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Research Newsletter

Eighth Annual RCCI Celebration

The eighth annual [Research, Creativity and Community Involvement Celebration](#), encompassing the Spring Jazz Concert, Student Juried Art Exhibition, and Research and Creativity Symposium, was held in an online format this year to great success. Dr. Rosalyn LaPier, a traditionally trained ethnobotanist from the Blackfeet Tribe, delivered the Symposium keynote on the necessity of perpetuating unwritten, Indigenous knowledge and languages. The Jazz Concert was streamed live to hundreds of viewers, sixteen art students were selected for the virtual Juried Exhibition, and over fifty students from across campus participated in the Symposium, with twenty presenting in the virtual live event to over 130 attendees.



Keynote Speaker
Dr. Rosalyn LaPier

**Research,
Creativity &
Community
Involvement
Celebration**

**Streaming Jazz Concert
Virtual Student Art Exhibition
Research & Creativity Symposium**

view all at
msubillings.edu/celebratemsub

Faculty Research

Studying Abandoned Mine Contaminants

Dr. Joseph Hoover, Assistant Professor in the Department of Social Sciences and Cultural Studies, is supported by NIH for his work as Co-PI of the Center for Native Environmental Health Equity Research (UNM). The Center addresses the relationships between exposures to metal mixtures in abandoned mine wastes present in proximity to partner communities on Navajo Nation, the Apsaálooke (Crow) reservation, and the Cheyenne River Sioux Tribe lands. Previous work in Navajo communities suggests that



environmental contamination already affects traditional cultural practices and community health; it remains unclear how emerging contaminants, such as microplastics and other non-metal chemicals generated from trash burning exacerbate these impacts. Dr. Hoover serves as administrative lead for research and community engagement activities that occur with Crow and Cheyenne River Sioux partners; and as co-lead for research project 2, collecting GPS tracking data of livestock and leading analysis and interpretation of health and geospatial data.

COVID-19 Testing Lab

MSU Billings was awarded a grant from St. John's United to establish a Pooled and Environmental Testing Laboratory on the St. John's campus, enhancing surveillance protocols for COVID-19 in vulnerable resident populations while reducing the needs for valuable testing materials. The partnership is led by **Dr. Daniel Willems**, Assistant Professor of Analytical Biochemistry, and utilizes a state-of-the-art RT-PCR lab.

Familial Dysautonomia

The laboratory of **Dr. Lynn George** continues their NIH-funded work on the underlying cellular and molecular causes of Familial Dysautonomia, a genetic disorder that affects the development and survival of certain nerve cells. Dr. George's work has most recently been published in *Nature Communications*, an international peer-reviewed journal that publishes high-quality research in biology, chemistry, physics, and other related areas and is ranked third worldwide in scientific impact. The article, "Elongator and codon bias regulate protein levels in mammalian peripheral neurons," included three MSUB undergraduate students as co-authors.

Collaborations



The Elk River Writing Project, housed in the department of English and directed by interim Dean of the College of

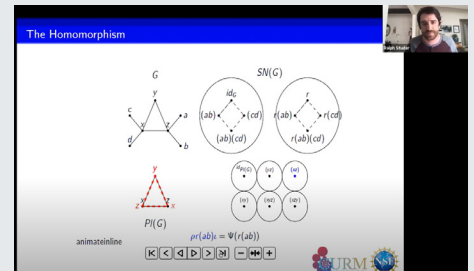
Liberal Arts and Social Studies **Tami Haaland**, has received continued funding from the National Writer's Project and the National Park Service to provide a place-based writing workshop for K-12 teachers focused primarily on the natural history, science, and Native American history of the Park. Young Poets, a program affiliated with creative writing at MSUB and co-founded by Tami Haaland, received a Montana Center for the Book Award and a Library of Congress state award in 2020-21. Young Poets promotes literacy skills for elementary school children through poetry and literature by placing professional writers in classrooms for 12-week programs where students express them-

selves through poetry.

Dr. Sarah Keller, Communications, and **Dr. Joy Honea**, Sociology, conducted research exploring how social media comments inform the promotion of mask-wearing and other COVID-19 prevention strategies. Their research asserts that COVID-19 messaging efforts by public health departments are primarily informational in nature, despite indications that individuals make lifestyle choices based on emotional, social and impulsive factors.

Students in **Dr. Paul Pope's** Public Policy Issues and Analysis course developed policy recommendations related to establishing a local option sales tax in Montana, and funding mechanisms and structures for the Montana public education system. Students collected publicly available data, examined prevailing laws and codes, and reviewed research literature on these local issues,

and presented their recommendations to state legislators and policy experts.



Alexis Stahl and **Ralph Studer** worked on ideas of discrete graph homotopy under the supervision of **Dr. Tien Chih**. Taking the framework of Dr. Chih and Dr. Scull, they were able to show that the collection of nulltopic automorphisms of a graph formed a normal subgroup of the automorphism group. They further found a homomorphism from the automorphism group of a graph, to the automorphism group of its pleat by conjugating with homotopy equivalences. The kernel of this map turns out to be exactly the nulltopic subgroup.

Montana Together Again

College of Business marketing students, led by Professor **A.J. Otjen** and working with the MSUB COVID task force, Riverstone Health, and entities across the state, developed a campaign encouraging vaccination for COVID-19. Students used secondary research and message analysis and testing to produce the website and public service announcement: [Montana Together Again](https://www.mtsu.edu/~ajotjen/mttogetheragain.org).



[MTTogetherAgain.org](https://www.mtsu.edu/~ajotjen/mttogetheragain.org)

BE PART OF OUR GOAL:
75% COVID-19 VACCINATED

Other Accomplishments

Clinical Testing Laboratory

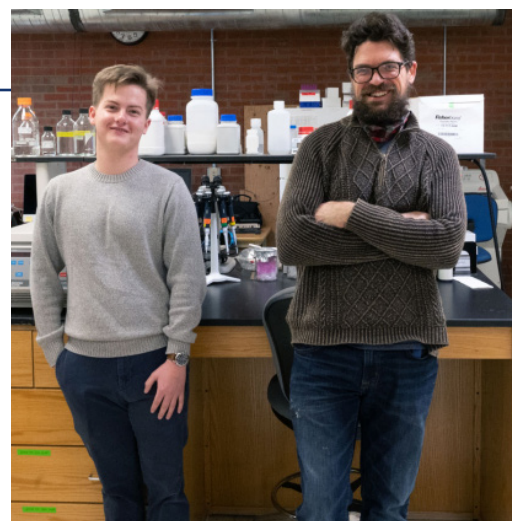


In January 2021, MSUB renovated space at the Student Health Services (SHS) for a MSUB Clinical Testing Laboratory to meet the challenges of the ongoing pandemic. The laboratory has two primary testing goals: surveillance testing of athletes, coaches and trainers per NCAA guidelines for competitive activities (practices and games) and testing of symptomatic students presenting to the clinic. The lab employs a rapid antigen test that utilizes a proprietary immunofluorescence technology to detect SARS-CoV-2 proteins. Since early February, the lab has conducted approximately 950 tests, with only one positive result. The lab is directed by **Dr. David Butler**, assisted by Biology graduate and former Goldwater Scholar **Cody Walters**. This is the first collaboration between Student Health Services and an academic department at MSUB. Going forward, the lab will continue COVID-19 testing, and will

also expand its menu of clinical tests to better serve the students of MSUB, as well as providing internship opportunities for Biology/Chemistry students interested in careers in the medical laboratory sciences.

2021 Goldwater Scholar

MSUB junior **James Unzaga** was recently announced as a recipient of the 2021 Barry Goldwater Scholarship, the third Goldwater recipient from MSUB. A team member in the laboratory of **Dr. Matt Queen**, Unzaga studies the dechlorination of carbon tetrachloride, an environmental contaminant formerly used widely as a refrigerant and cleaning agent. Unzaga used fundamental kinetics experiments, coupled with synchrotron core electron spectroscopy data to connect the electronic structure dechlorination function relationship in the small molecule copper bis pyradinedithiocarboxylate. This work will serve as a starting place for the development of novel environmental remediation tools.

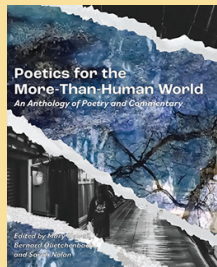


Institute for Neurodiversity and Applied Behavioral Analysis

The newly formed Institute for Neurodiversity and Applied Behavioral Analysis is in the process of hiring a Program Director and will hire a medical director over the course of the next year; these positions are funded through a multi-year grant from the M.J. Murdock Charitable Trust secured by the MSUB Foundation. The Institute will provide an on-campus demonstration site for socially valid applied behavior analysis programs for children and adolescents with social and behavioral challenges, serving as both a site for clinical internships and for providing direct services to children and families. The College of Education plans to begin offering services through the Institute in the fall 2021 semester.

Faculty Publications & Endeavors

Dr. Emily Arendt, Associate Professor of History, most recently published her work exploring the relationship between political culture and food in *Food & Foodways* and *Journal of the Early Republic*. Her papers explore 1) The history of “jumbles,” a type of cookie, from America’s colonial period through today, looking at the cultural factors that shaped iterations of the jumble during the American Revolution, the early 1800s, post-Civil War, and the late 19th and early 20th centuries; and 2) Culinary partisanship in the election of 1840.



Dr. Bernard Quetchenbach, Professor in the Department of English, Philosophy, and Modern Languages, co-edited *Poetics for the More-than-Human World*, a collection

of poetry and commentary featuring over 140 writers from several continents, published by Spuyten Duyvil Press of New York. English student Brie Barron served as Book Designer for the publication.

Professor of Sociology **Stephen Eliason**’s recent research examining factors related to hunting access on private and public lands, the importance of trophy wildlife in modern society, and conservation law enforcement has been published in the *International Journal of Rural Criminology*, *Human Dimensions of Wildlife*, and *Capitalism Nature Socialism*.

College of Business faculty **Brenda Dockery** and **Dr. Anna Talafuse**, and City College faculty **Jessie Perius**, have published in the *Journal of Selling* and the *Journal of Interdisciplinary Social Sciences* related to a sales calling experiential learning project and additional aspects of the exercise

associated with Sales Call Anxiety. Dr. Anna Talafuse published in the *Journal of Education for Business* outlining an experiential project used in the Marketing Research course.



Keeara Rhoades, Assistant Professor of Art, is Artist-in-Residence at the Yellowstone Art Museum (2020-2022), where she is producing her multi-media art film, *The Shape of a Corner*.

Department of Music Professors **John Roberts** and **Dr. Scott Jeppesen** wrote and arranged a variety of pieces for jazz and symphony orchestras. Dr. Jeppesen published six of his original arrangements.

Please see a full list of faculty publications and professional presentations from the 2020-2021 academic year on the pages below.

SOMETHING MISSING?

Please send us your research stories and publication lists to be included in the next Research Newsletter.

**SEND US YOUR
SUBMISSIONS**

2020-2021 Academic School Year Faculty Publications

Publications

Arendt, Emily J. "All Jumbled Up: Authenticity in American Culinary History," *Food & Foodways* Vol.28 (3): 153-173 (2020).

Arendt, Emily J. "'Two Dollars a Day, And Roast Beef': Whig Culinary Partisanship and the Election of 1840," *Journal of the Early Republic* (Spring 2020).

Eliason, Stephen L. (In Press). "Policing the Poachers in a Western State: Game Wardens and the Use of Discretion." *International Journal of Rural Criminology*

Eliason, Stephen L. (In Press). "A Place to Hunt: Some Observations on Access to Wildlife Resources in the Western United States." *Human Dimensions of Wildlife*

Eliason, Stephen L. 2020. "Poaching, Social Conflict, and the Public Trust: Some Critical Observations on Wildlife Crime." *Capitalism Nature Socialism* 31(2):110-126.

Gilbertz, Susan J. and Damon Hall. *An Introduction to Sustainability: The Case of the Yellowstone River Valley*. With Business Expert Press, Sustainability Series, (Under contract, forthcoming 2021).

Hall, D.M., **Gilbertz, S.J.**, Anderson, M.A., Avellaneda, P., Ficklin, D., Knouft, J., and C.J. Lowry. (2021). "Mechanisms for engaging social systems in freshwater science research." *Freshwater Science*, 40(1), March.

Emerson Madeline R., Hall, Damon M., and **Susan J. Gilbertz.** (2021). "Pipeline Pipedreams: Oil Spills, Pipeline Accidents, and the Local Truths Embedding Fossil Fuels in the Yellowstone River Valley, United States." *Energy Research & Social Science*, 72, February. Available online 12/3/2020 at <https://doi.org/10.1016/j.erss.2020.101859>

Gilbertz, Susan J., Anderson, Matthew, and **Jason Adkins.** (2020). "The Bakken Blind Field: An Empirical Investigation of Planetary Urbanization and Opacity in the Oil and Gas Fields of Eastern Montana, USA." *Annals of the American Association of Geographers*, vol. 110, online 27 July. DOI: 10.1080/24694452.2020.1774351

Gilbertz, Susan J., Emerson, M.R. and Damon M. Hall. 2020. "Yellowstone River Cultural Inventory-2012: Summary Report of all Segments." Co-Sponsored by the Yellowstone River Conservation District Council, with funding from the US Army Corps of Engineers. 468663 Planning Assistance Study MT. 94 pages. DOI: 10.13140/RG.2.2.22355.12321 Report available at:

http://ftp.geoinfo.msl.mt.gov/Documents/Projects/Yellowstone_River_Clearinghouse/YRCI_2012_SUMMARY_REPORT_of_ALL_SEGMENTS_FINAL_wPubDate.pdf

Gurney, Brian, and Joshua Hill. Volatile Crude and Railroad Regulation, *Journal of Transportation Management*, 2019, Volume 28, Issue 1.

- Haaland, Tami.** "Arsenal," "Noon Lockdown," and "The Practice of Trees." *Welcome to the Resistance Anthology*. Galloway: NJ: South Jersey Culture and History Center, 2021.
- Haaland, Tami.** "Sewing Room, 1973." *More in Time: A Tribute to Ted Kooser*, edited by Jessica Poli, Marco Abel and Timothy Schaffert. Lincoln, NE: University of Nebraska Press, 2021.
- Haaland, Tami.** "Understanding Silence." *Dark Matter: Women Witnessing*, March 2021.
- Chief, K., Arnold, R., Curley, A., **Hoover, J. H.**, Kacira, M., Karankiola, V., Simmons-Potter, K., Tellman, E. (2021). *Addressing food-energy-water insecurities of the Navajo Nation through university-community collaboration* (1st ed., vol. 23, pp. 31-36). American Water Resources Association. <https://online.flippingbook.com/view/167753/32/>
- Hoover, J. H.**, Lin, Y., Beene, D., Liu, Z. (2020). A geography-centered transdisciplinary approach to evaluate potential human exposure to abandoned uranium mine waste in an Indigenous community in the western United States. *2020 American Association of Geographers Conference Book*. Washington D.C.: Association of American Geographers.
- Hoover, J. H.**, Erdei, E., Begay, D., Gonzales, M., Jarrett, J. M., Cheng, P.-Y., Lewis, J., Team, N. S., others (2020). Exposure to uranium and co-occurring metals among pregnant Navajo women. *Environmental Research*, 109943.
- Lin, Y., **Hoover, J.**, Beene, D., Erdei, E., Liu, Z. (2020). Environmental risk mapping potential for abandoned uranium mine contamination on the Navajo Nation, USA, using a GIS-based multi-criteria decision analysis approach. *Environmental Science and Pollution Research*.
- De La Rosa, V. Y., **Hoover, J. H.**, Du, R., Jimenez, E. Y., MacKenzie, D., N. S. T., Lewis, J. (2020). Diet quality among pregnant women in the Navajo Birth Cohort Study. *Maternal and Child Nutrition*.
- Keller, S.**, Wilkinson, T., & **Otjen, A.** (Submitted). Real ID Campaign raises questions about privacy concerns. *Journal of Consumer Marketing Research*.
- Keller, S.**, Wilkinson, T., & **Otjen, A.** (2020). REAL ID: Privacy concerns still a factor, but weakly so. *Journal of Transportation Safety*.
- Keller, S.**, **Otjen, A.**, and Wilkinson, T. Improving Energy Conservation Awareness in a Rocky Mountain City, *Journal of Ethics in Entrepreneurship and Technology*, 2021.
- Keller, S.**, Wilkinson, T., and **Otjen, A.** 2021. Real ID Campaign Raises Questions About Privacy Concerns. *Journal of Consumer Marketing*, 2021.
- Otjen, A.**, **Keller, S.**, McNally, M., Wilkinson, T., **Dockery, B.**, Leonard, J., & Southworth, H. (In Press). Improving awareness of energy conservation: Rocky mountain city. *Journal of Ethics in Entrepreneurship*.
- Quetchenbach, Bernard.** "The Ecological Vision of 'The Far Field.'" *A Field Guide to the Poetry of Theodore Roethke*, edited by William Barillas, Ohio UP/Swallow Books, 2020.

Quetchenbach, Bernard. *Counterclaims: Poets and Poetries, Talking Back*, edited by H. L. Hix, Dalkey Archive, 2020, pp. 122-123.

Shaffer, Rachel. "(Super)Natural Healing in Juliet Blackwell's Haunted Home Renovation Series." *Clues: A Journal of Detection*, vol. 38, no. 2, Fall 2020, pp. 60-68.

Talafuse, A. M. Marketing research: Innovation, experiential learning, and student Engagement, *Journal of Education for Business*, February 2021.

Dockery, B.B., Talafuse, A.M., Perius, J. (in press) Cold calling: An experiential learning exercise within a classroom setting, *Journal of Selling*.

Talafuse, A. M., Dockery, B. B., Perius, J. (in press). Exploring sales call anxiety: A longitudinal study. *Journal of Interdisciplinary Social Sciences*.

Presentations

Brenda Dockery, Jessie Perius, and Anna Talafuse. Exploring Sales Call Anxiety, presented at the Fifteenth International Conference on Interdisciplinary Social Sciences, 2020.

Eliason, Stephen L. "An Analysis of Trophy Hunting in Contemporary Society." Presented at the virtual conference of the Western Social Science Association, Online, (April 2021).

Eliason, Stephen L. "A Place to Hunt: Some Observations on Access to the Resource in Contemporary Society." Presented at the virtual conference of the Western Social Science Association, Online, (June 2020).

Yazzie, S. (Co-Presenter), **Hoover, J. H.** (Co-Presenter), NIH-EPA Environmental Health Disparities Research Webinar Series - Fostering Community Engaged Research in Environmental Health Disparities, "Radon Knowledge and Testing Among Pueblo Communities in Northern New Mexico," National Institutes of Health and US Environmental Protection Agency, Webinar. (March 2021).

Yazzie, S. (Co-Presenter), **Hoover, J. H.** (Co-Presenter), Albuquerque Area Southwest Tribal Epidemiology Center Monthly Webinar, "Tribal Environmental Public Health Tracking: Examining the Relationship Between Environmental Exposures and Community Health," AASTEC, Digital, zoom, Albuquerque. (January 20, 2021).

Lewis, J. (Presenter and Center MPI), **Hoover, J. H.** (Co-author and Center MPI), MacKenzie, D. (Co-author and Center MPI), National Institutes of Minority and Health Disparities Centers of Excellence Annual Meeting, "Center for Native Environmental Health Equity Research - Center Overview," National Institutes of Minority and Health Disparities, Virtual. (October 26, 2020).

Hoover, J. (Presenter), Lin, Y. (Co-author), Beene, D. (Co-author), Liu, Z. (Co-author), Lewis, J. (Co-author), 2020 Annual Meeting Geological Society of America, "GPS tracking livestock to inform potential human exposure to abandoned uranium mine waste in an Indigenous community in the southwestern United States," Geological Society of America, Montreal, Canada. (October 26, 2020).

Hoover, J. H. (Presenter), Chief, K. (Co-author), Ingram, J. (Co-Author), Akee, R. (Co-Author), Beene, D. (Co-Author), Tulley, N. (Co-Author), Chee, R. (Co-Author), Shuey, C. (Co-Author), Carroll, S. (Co-Author), Lewis, J. (Co-Author), Navajo Nation COVID-19 WACG Sub-Group Communication and Drinking Water Research, "Navajo COVID-19 and Water Needs Mapping," Indian Health Service, Virtual. (October 8, 2020).

Hoover, J. H. (Presenter), 2020 February Meeting of the Centers of Excellence for Environmental Health Disparities, "Update On the Cove Livestock Study," National Institutes of Environmental Health Sciences & US Environmental Protection Agency, Conference Call. (February 24, 2020).

Hernandez, D. (Panelist), **Hoover, J. H.** (Panelist), Lebow-Skelley, E. (Panelist), Min, E. (Panelist), Rock, T. (Panelist), Partnerships for Environmental Public Health, "Partnerships for Environmental Public Health - Evaluation Panel Discussion," National Institute of Environmental Health Science, Durham Convention Center, Durham, NC. (February 12, 2020).

Hoover, J. (Presenter), Yazzie, S. (Co-author), Zychowski, K. (Co-author), Gonzales, M. (Co-author), Partnerships for Environmental and Public Health, "Community-engaged research and translation with Tribal communities in the western United States," National Institutes of Environmental Health Science, Durham Convention Center, Durham, United States. (February 11, 2020).

Otjen, A., Bash, J. Sheehan, M. Driver, R. Stewart, L., American Health Care and Research 2021 Virtual Event – Marketing Plan Recommendation, AMHCR Conference Proceedings.

Media Contributions

"The federal government fiddles as covid-19 ravages Native Americans," Washington Post. (May 26, 2020). Reference a co-authored publication by **Dr. Hoover** demonstrating water contamination on tribal lands. <https://www.washingtonpost.com/opinions/2020/05/26/federal-government-fiddles-covid-19-ravages-native-americans>

"What It's Like To Not Have Running Water During A Pandemic," Huffington Post. (March 26, 2020). Reference to first-author publication by **Dr. Hoover** on water quality of groundwater wells on Navajo Nation. https://www.huffpost.com/entry/water-coronavirus_n_5e7bede4c5b6256a7a243b73

Music Publications

Scott Jeppesen

Published Arrangements

- Silent Night* - original arrangement
- O, Come All Ye Faithful* - original arrangement
- Up on the Housetop* - original arrangement
- We Three Kings*- original arrangement
- Jolly Ol' St Nicholas*- original arrangement
- Wassail Song*- original arrangement