-3 slides)

This is the most important part of the model. A problem is an essential element of a business idea. If no problem exists, the idea being presented should be reconsidered. Explain what problem is being solved while framing it in the context of a deficiency in the current environment that could be improved through the idea. Talking to customers is a crucial step at this stage. To make a really dynamite product/service it is important to keep adding on value and figuring out different ways to solve the problem.

- Talk to primary customers to see if this problem exists and how big the problem truly is
- Provide an overview of the problem your business is addressing
- Provide enough detail that we can really understand what problem your target customer group has
- Tell stories about this problem– particularly from the customer standpoint

2. Product or Service (1-2 slides)

This section describes the product/service in more detail and combined with the, "Problem," defines the, "Value Proposition." The length of the section depends primarily on how complex the product or service is. Validate with multiple potential customers!! For products, depending on the complexity, it might be appropriate to have a description of how it works. Be sure to include features of the product/service and highlight the benefits to the customer and any details about the how the idea is protected. NOTE – If the product still has to be developed, give an overview of the steps you would follow to do this and how long you think it would take you.

3. Customer(s) (1 slide)

In this section, describe the customers, including "best" customer, that company or individual who will have the shortest sales cycle (time to buy) and pay the most. Be as specific as possible because the ideal customer should be intensely experiencing the problem that is being solved. The largest customer may NOT be your best customer. For example, a DoD customer might buy $10M worth of product from you (maybe) but 6 years from now. Meanwhile, a commercial customer might by $1M of product this quarter. The latter is clearly your priority focus!

4. Market(s) and Segmentation Model (1-2 slides)

The marketing section identifies how many of those best customers are out there. It should include information on current market size and growth potential at the least. Additional information on industry trends, seasonality factors, etc can be included as well. Assess sub-markets or segments of that overall market, and determine which is/are best for you.

5. Competition (1 slide)

It is important to acknowledge the competition and provide a complete view of the competitive landscape, including direct, indirect, current, and anticipated competitors. Competition could also be status quo. Describe your competition as specifically as possible. This section should answer why someone would buy from you versus someone else.

6. Marketing Strategy (1 slide)

This section should outline a general approach of a marketing strategy or how the business will identify prospective customers and make sure they know about your product. If a list of customers can easily be written, this section becomes less important. Be careful not to confuse marketing strategy with sales strategy.

7. Sales and Channel Strategy (1 slide)

Quite simply, the sales process is everything that is done once you are in front of the prospective customer. This section should talk about everything related to how the product/service will be sold. It includes discussion of sales, "channels."

8. Revenue Model (1 slide)

This is how the company will make money. Describe the intended revenue model – single sale, software as a service (SaaS), licensing, hardware service agreements, "Service Level Agreements," leasing revenue, etc…

9. Cash Flow and Profit/Loss Statement (1-2 slides)

Important Section: This section takes all of the information gathered from the previous nine steps of the business plan concept and helps determine if the company will make money. The cash-flow or P&L projection should be done for two to three years into the future. The IMPACT 307 can assist with developing assumptions and working through the model. This will help you learn what your revenue levels and profitability will be as well as help you learn about the sales cycle. This is the ultimate answer whether or not this product/service can become a successful business.

10. Timeline and Scope of Work (1 slide)

This is a visual representation of key milestones to be made over the next 24 months. Simplicity beats complexity here.

AGENDA ITEM TITLE: <u>Approval of Contracts and Grants Report</u>, Hulme

SESSION TYPE:
☐ Work Session
☐ Education Session
☐ Information Item
☒ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☐ Yes (select below):
- ☐ Driving Excellence
- ☐ Inspiring Students
- ☐ Impacting Communities
- ☐ High-Performing University

☒ No [Regular Business]

☒ *Attachments are provided with the narrative.*

EXECUTIVE SUMMARY:

The Division of Research and Economic Development provides a list of all Contract and Grants awarded to the University of Wyoming. This report provided data on a monthly basis. Attached is a list of all research grants and contracts awarded during November and through December 15th of the second quarter of FY22.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
At each meeting the Board approves or disapproves the Contract and Grants Report.

WHY THIS ITEM IS BEFORE THE BOARD:
UW Regulation 5-2 requires that all research grants, contracts and gifts be accepted or rejected by the Board.

ACTION REQUIRED AT THIS BOARD MEETING:
Board approval or disapproval of the Contract and Grants Report.

PROPOSED MOTION:
I move to approve the Contract and Grants Report as presented to the Board.

PRESIDENT'S RECOMMENDATION:
The President recommends approval.

Sponsor	Award Funding Amount	Prinicipal Investigator	Organization	Award Name
Agricultural Research Service/Department of Agriculture	26,016.10	Jeffrey French	Atmospheric Science	Measurements of Dairy Emissions in Southern Idaho utilizing the Wyoming King Air
Altru Health System	3,000.00	Janelle Simpson	Wyoming Survey & Analysis Center	Grand Forks Drug Free Community Evaluation
American Psychological Foundation	2,480.00	Kasey Stanton	Psychology	Pathological Personality: Fixed, Maladaptive Traits or Modifiable Treatment Targets?
Association of Exotic Mammal Veterinarians	5,000.00	Rae Van Sandt	Veterinary Science	Investigating a potential role for canine distemper virus as a cause of demyelinating disease in African pygmy hedgehogs
Bayer Corporation	12,000.00	Andrew Kniss	Plant Sciences	Weed Science Research & Education Program
CaaMTech, Inc.	411,050.00	Ana Clara Bobadilla	School of Pharmacy	Study of the Addictive Properties of Psychedelic Compounds and Derivatives
Centers for Disease Control and Prevention/DHHS	43,000.00	David Jones	College of Health Sciences Deans Office	Medicare Cost Report Payments for the Casper and Cheyenne Residency Programs to Encounter Rate of Services Provided on their Annual Clinic Costs Reports
Central Oregon Health Council	149,920.00	Emily Grant	Wyoming Survey & Analysis Center	Central Oregon assessment of Factors Contributing to Binge Drinking Among 18-34 Year Olds
Cheyenne Light, Fuel, and Power	5,659.00	Chrystelle Khalaf	COB Centers for Excellence	Assessing the Economic Impact of Constructing the Windstar and Stegall Electric Power Lines in Wyoming
Department of Education	515,442.00	Debra Hintz	Scholarships & Financial Aid	Direct Student Loans 2021-2022
Department of Education	78,516.86	Debra Hintz	Scholarships & Financial Aid	PELL Grant 2021-2022
Forest Service/Department of Agriculture	50,000.00	Joseph Holbrook	Haub School of Environment & Natural Resources	Advancing the Understanding of Outdoor Recreation and Wildlife Interactions
Forest Service/Department of Agriculture	16,284.63	John Scasta	Ecosystem Science & Management	Fire effects on herbaceous regeneration across an invasion gradient in sagebrush steppe
Jackson Hole One Fly	32,000.00	Annika Walters	Wyoming Coop Unit	Evaluating the role of spring-fed streams to Snake River cutthroat trout 1021
Monument Prevention Coalition	12,000.00	Rodney Wambeam	Wyoming Survey & Analysis Center	Evaluation of HPP Program in Nebraska 2021-22
Muley Fanatic Foundation	75,000.00	Matthew Kauffman	Wyoming Coop Unit	Uinta Mule Deer Survival, Movement, and Habitat Use
National Geographic Society	20,000.00	Jacqueline Dr. Shinker	Geology & Geophysics	Wyoming's People and Energy
National Institute of Food and Agriculture/Department of Agriculture	131,328.00	Scott Schell	Ecosystem Science & Management	University of Wyoming Extension Implementation Program Team Plan
National Institute of Food and Agriculture/Department of Agriculture	606,000.00	John Hewlett	Agriculture & Applied Economics	New Proposal Growing Beginning Farmers and Ranchers in Wyoming Growing Beginning Farmers and Ranchers in Wyoming
National Institute of Food and Agriculture/Department of Agriculture	7,785.00	Kelly Crane	UW Extension	University of Wyoming Smith-Lever Special Needs

Sponsor	Award Funding Amount	Prinicipal Investigator	Organization	Award Name
National Institute of General Medical Sciences/NIH/DHHS	536,174.00	David Fay	Molecular Biology	In vivo regulation of the extracellular matrix
National Institute on Drug Abuse/NIH/DHHS	248,999.00	Ana Clara Bobadilla	School of Pharmacy	Nucleus accumbens neuronal ensembles in drugs and natural rewards seeking
National Institutes of Health (DHHS)	132,102.00	Danielle Bruns	Kinesiology & Health	Therapeutic activation of AMPK for the aging right heart
National Oceanic & Atmospheric Administration/Department of Commerce	149,812.00	Bart Geerts	Atmospheric Science	Improved Operational Prediction of Blowing and Falling Snow and Extreme Wind Events in the Rocky Mountain Region and Northern High Plains
National Science Foundation	297,116.00	Neil Humphrey	Geology & Geophysics	Collaborative Research: Arctic Observing Network For Observing Transformation of the Greenland Ice Sheet Firn Layer.
National Science Teachers Association	4,500.00	Jonathan Prather	Life Science Program	Wyoming-Eastern Colorado academic year 2021-22 Junior Science and Humanities Symposium
Natural Resources Conservation Service/Department of Agriculture	600,000.00	Kristie Maczko	Ecosystem Science & Management	Connecting Resource Information with Social Information - Grazinglands
Office of the Chief Economist/U.S. Department of Agriculture	100,000.00	Andrew Kniss	Plant Sciences	Evaluating pesticide use trends on ecotoxicity endpoints in the United States
Patient-Centered Outcomes Research Institute	249,929.00	Eric Moody	Wyoming Institute for Disabilities WIND	Meaningful Inclusion of Intellectual & Developmental Disabilities in PCOR & CER: A Rural Approach to Health Outcomes
Petróleo Basileiro S.A.	297,000.00	Mohammad Piri	Center of Innovation for Flow through Porous Media	Experimental and Numerical Studies of Two-phase Flow Dynamics in Carbonate Reservoir Core Samples (Petrobras)
Serve WY	166,096.81	James Fried	Haub School of Environment & Natural Resources	Wyoming Conservation Corps (AmeriCorps 2021-2022)
U.S. Fish & Wildlife Service/Department of the Interior	95,728.17	Riley Bernard	Zoology & Physiology	Understanding seasonal roost selection, migration behavior and winter ecology of three white-nose syndrome susceptible species in Wyoming
University of Albany	58,257.00	Zachary Lebo	Atmospheric Science	Classification of Cloud Particle Imagery and Thermodynamics (COCPIT): A New Databasing Tool for the Characterization of Cloud Particle Images Captured During DOE Field Campaigns
University of Nevada, Las Vegas	11,000.00	Mark Guiberson	Communication Disorders	Telehealth Practices for Developmental Language Disorders in Young Native Americans
University of Wisconsin-Madison	307,134.00	Md Islam	Plant Sciences	Fostering Resilience and Ecosystem Services in Landscapes by Integrating Diverse Perennial Circular Systems
Various Sponsors	995.16	Jill Kline	Small Business Development Center	Program Income for FY18 SBDC SBA
Various Sponsors	60,796.53	Thomas Smoll	Laramie Clinic	New Access Point - Program Income 2021-2022
Various Sponsors	30,244.93	Thomas Smoll	Laramie Clinic	340B Pharmacy- Program Income 2021-2022
Various Sponsors	15,068.06	Rocky Case	Manufacturing Works	Program Income- NIST Year 5
Various Sponsors	6,082.25	Rocky Case	Manufacturing Works	Manufacturing Works USDA Program income

Sponsor	Award Funding Amount	Prinicipal Investigator	Organization	Award Name
Various Sponsors	385.00	Paul Kunkel	Transit & Parking Services	Transpark Farebox Revenue
WY Afterschool Alliance	20,000.00	Jeffrey Hamerlinck	Wyoming Geographic Information Science Center	Wyoming Afterschool Opportunities: Interactive Communications Tool
WY Association of Sheriffs and Chiefs of Police	3,555.00	Michael Dorssom	Wyoming Survey & Analysis Center	Data entry, analysis and reporting on the 2021 Wyoming Alcohol and Tobacco Compliance Checks.
WY Dept of Health	3,568.87	Robert Leduc	Wyoming Survey & Analysis Center	Ranger Maintenance CY21
WY Dept of Health	600,000.00	David Jones	College of Health Sciences Deans Office	School-based COVID-19 prevention, COVID-19 testing, contact tracing, outreach and communications, and/or COVID-19 vaccination
WY Dept of Transportation	200,000.00	Khaled Ksaibati	Civil & Architectural Engineering	Wyoming High Risk Rural Roads Program - 2022
WY, State of (Treasurer)	14,664,000.00	Steven Farkas	VP for Research & Economic Development Office	Wyoming Innovation Partnership (WIP)
Wyoming Game and Fish Department	50,000.00	Matthew Kauffman	Wyoming Coop Unit	Uinta Mule Deer Survival, Movement, and Habitat Use 1121
Wyoming Game and Fish Department	15,000.00	Kevin Monteith	Haub School of Environment & Natural Resources	Sweetwater Rocks Assessment for Bighorn Sheep
Wyoming Game and Fish Department	30,000.00	Kevin Monteith	Haub School of Environment & Natural Resources	Human Dimensions Study - Mule Deer
Wyoming Game and Fish Department	49,300.00	Michael Dorssom	Wyoming Survey & Analysis Center	Wyoming Speaks Survey

Externally Funded Projects	$21,205,325.37
Student Financial Aid	593,958.86
CARES funding	0.00
all other externally funded projects	20,611,366.512

Sponsor	Award Funding Amount	Principal Investigator	Organization	Award Name
Alabama Bureau of Pardons and Paroles	200,000.00	Laura Feldman	Wyoming Survey & Analysis Center	Evaluation of Alabama BPP COSMOSS Program
Bayer Corporation	27,000.00	William Stump	Plant Sciences	Field Tests of New Generation Pesticides for Disease Management
CaaMTech, Inc.	147,812.00	Elliott Hulley	Chemistry	Fundamental Studies of Psilocin and Derivatives
Centers for Disease Control and Prevention/DHHS	43,000.00	David Jones	College of Health Sciences Deans Office	Medicare Cost Report Payments for the Casper and Cheyenne Residency Programs to Encounter Rate of Services Provided on their Annual Clinic Costs Reports
Department of Education	15,476,387.00	Debra Hintz	Scholarships & Financial Aid	Direct Student Loans 2021-2022
Department of Education	62,530.00	Debra Hintz	Scholarships & Financial Aid	PELL Grant 2021-2022
Department of the Army	90,000.00	Virginia Paige	Ecosystem Science & Management	Upper Missouri Basin Soil Moisture and Snowpack Monitoring: Existing & New Site Retrofits
National Institute of Food and Agriculture/Department of Agriculture	133,838.00	Eric Webster	Agriculture Experiment Station	Hatch-Multistate Capacity FY22
National Institute of Food and Agriculture/Department of Agriculture	3,712.00	Eric Webster	Agriculture Experiment Station	Animal Health and Disease Research Capacity, FY22
National Institute of Food and Agriculture/Department of Agriculture	237,187.00	Eric Webster	Agriculture Experiment Station	Hatch-Regular Capacity FY22
National Institute of Food and Agriculture/Department of Agriculture	304,702.00	Kelly Crane	UW Extension	University of Wyoming Extension Smith-Lever 3(b) & 3(c) FY2022
National Institute of Food and Agriculture/Department of Agriculture	8,396.00	Kelly Crane	UW Extension	University of Wyoming Smith-Lever RREA FY22
National Science Foundation	271,750.00	Xiang Zhang	Mechanical Engineering	Collaborative Research: An Integrated Multiscale Reduced-Order Modeling and Experimental Framework for Lithium-ion Batteries under Mechanical Abuse Conditions
Small Business Administration	2,500,000.00	Jill Kline	Small Business Development Center	The Community Navigator Pilot Program (CNPP)
Tallgrass Energy	25,940.74	Jonathan McLaughlin	School of Energy Resources Directors Office	Blue Bison ATR Advanced CCUS System
Tallgrass Energy	33,800.57	Jonathan McLaughlin	School of Energy Resources Directors Office	Blue Bison ATR Advanced CCUS System- Off Campus
Various Sponsors	467.38	Melinda Meuli	UW Extension	Program Income - SNAP ED
Various Sponsors	10.00	Mike Moore	Agriculture Experiment Station	Grass Seed Research Account
Various Sponsors	5,000.00	Rocky Case	Manufacturing Works	Program Income- NIST Year 5
Various Sponsors	265,206.53	Thomas Smoll	Laramie Clinic	New Access Point - Program Income 2021-2022
Various Sponsors	14,345.81	Thomas Smoll	Laramie Clinic	340B Pharmacy- Program Income 2021-2022
WY Dept of Transportation	68,228.00	Khaled Ksaibati	Civil & Architectural Engineering	Evaluation of the WYDOT Research Center (2021)
WY Dept of Transportation	170,046.00	Khaled Ksaibati	Civil & Architectural Engineering	Developing a Collision Warning and Collision Avoidance System for WYDOT Snowplows
Sponsor	**Award Funding Amount**	**Principal Investigator**	**Organization**	**Award Name**
Wyoming Arts Council	8,000.00	Andrea Graham	American Studies & History	Partnership for Public Sector Folklore Position 21-22

Wyoming Game and Fish Department	48,333.00	Annika Walters	Wyoming Coop Unit	Genetic Assessment of Yellowstone Cutthroat trout across the Bighorn GMU
Wyoming Game and Fish Department	55,525.00	Jeffrey Beck	Ecosystem Science & Management	Influence of Annual Climatic Variability on Sage-Grouse Brood-Rearing Ecology

Externally Funded Projects	$20,201,217.03
Total Funding for FY22 2nd Quarter	**$56,534,647.87**

Student Financial Aid	15,538,917.00		
CARES funding	0.00	TOTAL CARES FY22 Q2	0.00
all other externally funded projects	4,662,300.03	TOTAL Externally Funded FY22 Q2	39,284,417.01

Month	Total Funding	Finacial Aid	CARES	Other External	
Jul-21	12,253,019.06	221,515.80	0.00	12,031,503.26	
Aug-21	14,745,260.22	8,527.00	0.00	14,736,733.22	report ran through 8/25/21 @ noon
Sep-21	41,981,537.71	18,900,211.56	0.00	23,081,326.15	
Oct-21	15,128,105.47	1,117,355.00	0.00	14,010,750.47	
Nov-21	21,205,325.37	593,958.86	0.00	20,611,366.51	
Dec-21	20,201,217.03	15,538,917.00	0.00	4,662,300.03	report ran through 12/15/21 @ noon
Jan-22	0.00				
Feb-22	0.00				
Mar-22	0.00				
Apr-22	0.00				
May-22	0.00				
Jun-22	0.00				
	125,514,464.87	36,380,485.22	0.00	89,133,979.65	

AGENDA ITEM TITLE: **Service Contract and Procurement Reports**, Evans

SESSION TYPE:
☐ Work Session
☐ Education Session
☒ Information Item
☐ Other:
[Committee of the Whole – Items for Approval]

APPLIES TO STRATEGIC PLAN:
☐ Yes (select below):
- ☐ Driving Excellence
- ☐ Inspiring Students
- ☐ Impacting Communities
- ☐ High-Performing University

☒ No [Regular Business]

☒ *Attachments are provided with the narrative.*

EXECUTIVE SUMMARY:
Per UW Regulation 7-2 (Signature Authority), unless otherwise limited by UW Regulation or reserved by the Board of Trustees, the President shall have authority to approve and/or sign University contracts, federal contracts, agreements, memorandums of understanding, and procurements that involve an external party, require consideration (paid or received) valued less than $1,000,000 (one-time or in aggregate), and for which the term is less than five years. The President may delegate this authority to University Officers for such contracts, federal contracts, agreements, memorandums of understanding, and procurements that require consideration (paid or received) valued less than $500,000 (one-time or in aggregate) and for which the term is less than five years.

As required by the Regulation, attached are the following reports:

1) Service Contracts (including contracts, federal contracts, agreements, and memorandums of understanding) valued at $50,000 or above (one-time or in aggregate) from October 16 – December 15, 2021

2) Procurements valued at $50,000 or above (one-time or in aggregate) from October 16 – December 15, 2021

Service contract workflow
Per Presidential Directive 3-2014-1 (Signature Authority), the President can delegate signature authority to University officers for service contracts valued less than $500,000 (one-time or in aggregate) and for which the term is less than five years.

Procurement workflow
Cost Center Managers (business manager level or designee) approve all purchases, and are the final approvers for purchases of $99,999 or less. Deans/Associate Vice Presidents are the final approvers for purchases between $100,000 and $249,999. Vice Presidents are the final approvers for purchases between $250,000 and $499,999. The President is the final approver for purchases between $500,000 and $999,999. The Board of Trustees approves purchases of $1,000,000 and above.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
Standing information item at each in-person Board of Trustees meeting.

WHY THIS ITEM IS BEFORE THE BOARD:
Per UW Regulation 7-2 (Signature Authority), at each regular meeting of the Board of Trustees (excluding conference calls), the President shall provide a written report to the Board of Trustees identifying each contract, federal contract, agreement, memorandum of understanding, or procurement valued at $50,000 or above (one-time or in aggregate) signed by the President or designee under this provision.

ACTION REQUIRED AT THIS BOARD MEETING:
N/A. Information Only.

PROPOSED MOTION:
N/A. Information Only.

PRESIDENT'S RECOMMENDATION:
N/A. Information Only.

UW Regulation 7-2 (Signature Authority) Contracts Board Report - October 16, 2021 - December 15, 2021

Contract Number	Contract Name	Contract Type	Department	Supplier	Signed Date	Agreed Amount	Signer
15102-Gonzalez.Tyler-July2021	Tyler Gonzalez	Services Contract	College of Education	Gonzalez, Tyler Anne	2021-10-19	63,001.00	Leslie Rush, Executive Director/Professor
17104340BasicsDEC2018	340Basics Administrative Services Agreement	Services Contract	College of Health Sciences	340 Basics	2021-10-29	200,000.00	David Jones, Dean
17104AdbayAgencySept19	Agreement for Services	Services Contract	College of Health Sciences	Adbay.com Inc	2021-11-02	134,065.75	Chad Baldwin, Assoc VP, Comm&Mkting
17104-Berg-Nov2021	Agreement for Services	Services Contract	College of Health Sciences	Sally Berg	2021-11-12	100,000.00	David Jones, Dean
11001-MeritEnergy_May2021	11001_MeritEnergy_May2021	Services Contract	Enhanced Oil Recovery Institute	Merit Energy Company	2021-12-02	100,000.00	Holly Krutka, Executive Director
33011-SYSCO/PITA 11/11/2021	Participation Agreement for Sysco/Pita Pit	Services Contract	Fiscal Administration	Sysco Food Services of Denver	2021-12-02	80,000.00	Neil Theobald, Senior VP, Admin & Finance
10401DairyOneForageLabServicesAugust2021	Agreement for Lab Services	Services Contract	Haub School of Environment and Natural Resources	Dairy One Forage Lab	2021-10-24	175,000.00	John Koprowski, Professor/Dean/Wyo Excellence Chair
40003-Performance Architects Inc-October 2021	Statement of Work and Master Services Agreement	Services Contract	Information Technology	Performance Architects, Inc.	2021-10-19	115,000.00	Robert Aylward, Vice President
40003-Oracle CPQ-2271216-October 2021	EPM Cloud Ordering Document	Services Contract	Information Technology	Oracle America, Inc.	2021-10-20	5,080,295.42	Robert Aylward, Vice President*
90251NewHorizonsSept2021	Aircraft Charter Agreement	Services Contract	Intercollegiate Athletics	New Horizons Travel	2021-11-19	110,141.85	Billy Sparks, Sr Assoc AD for Administration
90201-NewHorizons-Nov2021	New Horizons	Services Contract	Intercollegiate Athletics	New Horizons Travel	2021-11-19	227,592.19	Billy Sparks, Sr Assoc AD for Administration
90014NewHorizons2December2021	Aircraft Charter Agreement	Services Contract	Intercollegiate Athletics	New Horizons Travel	2021-12-10	165,000.00	Billy Sparks, Sr Assoc AD for Administration
90202IdahoStateNovember2021	Football Agreement	Services Contract	Intercollegiate Athletics	Idaho State University	2021-12-03	415,000.00	Matthew Whisenant, Deputy Director
90202 Cal Poly State Sept 2021	Football Agreement	Services Contract	Intercollegiate Athletics	California Polytechnic State University, San Luis Obispo	2021-10-19	425,000.00	Matthew Whisenant, Deputy Director
90014RiversideDecember2021	Hotel Agreement	Services Contract	Intercollegiate Athletics	The Riverside Hotel	2021-12-15	189,000.00	Thomas Burman, Athletic Director
10012-GrayAssociates-Sept 2020	Gray Associates	Services Contract	Provost	Gray Associates Inc	2021-12-09	61,050.00	Robert Aylward, Vice President
28350-KayaResponsibleTravel-Nov2021	Kaya Responsible Travel	Services Contract	Provost	Kaya Responsible Travel	2021-12-02	60,000.00	Tami Benham-Deal, Senior Vice Provost
70001-AlpineAnimalHospital-Aug2019	Vet Services for IACUC	Services Contract	Research & Economic Development	Alpine Animal Hospital PC	2021-12-08	60,000.00	Diana Hulme, Interim VP of Research & Economic Development
70007HighCountrySeptember2020	High Country	Services Contract	Research & Economic Development	High Country MW LLC	2021-10-26	70,000.00	Diana Hulme, Interim VP of Research & Economic Development
70001DDNNovember2021	DDN Support Service	Services Contract	Research & Economic Development	DataDirect Networks Inc	2021-11-12	51,727.00	Robert Aylward, Vice President
10501-BehrensConsulting-Dec2021	Behrens Consulting Amendment no. 5	Services Contract	School of Energy Resources	Behrens Consulting, LLC	2021-12-15	356,000.00	Holly Krutka, Executive Director
10501-BSIEnergyVentures-Nov2021	Agreement for Service - Uw & BSI Energy Ventures	Services Contract	School of Energy Resources	BSI Energy Ventures LLC	2021-11-19	50,000.00	Holly Krutka, Executive Director
19002-PQd-Oct2021	Databases	Services Contract	University Libraries	ProQuest, LLC	2021-10-19	888,609.31	Ed Seidel, President
19002 PQn-Oct2021	Newspapers	Services Contract	University Libraries	ProQuest, LLC	2021-10-19	50,478.00	Ivan Gaetz, Dean
26001ByArchitecturalMeansPCOct2021Amend5IvinsonParkingGarage	Amendment No. 5	Services Contract	University Operations	By Architectural Means, PC	2021-11-12	164,160.00	William Mai, Vice President
26001BigHornRoofing,Inc.Oct2021FY22RoofReplacement-GeneralStorageBuilding	Agreement Between Owner and Contractor	Services Contract	University Operations	Big Horn Roofing	2021-11-02	151,425.00	William Mai, VP of Government Relations
26001BigHornRoofing,Inc.Oct2021FY22RoofReplacement-AvenNelson	Agreement Between Owner and Contractor	Services Contract	University Operations	Big Horn Roofing	2021-11-02	80,525.00	William Mai, VP of Government Relations
26001JEDunnConstructionSept2021	Project Agreement (CMAR)	Services Contract	University Operations	JE Dunn Construction Company	2021-11-02	349,657.00	William Mai, VP of Government Relations
26001alm2sNov2021Amend6	Amendment No. 6	Services Contract	University Operations	alm2s	2021-12-15	774,520.00	William Mai, VP of Government Relations**
26001Plan/OneArchitectsSept2021	Architect Agreement	Services Contract	University Operations	Plan One Architects	2021-10-19	124,875.00	William Mai, VP of Government Relations
26001BigHornRoofing,Inc.Oct2021FY22RoofReplacement-MRRC(EarthSciences)	Agreement Between Owner and Contractor	Services Contract	University Operations	Big Horn Roofing	2021-11-02	195,235.00	William Mai, VP of Government Relations
26001BigHornRoofing,Inc.Oct2021FY22RoofReplacement-TennisBuilding	Agreement Between Owner and Contractor	Services Contract	University Operations	Big Horn Roofing	2021-11-02	163,995.00	William Mai, VP of Government Relations

*Board of Trustees approved August 11, 2021.

**Board of Trustees approved November 18, 2021.

UW Regulation 7-2 (Signature Authority) Procurement Board Report - October 16, 2021 - December 15, 2021

PO Date	Supplier Name	Line #	Description	Quantity	Line Unit Price	Total Line Price	Total PO Amount	Department	Next to Last Approver	Next to Last Approver Title	Approval Date
10/18/2021	Presidio Networked Solutions LLC	2	Aruba 3Y FC 24x7 Ctrl perAP Cap ELTU SVC (H2YU4E) per attached quote	120	27.65	3,318.00		Facilities Construction Mgt	Bryant, Darcy	Deputy Director, Business Serv	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	3	Aruba 3Y FC 24x7 Airwave 1 Dev E-LTU SVC (H2YV4E) per attached quote	120	27.65	3,318.00		Facilities Construction Mgt	Bryant, Darcy	Deputy Director, Business Serv	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	4	Aruba Cntrlr Per AP Capacity Lic E-LTU (JW472AAE) per attached quote	120	31.58	3,789.60		Facilities Construction Mgt	Bryant, Darcy	Deputy Director, Business Serv	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	1	Aruba 3Y FC 24x7 License PEF Cn SVC (H2XX4E) per attached quote	120	27.65	3,318.00		Facilities Construction Mgt	Bryant, Darcy	Deputy Director, Business Serv	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	5	Aruba Cntrlr Per AP PEF Lic E-LTU (JW473AAE) per attached quote	120	31.58	3,789.60		Facilities Construction Mgt	Bryant, Darcy	Deputy Director, Business Serv	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	6	Aruba AirWave 1 Device Lic E-LTU (JW546AAE) per attached quote	120	31.58	3,789.60		Facilities Construction Mgt	Bryant, Darcy	Deputy Director, Business Serv	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	7	AP-MNT-MP10-B AP mount bracket 10-pack B (Q9G69A) per attached quote	12	86.32	1,035.84		Facilities Construction Mgt	Bryant, Darcy	Deputy Director, Business Serv	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	8	Aruba AP-515 (US) Unified AP (Q9H63A) per attached quote	120	484.21	58,105.20	**80,463.84**	Facilities Construction Mgt	Bryant, Darcy	Deputy Director, Business Serv	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	1	EX2300 COMPACT FANLESS 12-PORT 10/100/10 (EX2300-C-12P) per attached quote	7	686.40	4,804.80		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	2	EX2300 24-PORT 10/100/1000BASET POE+, 4 (EX2300-24P) per attached quote	5	940.50	4,702.50		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	3	EX2300 48-PORT 10/100/1000BASET POE+, 4 (EX2300-48P) per attached quote	10	1,626.90	16,269.00		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	4	EX3400 48-PORT 10/100/1000BASET POE+, 4 (EX3400-48P) per attached quote	15	2,689.50	40,342.50		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	5	EX4300,24-Port 10/100/1000BaseT PoE-plus (EX4300-24P) per attached quote	5	2,145.00	10,725.00		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	6	EX4300, 48-PORT 10/100/1000BASET POE-PLU (EX4300-48P) per attached quote	5	3,564.00	17,820.00		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	10/14/2021
10/18/2021	Presidio Networked Solutions LLC	7	EX2300 VIRTUAL CHASSIS LICENSE (EX2300-VC) per attached quote	6	295.35	1,772.10	**96,435.90**	Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	10/14/2021
10/18/2021	Richard Dingman INC	2	RDI Bus Lifts/Support Stands FY22	0.06	39,613.50	2,376.81		Transit & Parking Services	Kunkel, Paul	Director, Transportation Services	10/15/2021
10/18/2021	Richard Dingman INC	1	RDI Bus Lifts/Support Stands FY22	0.06	39,613.50	2,376.81		Transit & Parking Services	Kunkel, Paul	Director, Transportation Services	10/15/2021
10/18/2021	Richard Dingman INC	2	RDI Bus Lifts/Support Stands FY22	0.38	39,613.50	15,053.13		Transit & Parking Services	Kunkel, Paul	Director, Transportation Services	10/15/2021
10/18/2021	Richard Dingman INC	2	RDI Bus Lifts/Support Stands FY22	0.38	39,613.50	15,053.13		Transit & Parking Services	Kunkel, Paul	Director, Transportation Services	10/15/2021
10/18/2021	Richard Dingman INC	1	RDI Bus Lifts/Support Stands FY22	0.38	39,613.50	15,053.13		Transit & Parking Services	Kunkel, Paul	Director, Transportation Services	10/15/2021
10/18/2021	Richard Dingman INC	1	RDI Bus Lifts/Support Stands FY22	0.38	39,613.50	15,053.13		Transit & Parking Services	Kunkel, Paul	Director, Transportation Services	10/15/2021
10/18/2021	Richard Dingman INC	2	RDI Bus Lifts/Support Stands FY22	0.09	39,613.50	3,565.22		Transit & Parking Services	Kunkel, Paul	Director, Transportation Services	10/15/2021
10/18/2021	Richard Dingman INC	1	RDI Bus Lifts/Support Stands FY22	0.09	39,613.50	3,565.22		Transit & Parking Services	Kunkel, Paul	Director, Transportation Services	10/15/2021
10/18/2021	Richard Dingman INC	2	RDI Bus Lifts/Support Stands FY22	0.09	39,613.50	3,565.22		Transit & Parking Services	Kunkel, Paul	Director, Transportation Services	10/15/2021
10/18/2021	Richard Dingman INC	1	RDI Bus Lifts/Support Stands FY22	0.09	39,613.50	3,565.22	**79,227.00**	Transit & Parking Services	Kunkel, Paul	Director, Transportation Services	10/15/2021
10/19/2021	Hyland LLC	1	Perceptive Content Subscription 9/1/2021-8/31/2022 per attached invoice and agreement	1	101,402.40	101,402.40	**101,402.40**	Applications and Customer Relations	Aylward, Robert	Vice President	10/19/2021
10/19/2021	Performance Architects, Inc.	1	Oracle EPM Cloud Workforce Planning Professional Services per attached Statement of Work and Master Services Agreement	1	115,000.00	115,000.00	**115,000.00**	Financial Affairs	Reese, Ashlie	Associate Vice President, Finance	10/19/2021
10/22/2021	University Corporation for Atmospheric Research	1	12th installment of NCAR Support per agreement (12th of 20 payments)	1	1,000,000.00	1,000,000.00	**1,000,000.00**	VP for Administration Office	Hulme, Diana	Interim VP of Research & Economic Development	10/22/2021*
10/22/2021	Oracle America, Inc.	1	Oracle EPM Cloud Subscription November 1, 2021 - August 30, 2022 per attached ordering document	1	876,366.30	876,366.30	**876,366.30**	Applications and Customer Relations	Seidel, Ed	President	10/22/2021
10/25/2021	Niche.com, Inc.	1	Niche Membership Inv# 114519 Includes services such as • Custom Lead Order - Bulk • Custom Lead Order - Subscription • Google Analytics Audit • Google Analytics Dashboard • Market Intelligence Report • Premium Profile • Qualified Inquiries	1	102,300.00	102,300.00	**102,300.00**	Admissions	Benham-Deal, Tami	Senior Vice Provost	10/25/2021
10/25/2021	Y6 Feeders	1	Y6 Feeders - Feed and care of Steer for Cowboy Joe Club Steer A Year Program (SAY-8104-4650)	1	80,000.00	80,000.00	**80,000.00**	Cowboy Joe Club	Hulet, Rachael	Assoc AD/Budgeting & Fin Mgmt	10/22/2021
10/26/2021	Illumina Inc	2	Illumina - 4375576 - NextSeq 1000 Sequencing System - Approved through Contracts	1	27,300.00	27,300.00		Zoology & Physiology	Carman, Kevin	Exec Vice President for Academic Affairs & Provost	10/26/2021

10/26/2021	Illumina Inc	1	Illumina - 4375576 - NextSeq 1000 Sequencing System - Approved through Contracts	1	231,675.86	231,675.86	**258,975.86**	Zoology & Physiology	Carman, Kevin	Exec Vice President for Academic Affairs & Provost	10/26/2021
10/26/2021	United Healthcare Student Resources	1	Domestic Student Health Insurance - Invoice 21-005857-10-1 DOM (Risk Management Approved)	1	1,097,201.00	1,097,201.00	**1,097,201.00**	Risk Management Office	Evans, Teresa	Vice President & General Counsel	10/26/2021**
10/29/2021	BSI Energy Ventures LLC	1	Basinal Assessment of CORE_CM Resources Basinal Strategies for reuse of Waste Streams Basinal Strategies for Infrastructure Technology Assessment, Development, and Field-Testing	1	75,000.00	75,000.00	**75,000.00**	School of Energy Resources Directors Office	Ferrell, Rachel	Dir, Business Operations	10/27/2021
10/29/2021	Presidio Networked Solutions LLC	1	Juniper EX4400-48MP 12x10G, 36x2.5G Switch with 2x100G per attached quote	17	5,000.49	85,008.33		Facilities Construction Mgt	Bryant, Darcy	Deputy Director, Business Serv	10/29/2021
10/29/2021	Presidio Networked Solutions LLC	2	Juniper EX4400-EM-4S 4X10G SFP+ Extension Module per attached quote	17	718.74	12,218.58	**97,226.91**	Facilities Construction Mgt	Bryant, Darcy	Deputy Director, Business Serv	10/29/2021
11/05/2021	TransLoc Inc.	1	Transloc monthly service for bus Oct 2021-Sept 2022	1	70,752.00	70,752.00		Transit & Parking Services	Kunkel, Paul	Director, Transportation Services	11/05/2021
11/05/2021	TransLoc Inc.	1	Transloc monthly service for bus Oct 2021-Sept 2022	1	17,688.00	17,688.00	**88,440.00**	Transit & Parking Services	Kunkel, Paul	Director, Transportation Services	11/05/2021
11/10/2021	Creighton University	1	2021-2022 cost of attendance for Wyoming students to attend the University of Creighton	1	714,930.00	714,930.00	**714,930.00**	WyDENT	Seidel, Ed	President	11/10/2021
11/10/2021	JE Dunn Construction Company	1	PRECONSTRUCTION SERVICES - UW STUDENT HOUSING & DINING	1	349,657.00	349,657.00	**349,657.00**	Facilities Construction Mgt	Theobald, Neil	Senior VP, Admin & Finance	11/10/2021
11/11/2021	Ellucian Company L.P.	1	Ellucian Elevate CE/WFD Pro License Fee Subscription Term: From 10/01/2021 to 09/30/2022	1	6,000.00	6,000.00		Distance Education	Stark, Stephanie	Dir, Business Operations	11/11/2021
11/11/2021	Ellucian Company L.P.	2	Ellucian Elevate CE Essentials License Fee Subscription Term: From 10/01/2021 to 09/30/2022	1	23,940.00	23,940.00		Distance Education	Stark, Stephanie	Dir, Business Operations	11/11/2021
11/11/2021	Ellucian Company L.P.	3	LF Ellucian Elevate Annual Subscription Subscription Term: From 10/01/2021 to 09/30/2022	1	3,000.00	3,000.00		Distance Education	Stark, Stephanie	Dir, Business Operations	11/11/2021
11/11/2021	Ellucian Company L.P.	4	Ellucian Elevate CE/WFD Pro Plus License Fee Subscription Term: From 10/01/2021 to 09/30/2022	1	19,560.00	19,560.00	**52,500.00**	Distance Education	Stark, Stephanie	Dir, Business Operations	11/11/2021
11/11/2021	DataDirect Networks Inc	1	Annual Sustaining Basic Software Support, Basic Onsite Support	1	51,727.00	51,727.00	**51,727.00**	Research Computing Support	Miller, Jamison	Dir, Business Operations	11/11/2021
11/17/2021	Honorlock Inc	1	Honorlock Subscription for Distance Education 7/1/2021-6/30/2022 per attached agreement	9000	6.00	54,000.00		Distance Education	Stark, Stephanie	Dir, Business Operations	11/16/2021
11/17/2021	Honorlock Inc	2	Honorlock Distance Education Postpay Exams February 2021 per attached agreement	351	6.00	2,106.00		Distance Education	Stark, Stephanie	Dir, Business Operations	11/16/2021
11/17/2021	Honorlock Inc	3	Honorlock Distance Education Postpay Exams March 2021 per attached agreement	1281	6.00	7,686.00		Distance Education	Stark, Stephanie	Dir, Business Operations	11/16/2021
11/17/2021	Honorlock Inc	4	Honorlock Distance Education Postpay Exams April 2021 per attached agreement	980	6.00	5,880.00		Distance Education	Stark, Stephanie	Dir, Business Operations	11/16/2021
11/17/2021	Honorlock Inc	5	Honorlock Distance Education Postpay Exams May 2021 per attached agreement	1094	6.00	6,564.00		Distance Education	Stark, Stephanie	Dir, Business Operations	11/16/2021
11/17/2021	Honorlock Inc	6	Honorlock Distance Education Postpay Exams June 2021 per attached agreement	1150	6.00	6,900.00	**83,136.00**	Distance Education	Stark, Stephanie	Dir, Business Operations	11/16/2021
11/18/2021	University of Arkansas	1	MBB Game Guarantee - University of Arkansas game on 11/14/21	1	75,000.00	75,000.00	**75,000.00**	Mens Basketball	Hulet, Rachael	Assoc AD/Budgeting & Fin Mgmt	11/17/2021
11/22/2021	West Fork Construction, LLC	1	WINTERIZATION & MAINTENANCE ACTIVITIES PER PROPOSAL DATED NOVEMBER 9, 2021	1	50,000.00	50,000.00	**50,000.00**	Facilities Engineering	Bryant, Darcy	Deputy Director, Business Serv	11/22/2021
11/23/2021	BKD LLP	1	FY21 External Audit-Invoice BK01424384 WPM and Single Audit, and UW Financial Statements	1	13,468.00	13,468.00		Wyoming Public Media	Hulme, Diana	Interim VP of Research & Economic Development	11/23/2021
11/23/2021	BKD LLP	1	FY21 External Audit-Invoice BK01424384 WPM and Single Audit, and UW Financial Statements	1	22,960.00	22,960.00		Athletics Business Office	Hulme, Diana	Interim VP of Research & Economic Development	11/23/2021
11/23/2021	BKD LLP	1	FY21 External Audit-Invoice BK01424384 WPM and Single Audit, and UW Financial Statements	1	82,502.00	82,502.00		VP for Research & Economic Development Office	Hulme, Diana	Interim VP of Research & Economic Development	11/23/2021
11/23/2021	BKD LLP	1	FY21 External Audit-Invoice BK01424384 WPM and Single Audit, and UW Financial Statements	1	13,720.00	13,720.00	**132,650.00**	Cowboy Joe Club	Hulme, Diana	Interim VP of Research & Economic Development	11/23/2021
12/06/2021	MJB Lab Consulting, Inc.	1	CLIA Laboratory Director and Clinical Consultant Agreement for Services	1	70,000.00	70,000.00	**70,000.00**	General University Operations	Kean, Alexander	Associate VP, Budget & Planning	11/30/2021
12/07/2021	Little America Hotels & Resorts Inc	4	Audio and Visual Equipment	1	4,141.00	4,141.00		Cowboy Joe Club	Hulet, Rachael	Assoc AD/Budgeting & Fin Mgmt	11/19/2021
12/07/2021	Little America Hotels & Resorts Inc	1	LIttle America -Food for event	1	64,489.48	64,489.48		Cowboy Joe Club	Hulet, Rachael	Assoc AD/Budgeting & Fin Mgmt	11/19/2021

12/07/2021	Little America Hotels & Resorts Inc	3	Conference rooms rental	1	1,800.00	1,800.00		Cowboy Joe Club	Hulet, Rachael	Assoc AD/Budgeting & Fin Mgmt	11/19/2021
12/07/2021	Little America Hotels & Resorts Inc	2	Lodging - CJC Auction 2021	1	1,393.00	1,393.00	**71,823.48**	Cowboy Joe Club	Hulet, Rachael	Assoc AD/Budgeting & Fin Mgmt	11/19/2021
12/07/2021	BSI Energy Ventures LLC	1	Basinal Assessment of CORE_CM Resources Basinal Strategies for reuse of Waste Streams Basinal Strategies for Infrastructure Technology Assessment, Development, and Field-Testing	1	50,000.00	50,000.00	**50,000.00**	School of Energy Resources Directors Office	Ferrell, Rachel	Dir, Business Operations	12/07/2021
12/07/2021	WyomingV Immune Inc	1	Phase II, Modification 1 - WyomingV Immune ($106,000)	1	106,000.00	106,000.00	**106,000.00**	General University Operations	Kean, Alexander	Associate VP, Budget & Planning	12/07/2021
12/07/2021	University of Denver	1	MBB Game Guarantee - Denver University Game on 12/2/21	1	75,000.00	75,000.00	**75,000.00**	Mens Basketball	Hulet, Rachael	Assoc AD/Budgeting & Fin Mgmt	12/06/2021
12/08/2021	McNeese State University	1	MBB Game Guarantee - McNeese State University game on 12/4/21	1	65,000.00	65,000.00	**65,000.00**	Mens Basketball	Hulet, Rachael	Assoc AD/Budgeting & Fin Mgmt	12/06/2021
12/09/2021	Cambridge Computer Services, Inc.	2	ARCC Infrastructure Bid- Teton Server Replacement: Foundation Service	1	4,055.74	4,055.74		Research Computing Support	Hulme, Diana	Interim VP of Research & Economic Development	12/09/2021
12/09/2021	Cambridge Computer Services, Inc.	1	ARCC Infrastructure Bid- Teton Server Replacement: Servers,Switches,Cables	1	249,206.65	249,206.65	**253,262.39**	Research Computing Support	Hulme, Diana	Interim VP of Research & Economic Development	12/09/2021
12/09/2021	Consolidated Sterilizer Systems	1	CONSOLIDATED 26AV AUTOCLAVE; TRAINING & CX: FREIGHT	1	49,632.76	49,632.76		Facilities Construction Mgt	Selmer, Forrest	Interim Assoc VP of Operations	12/09/2021
12/09/2021	Consolidated Sterilizer Systems	2	CONSOLIDATED 26AV AUTOCLAVE; TRAINING & CX: FREIGHT	1	49,632.76	49,632.76		Facilities Construction Mgt	Selmer, Forrest	Interim Assoc VP of Operations	12/09/2021
12/09/2021	Consolidated Sterilizer Systems	3	CONSOLIDATED 26AV AUTOCLAVE; TRAINING & CX: FREIGHT	1	49,632.76	49,632.76	**148,898.28**	Facilities Construction Mgt	Selmer, Forrest	Interim Assoc VP of Operations	12/09/2021
12/11/2021	New Horizons Travel	1	2021 Potato Bowl Team Charter Flight	1	165,000.00	165,000.00	**165,000.00**	Special Events Athletics	Sparks, Billy	Sr Assoc AD for Administration	12/11/2021
12/13/2021	Presidio Networked Solutions LLC	4	AP-MNT-MP10-X AP mount adapter 10-pack (R3T20A) per attached quote	15	123.30	1,849.50		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	12/13/2021
12/13/2021	Presidio Networked Solutions LLC	8	PC-AC-NA (NA) AC Power Cord (JW124A) per attached quote	2	1.99	3.98		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	12/13/2021
12/13/2021	Presidio Networked Solutions LLC	12	Aruba PSU-350-AC 350W AC Power Supply (JW657A) per attached quote	1	206.83	206.83		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	12/13/2021
12/13/2021	Presidio Networked Solutions LLC	3	AP-MNT-MP10-B AP mount bracket 10-pack B (Q9G69A) per attached quote	30	81.53	2,445.90		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	12/13/2021
12/13/2021	Presidio Networked Solutions LLC	1	Aruba 3Y FC 24x7 License PEF Cn SVC (H2XX4E) per attached quote	300	29.85	8,955.00		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	12/13/2021
12/13/2021	Presidio Networked Solutions LLC	5	Aruba 3Y FC 24x7 Ctrl perAP Cap ELTU SVC (H2YU4E) per attached quote	300	29.85	8,955.00		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	12/13/2021
12/13/2021	Presidio Networked Solutions LLC	6	Aruba 3Y FC 24x7 Airwave 1 Dev E-LTU SVC (H2YV4E) per attached quote	300	29.85	8,955.00		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	12/13/2021
12/13/2021	Presidio Networked Solutions LLC	7	Aruba 3Y FC NBD Exch ED/R7240XM CntrlSVC (H8AN0E) per attached quote	1	8,402.48	8,402.48		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	12/13/2021
12/13/2021	Presidio Networked Solutions LLC	9	Aruba Cntrlr Per AP Capacity Lic E-LTU (JW472AAE) per attached quote	300	29.83	8,949.00		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	12/13/2021
12/13/2021	Presidio Networked Solutions LLC	10	Aruba Cntrlr Per AP PEF Lic E-LTU (JW473AAE) per attached quote	300	29.83	8,949.00		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	12/13/2021
12/13/2021	Presidio Networked Solutions LLC	11	Aruba AirWave 1 Device Lic E-LTU (JW546AAE) per attached quote	300	29.83	8,949.00		Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	12/13/2021
12/13/2021	Presidio Networked Solutions LLC	2	Aruba 7240XM Controller (JW784A) per attached quote	1	16,702.56	16,702.56	**83,323.25**	Enterprise Infrastructure	Christensen, Margaux	Exec Administrator, IT Business Services	12/13/2021
12/13/2021	Piri Technologies LLC	1	Milestone 6: Steady-state gas/oil relative permeability measurement (Drainage on composite core Sample #2)	1	150,000.00	150,000.00		Center of Innovation for Flow through Porous Media	Ivanoff, Mary	Chief of Staff	12/13/2021
12/13/2021	Piri Technologies LLC	2	Milestone 3: Establish initial oil and brine saturation conditions by injecting brine and live oil (Composite sample #2)	1	32,500.00	32,500.00	**182,500.00**	Center of Innovation for Flow through Porous Media	Ivanoff, Mary	Chief of Staff	12/13/2021
12/14/2021	Telonics	1	Telonics Uinta MD Collars	10	995.00	9,950.00		Wyoming Coop Unit	Kauffman, Matthew	Unit Leader	12/13/2021
12/14/2021	Telonics	3	Freight	1	187.27	187.27		Wyoming Coop Unit	Kauffman, Matthew	Unit Leader	12/13/2021
12/14/2021	Telonics	2	Telonics Uinta Expandable insert	5	49.00	245.00		Wyoming Coop Unit	Kauffman, Matthew	Unit Leader	12/13/2021
12/14/2021	Telonics	1	Telonics Uinta MD Collars	40	995.00	39,800.00	**50,182.27**	Wyoming Coop Unit	Kauffman, Matthew	Unit Leader	12/13/2021
12/14/2021	21st Century Equipment LLC	1	2021 John Deere 6175R Tractor sn 1L06175RHMP102765	1	200,193.97	200,193.97		Agriculture Experiment Station	Rasco, Barbara	Dean of AGNR	12/14/2021
12/14/2021	21st Century Equipment LLC	2	2021 John Deere Gen 4 CommandCenter AutoTrac Activation - 243095	1	1,000.77	1,000.77	**201,194.74**	Agriculture Experiment Station	Rasco, Barbara	Dean of AGNR	12/14/2021

*Board of Trustees approved in FY22 Budget.

**Board of Trustees approved in FY22 Budget.

Capital Construction
Progress Report as of December 8, 2021

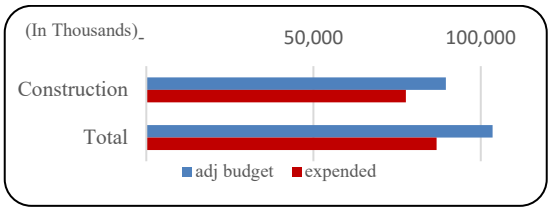
The following is an accounting of the progress and activity of construction and design since the last Trustees meeting. Also reported are approved change orders.

PROJECTS IN CONSTRUCTION

1. Science Initiative

Contractor: GE Johnson Construction Wyoming
Jackson, WY

Original Project Budget $ 103,000,000 (a)
Adjusted Project Budget $ 103,755,000 (d)



Funding Sources:	**Original Anticipated:**	**Actual:**
State Appropriation (2015 SL Ch 142 Sec 345)	3,000,000.00	3,000,000.00
UW General Reserve Account	10,000,000.00	10,000,000.00
UW Construction Reserve Account	5,000,000.00	5,000,000.00
State Appropriation (2018 Session, HB0194, Sec 5)	85,000,000.00	85,000,000.00
UW INBRE program		325,000.00
Major Maintenance		430,000.00
Total Project	**103,000,000.00**	**103,755,000.00**

Guaranteed Maximum Price $74,359,220
Contract Substantial Completion Date February 3, 2022

(In Thousands)	**Budget (a)**	**Additional Funding/Adj (b)**	**Use of Contingency (c)**	**Adj Budget (a+b+c)=(d)**	**Expenditures (e)**	**Obligations (f)**	**Remaining Balance (d+e+f)=(g)**
Construction	82,029	-	7,519	89,548	(77,591)	(11,957)	-
Contingency	3,919	430	(3,500)	849	-	-	**849**
Reserve	2,002	-	-	2,002	-	-	**2,002**
Design	6,962	42	171	7,175	(7,015)	(160)	-
FF&E	3,100	-	(1,013)	2,087	(605)	(1,120)	**362**
Tech	2,287	-	(2,287)	-	-	-	-
Admin	2,701	283	(890)	2,094	(1,621)	(417)	**56**
Total	**103,000**	**755**	-	**103,755**	**(86,832)**	**(13,654)**	**3,269**

Statement of Contract Amount

Original contract	Pre-construction	**$142,000**
10/16/2019, Amendment #1	GMP established, includes full project scope excluding alternates, reserve held for north greenhouses. (Includes pre-construction)	74,359,220
Amendment #2	Construct research greenhouse	5,999,462
Amendment #3	Multiple scope changes: utility consumption, cw/hw line upsize, vivarium underground, INBRE underground, general duty valves, civil additions & revisions, add L2 bulkheads, ABB drive, INBRE complete, growth chambers	6,439,023
Amendment #4	AV/IT package	2,269,217
Change order #1	Installation of two (2) additional 4" conduits	2,230
Change order #2	Installation of emergency exit signs in greenhouse area	1,896
Change order #3	Increased size for transformer breakers for levels 2 & 4	1,788
Change order #4	Adding one (1) UPS machine within greenhouse manager's office	2,087
Change order #5	Relocation of level 2 lab electrical panel	814
Change order #6	Allowance for temporary utility consumption – natural gas & electric (Feb 2021-Dec 2021)	314,083
Change order #7	Additional data drops & door hardware revisions, room 1230 – added plumbing & electrical, added CO sensors for greenhouse, room 1015 – add RO line	110,635
Change order #8-#12	See 11th & 12th/Lewis Street Reconstruction project	-
Change order #13	Added strainers for heat exchangers	43,390
COR 102	Added site rails, no change to overall contract. Cost adjustment from Lewis St portion to SI	3,390
Adj contract		**$89,547,235**

Work Completed/In Progress:

- Guaranteed Maximum Price contract amendment was approved 10/16/2019.
- Construction activities commenced 10/17/2019.
- Finish activities are in progress, all levels.
- Exterior masonry is complete, patch and punch list work in progress.
- Hardscapes are complete.

Issues Encountered with Proposed Resolution for Each:

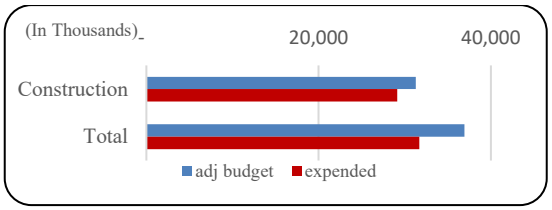
- Baseboard radiator heaters for level 4 are delayed due to pandemic. Re-sequenced finishes and commissioning to accommodate.

Work Planned for Upcoming Month:
• Greenhouse mechanical and electrical trim. • Finish trades. • Site work.

2. West Campus Satellite Energy Plant

Contractor: GE Johnson Construction Wyoming
Jackson, WY

Original Project Budget $ 36,931,109 (a)
Adjusted Project Budget $ 36,931,109 (d)



Funding Sources:	**Original Anticipated:**	**Actual:**
Major Maintenance	18,000,000.00	22,000,000.00
EERB Project Reserve	12,314,336.00	12,612,600.00
SI Project Reserve	2,000,000.00	1,701,736.00
UW – Capital Reserves (BOT)	4,616,773.00	616,773.00
Total Project	**36,931,109.00**	**36,931,109.00**

Guaranteed Maximum Price $ 29,058,549.00
Contract Substantial Completion Date November 22, 2021

(In Thousands)	**Budget (a)**	**Additional Funding/Adj (b)**	**Use of Contingency (c)**	**Adj Budget (a+b+c)=(d)**	**Expenditures (e)**	**Obligations (f)**	**Remaining Balance (d+e+f)=(g)**
Construction	29,559	(200)	1,930	31,289	(29,117)	(2,372)	**(200)**
Contingency	3,688	(500)	(1,931)	1,257	-	-	**1,257**
Reserve		1,447	-	1,447			**1,447**
Design	2,623	(565)	-	2,058	(1,907)	(137)	**14**
FF&E	110	(50)	-	60	(36)	-	**24**
Tech	25	-	-	25	(10)	-	**15**
Admin	926	(132)	1	795	(617)	(129)	**49**
Total	**36,931**	-	-	**36,931**	**(31,687)**	**(2,638)**	**2,606**

Statement of Contract Amount

Original contract	Pre-construction	**$61,250**
Amendment #1	Initial Guaranteed Maximum Price for Foundation and Utilities. (Includes pre-construction)	15,486,191
Amendment #2	Final Guaranteed Maximum Price; full project scope.	13,572,358

Amendment #3	Utility extension and future boiler rough-in	82,297
Amendment #4	Heat exchangers, full heating conversion to surrounding buildings	2,348,254
Adj contract		**$31,489,100**

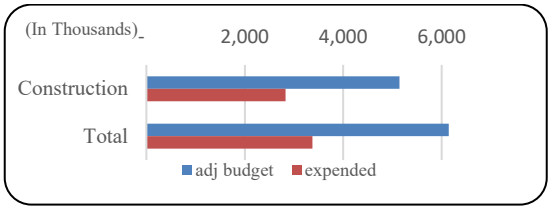
Work Completed/In Progress:
• Substantial completion scheduled for 11/22/2021.

Issues Encountered with Proposed Resolution for Each:
• None at this time.

Work Planned for Upcoming Month:
• Planning and permitting for irrigation work in 12th Street.

3. 11th & 12th/Lewis Street Reconstruction

Contractor: GE Johnson Construction Wyoming
Jackson, WY



Original Project Budget $ 4,000,000 (a)
Adjusted Project Budget $ 6,140,465 (d)

Funding Sources:	**Original Anticipated:**	**Actual:**
EERB Project Reserve	4,000,000.00	4,300,000.00
Science Initiative Project Reserve		300,000.00
West Campus Satellite Energy Plant Project Reserve		1,446,440.17
City of Laramie		31,624.83
Campus Master Plan Project – remaining funds		62,400.00
Total Project	**4,000,000.00**	**6,140,465.00**

Guaranteed Maximum Price $ 3,586,303 (direct construction)
Contract Substantial Completion Date Phase 1 and 2: May 2022

(In Thousands)	Budget (a)	Additional Funding/Adj (b)	Use of Contingency (c)	Adj Budget (a+b+c)=(d)	Expenditures (e)	Obligations (f)	Remaining Balance (d+e+f)=(g)
Construction	3,000	2,078	64	5,142	(2,831)	(2,307)	**4**
Contingency	450	-	(287)	163	-	-	**163**
Design	365	63	223	651	(512)	(139)	**-**
FF&E	-	-	-	-	-	-	**-**
Tech	-	-	-	-	-	-	**-**
Admin	185	-	-	185	(34)	(12)	**139**
Total	**4,000**	**2,141**	**-**	**6,141**	**(3,377)**	**(2,458)**	**306**

Statement of Contract Amount

Original contract	Phase 1 & 2 Lewis Street Corridor Improvements *(Change order to GE Johnson Science Initiative contract)*	**$3,586,303**
Change order #9	Additional concrete for light pole bases, contingency for 12th Street section and overhead	48,198
Change order #10	Additional light pole stone, construction contingency and overhead	8,057
Change order #11	Additional concrete to widen 12th Street rated path per AHJ, contingency and overhead	47,680
Change order #12	Additional boulders/plant count; additional sandstone boulders; irrigation design changes and added boring	25,754
Adj contract		**$3,715,992**

Work Completed/In Progress:

- Science Initiative south elevation is complete.
- Phase II between Agriculture and Engineering buildings has sod in place, hardscape is 90% complete.

Issues Encountered with Proposed Resolution for Each:

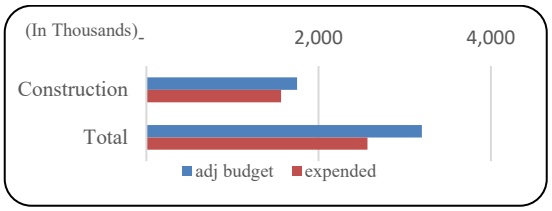
- None at this time.

Work Planned for Upcoming Month:

- Completion of the hardscapes and ramp between the Agriculture and Engineering buildings.

4. College of Business: Student Success Center

Contractor: GE Johnson Construction Wyoming
Jackson, WY



Original Project Budget $ 400,000 (a)
Adjusted Project Budget $ 3,200,000 (d)

Funding Sources:	Original Anticipated:	Actual:
Foundation donations	400,000.00	400,000.00
Foundation donations (loan)		2,800,000.00
Total Project	**400,000.00**	**3,200,000.00**

Guaranteed Maximum Price N/A
Contract Substantial Completion Date September 24, 2021

(In Thousands)	Budget (a)	Additional Funding/Adj (b)	Use of Contingency (c)	Adj Budget (a+b+c)=(d)	Expenditures (e)	Obligations (f)	Remaining Balance (d+e+f)=(g)
Construction		1,750	-	1,750	(1,563)	(103)	**84**
Contingency		262	(75)	187	-	-	**187**
Design	287	-	75	362	(319)	(43)	**-**
FF&E		665	-	665	(519)	(18)	**128**
Tech		129	-	129	(114)	-	**15**
Admin	113	(6)	-	107	(52)	(5)	**50**
Total	**400**	**2,800**	**-**	**3,200**	**(2,567)**	**(169)**	**464**

Statement of Contract Amount

Original contract	**$260,043 MEP scope in contract is funded by major maintenance	**$1,375,000**
Change order #1	Restroom 193: add floor drain/framing on north wall for water closet carrier inside wall cavity; specification change for tile carpeting	17,083
Change order #2	Installation of perimeter window sills, column patching, plastic laminate deletion, automatic entrance finish	35,821
Change order #3	Installation of vestibule renovations, demolition, framing & wood walls	47,393
Change order #4	Installation of electrical changes for breezeway renovations	49,757

Change order #5	Installation of access panels, mechanical revisions, vestibule paint & temporary protections, restroom ceiling, floor x-ray, fireproofing touchup	46,418
Change order #6	Installation of case room entry ceiling, controls work, AV/IT routing and power towel dispenser	44,590
Change order #7	Installation of stone and AV contractor change	43,130
Change order #8	Installation of new roller shades, added light fixtures and flooring preparation	38,297
Change order #9	Additional costs: ASI 11 breezeway modifications, added soffit in Student Commons, Gridworx for donor stone, Steamboat in case room, remake of panel for booths, force account for move-in damage	43,263
Change order #10	Paint touch ups & wall sconce replacements, add power to roller shades, outlets for data; additional speakers & strobes; cut/fab diffuser for vestibule & install duct/diffusers on north wall; rework wall C120; change accent wall south office	31,912
Change order #11	Removal & replacement of lighting fixtures & dimming switches; installation of new & relocation of receptacles & telecom outlets	44,179
Change order #12	Additional costs: Saturday premium time; TV change; south stair; case; room north wall; mechanical access panels; drywall; core for doors	40,378
Change order #13	Fry riglet lighted reveals for breezeway donor walls; demo/re-frame break room; stone & sealer on donor wall; remove/re-install door frames; extend main entry soffit to match existing soffit entryway 160	47,229
Change order #14	Painting for RFC077; added millwork for lighted reveals; donor wall corner detail; breezeway TV's; cut/run string line for room schedulers; credit – restocking film; frame soffits rooms 166 168	20,821
Adj contract		**$1,925,271**

Work Completed/In Progress:

- All work is complete, barring the engraving and installation of the vestibule Donor recognition stone.
- 11-month warranty walks scheduled with Architect and Contractors.

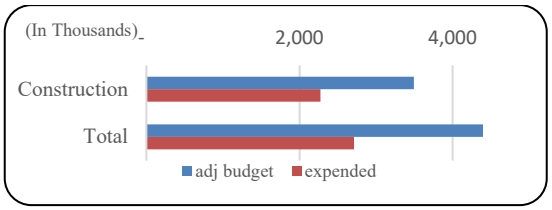
Issues Encountered with Proposed Resolution for Each:
• None at this time.

Work Planned for Upcoming Month:
• Engraving and installation of Donor recognition stone.

5. Corbett Renovation

Contractor: Shepard Construction

Original Project Budget $4,150,000 (a)
Adjusted Project Budget $4,395,846 (d)



Funding Sources:	**Original Anticipated:**	**Actual:**
State Appropriation (2018 Session, HB0001, Section 308 e)	1,000,000.00	1,000,000.00
UW – Kinesiology & Health	350,000.00	350,000.00
Major Maintenance	2,800,000.00	3,045,846.00
Total Project	**4,150,000.00**	**4,395,846.00**

Guaranteed Maximum Price N/A
Contract Substantial Completion Date November 30, 2021; June 3, 2022

(In Thousands)	**Budget (a)**	**Additional Funding/Adj (b)**	**Use of Contingency (c)**	**Adj Budget (a+b+c)=(d)**	**Expenditures (e)**	**Obligations (f)**	**Remaining Balance (d+e+f)=(g)**
Construction	3,277	246	(31)	3,492	(2,273)	(1,217)	**2**
Contingency	416	-	(45)	371	-	-	**371**
Design	228	4	-	232	(207)	(25)	**-**
FF&E	21	-	-	21	(18)	(2)	**1**
Tech	16	-	-	16	-	-	**16**
Admin	192	(4)	76	264	(215)	(72)	**(23)**
Total	**4,150**	**246**	-	**4,396**	**(2,713)**	**(1,316)**	**367**

Statement of Contract Amount

Original contract		**$3,041,142**
Change order #1	Complete second floor office expansion	93,000
Change order #2	Installation of showerhead change, stainless steel ball brim change	9,892.96
Change order #3	Additional electrical modifications/door preparations for reader systems	280,224

Change order #4	Extended substantial completion date by 275 days for electrical upgrade scope only	-
Change order #5	Install owner provided light fixtures	4,053.50
Change order #6	Install LVT flooring on ramp to classrooms 137 and 138	7,991
Change order #7	Install owner provided card readers	37,815.80
Change order #8	Paint 9636 square foot pool ceiling	11,220
Change order #9	Labor & materials for women's swim lockers 28, men's swim lockers 27, swim team room 29, restroom 15, panel board, replace mosaic tile with alternate, credit for locker changes	(6,022)
Change order #10	Labor & materials to frame base beneath all lockers	6,319
Change order #11	Labor & materials to abate fireproofing on existing structural steel columns, water shutdown, add receptacles for future TV in Kinesiology lab, frame & drywall south side of masonry wall in lab and existing masonry wall	4,225
Adj contract		**$3,489,861.26**

Work Completed/In Progress:

- Develop and begin completing punch list items for locker rooms, lab/classroom/offices portions of work.
- Balance HVAC and mechanical systems.
- Test fire alarm system.
- Install and program door access control.
- Complete IT install.

Issues Encountered with Proposed Resolution for Each:

- None at this time.

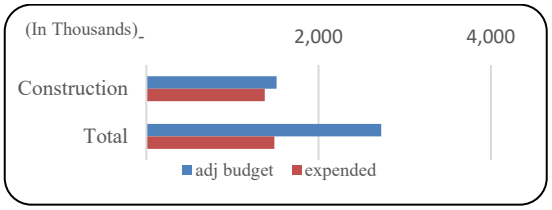
Work Planned for Upcoming Month:

- Complete remaining punch list items.
- Close out locker rooms, lab/classroom/offices scope of work.
- Confirm schedule to complete electrical upgrade scope of work spring 2022.

UW Housing Phase I

6. Wyoming Hall Deconstruction

Contractor: Haselden Wyoming Constructors
Laramie, WY



Original Project Budget $ 2,726,536 (a)
Adjusted Project Budget $ 2,726,536 (d)

Funding Sources:	Original Anticipated:	Actual:
UW – Housing Reserve Account	2,726,536.00	
UW – Housing Bonds		2,726,536.00
Total Project	**2,726,536.00**	**2,726,536.00**

Guaranteed Maximum Price $13,946,242 (includes Utility Relocation Scope)
Contract Substantial Completion Date November 30, 2021

(In Thousands)	Budget (a)	Additional Funding/Adj (b)	Use of Contingency (c)	Adj Budget (a+b+c)=(d)	Expenditures (e)	Obligations (f)	Remaining Balance (d+e+f)=(g)
Construction	720	788	3	1,511	(1,374)	(137)	-
Contingency	108	-	(3)	105	-	-	**105**
Design	43	-	-	43	(22)	-	**21**
FF&E	-	-	-	-	-	-	-
Tech	-	-	-	-	-	-	-
Admin	1,856	(788)	-	1,068	(88)	-	**980**
Total	**2,727**	-	-	**2,727**	**(1,484)**	**(137)**	**1,106**

Statement of Contract Amount

Original contract	GMP established	$1,508,420
	Adjusted amount on schedule of values from Wyoming Hall Utility Relocation project	2,398
Adj contract		**$1,510,818**

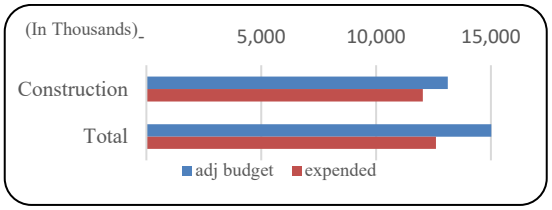
Work Completed/In Progress:
- Demobilization

Issues Encountered with Proposed Resolution for Each:
- None at this time.

Work Planned for Upcoming Month:
- Project completion.

7. Wyoming Hall Utility Relocation

Contractor: Haselden Wyoming Constructors
Laramie, WY



Original Project Budget $14,929,300 (a)
Adjusted Project Budget $15,017,986.25 (d)

Funding Sources:	Original Anticipated:	Actual:
UW – Construction Reserve Account	10,000,000.00	
Major Maintenance	4,929,300.00	4,929,300.00
City of Laramie	-	88,686.25
UW – Housing Bonds	-	10,000,000.00
Total Project	**14,929,300.00**	**15,017,986.25**

Guaranteed Maximum Price $13,946,242 (includes Demolition scope)
Contract Substantial Completion Date November 30, 2021

(In Thousands)	Budget (a)	Additional Funding/Adj (b)	Use of Contingency (c)	Adj Budget (a+b+c)=(d)	Expenditures (e)	Obligations (f)	Remaining Balance (d+e+f)=(g)
Construction	12,929	89	102	13,120	(12,039)	(1,081)	-
Contingency	1,200	-	(207)	993	-	-	**993**
Design	331	-	105	436	(414)	(22)	-
FF&E	-	-	-	-	-	-	-
Tech	240	-	-	240	-	-	**240**
Admin	229	-	-	229	(160)	(12)	**57**
Total	**14,929**	**89**	-	**15,018**	**(12,613)**	**(1,115)**	**1,290**

Statement of Contract Amount

Original contract	Pre-Construction	$10,000
Amendment #1	GMP established	12,427,822
Change order #1	Vault lid structural change and tunnel light fixture revision.	6,037
Change order #2	Removal of existing duct bank and installation of new, provide (4) runs of 4' conduit with new MV cable.	49,755
Change order #3	Installation of 15th Street water line, Bradley Street water line changes.	493,830
	Adjusted amount on schedule of values to Wyoming Hall Deconstruction project	(2,398)

Change order #4	Construction contingency, surveying, installation of 15th Street north additional water & sewer line, overhead & profit/general conditions **Lewis Street project/funds	1,425,572
Change order #5	Associated costs with accelerating the 15th Street water line work from Lewis Street to Ivinson Street, due to delayed start through DEQ permitting	16,297
Change order #6	15th Street water line: associated costs with added scope resulting from City of Laramie review	27,817
Change order #7	Associated costs with running compressed air to new vault	2,343
Change order #8	Construction/relocation of playground for Education Building/Lab School **Major Maintenance project	405,739
Change order #9	15th Street water main upsizing – 10" to 12" Ivinson to Lewis Street	25,573.25
Change order #10	Installation of 12" water line in 15th Street from Ivinson to Grand Avenue (per City of Laramie request)	63,113
Adj contract		**$14,951,500.25**

Work Completed/In Progress:

- Punch list is 80% created and 90% complete.
- Pavement striping is complete.
- Phase 9 and 10 utilities are complete.
- Education water tie-in is complete.
- Playground Phase 1 is complete.
- 9th and Lewis Streets Phase 11a is complete.
- 10th and Lewis Streets Phase 11b is complete.

Issues Encountered with Proposed Resolution for Each:

- None at this time

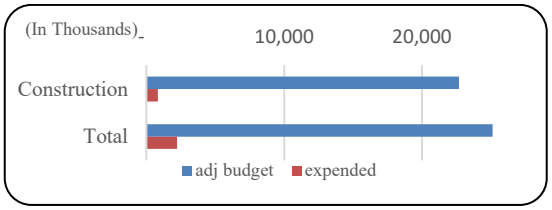
Work Planned for Upcoming Month:

- Lewis Street North utilities and streets punch list.
- Playground punch list.
- Complete Wyoming Hall utilities and streets punch list.
- Added irrigation main.
- Demobilization.
- Create schedule for activities to be completed summer 2022.

8. Ivinson Lot Parking Garage

Contractor: Sampson Construction Co.
Cheyenne, WY

Original Project Budget $926,400 (a)
Adjusted Project Budget $27,850,000 (d)



Funding Sources:	Original Anticipated:	Actual:
UW – Housing Reserve Account	926,400.00	-
UW – Housing Bonds	-	27,850,000.00
Total Project	**926,400.00**	**27,850,000.00**

Guaranteed Maximum Price N/A
Contract Substantial Completion Date December 15, 2022

(In Thousands)	Budget (a)	Additional Funding/Adj (b)	Use of Contingency (c)	Adj Budget (a+b+c)=(d)	Expenditures (e)	Obligations (f)	Remaining Balance (d+e+f)=(g)
Construction	22,688	-	-	22,688	(831)	(19,323)	**2,534**
Contingency	1,666	-	-	1,666	-	-	**1,666**
Design	1,680	-	-	1,680	(1,113)	(556)	**11**
FF&E	265	-	-	265	-	-	**265**
Tech	442	-	-	442	-	-	**442**
Admin	1,109	-	-	1,109	(281)	(94)	**734**
Total	**27,850**	-	-	**27,850**	**(2,225)**	**(19,973)**	**5,652**

Statement of Contract Amount

Original contract		**$20,138,000**
Adj contract		**$20,138,000**

Work Completed/In Progress:

- Caissons are complete.
- Foundation excavation ongoing.
- Foundations ongoing.
- Underground utilities have started.
- Waterproofing and backfill has started.

Issues Encountered with Proposed Resolution for Each:

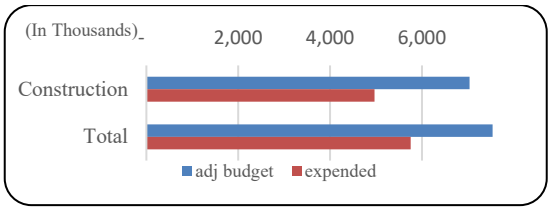
- None at this time.

Work Planned for Upcoming Month:
• Underground mechanical, electrical and plumbing (MEP). • Waterproofing and backfill. • Rough grading. • Column install. • Foundations.

9. Bus Garage/Fleet Relocation

Contractor: GH Phipps Wyoming
Laramie, WY

Original Project Budget $2,779,260 (a)
Adjusted Project Budget $8,761,222 (d)



Funding Sources:	**Original Anticipated:**	**Actual:**
UW – Construction Reserve Account	2,779,260.00	
FTA 5339(b) Grant		4,237,262.00
UW- VP Administration Reserve Account		197,695.00
WYDOT Grant (1005207)		1,547,005.00
UW – Housing Bonds		2,779,260.00
Total Project	**2,779,260.00**	**8,761,222.00**

Guaranteed Maximum Price $7,038,216.00
Contract Substantial Completion Date January 10, 2022

(In Thousands)	**Budget (a)**	**Additional Funding/Adj (b)**	**Use of Contingency (c)**	**Adj Budget (a+b+c)=(d)**	**Expenditures (e)**	**Obligations (f)**	**Remaining Balance (d+e+f)=(g)**
Construction	2,100	4,938	-	7,038	(4,966)	(2,072)	-
Contingency	315	1	-	316	-	-	**316**
Design	125	150	-	275	(262)	(13)	-
FF&E	86	166	-	252	(174)	(54)	**24**
Tech	71	1	-	72	(7)	-	**65**
Admin	82	726	-	808	(342)	(4)	**462**
Total	**2,779**	**5,982**	-	**8,761**	**(5,751)**	**(2,143)**	**867**

Statement of Contract Amount

Original contract	Initial limited scope Guaranteed Maximum Price	**$1,322,997**
	Final Guaranteed Maximum Price	5,989,703
Change order #1	Acceptance of Alt #1 south canopy and Alt #4 power drops & lights for south canopy	1,048,513
Adj contract		**$7,038,216**

Work Completed/In Progress:
• Develop punch list items. • Move Transit services and operations. • Balance and test HVAC, mechanical, and plumbing systems. • Test fire alarm system. • Install and program door access control. • Complete IT install.

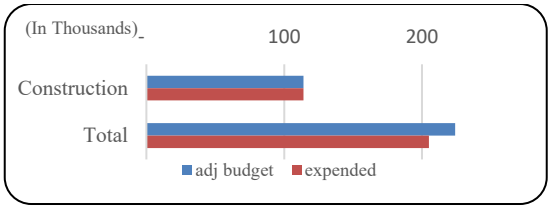
Issues Encountered with Proposed Resolution for Each:
• State Fire Inspector asking for wash bay to be separated from non-moisture rated shop bays. • South Canopy lighting delivery delayed until mid-January. Contacting suppliers and reviewing substitutions.

Work Planned for Upcoming Month:
• Complete punch list items. • Final acceptance and close out project. • Demobilization.

10. Bus Garage/Fleet Relocation – 1602 Spring Creek Renovation

Contractor:

Original Project Budget $223,772 (a)
Adjusted Project Budget $223,772 (d)



Funding Sources:	**Original Anticipated:**	**Actual:**
UW- VP Administration Reserve Account	223,772.00	223,772.00
Total Project	**223,772.00**	**223,772.00**

Guaranteed Maximum Price N/A
Contract Substantial Completion Date

(In Thousands)	Budget (a)	Additional Funding/Adj (b)	Use of Contingency (c)	Adj Budget (a+b+c)=(d)	Expenditures (e)	Obligations (f)	Remaining Balance (d+e+f)=(g)
Construction	94	-	20	114	(114)	-	-
Contingency	22	-	(20)	2	-	-	**2**
Design	-	-	-	-	-	-	-
FF&E	15	-	-	15	-	-	**15**
Tech	10	-	-	10	(10)	-	-
Admin	83	-	-	83	(81)	-	**2**
Total	**224**	-	-	**224**	**(205)**	-	**19**

Statement of Contract Amount

Original contract		**$-**
Adj contract		**$-**

Work Completed/In Progress:
• 1602 Spring Creek is complete.

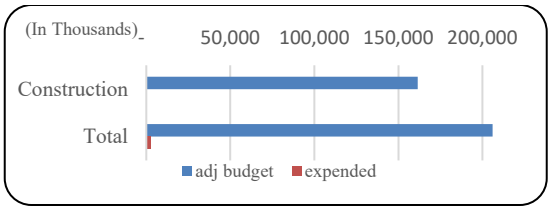
Issues Encountered with Proposed Resolution for Each:
• Fleet Services roof is damaged and leaking. Reviewing options for funding repairs.

Work Planned for Upcoming Month:
• None at this time.

11. UW Student Housing

Contractor:

Original Project Budget $10,824,675 (a)
Adjusted Project Budget $210,308,891 (d)



Funding Sources:	**Original Anticipated:**	**Actual:**
UW – Housing Reserve Account	8,681,675.00	
UW – Construction Reserve Account	2,143,000.00	
UW – Housing Bonds		210,308,891.00
Total Project	**10,824,675.00**	**210,308,891.00**

Guaranteed Maximum Price $
Contract Substantial Completion Date

(In Thousands)	Budget	Additional Funding/Adj	Use of Contingency	Adj Budget	Expenditures	Obligations	Remaining Balance
	(a)	(b)	(c)	(a+b+c)=(d)	(e)	(f)	(d+e+f)=(g)
Construction	161,450	-	-	161,450	-	(350)	**161,100**
Contingency	20,181	-	-	20,181	-	-	**20,181**
Design	14,117	-	-	14,117	(2,691)	(5,245)	**6,181**
FF&E	6,619	-	-	6,619	-	-	**6,619**
Tech	4,843	-	-	4,843	-	-	**4,843**
Admin	3,099	-	-	3,099	(51)	(120)	**2,928**
Total	**210,309**	-	-	**210,309**	**(2,742)**	**(5,715)**	**201,852**

Statement of Contract Amount

Original contract	Pre-construction	**$349,657**
Adj contract		**$349,657**

Work Completed/In Progress:

- Schematic design phase is complete and design development phase is complete.
- First Exterior Design Advisory Committee (EDAC) for the site work occurred on 11/3/2021.

Issues Encountered with Proposed Resolution for Each:

- None at this time

Work Planned for Upcoming Month:

- EDAC meetings for the site work will continue.
- Coordination efforts with the City of Laramie will begin related to the vacation of Lewis Street between 14th and 15th Streets and the installation of the roundabout and transit stop at the intersection of 15th Street and Willett Drive.

UNIVERSITY OF WYOMING

Faculty Workload
AY 2021-22

January 12-14, 2022

University Regulation 2-9 (Faculty Workload)

"The University maintains a flexible workload policy that allows academic units to capitalize on each faculty member's strengths to mee the mission of the university, college and academic unit."

- Baseline teaching load for full-time tenure stream faculty and non-tenure track faculty with primary teaching responsibility is 15 and 21 credits per academic year, respectively
- Remainder of workload is allocated to:
  - Research and creative endeavors
  - Service
  - Extension
  - Outreach/Engagement
  - Advising
  - Administration

Adjustments to Teaching Load Made For:

- Excellence in research and creative activity
- Graduate student research supervision
- Large class sizes and non-classroom teaching
- Professional service
- Administrative duties
- Clinical, Diagnostic, Professional Practice

Example 1: Workload distribution for tenure stream professor with no adjustments to teaching load

Teaching	Advising	Research or Creative Activity	Service
62.5% 15 credits/AY	~5%	~27.5%	~5%

Example 2: Workload distribution for tenure stream professor involved in substantial research and grant activity

Teaching	Advising	Research or Creative Activity	Service
25% 6 credits/AY		70%	~5%

FACULTY WORKLOAD

Tenure Stream Faculty

Workload	Agriculture & Natural Resources	Arts & Sciences	Business	Education	Engineering & Applied Sciences	Haub	Health Sciences	Honors	Law	SER	WyGISC
Teaching											
At or Above Baseline *(15 credits/year)*	6	51	10	17	2	1	5	0	5	0	0
Adjusted Below Baseline *(<15 credits/year)*	66	176	27	18	65	10	34	2	12	1	3
Research or Creative Activity											
Above Baseline *(~27.5% of total workload)*	45	113	30	4	53	6	23	0	17	1	3
At or Below Baseline *(>~27.5% of total workload)*	36	45	5	31	14	3	16	2	0	0	0

Additional Duties

In addition to teaching and research/creative activity, a job description for tenure stream faculty may include duties associated with advising; service and outreach; administration; extension; clinical, diagnostic, and professional practice.

- 100 tenure stream faculty have administrative duties in their 2020-21 job descriptions
- 18 tenure stream faculty have extension duties in their 2020-21 job descriptions
- 10 tenure stream faculty have diagnostic, clinical or professional practice duties in their 2020-21 job descriptions

How does UW compare to R1 Institutions?

Workload Policies For Tenure Stream Faculty at R1 Comparator Institutions

- R1 institutions provide teaching load discretion at the department and/or college level.
- The most typical workload load for tenure stream faculty is 40% teaching and 40% research.
- Annual teaching loads vary by department/college and are discipline specific.
  - Example – University of Colorado/Boulder
    - Engineering: 2 or 3 classes depending on department
    - Arts & Sciences: Humanities & Arts – 4 classes; Natural Sciences – 3 classes (e.g., Geography), 2 classes (e.g., Chemistry), or 1 class (e.g., Molecular, Cellular & Developmental Biology); and Social Sciences: 3 classes
    - Education: 4 classes
    - Music: 4 classes (or equivalent 1-on-1 lessons)
    - Business: 3 or 4 classes
    - Law: 3 classes
- Teaching loads may decrease as universities pursue and/or achieve R1 classification.
  - Example – U of New Mexico (from standard 3-3 to 2-2 for high research activity, 1-1 for extensive sponsored research)

R1 Comparator Institutions

Colorado State University
Kansas State University
Oregon State University
University of Arizona
University of Colorado/Boulder
University of Nebraska-Lincoln
University of Nevada-Reno
University of New Mexico
University of Utah
Washington State University

FACULTY WORKLOAD

Non-Tenure Track Instructional Faculty

Designation	Academic Affairs	Agriculture & Natural Resources	Arts & Sciences	Business	Education	Engineering & Applied Sciences	Haub	Health Sciences	Honors	Total
Lecturers	9	11	71	13	11	21	4	21	3	153
Professors of Practice			1			4	2			7
Instructional Professors			1		2	3			5	11
Clinical Professors			2					23		25

Duties

Job descriptions for non-tenure track faculty will vary, depending on the nature of the position. For example, the primary duties for most lecturers is teaching. In AY 21-22:

- 49 Lecturers will teach 7 classes or more onload
- 32 Lecturers teach 6 classes onload
- 27 Lecturers will teach 5 classes onload
- 42 Lecturers will teach 4 classes or less onload

Lecturers often have additional duties including administration (N=22), service (N=66), and advising (N=49).

All Clinical Professors primarily teach and 16 of the 25 have additional duties associated clinical, diagnostic or professional practice.
All Instructional Professors teach and have additional duties associated with professional development and/or service.
All Professors of Practice teach and have additional duties associated with either administration, service, advising or professional development.