

Section 1. Department Statutory Authority

Wyoming Constitution

- Article 7 Education; State Institutions; Promotion of Health and Morals; Public Buildings
 - Section 1 Legislature to Provide for Public Schools
 - Section 15 Establishment of University Confirmed
 - Section 16 Tuition Free
 - Section 17 Government of University
 - Section 23 Permanent Location

Wyoming Statutes

- Title 21 Education
 - Chapter 7 Teachers and Employees
 - Article 6 Wyoming Teacher Shortage Loan Repayment Program
 - Chapter 16 Higher Education Generally
 - Article 2 Western Regional Higher Education Compact
 - Article 5 Advance Payment of Higher Education Costs
 - Article 9 University of Wyoming Endowment Fund
 - Article 10 University of Wyoming Athletics Challenge Fund
 - Article 12 Higher Education Endowment Accounts
 - Article 13 Hathaway Scholarship Program
 - Article 14 University of Wyoming Academic Facilities Challenge Fund
 - Article 15 Tuition and Fees for Survivors of emergency Responders
 - Article 16 University of Wyoming Reclamation and Restoration Center Challenge Account
 - Chapter 17 University of Wyoming
 - Article 1 In General
 - Article 2 Board of Trustees
 - Article 3 Agriculture and Extension Work
 - Article 4 Capital Construction Projects
 - Chapter 19 Higher Education Retirement
- Title 9 Administration of the Government
 - Chapter 2 Agencies, Boards, Commissions and Departments Generally
 - Article 1 Department of Health
 - 9-2-118 Physician and Dentist Loan Repayment Program
 - 9-2-123 Wyoming Investment in Nursing
 - Chapter 4 Public Funds
 - Article 7 Investment of State Funds
 - 9-4-719 Investment Earning Spending Policy- Permanent Funds
 - Article 10 Guarantee Program for Bonds
 - 9-4-1003 Supplemental Coverage Program for University Revenue Bonds

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Title 19 Defense Forces and Affairs
 Chapter 14 Veterans
 19-14-106 Free Tuition and Fees for Education of War Orphans and Veterans; Definitions

Title 41 Water
 Chapter 2 Planning and Development
 41-2-125 Office of Water Programs Created; Duties; Annual Report

Section 2. Quality of Life Result

- Result #1: Wyoming families and individuals live in a stable, safe, supportive, nurturing, healthy environment.
- Result #2: Wyoming has a diverse economy that provides a livable income and ensures wage equality.
- Result #3: Wyoming residents have affordable and accessible health care and insurance.
- Result #4: Children are born healthy and achieve their highest potential during their early development years.
- Result #5: Students are successfully educated and prepared for life's opportunities.
- Result #6: Wyoming state government is a responsible steward of State assets and effectively responds to the needs of residents and guests.
- Result #7: Wyoming enjoys a safe, high-quality, efficient transportation system.
- Result #8: Wyoming natural resources are managed to maximize the economic, environmental and social prosperity of current and future generations.
- Result #9: Wyoming values the unique aspects of its western heritage, providing residents and visitors expanding access to cultural, historical and recreational experiences.
- Result #10: Advanced technologies and quality workforce allow Wyoming business and communities to adapt and thrive.

Section 3. Contribution to Quality of Life

As the only four-year public university in the state of Wyoming, the University of Wyoming is both a land grant and flagship institution and contributing to Wyoming citizens' quality of life is at the core of everything the agency does. The University seeks to contribute through its teaching, research, and service to the state. We prepare the next generation of Wyomingites to enter the workforce, develop and diversify our economy, and create stronger, more vibrant communities. A college degree not only allows graduates to earn a higher lifetime earnings, but on average college graduates are healthier and happier, and this translates into stronger more stable communities as college graduates are more likely to volunteer, donate to charities, vote, and be involved in the community¹. Our students are critical thinkers, and UW was recently ranked amount the top 15 universities for helping students improve their critical thinking skills.² In addition to creating well-prepared graduates that contribute to our communities and economies, the University's research advances fundamental understanding of topics, as well as provides practical solutions to business, industry and government. Wyoming Public Radio, Wyoming Small Business Incubators, Wyoming Technology Transfer Center, and the Ann Simpson Art Mobile are just a few of the ways we serve the state and build its economic, social, and cultural capital.

Section 4. Basic Facts

¹ <https://www.luminafoundation.org/files/resources/its-not-just-the-money.pdf>

² https://graphics.wsj.com/table/THINKTEST_0510; <http://www.uwyo.edu/uw/news/2017/06/uw-ranks-among-nations-best-in-helping-students-critical-thinking.html>

Vision

As the Equality State's university, ~~dedicated to involved teaching, engaged learning and the unfettered and open pursuit of knowledge, we aim to bring Wyoming and Western intelligence, energy, resolve and innovation to the economic, social and environmental challenges of today and to create a thriving, diverse, equitable and sustainable world for tomorrow.~~ we strive to break through barriers and explore new frontiers of teaching and learning. Through the unfettered pursuit of knowledge, we aim to apply innovation, intelligence and tenacity to meet the economic, social and environmental challenges of today, and to create a sustainable, diverse and equitable world without borders for tomorrow.

Mission

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.

Values

Our values represent beliefs and principles that drive the culture and priorities of the entire University community and provide the crucial framework within which decisions are made. Regardless of role: student, faculty, staff, trustee, alumni and other stakeholders alike recognize the importance of embedding these values in their day to day activities to assure that the institution and its graduates succeed and are exemplars of the best of Wyoming and the world.

Exploration and Discovery- Free, open and unfettered exploration and discovery supported by rigorous peer review and the communication and application of that scholarship, constitute the core principles and practices of this university.

Innovation and Application- Creative thinking leads to new knowledge, inspires student achievement and brings practical innovation to our communities.

Disciplinarity and Interdisciplinarity- Knowledge advances through intense and focused study and also in the intersection of ideas and disciplines. UW cultivates the energy of individual and collaborative advances.

Integrity and Responsibility- Outstanding teaching, learning and scholarship ~~relies~~ rely on the principles of integrity, responsibility and trust throughout our community.

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Diversity and Internationalization- A diverse and international community that includes and respects different ethnicities, genders, sexualities, abilities, cultures and worldviews multiplies our capacity to explore, innovate and educate.

Engagement and Communication- Engagement with local, state, tribal, national and global constituencies inspires our daily work. We are committed to active outreach and clear communication with our extensive communities.

Goals and Objectives

1. **Enrich Driving Excellence: Join together as an intellectual community already renowned for its regional, national and global relevance and impact by fostering and rewarding excellence in teaching, scholarship, innovation and creative endeavor.**

- Promote and strengthen the university as a scholarly and creative enterprise
 - Build national reputation and stature through strategic initiatives
 - Elevate expectations for research and creative activities
 - Expand capacity of the Office of Research and Economic Development
 - Invest in computational and library resources and fund seed grants
- Foster entrepreneurship and collaboration in research and teaching that bridge disciplines and engage public concerns
 - Fully recognize the role of interdisciplinarity and integration in teaching, research, service and outreach in performance evaluations and tenure and promotion decisions
 - Promote academic programs that address workforce needs of the state and region
- Enhance local and global relevance, engagement and impact by recruiting a regional, national, international and diverse community of students and faculty
 - Establish an Office of Global Engagement to expand recruitment of international students and broaden the exposure of faculty and students to international events and cultures
 - Increase faculty and student participation in programs abroad
 - Grow interactions with historically black, Hispanic-serving and tribal colleges, as well as international institutions of higher learning
- Achieve consistently excellent teaching and mentoring that gives students the knowledge, ability, determination and innovation to meet tomorrow's challenges with sustainable solutions
 - Develop a professional advising program for students that includes services centralized in colleges
 - Incentivize revision and development of courses and curricula that includes technology-enhanced learning, on-line delivery and high impact teaching practices
 - Embrace informed and innovative approaches to assessment and improvement of student learning

2. **Inspiring Students: Inspire students to pursue a productive, engaged and fulfilling life and prepare them to succeed in a sustainable global economy.**

- Welcome, support and graduate students of differing backgrounds, abilities and needs and from different cultures, communities and nations
 - Implement a student-centric enrollment management strategy to grow enrollment and enhance recruitment and retention of students

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- Enhance our relationship with Wyoming and regional high schools through visits and pre-college summer and academic opportunities on campus
 - Establish dual-enrollment, program articulation and other transfer processes with the state's community colleges
 - Improve retention, 4-yr and 6-yr graduation rates for undergraduates and graduation rates for graduate and professional students
 - Build new living and learning communities to enhance retention
 - Augment student support services to ensure that students thrive emotionally and physically
 - Grow the number of students at a distance enrolled in hybrid and fully on-line degree programs
 - Offer programming on diversity and inclusion through the office of the chief diversity officer
- Engage and graduate well-rounded and creative thinkers, capable of meeting unpredictable and complex challenges
 - Provide high impact learning experiences in research, creative activities, internationalization, internships, entrepreneurship, leadership and community service
 - Incentivize greater faculty and staff involvement in student life
 - Institute an experiential transcript
 - Expand career placement services
- Build pathways to academic, cultural, professional and entrepreneurial opportunity and leadership at undergraduate and graduate levels
 - Establish an Honors College
 - Establish an office to support graduate education
 - Establish a center for entrepreneurship and infuse innovation throughout the curriculum
 - Establish a center for integrated STEM education to support the engineering, science and trustees' education initiatives
 - Expand and grow quality of undergraduate and graduate scholarly experiences

3. Impacting Communities: Improve and enhance the health and well-being of our communities and environments through outreach programs and in collaboration with our constituents and partners.

- Facilitate collaboration between the university and its constituents to address complex economic, environmental and social challenges through research, education, entrepreneurship, economic diversification and growth
 - Establish an Office of Engagement and Outreach
 - Support economic development in Wyoming through ENDOW and other opportunities
 - Enhance extension programming
- Build a statewide community of learners by collaborating with schools, community colleges and tribal nations to connect students and citizens
 - Bring outreach educational and cultural opportunities to the state
 - Expand partnerships with the Eastern Shoshone and Northern Arapahoe tribes
- Engage strong and celebratory alumni who connect UW to regional, national and international communities, welcome graduates into a lifetime association with the university and boost all our endeavors through a culture of giving
 - Engage in a variety of strategies to establish contact with a greater number of alumni

- Engage alumni in student recruitment and mentoring
- Develop and promote competitive athletic teams that conjure enthusiasm and pride for UW

4. A High-Performing University: Assure the long-term strength and stability of the University by preserving, caring for and developing human, intellectual, financial, structural and marketing resources.

- Build human capital
 - Enhance workplace conditions to recruit, retain and reward all UW employees and encourage innovation and commitment
 - Implement career ladders for staff
 - Provide and incentivize participation in professional development that enhances technical skills of employees
 - Develop mentoring and leadership programs for faculty and staff
 - Increase the number of endowed faculty positions, including new types such as distinguished professorships, or state engagement professorships
 - Hire strategically to ensure robust disciplinary and interdisciplinary scholarship and to support academic and co-curricular opportunities that meet the needs of 21st century students
- Strengthen marketing effectiveness
 - Effectively communicate UW's opportunities to prospective students, regional partners and national and global markets
 - Institute a centralized plan that tells our story and positions UW for recognition in all of these contexts
 - Develop a comprehensive branding, public relations and marketing campaign
- Enhance financial resources
 - Stabilize, diversify and enhance revenue streams
 - Launch a substantial and strategic capital campaign
 - Develop a coordinated plan for managing intellectual property, entrepreneurship and technology development and transfer
 - Drive operating efficiencies to save costs while maintaining services
 - Analyze tuition and fee structure
- Enhance Institutional operations and planning
 - Build a more highly functioning university by embracing transparency at all levels of administration and operations as well as by streamlining, updating and consistently implementing governing regulations and policies
 - Create and implement university-wide plans such as a campus master plan, housing plan, capital and fiscal plans
 - Create and implement metric-based strategic plans for all university units
 - Honor UW's commitment to the environment by instituting sustainability initiatives in daily operations, renovations and new construction

Section 5. Performance Measures

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Goal 1: **Driving Excellence: Enrich** Join together as an intellectual community already renowned for its regional, national and global relevance and impact by fostering and rewarding excellence in teaching, scholarship, innovation and creative endeavor.

PERFORMANCE INDICATORS	BASELINE	2022 TARGET
Changes in external recognition of scholarly work	Invest in a database	1 decile improvement from baseline indicators
External research funding: awards and expenditures	\$95.33 M external awards/\$106 M in expenditures for 2016	\$115 Million External funding
Income-bearing IP licenses	2 to 3 per year	5 or more per year
Degree programs created, substantially modified, or eliminated	192 degree programs	8 New academic programs; 4 modified or eliminated
Number of international students (undergraduate and graduate)	791	1,050
Number of students and faculty participants in study abroad	425: 395 students, 30 faculty	650 students and faculty

Goal 2: **Inspiring Students:** Inspire students to pursue a productive, engaged and fulfilling life and prepare them to succeed in a sustainable global economy.

PERFORMANCE INDICATORS	BASELINE	2022 TARGET
Overall enrollment (enrollment growth projected for both in-state and out-of-state students)	12,366	13,500
Enrollment of transfer students	967	1,200
Enrollment of underrepresented students	13%	17%
Retention rate for FTFT (First-time, full-time, baccalaureate degree-seeking)	76%	80%
Construction of new residence halls	Create a 10 Year Plan for Student Housing	10 Year plan in implementation; 2-3 new residence halls in construction or completed
Student participation in support services	16%	25%
4 and 6-year graduate rates for undergraduates	25.8% / 54.4%	33% / 60%

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PERFORMANCE INDICATORS	BASELINE	2022 TARGET
Percentage of students completing an experiential transcript	Institute co-curricular transcript	25% of seniors have co-curricular transcript
Placement one year following graduation	TBD from new database	85% in jobs or advanced degree programs
Percent of graduates with credential from Honors College	4%	8%

Goal 3: **Impacting Communities:** Improve and enhance the health and well-being of our communities and environments through outreach programs and in collaboration with our constituents and partners.

PERFORMANCE INDICATORS	BASELINE	2022 TARGET
Carnegie Community Engagement Classification	Not designated	Qualified to submit for 2024 deadline
Attendance at intercollegiate athletic events	275,372	310,000

Goal 4: **A High-Performing University:** Assure the long-term strength and stability of the University by preserving, caring for and developing human, intellectual, financial, structural and marketing resources.

PERFORMANCE INDICATORS	BASELINE	2022 TARGET
Campus climate and environment	Fall 2018 campus climate survey	TBD from survey data
Employee job satisfaction	Participate in Chronicle of Higher Education “Great Colleges” job satisfaction survey	Improvement from 2017 baseline
Number of endowed faculty positions	36	60
Total annual university revenue	\$505.6 M	\$555 M
Growth of university endowment	\$450 M	\$650 M
Deployment and full utilization of Enterprise Management Systems	Underway	Completion
Implementation of an incentive-based, decentralized budgeting system	Beginning	Completion

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PERFORMANCE INDICATORS	BASELINE	2022 TARGET
Review and update of all university regulations and policies	Underway	Completion
Campus Sustainability Ranking (STARS)	Not designated	Bronze

Unit 6701- Base Funding

Statutory Authority

See Department Statutory Authority

Standard Budget

Part A: Narrative

As outlined in Table 1 below, the University of Wyoming (UW) started the 2017-2018 biennium with approximately \$387.7 million of block grant base funding. Throughout the 2017-2018 biennium, UW took a net reduction of \$40.6 million to begin the 2019-2020 biennium budget process with 347.1 million of block grant base funding. Furthermore, since the 2015-2016 biennium budget, the University has had \$8 million of its block grant funding earmarked specifically for new investments in its division of intercollegiate athletics, so the effective block grant base funding for UW for the 2019-2020 biennium is \$339.1 million. Therefore, as calculated in Table 2, since the beginning of the 2017-2018, the University of Wyoming has had an effective reduction to its block grant base funding of 12.5%

Table 1

	<i>in millions</i>
Block Grant at End of 2015-2016 Biennium	\$356.2
2017-2018 Insurance & Retirement Adjustments	16.8
<u>2017-2018 Compensation Adjustments</u>	<u>14.7</u>
Block Grant at Beginning of 2017-2018 Biennium	387.7
<u>2017-2018 Biennium Net Reductions to Block Grant</u>	<u>(40.6)</u>
Block Grant at Beginning of 2019-2020 Biennium	347.1
Block Grant Specifically Earmarked for Athletics	(8.0)
University's Effective Block Grant Funding for 2019-2020 Biennium	\$339.1

Table 2

	<i>in millions</i>
University's Effective Block Grant Funding for 2019-2020 Biennium	\$339.1
<u>Block Grant at Beginning of 2017-2018 Biennium</u>	<u>387.7</u>
Effective Reduction to Block Grant	(\$48.6)
Effective Percent Reduction to Block Grant	-12.5%

The University's Executive Team understood (and still understands) the context and needs that were the drivers for the reduction of state support during the 2017-2018 biennium and therefore immediately took proactive and strategic steps to transform, reorganize and reduce its operations to account for the decline in funding while maintaining and protecting its core missions of research, teaching and service to the state as much as possible. In addition to all divisions of UW reducing their operating budgets through plans submitted and reviewed by the Financial Crisis Advisory Committee (which was formed in the summer of 2016), the University took the following institution-wide action to permanently reduce its budget:

- Standardized faculty workloads
- Conducted an academic program review and eliminated 5 programs with low enrollment
- Eliminated the duplication of services, especially with the reorganization of the Outreach School
- Offered two retirement/separation plans
- Consolidated its fleet
- Consolidated Information Technology (IT) personnel and services
- Reduced fringe benefits and implemented a standard fringe rate
- Implemented strategic sourcing for three major procurement categories

However, the most substantial budgetary reductions the University was able to realize came unfortunately from position eliminations and reductions. As detailed in Table 3 below, UW removed 370 positions from its operating budget during the 2017-2018 biennium.

Table 3

Position Type	Vacancy Eliminations	Reductions in Force (RIF)	Total Eliminations and RIFs
Faculty	177	0	177
Staff	156	37	193
Total	333	37	370

While the University of Wyoming, with the approval of its Board of Trustees, does have the ability to generate additional revenue through increases to tuition and fees; which the University did in fact do during the 2017-2018 biennium, the revenue generated is either committed to contractual obligations or is pass through revenue used to cover inflationary costs of supplies and services required to deliver a high-quality education, and therefore cannot (and should not) be considered a funding source to supplant or off-set reductions in UW's block grant base funding.

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For instance, the largest portion of revenue generated by increases to tuition is obligated to support the contractual salary and benefit costs associated with the annual faculty and academic professional promotion and tenure process. During the 2017-2018 biennium, 120 faculty and academic professionals were promoted and/or awarded tenure and the additional salary and benefit costs for these 120 promoted and/or tenured positions will be over \$2.6 million for the 2019-2020 biennium. Furthermore, the remaining portion of revenue generated from tuition increases as well as increases to fees goes to support inflationary costs outside of the University's control related to supplies and services for UW's academic units, libraries and information technology division required to deliver a high-quality education to students. Finally, the University experienced a decline in enrollment during the 2017-2018 biennium and therefore did not realize as much additional revenue from increases to tuition and fees as anticipated or needed to cover the increased costs described above.

In general, the block grant funding supports the state's only university, established in 1886, as a land-grant institution with teaching, research and public service responsibilities. The university serves enrolled undergraduate, graduate and non-degree students, continuing education participants, high school students, alumni, business assistance clients, community assistance clients, clients requesting information, agricultural assistance clients, research clients, health care patients, cultural programs patrons, athletics fans and other Wyoming citizens.

University enrollment is predominantly on the Laramie campus (over 80 percent of federally reported enrollment on a student headcount basis), with the remainder of enrollment occurring through outreach programs and sites. A significant number of students throughout the state are also provided with professional development offerings. Final Fall 2016 headcounts, including professional development, outreach and online students were 13,298. There were about 800 international students on campus, with over 1,600 new first-time students each year and about 1,300 undergraduate students transferring to UW annually. Approximately 400 student athletes participate in 17 intercollegiate varsity sports in the NCAA Division I, Mountain West Conference. Students enjoy a low 14:1 student-faculty ratio. Resident undergraduate tuition and fees rank as the lowest among all public doctoral institutions across the United States. In 2015-16, UW awarded 2,860 degrees, the largest in the history of the institution. UW has updated and refined its capital facilities plan and is now able to closely align its fundraising strategies and budget requests with its near- and long- term capital facilities priorities in the context of a long-range development plan for the campus. UW receives significant funding from external research and its foundation.

Part B: Revenue

None.

Unit 6704- State Matching Fund

No standard budget presented for this unit.

Unit 6708- Brucellosis

Statutory Authority

See Department Statutory Authority

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Standard

Part A: Narrative

Continuation of the standard budget funding for brucellosis testing research is needed for the fundamentals of the brucellosis testing and research work to continue.

Though part of UW's block grant, UW proposes that these funds continue to be separately accounted for in the same manner as funding for UW's School of Energy Resources. While there are educational benefits to students that derive from this effort, those are incidental. The principal purpose of these funds is to lay the foundation for a national/international research effort regarding brucellosis research.

Part B: Revenue

None.

Unit 6801- SER

Statutory Authority

See Department Statutory Authority

Standard

Part A: Narrative

This request is for the continuation of the standard budget for the School of Energy Resources (SER). First authorized and funded by the Legislature in the 2006 Budget Session, the School of Energy Resources has three primary objectives: (1) provide nationally-competitive undergraduate and graduate instruction in energy-related disciplines, (2) advance Wyoming's energy-related science, technology and economics research, and (3) support scientific and engineering outreach through dissemination of information to Wyoming's energy industries, companies, community colleges, and government agencies. These objectives align with the overall mission of the university and include scholarship, research, and service in the energy resource area.

SER embarked on creation of strategic areas of concentration in FY 2012, and developing those concentrations continues, now in conjunction with the College of Engineering and Applied Science Tier 1 Initiative. SER developed a new concentration on Carbon Engineering in 2016 with the goal of developing technologies to enable manufacturing of carbon-based products from coal and natural gas, and continues an aggressive program of R&D in this area. SER supports new faculty recruiting and start-up, and early research activities in the strategic areas of unconventional oil and gas technologies; advanced conversion of fossil energy resources to value-added products; renewable energy sources; and scholarly areas related to the support of policy and legal issues associated with Wyoming's energy and natural resources.

Historically, the Legislature has appropriated funds for SER separate from UW's block grant. The base budget amount equals the 2017-2018 biennium appropriation.

Part B: Revenue

None.

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Unit 6901- Tier 1

Statutory Authority

See Department Statutory Authority

Standard Narrative

Part A: Narrative

This request is for the continuation of the standard budget for the Tier 1 Engineering initiative at the UW College of Engineering and Applied Sciences.

The Governor, the Legislature and the Wyoming Governor's Energy, Engineering, STEM Integration Task Force (WGEESIT) brought forth a vision of a nationally recognized College of Engineering and Applied Science reflecting academic excellence and world-class research. The Tier 1 initiative would provide greater opportunities for students to work with world-class faculty in nationally ranked programs and engage in cutting-edge research and learning. The key strategic goals are: 1) Excellence in undergraduate education; 2) World-class research and graduate education; 3) Productive economic development through partnerships and 4) K-14 STEM education.

In April 2013, the university provided a response to the WGEESIT report of December 2012 to ramp up new funding for academic programs in UW's College of Engineering and Applied Science (CEAS). Subsequently, a detailed budget was formulated, and funding of \$8 million of General Fund appropriation for Phase I of the initiative was requested by the Governor and appropriated by the Legislature.

The base budget amounts equals the 2017-2018 biennium appropriations plus adjustments. The Budget Division Adjustments to the Base reflect standard changes applied to the university in the same manner as other state agencies. The changes include, but may not be limited to, additions for continuing salary and benefits obligations. The university makes a contribution to this initiative with internal resources.

Part B: Revenue

None.

Unit 9601- NCAR

Statutory Authority

See Department Statutory Authority

Standard Budget

Part A: Narrative

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Pursuant to Article V of the Agreement between the University of Wyoming, Wyoming Business Council and University Corporation for Atmospheric Research (UCAR), dated May 18, 2010. UW is appropriated \$1,802,339 per biennium, but will continue to provide \$1 million to UCAR on an annual basis in the initial year (2010) and for nineteen (19) years thereafter so long as the NCAR-Wyoming Supercomputing Center (NWSC) is in operation as a National Science Foundation-sponsored facility. The University Consortium for Atmospheric Research and the National Center for Atmospheric Research (UCAR/NCAR) will use the \$1,000,000 annually in the following way:

- 75% or \$750,000 will go into an account toward purchase of the next computer. NCAR replaces the top line computer every 3-4 years.
- 25% or \$250,000 will aid in purchasing mass storage required to maintain a fully functioning High Performance Computer. Load balancing the computer's processing capability with the correct amount of data inflow is a significant issue. As computers become more powerful and faster, mass storage must keep pace.

Part B: Revenue

None.

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Priority	Division	Unit #	Program Name / Description	\$	GF	FF	OF	# of Positions
1a	6700	6701-6708	University of Wyoming State Aid ; funding supports the state's only university established in 1886, as a land grant institution with teaching, research and public service responsibilities.	\$347,108,318	\$347,108,318	\$0	\$0	N/A
1b	6800	6801	School of Energy Resources provides nationally-competitive undergraduate and graduate instruction in energy-related disciplines; advances Wyoming's energy-related science, technology and economics research; and supports scientific and engineering outreach through dissemination of information to Wyoming's energy industries, companies, community colleges, and government agencies.	\$18,303,167	\$18,303,167	\$0	\$0	N/A

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1c	6900	6901	Tier 1 Engineering initiative provides for excellence in undergraduate education; world-class research and graduate education; productive economic development through partnerships and K-14 STEM education.	\$8,369,436	\$8,369,436	\$0	\$0	N/A
1d	9600	9601	NCAR MOU ; pursuant to agreement, UW provides \$1 million on an annual basis for the operation of the NCAR-Wyoming Supercomputing Center operated as a National Science Foundation-sponsored facility.	\$1,802,339	\$1,802,339	\$0	\$0	N/A

067 - University of Wyoming 2019-2020 Biennium Budget Request									
Priority	Unit #	Description	Department Request		Governor's Recommendation				
			Amount	Pos	Amount	GF	FF	OF	Pos
1	-	Top Tier Science Initiative, Phase I – Funding Release	\$0	0	\$0	\$0	\$0	\$0	0
2	-	Footnote 3 & 4 - Aircraft replacement and sinking fund	\$0	0					
3	6801	SER-Carbon Engineering Research	\$1,000,000	0					
4	6701	UW Rodeo	\$100,000	0					
Totals									
			General Fund	\$1,100,000					
			Federal Funds	\$0					
			Other Funds	\$0					
			Total Request	\$1,100,000					

1. PRIORITY #1 TOP TIER SCIENCE INITIATIVE, PHASE I – FUNDING RELEASE

Amount Requested: Release of previously appropriated construction funds in the amount of \$100,000,000

A. EXPLANATION OF REQUEST:

The University of Wyoming requests release of all funds appropriated for deposit to the UW science initiative account created through Section 317(c), Chapter 142, Session Laws of Wyoming, 2015 [UNIVERSITY OF WYOMING TOP-TIER SCIENCE PROGRAMS & FACILITIES].

The University of Wyoming is ready to begin construction in the fall of 2018 and is requesting release of all previously appropriated funds. No new General Funds are being requested through this priority.

The Wyoming Governor's UW Top-Tier Science Programs and Facilities Task Force and the University of Wyoming have proposed a strategic investment, known as UW's Science Initiative, to build on emerging growth areas in scientific imaging and integrative biology that will elevate UW's core science disciplines to nationally recognized top-quartile status.

Two phases of development are envisioned for the Science Initiative. Development of both phases is essential to achieve the goal of top-quartile status in the core sciences. In Phase I, two new research centers, four large active learning classrooms, and a teaching and mentoring program would be developed. In

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Phase II, vacated lab spaces in the Biological and Physical Sciences buildings, the Aven Nelson Building, and the east wing of the Animal Sciences-Molecular Biology Building would be renovated, and a new 4.3-meter telescope center would be developed on Jelm Mountain.

Phase I of the Science Initiative involves the following central elements:

1. State-of-the-art facilities for scientific imaging in the Center for Advanced Scientific Imaging;
2. State-of-the-art plant growth facilities in the Center for Integrative Biological Research, and needed upgrades in existing animal rearing facilities;
3. A suite of four large active learning classrooms and programs to fundamentally transform science education in the state; and
4. Programs to enhance the initiative's goal of fundamentally transforming science education and research in Wyoming.

Two new research centers—the Center for Advanced Scientific Imaging and the Center for Integrative Biological Research—will form an innovative nexus to stimulate external funding and research productivity and to train the next generation of Wyoming science scholars, teachers and researchers. The centers will be designed to include strategically placed collaboration spaces to foster transdisciplinary research activities focusing on grand challenges facing Wyoming and the nation, and involving chemists, physicists, astronomers and biologists. The collaborative research activities across core sciences disciplines catalyzed by these centers will transform the way the university investigates and teaches science.

The Center for Advanced Scientific Imaging (CASI) will co-locate UW's highly regarded imaging scientists, their student teams, and unique instrumentation in a state-of-the-art staffed laboratory, allowing them to achieve unprecedented sensitivities and efficiencies in probing the fundamental interactions at the atomic, molecular, and cellular levels underlying all next-generation technologies. The Center will rank among the world's best, attracting faculty and students from across the globe as it spotlights Wyoming's commitment to the sciences that serve state and national needs. The CASI will consist of configurable, state-of-the-art rooms to host existing and new microscopy and imaging instruments that require vibration-free and radiation-free, climate-controlled environments. The new microscopy and imaging instruments to be housed in the CASI will include atomic force microscopes, transmission electron microscopes, and X-Ray photoelectron spectrometers, which are essential to modern nanomolecular materials research.

The Center for Integrative Biological Research (CIBR) will bring together UW's world-recognized biologists into a single collaborative space to foster innovation and convergent research activities, which will address some of Wyoming's most pressing environmental, agricultural and health-related challenges. The CIBR will be organized around state-of-the-art plant growth and laboratory animal research facilities specially designed for studies using model and transgenic organisms with appropriate safeguards. The Plant Growth Facility will consist of a centralized shared facility with state-of-the-art greenhouses, growth chambers, and teaching and research laboratories. In addition, the CIBR will include shared faculty research labs and office suites for faculty, research staff, and graduate students from the departments of Botany and Molecular Biology.

A new suite of active learning classrooms (ALCs) will enable UW to surpass peer institutions in the proportion of students educated in such an immersive pedagogical setting, which will ensure their success in a 21st century technological society. These transformative classrooms will be fully leveraged with instructors who are appropriately trained in their use. In these ALCs, working groups of 6 to 9 students will gather around tables supported by computers and video displays that can be connected and shared across the class. The four ALCs will have the following capacities of student stations: one 200-person, one 150-person, one 100-person, and one 50-person.

The Center for Integrative Biological Research, which will house the four new, large active learning classrooms, is new construction. The Center for Advanced Scientific Imaging will use space vacated by the UW Library Annex in the basement of the plaza between the Biological Science and Physical Science buildings, and will require renovation.

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Planning:

The Exterior Design Advisory Committee (EDAC or Committee) for the Science Initiative Facility has been meeting regularly with representatives from the Division of Administration and the design architect to determine the exterior design concept of this new building as it will be the gateway to the northwest corner of campus.

The programmatic interior allocation of space has been guided by the December 2014 Top-Tier Science Task Force Report and the EDAC is supportive of the space assignment and utilization plans.

Anticipated Timeline:

Start Date	End Date	Event
September 2017		UW Board Of Trustees (BOT) Vote on Exterior Design
October 2017	April 2018	Schematic Design (\$3M included in FY18 Budget Plan – funding would come from reserves established by the BOT)
March 2018		Anticipated Approval by Legislature & Governor of Release of Funds
May 2018	October 2018	Construction Documents
July 2018		Funds Officially Released by State
November 2018		Break ground- concrete piers and foundation
April 2019		Vertical concrete walls and steel erection
June 2020		Substantial Completion
July 2020	June 2021	Warranty Period
August 2020		Move-in

2. PRIORITY #2 – Extended Approval- Chapter 31, Section 067, Footnote 3 & 4 of the 2016 Session Laws:- Aircraft replacement and sinking funds.

A. EXPLANATION OF REQUEST: In the 2017-2018 biennial budget, the Wyoming legislature included budget footnotes at Section 067, footnotes 3 and 4 to SEA19 specifying the state’s commitment to allow the State Loan and Investment Board to loan funds to the University of Wyoming to acquire a replacement research

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aircraft. The loan interest rate was set at less than 3%. Specifically, the University requests the terms of the loan be continued and the following footnote be included within the 2019-2020 budget.

“3. Upon application of the university board of trustees, the state loan and investment board may loan funds to the University of Wyoming for the purpose of acquiring a replacement research aircraft for the department of atmospheric science within the college of engineering and applied science. The loan interest rate shall not exceed three percent (3%) and the loan shall otherwise be in accordance with the provisions of W.S. 16-1-109. The aircraft shall be treated as a "facility" for purposes of the loan. The university shall develop a financial plan for repayment of the loan to cover the cost of servicing the loan over the expected life of the aircraft and to cover the cost of distributions to the reserve fund as specified in footnote 4 of this section. The university shall provide a report on this plan to the joint appropriations committee within thirty (30) days after the loan is executed.”

“4. For the use of the university aircraft, the university shall identify and distribute amounts to a reserve fund to cover the cost for routine and planned maintenance, engine replacement and propeller replacement. To the extent funds are available after servicing the loan provided for in footnote 3 of this section, additional amounts to support funding of replacement of the research aircraft shall be included in any contract for use of the aircraft to the extent practicable. Amounts received to support replacement of the aircraft shall be held in the reserve fund. Proceeds from the sale of the research aircraft, engine or any related research instrumentation shall be credited to the reserve fund.”

The Atmospheric Sciences Department is a highly regarded program within the University of Wyoming College of Engineering and Applied Sciences and one of distinction among similar departments in the United States. The department operates the Wyoming King Air Research Aircraft, which is a national and international research platform and helps give Atmospheric Sciences its reputation.

The National Science Foundation (NSF) has supported this research aircraft as a national facility for more than three decades. Some 21 people are employed, in whole or in part, as a result of this funding supporting the aircraft and the associated equipment, including technicians, pilots, mechanics and specialized engineers involved in the design and deployment of the specialized equipment which flies in the plane. The Wyoming King Air Research Aircraft draws faculty and students to UW's Atmospheric Sciences Department thus establishing an international reputation.

In FY 2014 Atmospheric Sciences received almost \$6.2 million in external funding, the majority of which is associated with projects either directly supporting the research aircraft or using the research aircraft. As a research platform it also creates opportunities for collaborating with faculty and students around the world. Atmospheric Sciences at the University of Wyoming has built a reputation around measurement of small particles in the atmosphere which are critical because all precipitation forms on such particles. Water condensed onto particles forms clouds, therefore cloud microphysics is another area of strength. The King Air and the instrumentation built by UW engineers to measure atmospheric phenomena are critical in understanding how precipitation forms, cloud structure and ultimately how these relate to precipitation in the form of snow or rain.

Manufactured in 1977, the current UW Research Aircraft is 40 years old. It has had to accommodate specific, very precise and unique equipment to make innumerable and extremely varied measurements of the atmosphere while flying. Due to airframe modifications, the weight of the plane and equipment, and heavy weather this

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airplane experiences due to the nature of the research, the Federal Aviation Administration (FAA) has limited the airframe to 10,000 hours. The aircraft is nearing this limitation.

A new plane that continues to support cutting edge technology and research in atmospheric science is critical in maintaining this level of excellence. In addition a new replacement aircraft will enhance research capabilities by allowing for extended range while on missions, permitting an increased payload of instrumentation, making more electrical power available and increasing the altitude capabilities of the research platform. Without this aircraft, this highly regarded program will cease to exist at UW.

3. PRIORITY #3 – SCHOOL OF ENERGY RESOURCES – CARBON ENGINEERING RESEARCH

Amount Requested: \$ – 1,000,000 One-Time General Fund

A. EXPLANATION OF REQUEST: The University of Wyoming, School of Energy Resources is requesting a one-time General Fund appropriation in the amount of \$1,000,000 to support research at the University of Wyoming for the purpose of development and demonstration of critical technology for conversion of Wyoming coal to value added carbon-based products. This request follows a special appropriation of \$2,000,000 by the Legislature in 2016 to commence the Carbon Engineering research program at UW.

UW's School of Energy Resources distributed the previous appropriation together with an additional \$2,000,000 among 15 separate research projects with better than expected results:

- Five patents awarded or in process in FY17
- Fifteen patents expected to be awarded in FY18
- Five non disclosure agreements executed with private sector groups that are interested in commercializing coal-to-products manufacturing endeavors in Wyoming

With continued success in technology development at the university, the aspiration is to identify the location, scale and scope of at least one “coal refinery” in Wyoming in partnership with an able private sector partner.

B. REQUEST BY OBJECT CODE, FUNDING AMOUNT AND FUND SOURCE:

	Description	Amount	Funding Source
1	0626 – Grant Pymt	<u>\$ 1,000,000</u>	General Fund - 1001
	Total	\$ 1,000,000	General Fund - 1001

C. PERFORMANCE JUSTIFICATION: The funds requested through Priority 3 will provide necessary support for the important research that is currently underway to improve the probability of successful implementation of this economy-expanding endeavor. Additionally, it would allow UW to continue to improve its statewide engagement and accelerate the development of technical solutions for continued use of coal.

4. PRIORITY #4 – UW RODEO

Amount Requested: \$100,000 – One-Time General Fund

A. EXPLANATION OF REQUEST: The University of Wyoming is requesting that the legislature continue the state appropriation of \$100,000 for the FY 19-20 biennium for University of Wyoming Athletics to enhance the University of Wyoming Rodeo Team. This funding allows the Athletics Department to continue serving the rodeo team with strength and conditioning training. It also allows the Athletics Department to continue providing for graduate assistants to supervise and coach the students. Further, the appropriation provides for an assistant coach. This coach brings expertise in past National College Finals exposure.

These funds were first appropriated in FY 2015-2016 biennium and then were renewed in the FY 2017-2018 biennium.

B. REQUEST BY OBJECT CODE, FUNDING AMOUNT AND FUND SOURCE:

	Description	Amount	Funding Source
1.	0626 – Grant Pymt	<u>\$100,000</u>	General Fund - 1001
	Total	\$100,000	General Fund - 1001

C. PERFORMANCE JUSTIFICATION: Priority 4 would provide funding for the UW Rodeo Team. The funding has been appropriated as one-time funding since 2015-2016. This funding has been beneficial to the team. The athletic training that is funded with this appropriation allows for rapid return from injuries and strength conditioning that is essential to peak performance. The coach has provided an additional set of eyes in guiding the team. The teams have benefited greatly from the experience of two coaches in different areas of rodeo, and the weight room exposure enhances preparation.