

UNIVERSITY OF WYOMING
Endowed Faculty Report
From the Office of the Vice President for Academic Affairs
1 OCTOBER 2021

To the Joint Appropriations and Joint Education Interim Committees

The University of Wyoming has benefited greatly from the Excellence in Higher Education Endowment, which allows the university to establish state-funded endowed faculty positions to advance teaching and scholarship in the areas of distinction defined in the university's strategic plan. It has also benefited from state appropriations targeted toward faculty positions in legislatively identified areas of priority, in particular the School of Energy Resources positions and the Sustainable Business Practices positions. Furthermore, faculty positions supported (partially or fully) by private endowment gifts through the University of Wyoming Foundation enhance UW's teaching and research programs in areas of mutual interest to the institution and its donors. This report covers all such positions. Part A covers the Excellence in Higher Education Endowment (a continuation of legislative reports prepared annually); Part B covers other faculty positions identified in legislative appropriations; and Part C covers privately endowed faculty positions.

Part A. Excellence in Higher Education Endowment Report
[Pursuant to W.S. 21-16-1204]

1. Background

Created in 2006, the Excellence in Higher Education Endowment was funded at \$105 million, the earnings from two-thirds of which, or \$70 million, was designated to the University of Wyoming. Earnings on the state-managed endowment, which are distributed by the state treasurer to the university, allow the university to establish endowed faculty positions (known as Wyoming Excellence Chairs) and to acquire instructional and scholarly materials, classroom equipment, and other resources necessary to support the work of endowed chairs. Distributions to the university are based on a spending policy of 4.75% of the average of the market value of the corpus for each of the preceding five (5) fiscal years or the fiscal years up to five for which there was a balance.

The statute imposes some constraints on the uses of the endowment earnings. Not less than 2/3 of the amounts must be used to expand university instruction and research in disciplines related to economic and social challenges facing Wyoming. No fewer than four Wyoming Excellence chairs must be in the College of Education. The remaining endowed faculty members must have established reputations in other areas of distinction as identified in the university academic plan, including business, arts and humanities, mathematics, cultural studies, healthcare, economics and law.

To jump-start the program while the endowment corpus was filling, and pursuant to Senate Enrolled Act 54 Section 1 (c) (ii), the Legislature appropriated \$2.8 million in one-time funds, subsequently reduced to \$1.8 million, to be distributed to the University of Wyoming and expended exclusively for the purposes specified in W.S. 21-16-1202 (b). The one-time appropriation allowed the university to begin filling positions in fiscal years 2007 and 2008. Those initial positions were then funded permanently with earnings from the Excellence in Higher Education Endowment.

2. Summary, history, and accomplishments of authorized positions

Under W.S. 21-16-1204, UW must report annually on faculty positions partially or fully funded through the endowment program, including the name of each faculty member filling a Wyoming Excellence chair, their education and experience, their research and instructional activities, and the benefits of their research and instruction.

The jump-start appropriation became effective July 1, 2006. The Provost developed a planning budget for the allocation of positions to be supported with these funds during the 2007-2008 biennium, while the \$70M endowment account began to fill. Based on the planning budget, three searches were authorized with jump-start funds: two in the College of Education (fulfilling one-half of the legislative mandate requiring four positions in the College of Education) and one in the College of Arts and Sciences Creative Writing MFA program (aligned with UW's area of distinction Cultural Assets, Arts, and Humanities).

During the second year of that biennium, as more information became available about anticipated payouts to the university from the state-managed endowment account, the provost's office authorized more searches, in two phases. Seven additional Wyoming Excellence endowed positions were authorized during fiscal year (FY) 2008, and five more were authorized in July 2008 for a total of fifteen authorized endowed faculty positions. Four of these 15 positions were to be funded with earnings combined from both the state account and private endowment gifts to the university, allowing for a greater number of search authorizations and establishing a unique private-public partnership in endowing distinguished professorships.

The decision to authorize the 15 fully or partially funded positions was based on a budget for salary, benefits, and other position-related costs consistent with the projected payout estimates provided by the state treasurer's office prior to the financial market declines realized later in FY2009. Subsequent financial market events mandated the need to reevaluate the size of the budget and number of permanent positions that could be supported by the endowment earnings. Given the need for exceptional prudence in filling permanent faculty positions, and consistent with representations to the Joint Appropriations Committee, the university placed a number of the previously authorized searches on hold through FY2010. At the beginning of FY2011, following careful evaluation of the anticipated earnings stream and the accumulated reserves held in the university account, the provost authorized searches to fill a number of the on-hold positions, including some for a bridging period only in order to ensure that permanent funding commitments would remain in line with the anticipated funding stream. Then, at the beginning of FY2013, based on having received a significantly larger payout during FY2012 and as well as enhanced projected payout estimates from the state, and a substantial private gift, the provost was able to complete the originally planned position allocations, and augment the program with additional allocations to Nursing, Law, the Haub School (in collaboration with the College of Business), Global and Area Studies, and American Indian Studies.

In FY2021, sixteen (16) positions were fully or partially funded by the Wyoming Excellence Endowment, and additional positions were supported with endowment funds. Although all positions are subject to available funding in any year, the ongoing annual expenses associated with filling the 16 funded positions were in line with the state projections for annual earnings. The expenses associated with the additional bridge-funded (or temporarily) supported positions are funded with accumulated reserves beyond those needed to cover the risks of another period of earnings declines. Individual plans are in place to support each of the bridge-funded positions after the period of support by the Endowment has ended.

The 16 authorized positions conform to the legislative mandate. Four positions in Education, as prescribed by the legislation, have been created and all are important to the future of K-12 education in the state: literacy education (2 positions), science education, and mathematics education. The strategy for allocation of the other positions was to coordinate a set of positions in areas of distinction identified in the strategic plan and professions critical to the state such as business, law, and health professions. In addition, positions were selected for allocation based on their potential to address economic and social challenges in the state. Some of the Excellence Chair position allocations complement a group of faculty positions focused on energy resource sciences that are funded by the School of Energy Resources. The allocation strategy is reflected in the following table, and the accomplishments of the currently filled positions and the benefits of their research or instruction to students, businesses, industries, or other Wyoming residents are described in detail below.

Allocation strategy	# Positions (including partially funded)	College/Academic Unit	Names
Education	4	Education	Dr. Cynthia Brock, Dr. Leigh Hall, Dr. Rick Kitchen, Dr. Tim Slater
Life Sciences, Environmental and Natural Resource Sciences, Earth and Energy Sciences	7	Agriculture & Natural Resources; Geology/Geo-Physics; Engineering & Applied Science; Haub School	Dr. Holly Ernest, Dr. Dario Grana, Dr. Mohammed Piri, Dr. Mohamed M. Ahmed, Dr. John Koprowski, Dr. Cynthia Weinig, Dr. Bryan Shuman
Professions Critical to Wyoming (other than education)	3	Haub School; Health Sciences (Kinesiology & Health Promotion); Law	Temple Stoellinger, Dr. Christine Porter; Danielle Cover
Other Economic and Social Challenges	2	Haub School; Business	Dr. Steven Smutko, Dr. H. Jo Albers

FY 2020 Accomplishments of Wyoming Excellence Chairs

COLLEGE OF EDUCATION

Four of the permanent full-time positions reside in the College of Education, with focuses on literacy, science education, and mathematics education. The individuals who hold these positions are developing and leading nationally recognized programs in these fields and are expected to be magnets for attracting the best and brightest junior faculty and students into these critical areas of teaching need in Wyoming. These positions represent the four Wyoming Excellence chairs that must, by law, be in the College of Education.

Dr. Cynthia Brock, (Ph.D. in Educational Psychology, Focus: Literacy & English Learners, Michigan State University) *Wyoming Excellence Chair in Elementary Literacy Education*. Across the past year, Dr. Brock worked with Dr. Dana Robertson (Executive Director of the Literacy Research Center and Clinic) and Dr. Leigh Hall (Wyoming Excellence Chair in Adolescent Literacy Education) to develop collaborative research/professional development literacy learning partnerships in the following counties: Teton, Sublette, Natrona, and Fremont. Dr. Brock worked with Dr. Kate Welsh (who took over the leadership of the College of Education Academic Writing Fellows Initiative) to successfully implement the fourth year of the College of Education Academic Writing Fellows Initiative; this is a yearlong initiative that started in June 2020 and ended in June 2021. Years one through four of this initiative were so successful that the Initiative was extended to a fifth year. Dr. Brock collaborated with Drs. Amanda DeDiego, Lydia Nganga, and Reed Scull to implement the fourth year of the College of Education Mentoring Program. For the third year in a row, Dr. Brock served as the Chair of the College of Education Tenure and Promotion Committee. She also served as a committee member on the College of Education Diversity Committee. The College of Education initiatives developed by Dr. Brock and her colleagues—and Dr. Brock’s work serving on committees in the College of Education—benefit the residents of Wyoming because they provide ongoing learning, development, and support to the educators who teach the pre- and in-service teachers in the state of Wyoming. In conjunction with Dr. Dana Robertson, Dr. Brock sponsored a group of UW doctoral students to present research at the virtual 2020 Literacy Research Association Conference. This group won a LRA “Best Paper Award” for their work entitled, “Co-Constructing Dialogic Spaces that Promote Agency in School/University Literacy Professional Development Partnerships.” Dr. Brock served the second year of a three-year term on the Literacy Research Association Board of Directors. Dr. Brock and Dr. Vicky Zygouris-Coe completed their tenure as department co-editors of the ‘Text and Resource Review Forum: Professional Resources’ for the *Journal of Adolescent and Adult Literacy*. During the summer of 2020, Dr. Brock served on the Wyoming Department of Education K-3 Reading Taskforce led by Joe Simpson from McREL International. Dr. Brock serves on the Wyoming English Language Arts Council (WELAC) Board of Directors. WELAC is the Wyoming affiliate for the National Council of Teachers of English. Dr. Brock co-authored an *English Journal* paper entitled “The Intersections of Nature and Student Voice” with members of the *Wyoming English Language Arts Council*. The paper, based on a summer writing camp for children hosted for several years by members of the *Wyoming English Language Arts Council*, received the 2020 Paul and Kate Farmer *English Journal* Writing Award. Dr. Brock served a second year as a consultant to a Bureau of Indian Education (BIE) grant focused on preserving Northern Arapaho language and culture that was awarded to St. Stephen’s Indian School in Wyoming. Across the 2020/21-year, Dr. Brock co-wrote one grant, one book, eight journal articles, and three book chapters. Dr. Brock’s state, national, and international scholarly work benefits the teacher educators and educators she serves in the state of Wyoming because her ongoing learning and development informs the nature of the work that she does with teacher educators, educators, administrators, and children in the state of Wyoming.

Dr. Richard Kitchen, (Ph.D. Curriculum & Instruction Mathematics Education, University of Wisconsin-Madison) *Wyoming Excellence Chair in Mathematics Education*. In 2020-21, Dr. Kitchen continued in his role as the coordinator of the Ph.D. degree program in Mathematics Education at the University of Wyoming. In fall 2021, 15 students will be enrolled in the program. The vast majority of students in the Ph.D. degree program in Mathematics Education live and work in Wyoming. During the 2019-20 academic year, Dr. Kitchen led the effort to recruit the first cohort of students into the new Ed.D. Concentration in Mathematics Education in the College of Education at UW. The new degree program received final university approval in spring 2020 and the program launches in fall 2021. The initial cohort will have 11 new students, including 3 students who live and work in Wyoming. In the College of Education, Dr. Kitchen served as a mentor for three faculty members. Also during 2020-21, Dr. Kitchen was the lead author of three grant proposals, two were submitted to the Institute of Education Sciences (IES) in the U.S. Department of Education and one was submitted to the Bill & Melinda Gates Balance the Equation: A Grand Challenge for Algebra I competition. Fremont County School District #14 in Ethete, Wyoming was the proposed beneficiary of the Bill & Melinda Gates project. In 2020-21, Dr. Kitchen published 4 refereed journal articles, made two presentations at the 2021 American Educational Research Association (AERA) Virtual Annual Meeting, and presented at the 42nd Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA). Internationally, Dr. Kitchen served as an external reviewer for the South African National Research Foundation (NRF), supporting the five-year assessment of both the Research Chair in Mathematics Education and the Numeracy Research Chair. Despite the COVID-19 pandemic, Dr. Kitchen collaborated with the Los Alamos National Laboratory Math & Science Academy in 2020-21 to offer professional learning workshops in mathematics for elementary and middle school teachers via Zoom.

Dr. Leigh A. Hall, (Ph.D. Curriculum and Instruction, Michigan State University) *Wyoming Excellence Chair in Literacy Education*. Dr. Hall engaged in data analysis for her two-year research project on online teacher education to help middle and high school teachers improve their literacy instruction. As part of this project, she mentored two doctoral students in data analysis. Two manuscripts from this project are under review, one presentation has been given, and three more are planned for the 2021-2022 year. Dr. Hall began designing a research project using Amazon's Alexa device to further extend professional development opportunities to teachers in Wyoming. This project is expected to launch Fall 2021. Additionally, she mentored one faculty member on how to use Alexa to provide additional outreach to undergraduate students in the College of Education. Dr. Hall, in conjunction with Dr. Cynthia Brock and Dr. Dana Robertson, secured a book contract with Guilford press to produce an edited book on innovative professional development practices which will feature some of the work that has been conducted throughout Wyoming. Dr. Hall was invited by Peter Lang Publishers to write a research memoir on her work with adolescent struggling readers and is in the process of developing it. With the support of the College of Education, Dr. Hall has completed redesigning the literacy masters' program and has received the appropriate approvals to launch it beginning Summer 2022. This new program allows for teachers to develop both broad and deep knowledge in literacy education in order to effectively teach diverse learners. As this program launches, she hopes to develop a strong online community (the program is asynchronous online) to better support teachers. During this year, she mentored a doctoral student in engaging in a literature review on the research around this and plans to bring recommendations forth to faculty in the fall. Dr. Hall engaged in several invited presentations including two podcasts, one invited talk about the future of higher education with St. John's University in New York and one on leveraging social media to increase your impact at the University of Maryland (both held online). She also presented her work at five conferences this year (all held online). Finally, Dr. Hall was recognized as one of 30 high education influencers that should be followed by Ed Tech Magazine.

Dr. Tim Slater, (Ph.D. Geological Sciences, University of South Carolina) *Wyoming Excellence Chair in Science Education*. Dr. Slater is a Professor in the College of Education's School of Teacher Education and Adjunct Professor in the College of Arts & Science's Department of Physics & Astronomy. Dr. Slater is a prolific author being cited thousands of times by international scholars, having published more than 100 refereed journal articles, 26 books, and presented hundreds of papers at conferences, often with his graduate students as co-authors, describing his scholarly research on understanding the underlying cognitive mechanisms related to teaching and learning in introductory science survey courses taught to undergraduates and future teachers. An expert in enhancing STEM and CTE education for indigenous students both in Wyoming and across the Pacific-islands, Professor Slater serves as the Editor-in-Chief for the Journal of Astronomy & Earth Sciences Education and serves as the Senior writer for the Society of College Science Teachers. Winner of numerous national awards—including being distinguished as a Sequoia Fellow of the American Indian Science and Engineering Society (AISES) – and is frequently an invited speaker at education conferences worldwide, he teaches graduate-level courses in evidence-based education research methods and the learning sciences for the College of Education each year to teachers across Wyoming. Along with Wyoming graduate students, he further impacts the state by conducting numerous summer and weekend professional development workshops for K-12 teachers across Wyoming. This past year, his efforts have focused on creating a statewide drone education program, featuring workshops and community education festivals highlighting the teaching of STEM and Career Technical Education in classrooms, and has received extramural funding to support this work supporting Wyoming K-12 teachers and students to learn to engineer and fly drone quadcopters and earn FAA certifications in the service of enhancing Wyoming's emerging technical workforce.

LIFE SCIENCES, ENVIRONMENT AND NATURAL RESOURCES, AND EARTH AND ENERGY SCIENCES

John L. Koprowski, (Ph.D., University of Kansas) *Wyoming Excellence Chair in Environment and Natural Resources*. Dean Koprowski is Professor and Dean of the Haub School of Environment & Natural Resources with a partial appointment in the Department of Zoology & Physiology. Koprowski joined the University of Wyoming as a Wyoming Excellence Chair in October 2020, moving from the University of Arizona where he had spent the last 20 years ending as the Director of the School of Natural Resources & the Environment. His research and teaching emphasize wildlife conservation and management that involves local people in community-based conservation. Arriving in a leadership role during a challenging year, Dr. Koprowski assisted the Haub School through the ubiquitous challenges of the pandemic and economic downturn. He directed efforts to more closely align the School's strengths in interdisciplinary and collaborative solutions to challenges faced in our wild and working lands. Efforts to recruit an endowed chair in energy and environment policy in cooperation with the School of Energy Resources and the development of a proposed WORTH (Wyoming Outdoor Recreation, Tourism and Hospitality) Center with the College of Business attest to success in connecting the Haub School to the two leading economic drivers of our state. Multiple invited virtual presentations and a productive year of research publications have emphasized the value of community-based conservation that involves local people in the development of solutions that permit sustainable livelihoods and wildlife populations to coexist. Dean Koprowski is honored to serve as a Wyoming Excellence Chair and looks forward to his first full year in Laramie.

Dr. Holly Ernest, (Doctor of Veterinary Medicine, Ohio State University; Ph.D. Ecology with focus in wildlife genetics, University of California, Davis), **Professor and Wyoming Excellence Chair in Disease Ecology**, Department of Veterinary Sciences, faculty member in the Program in Ecology, and Affiliate faculty member in the Haub School of Environment and Natural Resources. Dr. Ernest holds certification as Senior Ecologist by the Ecological Society of America. Holly works to improve wildlife conservation, population health, and

management through collaborative research, education, and public outreach in the disciplines of genomics, landscape genetics, and disease ecology. During the 2020-2021 academic year, Dr. Ernest conducted a sabbatical year of research as visiting professor and served as a [Fulbright Fellow](#) at the [Department of Forest & Conservation Sciences](#) at the [University of British Columbia](#) (UBC) in Canada. Holly provided lectures and informal talks in “Genomics and Disease Ecology for Applied Wildlife Conservation” and “How Genomics of Disease Connects Us with Wildlife”. Dr. Ernest gave a talk and answered questions as a panelist on an international Fulbright program on research in Nature, Ecology and Evolution in the current era. As globally, this was a year of change and upheaval with the Covid19 pandemic. British Columbia, as well as Canada in general was in the grips of major epidemic peaks fall 2020, as well as a severe epidemic third wave during spring 2021 not experienced in Wyoming and a shortage of vaccines. Travel within the province was halted, UBC was shut down the entire academic year, with no on-campus interactions, and everything conducted by Zoom through summer 2021. In spite of these challenges, Holly initiated new networks with ecologists in Canada. Through online conference workshops and educational programs, she expanded knowledge of not only genomic science and bioinformatics, but also, through the Fulbright program, her awareness of issues of importance to society, culture, and teaching of human rights, power & equity, and indigenous relations. She led her UW team on research projects to find out how genetics of elk and deer influences the occurrence of chronic wasting disease in Wyoming. With her lab’s students, research scientists, and collaborators, Dr. Ernest co-wrote 10 manuscripts that are published, in minor revision, or submitted for publication. These works covered the breadth of wildlife population health in mule deer, mountain lions, hummingbirds, and otters. You can read more about Dr. Ernest’s Wildlife Genomics and Disease Ecology Lab through her active online presence educates the public with over 30 informational pages and links to publications, www.wildlifegenetichealth.org, and regular Twitter and Facebook postings about her science and team. Holly is very thankful for the opportunities the Excellence Chair offers.

Professor Mohammad Piri, (Ph.D.; Imperial College London), *Wyoming Excellence Chair in Petroleum Engineering and Thomas and Shelley Botts Endowed Chair in Unconventional Reservoirs* in the College of Engineering and Applied Science. In the 2020-2021 fiscal year, Prof. Piri and members of his research group disseminated their research results through more than fifteen (15) papers published (or accepted for publication) in peer-reviewed journals with at least sixteen (16) more manuscripts submitted or in preparation. Prof. Piri and his research team continued further development of the world’s most advanced Center of Innovation for Flow through Porous Media (COIFPM) located in UW’s High Bay Research Facility. In this period, he obtained \$4 million in external research funding from a major national oil company in the Middle East. This initiative is primarily focused on the development of Digital Rock Technologies that involve the creation of computational platforms capable of modeling multiphase flow through disordered rock pore space under wide ranges of flow and wettability conditions. Prof. Piri’s external research funding exceeds \$22 million. His research group currently includes twenty-one (21) Ph.D. students, ten (10) post-doctoral research associates, and five (5) staff members. At least six (6) more Ph.D. students will be joining the team in the next 1-2 semesters. Furthermore, in this period, Prof. Piri established a new branch under COIFPM focused on the computational aspects of flow through porous media through the use of high-performance computing and data processing and visualization techniques, state-of-the-art multi-GPU systems, and other advanced methods and hardware. This branch currently comprises six (6) senior research scientists and four (4) Ph.D. students. Prof. Piri also recruited four (4) high-caliber research scientists for his Digital Rock Technology (DRT) team: (1) Dr. Amin Amooie from Massachusetts Institute of Technology, and (2) Dr. Samuel Fagbemi from UW, (3) Dr. V M Krushnarao Kotteda from UW, and (4) Dr. Maria Vasilyeva from Texas A & M University. Additionally, he graduated four (4) Ph.D. and two (2) MSc students. Prof. Piri taught two classes: 1) Flow through Porous Media and 2) Unconventional Reservoirs. During July 2020 and June 2021, COIFPM held numerous preliminary exams and final thesis defense sessions for its Ph.D. and MSc students. In Spring 2021, for the sixth year in a row, Prof. Piri and his team won

the performance award granted annually by Hess Corporation after their careful evaluation of COIFPM's contributions and accomplishments. Additionally, in April 2020, for the fifth year in a row, a member of Prof. Piri's research group (Mr. Abdelhalim Mohamed) was placed first in the Society of Petroleum Engineers (SPE) Regional Student Paper Contest. Moreover, for the past two years, Prof. Piri's Ph.D. students, Elizabeth Barsotti (2019) and Vahideh Mirchi (2018) won first place in the International Student Paper Contest hosted by SPE. In Fall 2020, Mr. Abdelhalim Mohamed competed at the international contest against the winners of the other SPE regions from around the world as part of the SPE Annual Technical Conference and Exhibition. Prof. Piri's specialty is multiphase flow through porous media with applications in oil and gas recovery from unconventional and conventional reservoirs, pore-scale modeling of displacement processes, wettability, and CO₂ sequestration and leakage. Prof. Piri's expertise and research findings have direct relevance to enhancing oil and gas recovery from the reservoirs in the State of Wyoming and elsewhere. Since joining UW in 2005, he has designed, installed, integrated, and commissioned three unique research facilities that have put the University of Wyoming at the forefront of research in the area of flow through porous media. These research facilities include Encana Three-Phase Flow and Computed Tomography Research Laboratory, Hess Digital Rock Physics Laboratory, and Center of Innovation for Flow through Porous Media. These platforms provide UW students exceptionally rich research and educational experiences that are seldom available elsewhere. Prof. Piri also used these to help attract three new faculty members to the Petroleum Engineering program at UW. Furthermore, he has been diligently working to commercialize the technologies developed in his research group at the University of Wyoming. This has been made possible by a spin-off company, Piri Technologies, LLC, in Laramie, Wyoming. UW is an equity owner of this company. This entity provides distinctive technical services in the broad area of Flow through Porous Media. Through this initiative, Prof. Piri has established an avenue for diversification of the economy in the State of Wyoming as well as creating job opportunities for UW graduates and others. Since the start of its operations in September 2017, Piri Technologies has developed several projects with large national and international corporations. This indicates that its technologies are globally relevant. It currently employs seven (7) full-time, highly talented professionals with advanced degrees. Six (6) of these employees are University of Wyoming graduates with Ph.D. degrees in Petroleum Engineering.

Dr. Dario Grana, (M.S. and Ph.D., Geophysics, Stanford University), *Wyoming Excellence Chair and SER Associate Professor of Geology and Geophysics and Wyoming Excellence Chair*. Dr. Grana's research areas of interest include modeling, characterization and interpretation of subsurface reservoirs for energy resources exploration and production, using geophysical methods. Reservoir geophysics aims to estimate rock and fluid properties to quantify energy resources volume and productivity. Dr. Grana's research also includes time-lapse modeling of rock and fluid properties changes for reservoir monitoring to update the reservoir model and estimate the dynamic variations of geological properties and processes. Dr. Grana applies innovative modeling methods to hydrocarbon and CO₂ sequestration studies to predict the fluid behavior in the subsurface, to optimize production, and to reduce the probability of leakage. Dr. Grana's research has been applied in several case studies all over the world, including a CO₂ sequestration project in Southwest Wyoming and a CO₂ feasibility study in Norway. Dr. Grana's research results improved the accuracy of the predictions and reduced the uncertainty, which allowed reducing the operation risks. The recent research conducted by Dr. Grana and the application to CO₂ sequestration provided a valuable contribution in the development of strategies for carbon dioxide reduction. Dr. Grana published 20 peer reviewed papers in the academic year 2020-21 and delivered 4 invited talks at University of Southern California, EAGE conference on Seismic Inversion, KAUST (Saudi Arabia), and University of Bergen (Norway). In April 2021, Dr. Grana also released a new book, "Seismic Reservoir Modeling" with Prof. Tapan Mukerji and Dr. Philippe Doyen published by Wiley Blackwell. Dr. Grana currently teaches four classes at the University of Wyoming: an undergraduate level class on the basic concepts of exploration geoscience, two undergraduate classes on mathematical methods for geoscience, and a graduate seminar on diversity and inclusion

in geosciences. Dr. Grana's classes at the University of Wyoming contribute to the formation of the new generation of scientists, including geologists, geophysicists, and petroleum engineers who aim to work in the energy sector.

Dr. Mohamed M. Ahmed, (Ph.D. Civil Engineering, University of Central Florida) *Wyoming Excellence Chair in Civil Engineering*. Dr. Ahmed is an Associate Professor/Williams and Person Professor in the Department of Civil and Architectural Engineering, and Construction Management, and is also the director of the Driving Simulation and Human Factors Lab for Connected and Automated Vehicles. Dr. Ahmed is an influential and prodigious road safety scholar whose interdisciplinary work on advanced road safety management is at the leading edge of the field. His research and scholarly contributions demonstrate his outstanding ability to mobilize knowledge beyond the University and significantly impact the shaping of evidence-based traffic policy and practice. Some of the major research initiatives he has led include designing and testing Human Machine Interface (HMI) for Connected Heavy Trucks and Highway Patrol centering on empirically-driven resource allocation mechanisms, implementing a multifaceted Connected Vehicle (CV) applications to improve traffic safety and operations of high speed facilities, enhancing the depth of knowledge on risk-based highway design, and exploring the 'readiness' of existing infrastructure to partially accommodate Connected and Automated Vehicles (CAVs). He is currently collaborating with a team of engineers, meteorologists, and computer scientists on deploying and testing an interdisciplinary CV Pilot Program on a 400-mile rural freeway corridor. His research team was the inaugural recipient of one of three USDOT Federal Highway Administration competitive research grants, to help advance knowledge on how the US can lead the early adoption of CAV technologies worldwide. Recently, he was approached to rejuvenate the Wyoming Department of Transportation, Intelligent Transportation Systems program in a similar fashion to reimagine the Active Traffic Management and Advanced Traveler Information System (ATIS) program by utilizing cutting-edge computer vision and machine learning to identify adverse weather and surface conditions and disseminating timely information to road users. The diversity of his involvement in these initiatives demonstrates his dynamic leadership skills and the depth of his knowledge in the field of road safety. Indicative of the impact and significance of his research, almost all of Dr. Ahmed's publications are in top-tier civil and transportation engineering journals that reach broad audiences in both research and practice, often with high impact factors (Citations 3930, h-index 31, i-10 index 103). In recognition of his research's impact, Dr. Ahmed and his graduate students were the recipients and/or the nominees of multiple awards including Best PhD Award by the National Academies of Science, Medicine, and Engineering, Transportation Research Board, Washington, DC, Colorado/ Wyoming Institute of Transportation Engineers Graduate Student Award, WTS Colorado Chapter's Helene Overly Memorial Scholarship Award, etc. Dr. Ahmed was selected as the Department of Civil and Architectural Engineering nominee for the College of Engineering and Applied Science Outstanding Graduate Research and Teaching Awards in 2019 and 2020.

Dr. Cynthia Weinig (PhD Ecology, Evolution, and Behavior, Indiana University). *Wyoming Excellence Chair in Botany*. Dr. Weinig is a Professor in the Departments of Botany and Molecular Biology, and in the Program in Ecology. Her research focuses on plant evolutionary genetics, that is, the genetic underpinnings of plant adaptation to natural or agricultural settings, and has received over \$40M in funding from the National Science Foundation, including an early career NSF Young Investigator's Award as well as collaborative institutional awards such as the NSF EPSCoR. Dr. Weinig's research in the past year funded in part by the WY Excellence Chair has focused on the interaction between plants and microbes (microscopic organisms). When growing in agricultural or natural field settings, plants interact with complex microbial communities. As many as 10 billion microbial cells are present in each gm of soil, meaning that soil in the immediate proximity of plant roots harbors abundant microbial life and is the site of continuous host plant-microbe interactions. Not only are microbes highly abundant in soil, but also their communities are exceptionally diverse, with a gm of soil including thousands to tens of thousands of microbial species based on gene sequence analyses. As a consequence of this taxonomic diversity and associated differences in their functions, microbes can have pronounced negative or positive effects on the growth of plants with which they interact. Her research seeks to identify both the plant traits that may attract beneficial microbes as well as the plant growth responses to the presence of microbes. Dr. Weinig's lab hosted 4 UG researchers in the past year, and approximately 100 undergraduate students over her career, including WY Research Scholars and McNair scholars, as well as dozens of graduate students and post-doctoral fellows. Dr. Weinig incorporates her interest and

enthusiasm for plant-microbe interactions into undergraduate courses at the University of Wyoming, such as Genetics, and graduate courses such as Plant Plant-Microbe Interactions.

Dr. Bryan Shuman (Ph.D. Geological Sciences, Brown University) *Wyoming Excellence Chair in Geology and Geophysics*. Dr. Shuman has taught in the Department of Geology and Geophysics at the University of Wyoming since 2007 and works with undergraduates, graduate students, and post-docs to study the geological record of past climate changes and their influence on water and ecosystems. Shuman directs UW's Roy J. Shlemon Center for Quaternary Studies, focused on Earth's recent geological past by bridging geology with archeology, botany, civil engineering, hydrology and soil science. He has also led the recent effort to enhance UW's programs at the UW-National Park Service Research Station at the AMK Ranch in Grand Teton National Park. Shuman has published over 100 peer-reviewed journal articles and served in leadership roles in the American Quaternary Association, the Ecological Society of America, and on the board of DOSECC (Drilling, Observing, and Sampling Earth's Continental Crust), Inc. Past awards include a National Science Foundation CAREER award. In addition to teaching required courses on the Earth system and global change for both the Geology major and the Haub School's Environmental System Studies major, Shuman has regularly taught both undergraduate and Master's level courses for future and current Wyoming teachers enrolled through UW's College of Education. Shuman's research provides opportunities for Wyoming students to learn and apply cutting-edge techniques in isotope and organic geochemistry, geophysics, sedimentology, genetic tools and paleoecology to investigate how our climate and natural resources have changed since the end of the last Pleistocene ice age, roughly 14,000 years ago around the time when people first arrived in North America. Shuman has conducted field-based research about past environmental changes in the Bighorns, Beartooths, Wind River Range, and the Snowies as well as across Colorado and Montana, the Great Lakes region, and New England. Ongoing projects study past events in these areas to help anticipate future changes by examining prolonged droughts and snowpack changes, severe wildfire outbreaks, and widespread tree species declines and by testing the ability of climate models to simulate conditions different from today. Because the work confirms significant climate-related challenges ahead for Wyoming, its citizens, and its landscapes, Shuman works with communities and agencies across the state to consider and plan for the future, such as by helping to lead the 2021 Greater Yellowstone Climate Assessment (gyclimate.org).

PROFESSIONS CRITICAL TO THE STATE

Temple Stoellinger, (University of Wyoming; J.D. with honors, University of Wyoming College of Law) *Law & Haub School*. Professor Stoellinger is an Assistant Professor in the Haub School of Environment and Natural Resources with a joint appointment at the College of Law where she is also the Co-Director of the Center for Law and Energy Resources in the Rockies. Professor Stoellinger also oversees the Haub School's JD/MA program, a joint master's degree offered in collaboration with the Law School and she is also a faculty fellow with the School of Energy Resource's Center for Energy Regulation and Policy Analysis. Professor Stoellinger's work and engagements continue to have a direct and impactful benefit to the State of Wyoming. During the fall 2020 semester she taught the following courses: Environment and Natural Resource Law and Policy (ENR 4750/5750), and Environment and Natural Resource Problem Solving (ENR 5000). During the spring 2021 semester she taught Wildlife Law (graduate/law); as well as a seminar course for JD/MA students on interdisciplinary thesis writing. Professor Stoellinger's scholarship focuses on environmental and natural resource law and policy, with an emphasis on wildlife law and policy including the Endangered Species Act. Highlights of her scholarship this past year include the publication interdisciplinary law review article published in the DUKE ENVIRONMENTAL LAW AND POLICY FORUM focusing the need for the integration of ecology and economics into big game migration policy, written in collaboration with Dr. Jo Albers and Dr. Jason Shogren (both from the UWYO economics department), Dr. Arthur Middleton, a big game ecologist at the University of California at Berkley, and Robert Bonnie a former executive in residence at the Nicholas Institute for Environmental Policy Solutions and currently a Deputy Secretary for the USDA. Again, working with Dr. Middleton, Professor Stoellinger contributed to an interdisciplinary paper entitled *Harnessing Visitors' Enthusiasm for National Parks to Fund Cooperative Large-Landscape Conservation*, an article published in CONSERVATION SCIENCE AND PRACTICE that explores

opportunities to capture additional visitor revenue from Yellowstone and Grand Teton National Park visitors to fund conservation efforts in the area. Professor Stoellinger and colleagues from the University of Wyoming College of Law past and present, wrote and published an article entitled *Unbecoming Adversaries: Natural Resources Federalism in Wyoming*, that was published in the celebratory centennial issue of the WYOMING LAW REVIEW. Her work in progress includes work on a grant from the INL related to the citing of advanced energy technologies (including small nuclear reactors), a publication with nationally recognized interdisciplinary scholars on allowing conservation groups to engage in natural resource markets, an article exploring the laws and regulations governing public land grazing lease retirements, and an interdisciplinary article on utilizing emerging technology to fund carnivore conservation. For the summer of 2021, Professor Stoellinger has received a fellowship from the Property Environmental Research Center where she plans to finish a law review article on the effectiveness of ESA section 4(d), a unique and flexible policy tool embedded within the ESA. This past academic year Professor Stoellinger participated in a number of workshop and invited speaking events including a presentation to the Rocky Mountain Mineral Law Foundation on the current status of ESA regulations.

Dr. Christine M. Porter, (Ph.D. Community Nutrition, Cornell University) *Wyoming Excellence Chair in Community & Public Health*. Dr. Porter does participatory action research to foster nutritional health, develop strong community food systems, and end health disparities. She has also devoted time in the past year to addressing the pandemic, in particularly by speaking with regional news media journalists. She has helped to secure a quarter-million dollar grant for the four-year project *Growing Season: Native student pathways to food system and sovereignty studies* from the USDA/NIFA program in New Beginning for Tribal Students Programs and some pilot grants to support and assess food projects including Edible Prairie Project's CSAs and Wind River Grow Our Own 307's garden box and education programs. She has collaborated with food leaders across the state to launch and expand the Wyoming Food Coalition: WY Food Matters. She is in the final year of the continues to lead the \$3 million, NIH R01-funded, Growing Resilience project, which studies health impacts of home gardens with Wind River Indian Reservation families. Porter has two publications accepted this calendar year. She serves as executive committee chair of the Inter-institutional Network for Food, Agriculture and Sustainability (INFAS). She continues to teach food and public health courses, leads development of a new online graduate certificate in community and public health at UW, and is co-leading a national Native American food system graduate fellowship and mentorship program. This teaching work aims to help develop new and diverse health leaders in Wyoming and the Rocky Mountain West who can help ensure the wellbeing of our communities.

Danielle R. Cover, (J.D. *Cum Laude*, Tulane University School of Law) *Wyoming Excellence Chair in Law*. Professor Cover is a Professor at the College of Law where she is the Director of the Civil Legal Services Clinic. During AY 20-21 Professor Cover taught the following courses: Civil Legal Services Clinic (Fall, Spring); Professional Responsibility (Fall); and Judicial Remedies (Spring). As Director of the Civil Legal Services Clinic, Professor Cover has worked to expand the substantive case law offerings to low-income residents of the State of Wyoming. The CLSC is a trusted and well-respected legal service provider in the state and has a close working relationship with Equal Justice Wyoming, the low-income legal services clearinghouse for the state and primary outside funder for legal services within the state. In addition, judges in multiple counties contact the CLSC directly to provide representation in complex litigation involving some of Wyoming's most economically vulnerable clients. Through the end of 2020, Professor Cover worked closely with Equal Justice Wyoming to identify and address the legal needs of Wyoming's most geographically and economically vulnerable, a situation exacerbated by the pandemic. In the Fall of 2020, she presented with a panel of distinguished speakers, the results of a statewide legal needs assessment, providing perspective on the long-term impacts of the pandemic on demands for free and reduced fee legal services. The CLSC represented approximately 65 people in the state over the

academic year in a variety of legal matters from divorce and custody to landlord tenant disputes; rental and housing disputes saw the greatest increase in inquiries for representation over the year.

Professor Cover's scholarship focuses on the intersections between psychology and legal practice, particularly around motivational theory, adult learning theory, and clinical pedagogy. During AY 20-21, a well-respected publisher of law school textbooks approached her to write a classroom book on interviewing, counseling, and negotiation using the principles she has developed in past scholarship.

Professor Cover's work has a direct positive impact on the State of Wyoming. As one of the largest providers of pro bono legal assistance in the state, the Civil Legal Services Clinic works diligently to develop and direct the rich resources of Wyoming's College of Law toward promoting access to justice for low-income individuals in the state. The Kaiser Family Foundation estimates that the percentage of Wyoming's population living at or below 200-299% of the federal poverty income guideline is 33%. The clinical experience promotes a practical, holistic legal education to students, while re-affirming a strong commitment to public service through experiential learning. An additional benefit to the CLSC is increasing awareness among matriculating law students of the vast need for legal representation for people living in poverty. This in turn can influence the willingness of law students to incorporate pro bono or low bono legal assistance into their legal careers, regardless of their ultimate practice choices. When vulnerable populations receive direct legal representation and community education, many members of those populations can overcome severe barriers to maintaining financial stability. Students experience first-hand how economic independence and income stability improve not only the lives of their clients but the functioning of entire communities. In-person meetings with clients and relationships with local judicial bodies, together with community outreach and education that takes the students where the clients live, work, and build their families, amplifies the benefits the CLSC program offers. Because most University of Wyoming College of Law students remain in Wyoming, many returning to the small towns from which they came, they can provide access to the legal system in ways they may not have anticipated.

Professor Cover received Endowment funding to conduct research in Scotland and Ireland on approaches to clinical pedagogy, specifically working with student lawyers to represent clients in rural communities impacted by Brexit. Because of the pandemic and its related travel restrictions, Professor Cover did not travel in June 2020 as planned. She received an extension until December 2020 to spend the funding. She was unable to utilize the funding as travel restrictions locally and globally remained in place until the Spring of 2021.

OTHER ECONOMIC AND SOCIAL CHALLENGES

Dr. Steven Smutko, (Ph.D. Economics, Auburn University) *Wyoming Excellence Chair and Spicer Distinguished Chair in Environment and Natural Resources*. Dr. Smutko carries out a research, teaching and outreach program in policy development and public decision-making in natural resources management. Dr. Smutko's outreach work focuses on engaging with local governments, state and federal agencies, and the private and nonprofit sectors to enhance participatory decision-making on complex and often contentious environmental and natural resource policy issues. Dr. Smutko's research activities focus on understanding how collaborative processes can lead to better public policy decisions. In FY 20-21 Dr. Smutko led research projects to measure the efficacy of collaborative processes in federal land use designation, and the potential for a negotiated outcome on wolf management in Colorado. On this latter project, his graduate student, Tori Anderson, is developing a negotiation simulation model focused on approaches for managing wolf populations that will be reintroduced into the state following the passage of Colorado Proposition 114. This model will identify potential areas of agreement on such parameters as population targets, lethal removal, depredation compensation, and funding sources among

key stakeholders including ranchers, local governments, conservationists, and others. The results of this study can aid wildlife managers in integrating stakeholder values and interests into their biological decisions. For his outreach work Dr. Smutko convened representatives of landowner groups, renewable energy developers, conservation organizations and local governments to develop consensus recommendations on siting renewable energy facilities in Wyoming. The recommendations from this collaborative process will be forwarded to the Governor's Office, legislators, and local governments for consideration for future policy. As chair of the Haub School Graduate Program Committee, Dr. Smutko led the development of a new Master of Science degree in Environment, Natural Resources & Society. The graduate program was approved by the UW Board of Trustees this year. He continues to teach courses in negotiation, negotiation analysis, and decision analysis at UW. He also oversees the Collaboration Program in Natural Resources, a yearlong series of professional development workshops attended by natural resources professionals in the public, private and nonprofit sectors in Wyoming and adjacent states.

Dr. Heidi J. Albers, (Ph.D. in Economics. University of California at Berkeley) *Wyoming Excellence Chair in Conservation Economics*. In 2020-2021, Dr. Albers taught her core PhD course in Natural Resource Economics in the Department of Economics before going on sabbatical for spring term. Over the summer of 2020, Albers worked with several graduate students to enable them to get back on track with their academics during the pandemic. That process including using excellence funds to support those students during research and in generating refereed journal articles with students to help them on their career paths. She advised, or served on the committees for, nine graduate students and mentored former students as they navigate their careers. She also serves as a mentor to junior faculty on campus and worldwide. In that capacity, Albers continues to work with women in economics through the Environment for Development Initiative's WinEED, CSWEP, and Wyoming Women in Economics. Dr. Albers maintains an internationally respected research agenda based around determining resource management strategies that integrate socio-economic, ecological, and institutional characteristics of the setting. In 2020-2021, Dr. Albers published 8 peer-reviewed or refereed articles covering topics including siting marine protected areas, small-scale aquaculture promotion, and migratory species conservation. She gave 2 virtual research presentations, with both being interdisciplinary in focus and audience. She continues to contribute to economics, policy, and interdisciplinary literatures through editorial roles at the *Environmental and Resource Economics*, *Ambio: A Journal of the Human Environment*, *Conservation Biology*, and *Environment and Development Economics*. Although the pandemic thwarted travel plans, Albers used spring term to push forward with research on marine conservation and migratory species conservation; developed an international short course on conservation economics in Costa Rica; and worked toward developing a new research agenda on pest control and pollinator ecosystem services from aerial species. Her teaching benefits students by giving them strong decision analytic tools that empower students to make well-developed arguments for their positions, make students into better decision-makers and contributors to society, and prove important for employment success. She was able to use excellence funds to travel to Costa Rica for course development and limited fieldwork for a month during the pandemic. Excellence funds enable Dr. Albers to conduct fieldwork that she then brings to the classroom as local and international case studies that cover a wide range of perspectives, tools, and issues, which further expands the UW students' horizons. To further foster students' educational growth, Dr. Albers used her Excellence funding to support three graduate students and two recent graduates for various experiences including summer work, conference presentation experience, and publishing, which provides students with important learning/networking, develops marketable skills, and deepens understanding of tools and issues. The funding enriches the students' educational programs by enabling them to explore topics and develop skills differently than classroom work and by providing experience with analytical tools that employers value. Through these experiences, students become stronger contributors to Wyoming's economy and resource management debates.

Wyoming Excellence in Higher Education Endowment Fiscal Summary

The costs associated with each position include salaries commensurate with the market for top academics, employer paid benefits, ongoing budgets to support research and instructional activities, as well as one-time start-up expenses which are especially critical to recruiting distinguished scholars with large established laboratory research programs.

The balance in the Excellence in Higher Education Endowment expenditure account held at the university as of June 30, 2020 was \$5.2 million. Total expenditures for the 2020 fiscal year were currently budgeted at \$2.81 million. The planning budget was designed to maintain an adequate cash balance to cover on-going expenses for an acceptable period, in the event of diminished revenue.

The following table summarizes the uses and expenditures of the budgets for filled positions, and the total estimated initial cost of the program when all allocated positions are filled. Not shown are projected costs as the program continues.

Balance July 1, 2020	\$5,242,879.57
Advertising and Professional Development	\$22,363.13
Graduate Assistant Financial Aid	\$14,690.26
Salaries and Benefits	\$2,638,153.74
Support	\$120,258.71
Equipment/facilities	\$14,820.72
Total Expenses	\$2,810,286.56
Income (distribution from state and interest)	\$3,656,039.50*
Balance June 30, 2021	\$6,088,632.51*

*Due to UW Year-End processes, full accounting for FY2021 is not complete.

Planning for FY2022

Planning for the FY2022 budget is based on anticipated annual projected income as per State Spending Policy for FY21 (WS 9-4-719). The table below includes the estimated annual budget for 22 partially or permanently funded positions.

<i>Estimated FY22 Spending Policy Amount for UW*</i>	\$3,800,000
Income FY20 90% per W.S. 21-16-1201(c)	\$3,420,000
Use of FY21 Beginning Balance	\$2,498,443
Reserve for Salaries and Benefits of Chairs	\$1,500,000
Salaries and Benefits (for Chairs and GAs)	\$3,004,860
Support for Chairs	\$ 950,000
AA Support Programs	\$ 500,000
Total Expenses	\$5,954,860

* The FY 2022 Spending Policy Amount was not available prior to the due date of this report; therefore, an estimated based on the FY 2021 Spending Policy Amount was used.

Part B. Legislatively identified faculty positions

1. School of Energy Resources (SER) faculty

The Wyoming Legislature established and appropriated initial funding for the School of Energy Resources (SER) in 2006. The plan for SER stipulated the hiring of up to 12 distinguished faculty who were to be co-appointed in departments across campus. Professors in the SER are internationally recognized energy experts who are actively involved in both energy research and teaching. They work in a variety of disciplines and have formed productive collaborations across campus. The current SER professors include:

Dr. Timothy Considine, (Ph.D., Cornell University) *SER Professor of Economics and Finance*. During academic year 2020-2021, Dr. Considine taught undergraduate courses in Oil: History, Culture, and Power, Energy Markets and Policy, and Intermediate Econometric Theory. He and his colleagues in the School of Energy Resources continue their research on energy regulatory law and economic, completing a study on the fiscal and economic impacts of policies to restrict development of oil and gas on federal lands and a study of how climate variations affect energy expenditures and carbon emissions. The federal lands study received considerable attention and is currently being used to formulate federal legislative remedies for lost state revenues from the current pause in oil and gas leasing.

Dr. Craig Douglas, (Ph.D. Yale University) *SER Professor of Mathematics*. **Dr. Craig Douglas, SER Professor of Mathematics** (Ph.D. Yale University). Dr. Douglas is an internationally recognized expert in computational sciences who leads a research group that creates sophisticated mathematical models of physical phenomena using networks of remote sensors and high-performance parallel computers. He has a long-term collaboration with AirLoom, LLC, a renewable energy company located in Laramie. Two of his current or former Ph.D. students have worked there, including one full time. He has published a research paper recently with AirLoom staff on optimization techniques relevant to wind energy design development. Dr. Douglas also has a project on dual porosity models relevant to both the fracking industry and aquifer modeling. An open source two and three-dimensional high-performance code has been released that runs efficiently on one to thousands of processors. A recent project involves the Wyoming Department of Transportation to create a machine learning model for predicting when Interstate 80 should be closed and re-opened. It currently works well with historical data. We are working to create a better model using a live data stream. Federal dollars are spent in state and the results enhance UW's reputation through high visibility internationally. One of his projects has created the first 100 Gigabit/second computer network in Wyoming, which enhances Wyoming's ability to attract large data centers to the state. He has taught a first-year seminar course on Energy, the Environment, and Economics, that covers all aspects and forms of energy from the viewpoints of Wyoming and globally.

Dr. Subhashis Mallick, (Ph.D. University of Hawaii) *SER Professor of Geology and Geophysics*. Dr. Mallick and his team are involved in the research and development of fundamental seismic modeling and waveform inversion methods using classical optimization and machine-learning approaches. These research requires high-performance computing facilities of the University of Wyoming's advanced research computing center (ARCC) and the NWSC supercomputing facility. He collaborates with several faculty members, both within the University of Wyoming and outside. Additionally, he also closely collaborates with the researchers from the oil and gas industry. The primary application of Dr. Mallick's research is in the field of subsurface characterization for lithological and fluid properties, which is vital for the fossil-fuel exploration, mineral exploration, and CO₂ sequestration; all of which are important to the state of Wyoming. More recently, he has been also interested in the applications of geoscience research in global climate change such as developing climate prediction models

such as the frequency of occurrence and severity of future hurricanes if global temperatures continue to rise. To fund his research, he submitted one major DOE proposal as the lead PI. Additionally, he is also the collaborating senior researcher for another major NSF proposal which has been submitted by the Oklahoma State University. He is continuing his collaboration and with the Daqing Oilfield Company (DOC, a division of Petro China), Daqing, China. Moreover, he is in the process of initiating a new collaboration with BP. In 2020-21, Dr. Mallick and his team published or submitted four papers in peer-reviewed journals, and two expanded abstracts in international conferences. In Spring 2021, he taught two sections of the Petroleum Geology course to the senior undergraduate students majoring in Geology and Petroleum Engineering. He was also involved in advising three graduate students as their primary research advisor. Dr. Mallick and his students will continue their research on waveform inversion, imaging, and artificial intelligence. The courses taught by Dr. Mallick benefit the students as they work as professionals in the oil and gas industry. All students graduated with advanced (Masters and Ph.D.) degrees with Dr. Mallick as their primary advisor are well-respected industry professionals, which indirectly benefits the state by establishing the University of Wyoming as a reputed school of higher learning. Finally, he is working on completing a textbook on seismic modeling and inversion, which will be published by Springer as an American Geophysical Union (AGU) textbook series.

Dr. Bruce Parkinson, (Ph.D. California Institute of Technology) *SER Professor of Chemistry and Warren Chair of Energy and Environment*. Dr. Parkinson is an internationally renowned scientist who leads a research group that investigates novel methods to harness solar energy and developing new materials for electrochemical and environmental applications. He has over 260 publications in peer reviewed journals that have been cited over 12,000 times. He is working on fundamental aspects of storing solar energy in chemical bonds such as producing hydrogen from sunlight and water and charging redox flow batteries directly with sunlight as well as a DOE grant for studying emergent phenomena to more efficiently convert sunlight to electricity. He still collaborates with Dr. Carrick Eggleston former professor in geology at UW, but now at the Worcester Polytechnic Institute, in investigating photoelectrochemical processes on the surface Mars with a grant from NASA. The resulting publications have enhanced UW's reputation for research and innovation with research that has upended previous models. In addition, he is co-inventor on a composition of matter patent and many application patents with Professor John Hoberg in a new area where they synthesize two dimensional nanoporous polymers with unique properties useful for membrane separations that have many different commercial applications that could result in significant licensing revenue for UW. He also is on Department of Energy grant obtained for this project with Hoberg and Katie Li-Oakey from Chemical Engineering. Every year he teaches the introductory course for the Energy Resource and Management and Development majors called Energy and Society. This class uses many class participation activities to present the many sides of energy related issues. Students get exposure to a top-level researcher in the classroom with many years of experience in energy related issues and where they are encouraged to discuss current energy related topics. He also teaches a course on solar energy. The main expenditures from the research grants are to pay graduate students and post-doctoral researchers with the result that federal dollars are being spent in Wyoming for food, lodging and at local businesses. He was the recipient of the University of Wyoming's Presidential Research Award for 2019 and recently received the David C. Grahame Award of the Physical and Analytic Division of the Electrochemical Society during a virtual symposium in his honor.

Dr. Maohong Fan, (Ph.D. Iowa State University; Ph.D. Osaka University), *SER Professor of Chemical and Petroleum Engineering*. As a PI and Co-PI or UW-PI, Dr. Fan is leading and/or working on ~\$20M (UW parts: > \$6M) R&D projects including those funded by NSF, DOE, and DOI in the areas of advanced material development, energy production, and environmental protection. He has supervised many graduate students, postdocs, and research scientists. His last year's publications are in the areas of clean energy production and

environmental protection. *Web of Science* (the leading scientific data base) acknowledged that Dr. Fan has been a globally highly cited researcher (A Highly Cited Researcher) in last several years including 2020. In 2020, *Web of Science* says that “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.” Also, he was the winner of “Top 50 *Nature Communications* chemistry and materials science articles” in 2019. Among those 50 globally top papers, his paper is ranked as No. 7. Dr. Fan not only instructed graduate students but also undergraduate students for conducting scientific research. Many undergraduate students have taken undergraduate research courses with Dr. Fan. The disseminated knowledge from Dr. Fan’s research or instruction have considerably helped benefited students’ employments and career development opportunities. The technologies developed by Dr. Fan have helped businesses and industries improve their technology and market developments in the U.S..

Dr. John Kaszuba, (Ph.D. Colorado School of Mines), *SER Professor of Geology and Geophysics*. Professor Kaszuba has over 25 years of experience researching geochemical interactions between fluids and rocks. His research group of five graduate students, one undergraduate student, and one postdoctoral research scientist presently focus on unconventional oil and gas reservoirs, carbon storage, and rare earth elements in Wyoming. His former students have successful careers in industry (ExxonMobil, ConocoPhillips, Enerplus Corporation, Wyoming Whiskey) and government (Pacific Northwest National Laboratory, Los Alamos National Laboratory). His research is funded by several extramural resources, including an Energy Frontiers Research Center funded by DOE and a Joint Industry Project with ConocoPhillips Company. He teaches courses in the Department of Geology and Geophysics. He serves on numerous committees, including graduate student committees as well as SER and University committees, and is a member of the Wyoming State Geological Survey Advisory Board. Professor Kaszuba is the John and Jane Wold Centennial Chair in Energy.

Dr. Po Chen, (Ph.D. University of Southern California) *SER Associate Professor of Geology and Geophysics*. One of the most fundamental subjects of seismology is the reliable detection of earthquakes using waveform data recorded by seismic instruments. The past few decades have witnessed rapid advances in seismic data acquisition technology and modern multi-channel, broadband, continuous-recording seismic sensor networks have been producing hundreds of terabytes of seismic waveform data per day. It has become increasingly challenging to rapidly and reliably detect earthquakes, especially small earthquakes and unconventional earthquakes, in such a vast, ever-increasing waveform dataset. In the past year, Dr. Chen and his collaborators at the National Cheng Kung University, Taiwan, and the National Center for Supercomputing Applications (NCSA), University of Illinois at Urbana-Champaign (UIUC), have been developing and applying a new set of computational tools to automate the detection and location of earthquakes, especially those small earthquakes and unconventional earthquakes induced by anthropogenic activities. In the past year the research work and collaborations have resulted in 4 peer-reviewed publications in professional journals. In the past year, Dr. Chen taught 4 courses: “Methods in Petroleum Geology” in both Spring and Fall, “Introduction to Machine Learning for Scientists and Engineers” in Spring and “Introduction to Wind Energy” in Fall.

Dr. Dario Grana, (M.S. and Ph.D., Geophysics, Stanford University), *Wyoming Excellence Chair and SER Associate Professor of Geology and Geophysics and Wyoming Excellence Chair*. (See WY Excellence Endowment Section)

Tara Righetti, (J.D., University of Colorado Boulder) *SER Professor of Law*. Tara Righetti teaches in the College of Law, the Energy MBA program, and the School of Energy Resources. During the 2020-2021 academic

year, Professor Righetti taught two sections of Oil and Gas Law and two sections of Advanced Oil and Gas Law. Professor Righetti published work in Professor Righetti published work in Supreme Court Preview, SN Social Sciences, the Utah Law Review, Property & Probate, and the International Journal of the Commons. Professor Righetti served as the PI on a grant from the United States Energy Association that involved a multi-state comparative analysis of laws and regulations pertaining to CO₂-EOR and geologic Carbon Storage and for a program development grant from Battelle Energy Alliance which involves developing a framework for studying the social and economic factors relative to evaluating emerging markets for advanced Phase IV nuclear technologies. Professor Righetti gave numerous public webinars accessible to UW students, energy professionals, and the public, including the Ernest Smith 2021 Fundamentals of Oil and Gas Law, the Vermont Law School Colloquium on Environmental Scholarship, the Wyoming State Bar Conference, and the CO₂ Conference and Carbon Management Workshop. She served as a Trustee-at-large, on the special institutes committee, and as co-chair of the Diversity and Inclusion Task Force for the Rocky Mountain Mineral Law Foundation. She also served as a board member for the Albany County Safe Project. Professor Righetti serves the landman and legal professions and energy industry in Wyoming by producing innovative research on emerging issues in the fields of oil and gas law and carbon storage.

Part C. Privately Endowed Faculty Positions

Forty-six¹ UW faculty positions are partially or fully supported by privately funded endowments established with gifts to the UW Foundation. A \$3 million or more endowment supports a faculty chair, which may be designated to cover all or part of the base salary of the faculty member. A \$2 million gift endows a professorship, which may be used to provide an annual salary supplement or to support teaching, research, or scholarship expenses. And a \$1 million gift endows a faculty fellowship, which supports faculty development in teaching or research. Of the 46 endowments, 22 support faculty chairs (most are partially funded from their respective endowments), 24 support faculty professorships and/or programs. A complete list of the privately endowed chairs, professorships, and faculty fellowships is available from the UW Foundation. That list describes the history of the endowment, the qualifications or purpose, the uses, and the current and past faculty recipients. Some of these endowed positions are not filled at the present time; others fund various faculty from year-to-year.

In all cases, the specific uses of the endowment earnings are specified in the gift agreements and are reflected in the focus of the teaching, research, and extension/outreach programs of the faculty member beneficiaries.

As discussed in Part A of this report, the funding for some privately endowed positions is bolstered by earnings from the state-funded Excellence in Higher Education Endowment. These public-private partnerships include:

The *Roy & Caryl Cline Endowed Chair in Engineering, Environment, and Natural Resources*, Haibo Zhai (College of Engineering and Applied Science).

The *Eldon & Beverly Spicer Chair in Environment and Natural Resources*, held by Professor Steve Smutko (Haub School and College of Agriculture).

The *Clara Raab Toppan Distinguished Professorship in Accounting*, held by Professor Eric Johnson (College of Business).

¹ One endowment supports academic centers or institutes: the Solomon D. Trujillo Center for e.Business.

The individuals who currently hold privately endowed faculty positions are as follows:

College of Agriculture and Natural Resources

James K. Pru, (Ph.D., University of Wyoming), *Curtis and Marian Rochelle Endowed Chair in Animal Science*, Professor, Department of Animal Science. Dr. Pru rejoined the University of Wyoming in January, 2021. He has worked through the last half of the academic year to establish his lab and resume studies that center on three primary areas of research. Dr. Pru's research has application to both domestic animal reproduction and women's reproductive diseases. First, Dr. Pru's lab seeks to understand the unique molecular dialogue that exists between the mother and implanting embryo as pregnancy is first being established. He uses conditional mutagenesis and gene editing to understand gene networks that coordinate maternal: embryo cross-talk. The significance of these studies is that the large majority of failed pregnancies in mammals occur during this time when the embryo first signals its presence to the mother. Second, Dr. Pru is interested in elucidating the natural reparative processes that occur in the uterus following birth and at the end of the menstrual cycle in women. The uterus harbors arguably the most highly regenerative tissue (*i.e.*, inner lining called the endometrium) of all mammalian tissues. Dr. Pru is focused on understanding how endometrial stem cells and mesenchymal-to-epithelial transition contribute to the regenerative process. The long-term goal is to understand the genetic events that coordinate endometrial regeneration under natural conditions with the hope of applying this knowledge to reparative processes in more vital organs such as the heart, liver, and kidney that do not undergo natural tissue regeneration following injury. Furthermore, faulty uterine involution/regeneration after giving birth is a significant barrier to subsequent long-term fertility in cattle. Third, Dr. Pru has a long-standing interest in the etiology and progression of women's reproductive diseases such as endometrial cancer and endometriosis, as well as in the development of therapeutic strategies to combat these diseases. Such diseases dramatically increase female morbidity and mortality and reduce overall quality of life. Among the many women's reproductive diseases, endometrial cancer and endometriosis are collectively an estimated \$37 billion/year societal burden. Extramural funding to support Dr. Pru's research efforts derive from the National Institutes of Health and commercial funding sources. Dr. Pru is presently developing a graduate level course in Animal Science and he is assembling a tiered research program that offers training opportunities for undergraduate and graduate students, as well as postdoctoral fellows and research scientists. The basic and translational research conducted in Dr. Pru's lab has impactful application to both the agricultural and health care sectors within the state of Wyoming and beyond.

Donna K. Harris, (Ph.D., University of Georgia), *E.A. Whitney Professorship in Agriculture*, Department of Plant Sciences. Dr. Harris started her position at the University of Wyoming in August of 2020 and her research is focused on the genetic improvement of several crops relevant to the state of Wyoming and the current and potential needs of both the producer and consumer. Specifically, her program is focused on using a combination of molecular and traditional breeding technologies to improve the genetic gain of dry beans, field peas, and alfalfa. Harris is also collaborating with colleagues to improve perennial native grasses for restoration purposes including the potential for more persistent soil carbon storage. Harris taught Plant Breeding this past spring semester and is preparing a class in Genetics and a class in Plant Biotechnology. Prior to beginning her position at the University of Wyoming, Dr. Harris was with BASF Vegetable Seeds (formerly Bayer Vegetable Seeds) where she worked as a Senior Scientist in tomato prebreeding located in Acampo, CA. In her role, she led the discovery-based research of the US tomato prebreeding program where she managed and participated in global projects with both internal and external collaborators to ensure a constant flow of value-added traits into commercial varieties. She has also worked as a corn breeder in the seed industry. Her passion is to work, together with her colleagues, on the design and implementation of new technologies and methods to optimize the efficiency and output flow in plant breeding programs and to help train the next generation of plant breeders.

Dr. Kerry Sondgeroth, (Doctor of Veterinary Medicine, Colorado State University; PhD Veterinary Infectious Disease, Washington State University) *Riverbend Endowed Chair of Wildlife-Livestock Health*. Dr. Sondgeroth is an Associate Professor in the Department of Veterinary Sciences, and the only board certified Veterinary Bacteriologist at the Wyoming State Veterinary Laboratory. She is interested in bacterial infectious diseases that affect both wildlife and livestock, with a primary focus on those bacteria that cause pneumonia in cattle, sheep, and wild sheep populations. During the past year, Dr. Sondgeroth led the Veterinary Sciences graduate student seminar during the Fall semester, which focused on the introduction to bioinformatics training for students both within and external to the department, as well as faculty and staff. She also taught Immunology and Mycology to the 1st year medical students in the WWAMI program. For the Spring semester, she taught Pathogenic Microbiology to 45 undergraduate students, engaging them through active learning techniques through virtual course delivery. Dr. Sondgeroth was acknowledged as one of the University of Wyoming Honor Board's 2020 Top Professor's for her impactful teaching. Dr. Sondgeroth accepted a nomination for participation in the 2020-2021 Academic Management Institute and has assembled a small team to focus on a project that is "Assessing Gender Bias in Performance Evaluations of Tenure Track Faculty" in the upcoming months. She also was one of the University of Wyoming's Academic Writing Fellows (AWF), which provided key collaborations for developing more efficient and productive writing techniques. Some of the writing tools she discovered as an AWF, was shared with her graduate student for the writing of his PhD proposal, and successful completion of his preliminary exam, entitled "Characterization of respiratory pathogens associated with bighorn sheep pneumonia; bacterial genotypes, biotypes, and microbiomes". Dr. Sondgeroth has been active in discussions with UW's sheep producing unit manager and the Wyoming Game & Fish biologist and veterinarian, to determine how to best manage the interaction of wild bighorn sheep and domestic sheep grazing on UW's McGuire property on Morton Pass. She has started a collaboration project with UW's Laramie Research & Extension Center to characterize the types of bacteria present in the nasal passage of ewes and lambs. This project is relying on summer undergraduate research students, and the data will complement her research project on bighorn sheep. Dr. Sondgeroth will be co-advising a new PhD student beginning in summer 2021, on a project that will be analyzing *Mycoplasma bovis* from wildlife and livestock hosts. Taken together, her research projects' data should help to inform management decisions, and aid in understanding disease transmission at the wildlife-livestock interface.

Farm Credit Services of America Ranch Management and Agricultural Leadership Chair – Vacant

American Heritage Center

Clara R. Toppan Curator of the Toppan Rare Books Library – Vacant

College of Arts and Sciences

Jerod Merkle, (Ph.D., Université Laval, M.S., University of Montana), the *Knobloch Professorship in Migration, Ecology and Conservation*, Department of Zoology and Physiology. Dr. Merkle's research aims to uncover the ecological intricacies of how animals move across large landscapes, and how to conserve them. Dr. Merkle leads a wide range of projects including how extreme heat affects the movements of large mammals, how energy development and roads affect migrating big game, and how migrating big game use memory and social dynamics to navigate across large landscapes. Over the past year, Dr. Merkle has authored or co-authored 15 peer-reviewed publications in journals including Science, Trends in Ecology and Evolution, and Journal of Animal Ecology. Dr. Merkle raised over \$460,000 in grant funding as principle investigator. Dr. Merkle, in collaboration with the Wyoming Migration Initiative and the Wyoming Cooperative Fish and Wildlife Research

Unit, has played a crucial role in leading a migration mapping effort across the western United States, which includes writing and compiling all of the computer code for the effort, co-authoring open source migration mapping software, and co-developing online migration viewing platforms for the public and for conservation organizations. Dr. Merkle taught two graduate level courses over the last year: Introduction to the data management and statistics software R and Movement and Habitat Selection Modeling.

Craig Benkman, *Wolf Creek/Bob and Carol Berry Chair*, (Ph.D. Biology, State University of New York at Albany, 1985). One bird species that Dr. Benkman and his students have studied is the Cassia Crossbill. It is of conservation concern because it is restricted to 67 km² of lodgepole pine in two small mountain ranges in southern Idaho. In 2016 its total population was 5,800 individuals. Its small and restricted distribution in combination with the increasing frequency, size, and intensity of fires in the region make it highly vulnerable. This came to a head in September 2020 when 20-30% of its lodgepole pine habitat burned. This has attracted the attention of the U.S. Forest Service, which manages nearly all the crossbill's habitat, and other government and non-government agencies. Consequently, Dr. Benkman has been giving presentations to and consulting with these agencies on how best to manage for the Cassia Crossbill. During the past fiscal year, two of his graduate students graduated. One (from Michigan) defended his PhD dissertation based on field research within southeast Wyoming and northern Colorado examining the conditions that facilitate and inhibit the origination of new bird species. A second student (from Florida) defended his MSc thesis that focused on the management of the Cassia Crossbill. He and Dr. Benkman published the work this spring in an applied journal, *Forest Ecology and Management*. A postdoc (from Nebraska) who was generously funded by the Wolf Creek Foundation worked with Dr. Benkman on genomic analyses of crossbills. Students take Dr. Benkman's Herpetology course as an upper division elective, and those taking it are predominately in wildlife management, interested in working with animals especially in zoos, or have a passion for reptiles and amphibians. Thirty-four students were in the course, and most are Wyoming residents. Finally, he also provides consultation to Robert Berry from Sheridan on his studies of a falcon in Central America and serves on a related board of directors for a foundation devoted to the management and conservation of lands near Sheridan and in Belize.

Daniel A. Dale, (Ph.D., Cornell University), Professor of Physics & Astronomy and Interim Dean for Arts & Sciences, *Harry C. Vaughan Professor in Astronomy*. As Interim Dean of A&S during the 2020-2021 academic year, Professor Dale's time was mostly devoted to running UW's largest college. However, Professor Dale was also in charge of ASTR 5980. This is an independent study course for astronomy graduate students working on their Ph.D. dissertations. Professor Dale's research focuses on star-forming galaxies. He gathers astronomical data—images and spectra—from the *Wyoming Infrared Observatory* and the *Hubble Space Telescope*, among other astronomical observatories, to understand how galaxies convert gas clouds into stars and how the life cycles of those stars impact the formation of the next generation of stars. He published a total of 13 refereed publications in the 2020 calendar year and oversaw multiple federal grants that funded his research group of three Ph.D. students and several undergraduate students. One of these federal grants involves Professor Dale directing a summer internship program for astronomy undergraduates. A critical aspect to Professor Dale's work is the career preparation student interns receive as they carry out research in his group. Students learn marketable skills in computer programming (“coding” in today's vernacular), public speaking, and technical writing in addition to gaining teamwork and leadership experience in his team-based work. Professor Dale also served as the director of the *UW Harry C. Vaughan Planetarium*, as Director of *Wyoming Astro Camp* for middle school students, and as head coach of the UW Women's hockey team (for the 12th consecutive year!).

Amy Navratil (Ph.D., Colorado State University) *Hank Gardner and Marilyn Fiske Professor in Physiology* Through the philanthropic kindness of Dr. Hank Gardner and Marilyn Fiske, they established a common vision

of enhancing interdisciplinary biomedical teaching and research excellence at the University of Wyoming. As a physician, Dr. Gardner was interested in improving health care through innovative biomedical research, academic leadership and teaching excellence in the field of human physiology. Dr. Navratil's efforts in achieving these goals include teaching over 400 students in core pre-health classes and providing academic advising to pre-health professional students in the Physiology major. Last year, she completely redesigned Integrative Physiology (ZOO4735) to include new material covering Pregnancy, Immune System, Metabolic Physiology, and Sensory Biology. The revamp also included active learning sessions. For her efforts, she received a Mortar Board "Top Prof" award in 2020. She also teaches in the WWAMI medical program. She also provides laboratory training to graduate and undergraduate students in hypothesis driven scientific research. The ultimate goal of her program is to vertically advance the field of reproduction by discovering novel mechanisms that regulate fertility. In support of this, Dr. Navratil's laboratory was awarded an INBRE collaborative grant (working with UW Casper) to study the role of the cytoskeleton on female reproduction. She also has a pending grant submission in women's health at the NIH.

Dr. Catherine Hartmann (Ph.D., Harvard University), **Robert H.N. Ho Family Foundation Professorship in Buddhist Studies**. In her first year at UW, Professor Hartmann taught classes on the history of Buddhism, Buddhist ethics, Asian religions, and world religions. These classes introduced students to the key ideas and practices of religions such as Buddhism, Hinduism, Sikhism, Daoism, Confucianism, and Shinto from a historical perspective. This prepared UW students to engage our global world, to analyze the role religion plays in society, and to discuss sensitive topics such as religion in a respectful way. Most of her students had never been exposed to these religious traditions before taking these classes. Professor Hartmann's research focuses on the history of Tibetan pilgrimage to holy mountains. She published two refereed articles, one book chapter, and two book reviews during the 2020-2021 school year, as well as delivering a paper at an international conference, giving four invited lectures, either hosting or being invited onto four podcasts, and serving as a reviewer for two academic journals. In addition, she contributed two videos to the Malcolm Wallop Civic Engagement Project, served as a mentor on "Culture and Cultural Diversity" for the Malcolm Wallop Teacher Training Workshop, gave a talk to the Wyoming Interfaith Network on Buddhism, and taught a course on Buddhism to Wyoming high school students at the UW High School Summer Institute. Each of these activities provided service to the broader Wyoming community. In recognition of her efforts in research and teaching, she was awarded an Undergraduate Dean's Council "Thumb's Up" Award for Outstanding Contributions, a UW Education Abroad Curriculum Integration Grant, and a UW Center for Global Studies International Research Grant to fund research in Kathmandu, Nepal.

Clarence Seibold Professorship – Provides program support in the Social Sciences, Humanities, and Fine Arts

L. Floyd Clarke Professorship in Zoology and Physiology – Provides support for annual lecture series, scholarships to support research in Greater Yellowstone area.

Milward L. Simpson Fulbright Visiting Professor – Vacant

Bobby Model Professorship in Photojournalism – Vacant

College of Business

Kent R. Noble, (B.S., University of Wyoming), Department of Management and Marketing, *Bill Daniels Chair of Business Ethics*. The [Daniels Fund Ethics Initiative](#) is making an impact on current and future business leaders in Wyoming and beyond. To that end, in an anonymous survey of Spring 2021 Business Ethics students, 93% agreed with the following three statements, “This course is valuable to me.” “I am learning a great deal in this course.” “This course is increasing my competence in this area.” Also in Spring 2021, 101 Business Ethics students (98%) distinguished themselves by completing their [Ethical Leadership Certification](#) through the NASBA Center for the Public Trust. In AY 2020-21, UW’s Ethics Club worked with Sales Seminar students and donors to raise \$57,500 for [SparkTank 2021](#). Chapter members used the [Daniels Fund Ethics Initiative Principles](#) to help evaluate nonprofit organizations to determine where to invest the resources. Winners were Laramie Foster Closet (\$22,000), Wyoming Coalition Against Domestic Violence and Sexual Assault (\$16,000), Laramie Soup Kitchen (\$12,000), and Climb Wyoming (\$7500). In 2020, UW’s Mortar Board Honor Society recognized Kent as a *Top Prof*, and in 2021 it presented him with *UW’s Outstanding Service and Dedication Award*. Kent was appointed by former Governor Matt Mead to the Wyoming Commission on Judicial Conduct and Ethics in 2018, and he was reappointed in 2021 by Governor Mark Gordon. He also serves on the board of directors of the John P. Ellbogen Foundation and the Better Business Bureau Foundation Board of Advisors for Northern Colorado and Wyoming. In AY 2020-21, Kent used two primary outreach vehicles to conduct presentations for business, education, and community leaders. The first, *What Do You Stand For?*, is spotlighted in this [three-minute promotional video](#). The other primary offering is *What’s Your Brand?*, a personal branding presentation that focuses on integrity, attitude, and grit. An abbreviated version of his *What’s Your Brand?* talk is featured in this 13-minute [TEDx presentation](#). Additional outreach included sessions for the Wyoming Aspire Conference, [2021 Torch Awards Panel Discussion](#), [gBeta Mentor Swarm](#), and the [Varsity Blues College Admissions Scandal](#). Finally, Kent recently launched two statewide recognitions honoring individuals who embody the Daniels Fund Ethics Initiative Principles. The 2020 recipient of the Bill Daniels Ethical Leadership Award was [Tucker Fagen](#). The other award is the Wyoming Athletics Department Ethical Leadership Award. The most recent recipient was former Wyoming women’s basketball coach Joe Legerski. Each year, the honor recognizes a University of Wyoming team, coach, player, donor, administrator, and/or volunteer who embodies the Daniels Fund Ethics Initiative Principles on the field, in the classroom, and/or in the community.

Mark Leach, (Ph.D., Georgia State University) *Mendicino Chair in Sales and Salesmanship*. Dr. Leach’s research is in business-to-business marketing and sales. More specifically, his research typically focuses on understanding buyer and seller relationships, leveraging the sales function to manage relationships with profitable customers, and providing effective sales training. Mark has published articles in the *Journal of Business Research*, *Journal of Personal Selling & Sales Management*, *Industrial Marketing Management*, *Journal of Applied Social Psychology*, and other leading academic journals. Mark is a member of the editorial review board of the *Journal of Marketing Theory and Practice*, *the Journal of Business and Industrial Marketing*, and the *Journal of Business-to-Business Marketing*. Prior to joining the University of Wyoming in 2017, Dr. Leach was a member of the faculty at Loyola Marymount University and Purdue University. He has also been a behavioral research scientist at the Centers for Disease Control and Prevention. During the 2020-2021 academic year, Dr. Leach has published research examining effective selling strategies during the COVID-19 pandemic in the journal *Industrial Marketing Management*. His work examining the impact of a customer’s supplier advocacy on sales was published in the *Journal of Personal Selling and Sales Management*. His work examining selling to highly knowledgeable buyers was published in the *Journal of Business and Industrial Marketing*. Furthermore, this year he has worked to execute UW’s new major and minor in Professional Selling where he has continued to develop

and refine curriculum for these new programs. This year Dr. Leach advised UW's first doctoral student graduate conducting research in the area of sales. Dr. Leach has continued to develop and expand the UW Center for Professional Selling and has brought together a team of faculty and sales practitioners to effectively deliver classes and establish of the Center as a hub for sales thought-leadership.

Jason Shogren, (Ph.D., University of Wyoming), Department of Economics, *Stroock Chair of Natural Resource Conservation and Management*. Returning to his alma mater, Dr. Shogren has been the Stroock Chair of Natural Resource Conservation and Management since 1995. For the academic year 2020-21, Shogren continued to work on teaching, research, service, and outreach. Shogren taught a course on Experimental Economics for the graduate students. He also taught Global Economic Issues for —History of Economic Thought. He chaired or co-chaired the Ph.D. committees for several PhD students. He also advises numerous recent graduates to help them with their research program. He also serves on the committees of several Ph.D. and MS candidates, both inside and outside the Department. Shogren just went through his five year review, and was recommended for reappointed by the Interim Dean Robert Godby. A few of the external reviewers's comments. Reviewer 1: "My bottom line is simple. Jason Shogren would merit a chair in natural resource conservation and management at any university in the country." Reviewer 2: "I think Professor Shogren is one of top environmental economists anywhere in the world. His citation count ranks him in the top 25 globally among environmental economists." Reviewer 3: "Professor Shogren...is doing an exemplary job of fulfilling the role implied by the title of that chair, appropriate to the stage of his career. I wish I could say that my own vita looked equally impressive." Reviewer 4: "Jay's contributions as Stroock Chair over the past five years are beyond remarkable. According to Google Scholar, his work has been cited over 7,500 times during the five-year evaluation period (2016-2020) and has been cited over 25,000 times over his career." He published numerous peer-reviewed papers in top general and field journals, and was awarded a COB Belt Buckle Research Award. Shogren is on the editorial board of two international journals, he is a foreign member of the Royal Swedish Academy of Sciences, he is a fellow of the Association of Environmental and Resource Economics, the Association of Applied and Agricultural Economics, he is a fellow of the Beijer Institute of Ecological Economics, the Ecological Society of America, US Steering Committee for Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), and he is serving on board for the Laramie Plains Civic Center and was appointed to the Wyoming Arts Council by Governor Mark Gordon. He received his second Honorary Doctorate in 2019, this one from the Swedish University of Agriculture Sciences (SLU). Dr. Shogren also talked with numerous media outlets about economics throughout the year. Endowed chairs at the University of Wyoming benefit the people in Wyoming in three specific ways: (1) help attract world-class economists to Wyoming to continue to provide effective and timely policy advice to local businesses, non-profit organizations, and local government; (2) provide a sound structure to understand better the economics of environmental, resource, and energy challenges; (3) to attract extremely talented undergraduate and graduate students to UW economics department. Our alumni now work to keep the cycle going—UW produces good students, who become business leaders, academics, and policy makers who continue to send us their top students. The main contribution of the Stroock chair has been through the students. Dr. Shogren enjoys working with graduate students on their ideas and helping them find their own voice. Other contributions include working with government agencies at the State, Federal, and International level; working with scholars from other disciplines (e.g., ecology, biology, psychology) to understand better how they approach a problem. Dr. Shogren's current work has focused on the economics of controlling the COVID-19 pandemic; winning the award for the Best Paper in the *Journal of Benefit-Cost Analysis*: **Best Applied Article: ["The Benefits and Costs of Using Social Distancing to Flatten the Curve for COVID-19"](#)** by Linda Thunström, Stephen C. Newbold, David Finnoff, Madison Ashworth, and Jason F. Shogren. This article was the first published study of the benefits and costs of social distancing policy to help mitigate the damage from the COVID-19 pandemic. The article provided a framework and empirical estimates that policymakers could use as they sought to develop appropriate responses

to the spread of COVID-19. The bottom-line conclusion was that even with the substantial economic costs associated with a broad-based social distancing policy, the lives saved by such a policy could generate net benefits in the U.S. worth trillions of dollars. The article is also a nice example of how to provide useful policy advice even when faced by substantial uncertainty. The article is by far the most frequently read article in the past year.

Charles Mason, (Ph.D., University of California, Berkeley) Department of Economics and Finance, *H.A. (Dave) True Jr. Chair in Petroleum and Natural Gas Economics*. During the past fiscal year, Dr. Mason taught one class (Advanced Microeconomics II - Economics of Uncertainty and Game Theory; ECON 5120), while serving as Associate Dean in the College of Business. He directed or co-directed two doctoral students, one of whom completed her doctoral work and the other of who is close to completion. He had three papers accepted or published, and gave a variety of zoom presentations — one of which was an invited keynote speech as part of the annual conference of the International Association of Energy Economists. He has several projects underway, many of which directly relate to oil or natural gas markets; one of these is based on a recently awarded grant from the Sloan Foundation (shared with colleagues at the University of Texas - Austin) to study the economics of carbon capture, utilization and storage. Students in his graduate class gained important skills that modern micro-economists use regularly in their professional work. His approach to this class encourages students to speak up, and he capped the class off with a round of zoom presentations by the students. material he discusses in that class is also amenable to public presentations, which provides visibility for the University and helps lay people better understand these markets. His research program is largely centered on studying oil and gas markets, including studies of oil and gas prices, motives to hold oil inventories, and the incentives for deployment of infrastructure, such as pipelines, and the implications of constrained infrastructure upon energy markets. These topics have clear relevance to the energy sector of the state, and policy relevance to the nation. Dr. Mason’s research agenda also provides valuable input that allows regular updating of the undergraduate oil and gas class, which he teaches most years (and is scheduled to teach next spring), enhancing the educational value and relevance of the class.

Ali Nejadmalayeri, (Ph.D., University of Arizona), *John A. Guthrie Endowed Chair of Banking and Financial Services*, Department of Accounting and Finance. Since joining UW in August 2018, Dr. Nejadmalayeri has taught five classes (Bank Management, FIN 4510; Bank Policy, FIN 4540; Fixed Income Securities 4530; Secular Stock Cycles BUSN 5959; Blockchain and Banking FIN4910). His broad research agenda concerns the intersection of corporate finance and capital market. His recent publications and work-in-progresses involve the study of information flow on corporate and municipal bonds. During 2020-2021, Dr. Nejadmalayeri published two papers: (1) “Asset Liquidity, Business Risk, and Beta,” at Global Finance Journal and (2) “Equity Short Interest and the Cost of Corporate Debt” at Multidisciplinary Business Review. Dr. Nejadmalayeri is additionally collaborating with the junior faculty and former doctoral students on five other projects concerning debt covenants and corporate bond ownership. Dr. Nejadmalayeri teaches the full sequence of courses necessary for the Banking Minor in Finance. In his bank management course, he delves into the inner-workings of banks while overviewing a long history of banking as told by Niall Ferguson’s best-selling book, “The Ascent of Money”. In his bank policy course, he prepares students for Credit Essentials Certificate through rigorous real world case analysis and live presentations to Wyoming’s own renowned commercial banking dignitaries. Students additionally revel in the glorious story of the famed Morgan Dynasty vis-à-vis American banking history through the lens of Ron Chernow’s best seller, “The House of Morgan”. His fixed income securities course follows the CFA© curriculum and offers students a tour de force of bond markets. His Secular Stock Cycles is a tour de force of the conceptual foundations of secular stock market cycles. The course starts with pioneering business cycle theory of Schumpeter and examines the enduring impacts of demography and technology in the last 200 years of U.S. stock market cycles. Dr. Nejdmalayeri’s research in bonds intimately compliments his teaching in banking

and fixed income securities. Dr. Nejadmalayeri's new Blockchain and Banking is a truly unique course with in-depth and broad coverage of payment systems, applications of distributed ledger technologies in payments, central bank digital currencies, and decentralized finance applications. As the results of the pedagogical innovations in this course, Dr. Nejadmalayeri has been able to secure guest speakers like Dr. Thomas Moser, the alternate member of Swiss National Bank's governing board and Professor Jamail Sheikh from Columbia University and the founder of Chainhaus. Dr. Moser presentation was hosted by UW's Center for Blockchain and Digital Innovation and attracted 300+ registered participants from 20+ countries.

Patrick M. Kreiser, (Ph.D., University of Alabama), *Rile Endowed Chair of Entrepreneurship and Leadership*. During the 2020-2021 academic year, Dr. Kreiser served on the University of Wyoming Innovation Pillar Task Force at the request of President Seidel; served as the faculty lead for the John P. Ellbogen \$50K Entrepreneurship Competition; continued to serve in a leadership role related to the revised cross-campus Entrepreneurship Minor and new COB Entrepreneurship Major; served as a champion and thought leader representing Entrepreneurship within the College of Business, across the University of Wyoming, and throughout the state of Wyoming; served on the Editorial Review Board for Journal of Business Venturing and Entrepreneurship Theory and Practice (recognized as the top two journals in Entrepreneurship); created and taught ENTR 4750 (Theories of Entrepreneurship), which serves as the required capstone course for the new Entrepreneurship Major and was offered for the first time in Fall 2020; and taught ENTR 4700 (Business Model Creation and Launch) offered specifically for the John P. Ellbogen \$50K Entrepreneurship Competition finalists. Dr. Kreiser served as the lead organizer for the inaugural Rocky Mountain Entrepreneurship Research Conference, which was held in Laramie during 2020. This conference brought together leading Entrepreneurship scholars from across the world. Dr. Kreiser received the "COB Belt Buckle Research Award" for research productivity from the College of Business in 2020 and also received a COB merit-based research award for his research publications. During 2020-2021, Dr. Kreiser had a paper published in Entrepreneurship Theory and Practice (5-year impact factor=9.547), which is one of the top two journals in Entrepreneurship. He also was the co-editor of a book titled "Entrepreneurial Orientation: Epistemological, Theoretical, & Empirical Perspectives." Volume 22 of Advances in Entrepreneurship, Firm Emergence and Growth. His paper submitted to the United States Association of Small Business and Entrepreneurship (USASBE) Conference was awarded the 2020 USASBE Best Empirical Paper Award. USASBE is the largest annual academic conference in Entrepreneurship. His paper received first place out of over 450 paper submissions. He had 962 citations of his research during 2020-2021 according to Google Scholar as of June 15, 2021.

Eric Johnson, (Ph.D., Arizona State University) *The Clara Raab Toppan Distinguished Professorship in Accounting*. In Fall 2020, Dr. Johnson published a major study of auditor and CFO narcissism and its influence on auditors' fraud risk assessments in a top-ranked Accounting journal. He also advanced a number of continuing research projects involving junior UW accounting faculty at UW to increase the department's research productivity and visibility. As of the end of the Spring 2021 semester, two of these projects are under review at high-quality academic journals, with one other at the advanced pilot study stage and a fourth in the early phase of experimental design. As director of the MS Accounting program, Dr. Johnson led the initiative to take the program entirely online beginning in Fall 2020. The MSA program is entering a stage of rapid growth, attracting adult learners from Wyoming and the surrounding region who are able to pursue graduate studies and professional certification in accounting while remaining employed in their local communities. Dr. Johnson teaches a popular seminar on the psychology of management fraud in the MSA program, which also attracts students from other graduate programs both within and outside the College of Business.

Todd L. Cherry (Ph.D., University of Wyoming) Department of Economics, **John S. Bugas Chair**. During the 2020-21 academic year, Dr. Cherry engaged with students at all levels. As the current Director of Graduate Studies, he mentored the MS and PhD students and served on multiple theses and dissertation committees. At the undergraduate level, he taught a senior capstone course (The Evolution of Economic Ideas) and a freshman introductory course (Principles of Microeconomics). Dr. Cherry advised the independent research efforts of more than 16 undergraduate students and collaborated with four PhD students on multiple advanced research projects. He supported students in their transition to life beyond the UW campus by assisting with securing employment opportunities and graduate school admissions. Cherry's research addresses policy-relevant challenges, with a particular focus on energy and environmental resources. In the past year, he published multiple journal articles in leading peer-reviewed journals and continues to be ranked among the top economist in his field. Much of his work attracts external funding that supports graduate students. Cherry, along with UW colleagues, received funding from Wyoming Health and Bioscience Hub to conduct research on the risk reduction behavior of Wyoming residents. Results were shared with decisionmakers responsible for navigating the benefits and costs of COVID-19 actions. Dr. Cherry was the lead investigator for a National Science Foundation (NSF) funded research project that investigates the strategic and governance issues related to the emerging technologies of solar geoengineering. The three-year project is a collaborative effort with Duke University. Also, he was a member of a UW team that continues to develop a proposal for NSF's Track-1 EPSCoR program. Cherry is on the editorial team of three international journals, including *Resource and Energy Economics* and *Journal of Environmental Economics and Management*. He is a faculty affiliate with the Ostrom Workshop at Indiana University-Bloomington and a Senior Research Fellow in the Climate Policy Program at the Center for International Climate Research in Oslo Norway.

Linda L. Price (Ph.D., University of Texas at Austin) **W. Richard Scarlett III and Margaret W. Scarlett Chair of Business Administration**. Professor Price taught a PhD seminar in Consumer Behavior in Fall 2020 and an undergraduate class in Services Marketing in Spring 2021. She officially ended her 3 year term as editor of *Journal of Consumer Research* in December 2020, but continued handling revisions through June 2021. This is a premiere marketing and business journal and has an acceptance rate of less than 6%. Being selected as editor is a significant honor (and a lot of work). Most editors are from Ivy League schools. Linda also published an article in this journal in Fall 2020 as part of a special issue on Consumers' Responses to COVID. In addition, she has a forthcoming article in *Journal of International Marketing* during the academic year of 20/21, and several manuscripts in the review process at top marketing journals. In 2020 she was also given the *American Marketing Foundation* Mentorship Award for lifetime mentorship of Graduate Students. She is the third, and only woman recipient of this prestigious award. The other recipients are Emeritus Professors at Duke University and Columbia University. During the 20/21 school year she served on multiple college and university task forces, and took an active role working with the College of Business Advisory Board to help advance world class research visibility and relevance with our stakeholders. During the year Linda was also invited faculty to participate in several international doctoral consortiums and research conferences (all virtual this year, except an upcoming one in August that was rescheduled from last summer). Some of these are reserved for only the top marketing faculty in the world. Linda is currently chairing two Wyoming PhD students' dissertations. Both research projects are targeted for top journals and make important contributions to consumer well-being. She has assisted one of these students in obtaining University funding as well as significant funding from *The American Marketing Foundation*, and this project was also selected as a best PhD conceptual paper by the *Academy of Marketing Science*. Linda is also chairing a PhD Student dissertation at University of Oregon. This is her first year at University of Wyoming and during this year Linda also finished off an interdisciplinary grant project at University of Oregon around transportation challenges emergent as a result of COVID. The results of the research have been important in city planning for Eugene and the broader region. This is part of a longer- term project with the City of Eugene that

investigates and promotes active and sustainable transportation options. As one of the leading consumer research scholars in the world, Linda brings visibility to University of Wyoming and expertise to her classrooms, and in her service to the college and university.

College of Education

Kimberly Gustafson (Ed.D. University of Wyoming) *Everett D. and Elizabeth M. Lantz Distinguished Professorship in Education*. Kim Gustafson was awarded the Everett D. and Elizabeth M. Lantz Distinguished Professorship in Education in May 2020 and continues until May 2022. Kim's research focuses on purposefully and consistently integrating social studies content into elementary curricula in Wyoming elementary classrooms by using curriculum mapping to guide instruction.

By collaborating with current Wyoming elementary teachers (both mentor and non-mentor), to create integrated social studies curriculum maps for grades K-5 based on the National Council for Social Studies Standards and the Common Core State Standards provides current teachers with a framework for teaching social studies consistently and with greater depth. Providing the mentors with the proper understanding and tools for curriculum mapping and integration; has also shown to better prepare UW pre-service elementary education teachers by providing them with effective ways to integrate social studies into the classroom in purposeful and consistent ways. This research meets the College of Education and The Wyoming-School University Partnership mission in the following ways. The project aims to collaborate with K-5 teachers in the State in an effort to provide quality social studies instruction for all students. It also serves the purpose of advancing teacher education and the renewal of public schools through creating integrated social studies curriculum maps that can be utilized by both pre-service and current Wyoming elementary teachers. Since July 2020 Kim has developed a survey to introduce this project to approximately 44 mentor teachers and 44 pre-service teachers across Wyoming concerning social studies instruction in the classroom. This survey serves the purpose of collecting baseline data. She has also been designing and collecting curriculum resources for grades K-5 to help create individual, standards-based, integrated social studies units of study. From the data analysis and the creation of the social studies units, the intended outcome for this project is to integrate social studies into Wyoming elementary classrooms to enhance student education and teacher instructional proficiency by creating integrated social studies curriculum maps K-5. This research aims to encourage elementary educators to bring social studies back into the classrooms in a purposeful and consistent manner by providing them with standards-based curriculum maps. By providing a framework to help integrate social studies into classroom instruction, it will benefit both teachers and students, while simultaneously preparing our UW pre-service teachers for curriculum integration to ensure social studies education exists in all our Wyoming elementary classrooms moving forward.

Patrick Manyak (Ph.D., University of Southern California) *Everett D. and Elizabeth M. Lantz Distinguished Professorship in Education*. Dr. Manyak just completed his first year of research funded by the Lantz Professorship Award. Dr. Manyak's project involves working with 14 kindergarten teachers at the Aspen Early Learning Center in Riverton, Wyoming to implement and test the effects of multifaceted vocabulary instruction. During this first year, he used the Lantz funds to support my summer work developing the project's vocabulary lessons and an assessment for taught words and to provide an honorarium to each of the participating teachers. During the school year, he assessed approximately 140 kindergarten students in the fall and spring using a standardized measure of general vocabulary and his own assessment of target words, modeled vocabulary lessons in each of the 14 classes, conducted fidelity observations of vocabulary lessons, and met with the team of teachers by Zoom throughout the year to discuss the project. Overall, the fidelity observations demonstrated that the teachers were all implementing key elements of the vocabulary lessons to a high degree. Initial analysis of the student outcomes on a commonly used standardized measure of vocabulary indicates that the participating

students made greatly accelerated growth in general vocabulary vis-à-vis the norming sample. Specifically, the mean score for the Aspen students at the beginning of the year showed that the group was at the 45% in vocabulary knowledge. The end-of-year mean score for the group corresponded to the 68%. This kind of accelerated growth in general vocabulary knowledge is unprecedented in vocabulary research! This summer, Dr. Manyak will revise the vocabulary lessons based on teacher feedback. The teachers are excited for a second chance to implement the instruction next year, and will prepare to conduct a quasi-experimental trial that will provide stronger evidence of the impact of the intervention.

College of Engineering and Applied Science

Dennis Coon, (Ph.D., Pennsylvania State University) *H.T. Person Professorship of Engineering Education*. Dr. Coon coordinated H.T. Person Distinguished Speaker Series with Dr. Karl Reid, Executive Director of the National Society of Black Engineers. Dr. Reid presented a talk entitled “The Case for Diversity and Inclusion, From an Engineer’s Perspective” on Friday, October 16, 2020. Prof. Coon coordinated the CEAS Freshman Design Challenge for Fall 2020. The Freshman Design Challenge activities were significantly impacted by restrictions on in-person events during the pandemic. Instead of a design challenge day as the culminating event, students recorded videos demonstrating their design challenge projects. Prof. Coon collaborated with the CEAS John and Sally Steadman Endowment for Educational Improvement Grants program, and H.T. Person Endowment funding was used to implement and enhance online learning methodologies in CEAS. The H.T. Person Endowment funding was used to provide equipment to several CEAS faculty to implement the mandatory conversion to online instruction. Since travel was restricted during the pandemic, funding was provided for several CEAS faculty members to participate in virtual events focused on active learning, engineering education, and engineering accreditation. Funding for the registration of the student officers of the UW Student Section of the National Society of Black Engineers to attend a virtual national conference was provided. Prof. Coon assisted with the analysis of data from U.W. students completing the Fundamentals of Engineering Exam and was the instructor of record for two capstone design engineering courses during AY 20-21.

Dimitri Mavriplis, (Ph.D., Princeton University), *A.J. Castagne Professorship in UW’s College of Engineering and Applied Science (CEAS)*. During the 2020-2021 academic year, Professor Mavriplis taught two courses in the department of Mechanical Engineering, managed a research group consisting of two PhD graduate students, one MS graduate student, and three postdoctoral researchers, and was involved in various university and external professional service commitments. In Fall 2020, Professor Mavriplis taught ME 4240: Gas Dynamics, a senior elective course in our department. In Spring 2021, he taught ME 5462: Computational Fluid Dynamics II, which is a graduate level course in our department in the area of research expertise of Professor Mavriplis. In both courses he obtained excellent student evaluations, and his evaluations in Fall 2020 made him the highest rated professor in the ME department for that semester. Throughout the year, Professor Mavriplis managed his on-going research group which currently consists of three postdoctoral researchers, two PhD graduate students and one MS graduate student. Additionally, three external postdoctoral researchers were supported on a part-time basis over the past academic year. Emmett Padway obtained his PhD degree in Fall 2020 and is currently employed at the National Institute of Aerospace, in Hampton VA. During the past academic year Professor Mavriplis and his research group have published 8 conference papers and 4 archival journal papers. Professor Mavriplis was also a lead author on a recent NASA report entitled: “Requirements for Aircraft Certification by Analysis: A 20-year Vision for Virtual Flight and Engine Testing”. This report documents a two year effort, sponsored by NASA, to establish requirements for certification by computer analysis, undertaken by the team which included representation from Boeing, Pratt and Whitney, Stanford University and the University of Wyoming. Professor Mavriplis has been involved extensively with the NCAR-Wyoming alliance, and has served

on the Science Requirements Advisory Panel (SRAP) for the NWSC-3 procurement. Professor Mavriplis currently serves as the Chair of the CFD2030 Integration Committee within the American Institute of Aeronautics and Astronautics (AIAA). Professor Mavriplis also serves as a member of the AIAA High-Lift Prediction Workshop organizing committee and the AIAA Community of Interest on Aircraft Certification by Analysis. Professor Mavriplis also serves on the NREL Working group on wind-sim benchmarks. Finally, Professor Mavriplis and two of his former students wrote an SBIR Phase 2 proposal which was awarded in May 2019 and has been active throughout CY2020-2021. Another Phase 1 proposal was written in March 2020 and was selected for award in June 2020 and was completed in February 2021. NASA is the sponsor for both SBIR projects. The research on computational methods for aerodynamics and wind energy undertaken by Professor Mavriplis' group is highly relevant and of interest to the various companies involved in current and future planned wind plant installations in the State of Wyoming. Dr. Mavriplis' research has also been instrumental in leveraging the NCAR-Wyoming Supercomputer (NWSC) facility and demonstrating the importance of this facility for competitive research at UW, for student and faculty recruitment, as well as for economic development and diversification within the State of Wyoming.

Jonathan Brant, (Ph.D., University of Nevada, Reno), *Vincent O. Smith Professorship in Engineering*. Dr. Brant was promoted to the rank of Professor for the recent academic year. He taught 3 courses during this time, which included CE 4410 (design of wastewater treatment facilities) and twice taught CAE 3000 (Vista III). He was the advisor for 2 masters and 3 doctoral candidates. He was the Principal Investigator on four active research grants related technology development for treating oil and gas produced waters, including a DOE sponsored project on developing membranes for the selective recovery of hydrocarbons from mixed brines. Other efforts included a now completed Bureau of Reclamation project focused on synthesizing nanocomposite membranes for desalination applications using imogolite nanotubes as the nanofiller and a partnership project with a company for developing treatment systems using magnetic fields. These projects have an overall goal of reducing the energy consumption of desalination processes so as to make them more viable for rural communities and industries. Together with his graduate students he published 4 articles on his research in peer-reviewed journals. He has submitted a variety of proposals to Federal agencies to continue his work on water treatment technologies, such as the National Science Foundation and the Department of Energy. The focus of Dr. Brant's research is the development of new materials and technologies for separating materials, with an emphasis on resource recovery, from water. These applications range from produced water treatment to municipal water reuse to the recovery of elements of value from aqueous mixtures. The benefits of this work to Wyoming include the expansion of our ability to successfully utilize our State's resources, diversification of our water resources, and environmental protection. Dr. Brant is currently working with various energy partners in Wyoming to advance our capabilities in lithium, and other precious element, recovery from industrial brines like produced waters. His group is preparing to set up a pilot-system in the Rock Springs area that will be treating produced water from the Green River Basin. Process flows (vapor and salt cake) will then be processed to extract lithium. An important goal of this work is to demonstrate the economic viability of lithium extraction from these waters. Our ultimate objective is to facilitate the commercial development of lithium extraction from these waters to diversify Wyoming's economy and to improve the economic vitality of our energy resource industries.

Suresh Muknahallipatna (Ph.D., University of Wyoming), G.J. *Guthrie Nicholson Professorship in Electrical Engineering*. Dr. Muknahallipatna has received awards, recently earned, the George Duke Humphrey Distinguished Faculty Award for being a teacher, mentor, inventor, and entrepreneur. The G. J. Guthrie Nicholson Chaired Professorship of Power Engineering is specific to the field of electric energy. Dr. Muknahallipatna was appointed to the position effective July 2019, recognizing his research work in optimizing parallel algorithms and software for execution on heterogeneous hardware architectures consisting of traditional CPU and accelerators.

He has applied the high-performance computing and deep learning research expertise to perform a transient stability analysis (TSA) of the power grid in near real-time. Achieving near real-time TSA of a power grid will allow grid operators to transfer more power over existing transmission lines. This research has resulted in the development of a modified parallel-in-time algorithm, and Machine Learning algorithms for real-time TSA of a power grid. Dr. Muknahallipatna and his research team have three publications on the modified parallel-in-time and machine learning algorithms in the academic year 2020 - 2021. Dr. Muknahallipatna has been successful in simulating and studying the cyber security attacks on a power grid equipped with phasor measurement units to cause the collapse of the grid, using the real-time digital simulator from OPAL-RT technologies. In addition to research on the grid, Dr. Muknahallipatna also researches the use of Deep Learning to detect the no passing zones on two lane highways as part of a research grant from WYDOT. Dr. Muknahallipatna and his research team have two publications on the use of Deep Learning algorithms to detect no passing zones on two lane highways. Dr. Muknahallipatna also researches the use of Augmented reality devices for medical surgery and education. Recently, he along with two UG students, and a graduate student have developed a medical image viewing wireless device to assist MDs during surgery. Dr. Muknahallipatna teaches both undergraduate and graduate courses on high-performance computing, machine learning topics and Quantum Computing.

Dr. Mohammad Piri, (Ph.D. Imperial College London), *Thomas and Shelley Botts Endowed Chair in Unconventional Reservoirs and Wyoming Excellence Chair in the College of Engineering and Applied Sciences*. (See WY Excellence Endowment Section)

Dr. Haibo Zhai, (Ph.D. in Environmental Engineering, North Carolina State University) *Roy & Caryl Cline Chair in Engineering, Environment, and Natural Resources*. Dr. Haibo Zhai joined the Department of Civil and Architectural Engineering as an associate professor in August 2020. Dr. Zhai has also been appointed as Adjunct Faculty in the Department of Engineering and Public Policy at Carnegie Mellon University. At UW, he has developed an interdisciplinary program of research and education in low-carbon energy and environmental sustainability. He offers two new courses: CE4920 Carbon Capture & Storage and CE4920 Water for Energy. Two new PhD students and one postdoctoral research associate have joined his group. His research program addresses technical, economic and policy issues related to energy and environmental systems and spans technological development and sustainable systems integration. His research focuses on carbon capture and sequestration (CCS), water use for low-carbon electric power generation, and power sector decarbonization. Dr. Zhai has received five research grants from the U.S. Department of Energy's Advanced Research Projects Agency–Energy (ARPA-E), the National Energy Technology Laboratory, and the School of Energy Resources (SER), which are used to support his PhD students and postdoctoral researcher. In collaboration with SER colleagues, Dr. Zhai has investigated the viability of retrofitting CCS at existing coal-fired power plants to meet the State of Wyoming's House Bill 200 Low-Carbon Energy Standards. In March 2021, Dr. Zhai presented, along with SER colleagues, to the Wyoming Public Service Commission. To support state policy development and implementation, Dr. Zhai is making an effort to deliver his major findings and recommendations to both public and private stakeholders, including the Office of the Governor, the Wyoming Public Service Commission, the Wyoming Legislature, and the Basin Electric Power Cooperative. Dr. Zhai has published five research articles in top journals, such as *Applied Energy*, *Energy Policy*, and *Environmental Science & Technology*, and had five journal manuscripts under peer review. His energy and environmental studies explore opportunities to reductions in coal-fired power plant emissions in the near term, highlight the time to a shift of U.S. power-sector policy on carbon dioxide emissions reductions beyond 2030, and emphasize the incorporation of climate change into planning of future energy systems. Dr. Zhai serves as a member on the graduate student committee and the ABET committee in the home department. In addition, Dr. Zhai is a guest editor of *Energies*, a journal of the

Multidisciplinary Digital Publishing Institute, and also serve on the advisory board of *iScience*, an interdisciplinary journal of Cell Press.

Lamia Goual, (Ph.D., Imperial College in London, UK) *Constagne Endowment for Mechanical, Petroleum Engineering and Computer*. Dr. Goual taught two graduate courses in the 2020-21 academic year: PETE 5080 (Interfacial Phenomena) and PETE 5150 (Carbon Engineering). She was the advisor of 5 doctoral candidates and 1 MSc student who graduated during this time period. She is the co-Principal Investigator on a \$10M grant from the U.S. Department of Energy on foam-assisted hydrocarbon gas injection in Bakken formations in collaboration with Hess Corporation. She has also submitted two research proposals to the U.S. National Science Foundation in collaboration with multiple university partners for the creation of an Engineering Research Center for sustainability in petroleum extraction and another one for regional greenhouse gas emissions neutrality. She has published 13 peer reviewed papers in the past year and presented a keynote speech on emulsions and interfacial phenomena at the International Petrophase conference organized by Exxon Mobil. She is the Associate Principal Editor of Fuel journal and has just accepted a new appointment with Energy & Fuel. She is the graduate coordinator of the department of Petroleum Engineering and a member of its Strategic Visioning Goals Committee. Dr. Goual is the manager of the Hydrocarbons Laboratory at the Engineering Education and Research Building and was instrumental in the purchase, installation, and operation of its shared equipment. Her efforts are well aligned with the vision of the Engineering Initiative and are tremendously helpful to advance graduate education in the College. She is also leading the creation of a new graduate program in Energy Engineering that will attract more students to Wyoming and help with the Energy transition. Her research interests are in colloid and interface science, flow through porous media, nanotechnology, molecular engineering, electron microscopy and digital rock physics with applications to hydrocarbon recovery, flow assurance, environmental remediation, carbon capture and storage. She is particularly interested in intermolecular and surface interactions, wetting phenomena, functional nanomaterials, and structure-function relationships. The benefits of her research to Wyoming include the ability to expand and diversify the utilization of the State's natural resources. For example, her latest research enabled the synthesis and characterization of novel graphene-based nanofluids from Powder River Basin coal and their application as flow additives for improved oil recovery. More specifically, her engineered carbon nanosheets and graphene quantum dots have shown a superior ability to enhance the flow and transport of nonaqueous phase liquids in porous media and a patent on this new invention was successfully filed last year. Dr. Goual was recently promoted to the rank of Full Professor in the College of Engineering and Applied Sciences. Her outreach activities with the Wyoming Summer High School Institute aim at inspiring young female Wyomingites to pursue STEM-related career paths.

Mike Borowczak, (Ph.D., University of Cincinnati) *Harris Early Career Faculty Fellowship*. In the 2020/2021 academic year Dr. Mike Borowczak, the Loy and Edith Harris Assistant Professor of Computer Science, taught eight courses (~ 150 students), was awarded just over \$2.1 million dollars in funding (\$1M as PI; \$1.1M as Co-PI), and was part of a interdisciplinary team which was awarded both a UWYO Grand Challenges award as well as a Provost's Initiative award. He was actively involved in research and outreach funded by the National Science Foundation, the National Security Agency, Department of Energy (through Idaho National Laboratory), Wyoming Department of Education, as well as several industry partners (IOHK, Kraken, Microsoft, MilliporeSigma). His outreach work included developing and running three week-long federally supported professional developments for over 100 Wyoming K-12 educators, students, and state librarians through a collaboration known as the WyCSHub (uwo.edu/WyCS) with the College of Education (Dr. Andrea Burrows, Assoc. Dean of Undergraduate Studies). His current labs, the Cybersecurity Education and Research Center (Director) and Wyoming Advanced Blockchain Lab (Co-Director) support 1 Post-Doctoral researcher, 9 PhD students, 1 MS student, and another 20+ undergraduate students as well as three external researchers (2 PhD and

1 BS). In the past year he his collaborators have published 15 peer-reviewed publications. His endowed professorship has enabled him to support students in ways that go beyond what federal agencies would typically support. In particular, Dr. Borowczak was able to use the Loy and Edith Harris endowment to support several student and faculty conference registrations, student participation in the Wyoming Innovation Networks pilot Software Engineering Bootcamp, a part-time undergraduate student researcher, and the overhaul of a national organization's open access journal, and a communication platform (Slack) for the Computer Science Department's students, faculty and alumni. Finally, in addition to these contributions, the endowment funds were also used to support and two senior capstone teams, one in Computer Science (Secure 3D Printing) and one in Mechanical Engineering (Secure Autonomous Rover Swarms) featured in the May 2021 issue of the UWYO Magazine ("Made It"). Dr. Borowczak's interdisciplinary work is rooted in partnerships - he continues to utilize his Loy and Edith Harris Assistant professorship to bring people together to create and support positive change in our Wyoming communities. Visit <http://uwyo.edu/cedar> for more details about Dr. Borowczak's work.

Mohammad Piri, *Alchemy Sciences Petroleum Engineering Chair* – (See WY Excellence Endowment Section)

E.G. Meyer Family Visiting Industry Professorship – Vacant

Le Norman Endowed Leadership Chair in Petroleum Engineering -- Vacant

Interdisciplinary

Drew Bennett, (Ph.D. Geography, Oregon State University) ***Whitney MacMillan Professor of Practice in Private Lands Stewardship***. Dr. Bennett leads the Whitney MacMillan Program in Private Lands Stewardship in the West, housed within the Ruckelshaus Institute at the University of Wyoming. The program supports research, information synthesis, outreach, and teaching to help sustain working farms and ranches in Wyoming and the West. During FY2020-21, Dr. Bennett published 2 peer reviewed journal articles. The first article used a social science perspective to understand how holistic grazing strategies can provide financial and ecological benefits to ranches as a complement to a large body of ecological research and was published in the journal *Rangelands*. The second article, published in a special issue of the journal *Conservation Science & Practice*, described how rancher led conservation groups have catalyzed landscape scale conservation in the West. Additional research efforts resulted in several reports including documenting rural westerner's attitudes towards the environment and conservation and a review of human dimensions research on sagebrush management. Given the impacts of the pandemic, Dr. Bennett shifted outreach activities into online formats including helping to organize a webinar series, *Conservation Conversations*, on the future of conservation in the United States. This collaborative effort among nine western universities reached thousands of participants across the country. As part of the series, Dr. Bennett organized and facilitated a highly attended webinar on the role environmental conservation can play in stimulating economic development in rural western communities. Additional outreach efforts included co-authoring a guide for landowners on conservation finance and launching *Producer Perspectives*, a storytelling series documenting landowner experiences with management, conservation, and stewardship efforts on their land as told through their own words. Dr. Bennett continues to teach *Conservation Entrepreneurship*, a course that applies entrepreneurial concepts to environmental conservation and trains students in business concepts with the aim of inspiring innovation in the environmental sector. All of these endeavors support the stewardship of private lands in Wyoming and the West.

Bruce Parkinson, (Ph.D. California Institute of Technology) *J.E. Warren Distinguished Professorship of Energy and the Environment*. Dr. Parkinson has been a Professor of Chemistry at Colorado State University since 1991. Dr Parkinson is jointly appointed in the School of Energy Resources and the Chemistry Department. (See School of Energy Resources (SER) faculty, part B)

Steve Smutko, *Eldon & Beverly Spicer Chair in Environmental and Natural Resources* (See WY Excellence Endowment Section)

Dr. Jacob P. Hochard, (Ph.D. in Economics. University of Wyoming) *Knobloch Assistant Professor of Conservation Economics*. Dr. Hochard joined the University of Wyoming in fall 2020. In spring 2021, he taught undergraduate-level Environmental Economics to Haub School of Environment and Natural Resources students. He advised 1 PhD economics student, served on the thesis committee for 1 joint JD/MA Environment and Natural Resources student and hired 1 undergraduate ENR student as a research assistant. In addition, Dr. Hochard recruited three incoming post-doctoral scholars and 1 MS Environmental Science and Society student. During academic year 2020-2021, Hochard had 3 peer-reviewed articles published or accepted for publication spanning topics of (i) societal benefits from federal listing and delisting of gray wolves, (ii) international climate change policy and negotiations and (iii) methodological approaches in experimental economics. Dr. Hochard also refereed 5 articles for peer-reviewed journals and presented virtually at the Southern Economic Association, Mississippi State University, University of Wyoming's Wildlife Society, and the U.S. Environmental Protection Agency. During academic year 2020-2021, Dr. Hochard served as a lead Principal Investigator on two new awards at the University of Wyoming totaling \$1.1 million from the Knobloch Family Foundation and the U.S. Environmental Protection Agency. Hochard also has an incoming award totaling \$223,723 and a pending award totaling \$499,679 from the National Science Foundation. The topics of funded and proposed projects cover (i) the development of Wyoming natural wealth accounts, (ii) the use of machine learning predictions of private drinking water well contamination to support a passive environmental surveillance system, (iii) creation of unified, transdisciplinary data collection standards for research efforts in rapid response to natural disasters and (iv) the use of augmented and virtual reality approaches to support virtual ecotourism in US national parks. Dr. Hochard also served on the planning committee for 22nd Annual Bioecon Conference to-be held in Jackson, Wyoming in September 2021. At this event, Hochard will co-lead a pre-workshop focused on the economics and legal underpinnings to predator management in the West. Together, foundation support, federal and Knobloch endowed funds are being used to build and expand the program area in Conservation Economics, which is housed within the Haub School of Environment and Natural Resources. The program area is rooted in rigorous theoretical and empirical economic modeling of socio-ecological systems, while being inherently "outward facing" and in service to regional stakeholders, economic challenges, and conservation priorities.

John Kaszuba, *John and Jane Wold Chair of Energy* (See School of Energy Resources Faculty (SER) Section)

College of Health Sciences

Nancy 'Niki' Eisenmann (Ph.D., RN, University of Missouri-Kansas City) *Cheyenne Regional Medical Center Faculty Partnership*. Dr. Eisenmann is currently serving as the Academic Practice Partner with Cheyenne Regional Medical Center and the University of Wyoming. Over this past year, she has worked on laying the foundations of evidence-based practice and research knowledge for the practicing nurses at CRMC. Niki is currently facilitating the evaluation of data for the first research project centered around nurses' knowledge of communication at the end of life. With the magnet status of CRMC, Niki is currently working on implementation of evidence-based changes in multiple standards of practice with nurses including pain assessment scales and

medication administration. She works with the nurse residents on their evidence-based practice projects and implementation of necessary practice changes. She continues to facilitate future research and implementation projects as well as publication and presentations with all nursing staff at CRMC. Dr. Eisenmann has personally published a tool for critical thinking for nurses and look to research the outcomes of this over the next year.

McMurry Foundation Fund in Mental Health and Integrated Care in Honor of Mary Burman – Vacant

College of Law

Jacquelyn Bridgeman, (J.D., University of Chicago), has been the ***Kepler Distinguished Professorship of Law***. In FY 2021, Ms. Bridgeman continued to provide service to both the College of Law and the College of Arts and Sciences through her continued work as the Director of the School of Culture, Gender, and Social Justice. In the 2020/2021 academic year, Professor Bridgeman again taught courses in Race, Gender, and the Law, and Social Justice and the Law. These courses are offered to law students, graduate students, and upper-level undergraduates. In the wake of the social upheaval and social disruption caused by COVID-19, these interdisciplinary courses helped students understand the multivariant complex nature of some of society's most pressing social and political problems, with a focus on seeking real world, practical solutions to the same. Ms. Bridgeman also taught a course on Sports and Entertainment law that was offered to law students only. Putting theory into practice, Ms. Bridgeman continued her work as the magistrate judge for the Albany County Integrated Juvenile Treatment Program (juvenile drug court). Working with a team of community members, Ms. Bridgeman continues to help develop the program according to national best practices and to work to make it a model program for the state and nation, particularly with respect to how to develop a strong program in rural areas. In this past year, Ms. Bridgeman continued work on two book projects. The first with four co-authors aimed at helping students from unrepresented populations be successful in college. The second is a book on social justice in American society.

Stephen M. Feldman, (J.S.M., Stanford University, 1986; J.D., University of Oregon, 1982; B.A., Hamilton College, 1977), has been the ***Jerry W. Housel/Carl F. Arnold Distinguished Professor of Law*** and Adjunct Professor of Political Science since 2002. During the past year, he has published numerous articles and essays, including the following: Review of J. David Holcomb, *Guardian of the Wall: Leo Pfeffer and the Religion Clauses of the First Amendment* (2021), *J. Church & State* (forthcoming); *Blinded by the White: The Nation's Fatal Flaw*, *Cornell J. Law & Public Policy* (forthcoming); *Court Packing Time? Supreme Court Legitimacy and Positivity Theory*, 68 *Buff. L. Rev.* 1519 (2020); *Free-Speech Formalism Is Not Formal*, 12 *Drexel L. Rev.* 723 (2020) (presented at Symposium on Not Your Father's First Amendment); *Free-Speech Formalism and Social Injustice*, 26 *Wm. & Mary J. Race, Gender & Social Justice* 47 (2019) (presented at Symposium on First Amendment Marketplace Morass). This summer, Temple University Press will be publishing his latest book: *Pack the Court! A Defense of Supreme Court Expansion* (Temple University Press, forthcoming 2021). As he does regularly, Professor Feldman taught Constitutional Law I, Constitutional Law II, and Jurisprudence. His research and writing projects emphasize national concerns and are of national interest. As such, they benefit the University of Wyoming, the state of Wyoming, and Wyoming residents. His articles and essays consistently rank in SSRN's Top Ten Percent Total New Downloads List as well as SSRN's Top Ten Percent Total All-Time Downloads List. He is the faculty adviser for the American Constitution Society Wyoming student Chapter.

James Delaney, J.D., Gonzaga School of Law, LLM (Taxation) University of Florida School of Law, ***Winston S. Howard Distinguished Professor of Law***. James Delaney was appointed as the Centennial Distinguished

Professor of Law at the beginning of the 2020-2021 academic year and he is now finishing his first year in that capacity. The administrative and faculty committee appointed Professor Delaney based upon his successful teaching record, his scholarly publication achievements, active involvement in the work of the Tax Section of the American Bar Association, his numerous presentations at tax conferences which are both national and regional, and his membership in both the American College of Tax Counsel and the American College of Trust & Estate Counsel. During the 2020-2021 academic year, Prof. Delaney finished writing and updating a chapter of Planning for Large Estates which was published by several months ago by Matthew Bender Elite Products, a subsidiary of LexisNexis. He has continued to update and rewrite another chapter of this treatise during the spring of 2021. During the fall of 2020 and the spring semester of 2021, Prof. Delaney co-authored an article, Recent Developments in Federal Taxation: The Year 2020, which has been accepted for publication in The Tax Lawyer, Vol. 74, Summer 2021 (forthcoming). Professor Delaney taught Contracts 1, Business Entities Taxation (corporate and partnership taxation), Federal Income Taxation, Estate & Gift Taxation, and Estate Planning during the 2020-2021 academic year. In May, Professor Delaney was selected as the “2021 Most Outstanding Professor” at the College of Law. Along with this accolade, he delivered the Commencement Speech for the graduating law class. Professor Delaney’s teaching efforts at the College of Law reflect his dedication to teaching newly graduated lawyers who largely practice in Wyoming and the Mountain West. His scholarly endeavors emphasize both local and national interests. As such, his publications benefit the University of Wyoming, the state of Wyoming, and Wyoming residents. For example, his books on Federal Income and Estate & Gift Taxation Serve to educate students here at the University of Wyoming and Colleges of Law throughout the Mountain West and abroad. In relation to scholarly presentations, in the fall of 2020, Prof. Delaney attended and spoke at the University of Montana Tax Institute which took place in Missoula, Montana. He has once again been invited to speak at the Montana Tax Institute this coming fall of 2021. In May of 2020, Prof. Delaney co-spoke at a tax conference for the Virginia Law foundation. In June of 2021, Prof. Delaney also co-spoke at the Oregon Tax Institute conference. Professor Delaney would like to thank the University of Wyoming and Dean Klint Alexander for the support he has received over the past year which has allowed him to engage in the above listed endeavors.

Alan Romero (J.D., Harvard University), *Carl M. Williams Professor of Law & Social Responsibility*. Professor Romero is the founding Director of the University of Wyoming Rural Law Center. One of its ongoing projects is its Legislative Research Service, which offers student legislative research and drafting on rural policy issues to local governments and public-interest groups. These projects give students unique experience researching and writing about current public policy issues in the state. During the 2020-2021 academic year, Professor Romero organized and supervised legislative research on three projects. One is a study for the Wyoming County Commissioners Association about land use laws and policies to help preserve wildlife migration corridors. This project will result in a publication distributed to counties throughout the state. The second project is research and publication of a legal guide for Wyoming conservation districts and the public, explaining how to formalize and incorporate irrigation ditches in Wyoming. In connection with this project, Professor Romero arranged a presentation to students by several officials from around the state about Wyoming conservation districts and irrigation ditches. The third project is research contributing to the work of a state bar committee that is considering programs and proposals to attract lawyers to rural communities, support rural practitioners, and better serve rural legal needs. Professor Romero has worked with that committee throughout the academic year. In collaboration with the state bar, he organized and co-hosted a full-day conference at the College of Law on October 16, 2020, with 155 registrants, some attending in person and more attending online. He presented about the shortage of lawyers in rural Wyoming, why it is a problem, and ways that the problem could be remedied, particularly ways to attract recent law school graduates to serve rural communities and ways to help them succeed there. In his work with the committee, he helped to prepare a statewide bar survey about rural practice issues and to analyze the

results of the survey. Professor Romero also did additional research, writing, and editing to prepare his latest article, *Identifying Rural Roads*, for publication in the *Indiana Law Review* in the next few weeks. The article describes and evaluates the various and widely differing state rules regarding the acquisition, creation, recording, and elimination of public roads, particularly rural county roads where these problems are most likely to arise. The article advocates rules that both reduce uncertainty about the status of rural roads and appropriately respond to rural circumstances and explains how some state rules fail to do so and even contribute to the problem. Professor Romero also worked on a co-authored article, *Law in Place: On Urban and Rural Paradigms in Legal Scholarship and Law*. The article considers how place characteristics are and should be relevant to law and its application. He presented a completed draft of the article at the Rural Legal Scholars Workshop during the fall semester, as well as reviewing and commenting on other scholars' works-in-progress, and more informally at the J. Reuben Clark Law Society works-in-progress meeting during the spring semester. Professor Romero taught Property I and Property II, required courses for all first-year law students; Real Estate Finance, which covers subjects tested on the Wyoming bar exam; and Agricultural Law, for which he researched, selected, and edited new case readings throughout the semester, replacing past use of a casebook in the course and emphasizing issues of state and regional interest. He taught all of these courses in law school classrooms with some students attending in person and other students attending online. He also served on a student's master's thesis committee, advised a student writing for the law review, and supervised four students doing independent study writing projects.

Sam Kalen, (J.D., Washington University), *William T. Schwartz Professor of Law and Centennial Distinguished Professor*. Sam Kalen is the William T. Schwartz distinguished professor of law and teaches in the College of Law, and he is a nationally recognized energy, environmental, public land, and natural resources professor. Mr. Kalen's activities and teaching continue to have a direct and relevant benefit to the State of Wyoming. He often is interviewed by the national press on current events, commenting on the matters involving an array of natural resources topics. He lectures and speaks on topics ranging from the future of our electric grid to resource development on public lands. He recently was featured by Vital Interests, a national security forum at Fordham Law School, on the future of energy policy. Professor Kalen founded and is now the co-Director of the Center for Law and Energy Resources in the Rockies and helps organize the annual CLERR Landscape Discussion on Energy Law and Policy. While serving as the Associate Dean, this past academic year he taught Federal Indian Law, Administrative Law, and Environmental Law, and he often teaches Energy Law & Policy, Public Lands, and Legislation as well. He is a co-author of one of the principal public lands and natural resources legal casebooks (Foundation Press) used by law schools across the country. He is a co-author of a book on the history of energy policy, entitled *Energy Follies*, published by Cambridge University Press, along with an earlier book published by the American Bar Association on the Endangered Species Act (ESA)—a book currently being updated. He recently authored a study on the evolution of the National Environmental Policy Act (NEPA), published in the *Environmental Law Reporter*. And he has just completed a manuscript on the history of the act, for publication as a monograph. These are all matters of acute interest to Wyoming. Professor Kalen also has authored numerous scholarly articles and book chapters, including publishing in *Florida Law Review* (often listed as one of the nation's top 30 law reviews), *Environmental Law Reporter*, *Colorado Law Review*, *Marquette Law Review*, *Rutgers Law Review*, *Ecology Law Quarterly*, *NYU Environmental Law Journal*, and *Duke Environmental Law and Policy*; and one of his articles was quoted in a United States Supreme Court opinion. He serves as the College of Law's trustee to, and on two committees for, the Rocky Mountain Mineral Law Foundation, and he serves on the book publishing board for the American Bar Association's Section on Environment, Energy & Resources.

Noah Novogrodsky, (J.D., Yale Law School) *Carl M. Williams Professor of Law and Ethics* and the Faculty Director of the Center for International Human Rights Law & Policy. Professor Novogrodsky's current

scholarship is focused on four international law articles: (1) Winning Transnationalism, an examination of the ways that advocates share foreign and comparative law across jurisdictions, (2) The New Human Right to Property (with Greg Fox), a discussion of the judicial treatment of takings and foreign sovereign immunity after the Supreme Court's decision in *Philipp*, (3) The Many Deaths of Jamal Khashoggi, an in-depth account of the murder of Jamal Khashoggi and its effect on international legal norms, and (4) Farcical Fascism, a study of the fringe element associated with authoritarian regimes. In the last twelve months, Professor Novogrodsky has served as an expert witness in a federal class action suit and in three immigration cases. Professor Novogrodsky has also appeared remotely at conferences and panels in Jackson, in Argentina, and at the CIJA-UJA annual conference in Toronto.

Michael R. Smith (J.D., University of Florida). *Carl M. Williams Professor of Law & Ethics*, split with Noah Novogrodsky. Professor Smith is the Director of the Legal Writing Program and is the Founder and Director of the Center for the Study of Written Advocacy at the University of Wyoming College of Law. Professor Smith is the author of an ongoing column called "Write On!," which appears in the WYOMING LAWYER, a magazine published by the Wyoming State Bar. This column provides instruction for practicing lawyers, judges, and paralegals on how to improve their professional writing. During the 2020-2021 academic year, Professor Smith published the following articles under this column: *Traits of Credibility, Part 4: Candid Concession*, 43 WYOMING LAWYER 52 (August 2020); *Traits of Credibility, Part 5: Organization as a Sign of Intelligence*, 43 WYOMING LAWYER 52 (December 2020), and *Traits of Credibility, Part 6: The Dual Benefits of "Intelligent" Writing*, 44 WYOMING LAWYER 50 (April 2021). Also, during 2020, Professor Smith started researching and writing a Criminal Law textbook to be used in first-year Criminal Law courses in law schools nationally. The book will be a casebook setting out foundational materials and practice problems on the general nature of criminal offenses and affirmative defenses. The working title of the textbook is AN INTRODUCTION TO CRIMINAL OFFENSES AND DEFENSES: A PRACTICAL APPROACH. In November of 2020, Professor Smith finished a working draft of the book (300+ pages) and used this draft as the main textbook for his Criminal Law course in Spring 2021. He plans to submit the textbook for publication in summer 2021. In his role as the Director of Legal Writing, Professor Smith generally administers the legal writing program at the College of Law. During the 2020-2021 academic year, these duties included advising the law school faculty and administration on the legal writing curriculum, working with the Law Library to coordinate the teaching of the first-semester Legal Writing I course and the first-semester Legal Research course, overseeing the hiring of adjunct professors to teach in the first-year writing program, overseeing and mentoring these adjunct professors during the academic year, coordinating the development of the curriculum for the Legal Writing I and Legal Writing II courses, coordinating the development of the Legal Writing II appellate brief problems that are used by the adjunct professors teaching Legal Writing II in the spring semester, overseeing the hiring of student teaching assistants for the first-year legal writing program, overseeing the hiring and performance of a writing specialist from the University Writing Center who provides general writing advice to law students, and generally being the contact person at the law school on issues related to the legal writing program. Also, before the beginning of the Fall 2020 semester, Professor Smith worked with Professor Lauren McLane of the Law School to help organize an introduction-to-law-school event for incoming first-year law students. The two-day program (held on August 10 & 11, 2020) was called the UW Law School Acclimatization Program. In addition to helping organize the program, Professor Smith gave two presentations (totaling 4 hours) to the attendees: *Introduction to the Legal System* (with Deb Person) and *How to Write an Exam Answer* (solo presentation). Professor Smith also participated in the formal Orientation Week for incoming law students at the beginning of Fall 2020. At the orientation, he gave a presentation on the nature and structure of the Legal Writing Program at the College of Law. As for teaching, in Fall 2020, Professor Smith taught 3 sections of Legal Writing I. Legal Writing I is a required course that teaches first-semester law students the foundations of legal analysis, legal research, and legal writing. In Spring 2021, he taught the first-year required course

Criminal Law. In terms of student advising, Professor Smith regularly met with students to offer guidance on law school issues, issues regarding job searches, and issues regarding the practice of law generally. Because his first-semester Legal Writing I course is taught in smaller sections than the students' other first-year courses, and because students in that course meet with him regularly to discuss their writing assignments, Professor Smith often develops a close relationship with the students. As a consequence, these students often seek him out for general advisement beyond the topics of the course and do so even after the course is over.

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