UNSUNG HEROES

As we’ve reached the end of another academic year, I want to take this time to acknowledge the many undergraduate students who have worked with us in our offices at CAIRHE over the years. Their tireless hard work and cheerfulness have made a huge difference to us daily.

Two remarkable students who have worked with us this year are Terrance Limpy and Emory Hoelscher-Hull. Terrance and Emory are both exceptional people (each was recently honored—see pp. 6-7), and they are caring, eager to learn, and smart in all they do.

I first met Terrance, a member of the Northern Cheyenne Tribe, when he was part of the American Indigenous Business Leaders (AIBL) student chapter on campus. The AIBL students helped create a business plan for Turtle Island Tales, our research dissemination program focused on wellness for American Indian families with young children. Their work was so good that they won national awards in 2020 and 2021! We then hired Terrance last summer to help us with a dissemination research pilot project in partnership with the Blackfeet Nation and MSU Extension. His hard work, business acumen, and dedication included creating systems for mailings, ordering of supplies, and managing participants, among many other tasks. He works well with our partners and has kept the project moving along smoothly. Terrance’s quiet leadership and creativity, in fact, make up much of the “glue” for this project.

Though he graduated in May, Terrance will stay on with us remotely in the months ahead; we can’t do without his expertise! He recently accompanied me and other members of the Turtle Island Tales team to the Fifth-Annual Conference on Native American Nutrition in Minneapolis, where he presented a poster on his work and helped operate our CAIRHE booth. It was a fantastic conference, and Terrance was an immense help.

Emory, a rising senior in the environmental health program in the Department of Microbiology and Cell Biology, helped us at CAIRHE this semester with the large amount of work that purchasing cards generate, and she also has greatly contributed to our work with the Blackfeet Turtle Island Tales dissemination project. Emory has worked creatively with both projects and always has lots of new ideas and a sense of fun. Her Adobe InDesign expertise is invaluable whenever we need to modify handouts and other items for dissemination.

As part of Emory’s award from the Rocky Mountain Public Health Training Center (p. 7), she received a stipend to help fund her ongoing undergraduate research, which investigates the prevalence of unsafe levels of strontium in home well water within rural Montana counties designated as low-income and low-access by the U.S. Department of Agriculture.

I have greatly enjoyed working with Terrance and Emory as a team and individually, and we are so lucky to have such excellent and flexible students working with us. Their enthusiasm and hard work are infectious. Providing such opportunities to undergraduate students like Terrance and Emory gives these unsung heroes invaluable real-world research and job experience that will serve them well into the future.

And we know it will be a bright future indeed.

Alexandra Adams, M.D., Ph.D.
Director and Principal Investigator

For Healthy Communities Under the Big Sky
Public outreach by CAIRHE and its partners continues for a landmark report published in late 2020, *Climate Change and Human Health in Montana*, on C2H2, was released in December of that year as a special report of the Montana Climate Assessment. C2H2 was produced by CAIRHE, Montana on Ecosystems, Montana Health Professionals for a Healthy Climate, and CAIRHE, with support from the Montana Healthcare Foundation.

In addition to presentations about the report and its findings made by the C2H2 authors across the state, a new film project will present the health threats of climate change to a broad audience. A series of four short films, each running 4 to 6 minutes long, will focus on climate change and mental health; the impacts of climate change on the health of children; the impacts of more hot days, wildfire smoke, flooding, and drought on pulmonary health, mental health, heat stroke, and food security; and the impacts of climate change on vulnerable, exposed populations, such as the homeless, outdoor workers, and Indigenous communities.

The short films are funded by the Montana Healthcare Foundation, the Great Montana Foundation, and Montana INBRE. Science journalist and filmmaker Sara Reardon is creating the films. “It’s critical that the health community discusses the effects of climate change on human health in our exam rooms and our policy rooms,” said Lori Byron, M.D., a pediatrician in Harlem, Mont., who co-authored the report as chair of Montana Health Professionals for a Healthy Climate (MtHPHC). “In Montana, we’re fortunate to have a climate and health report specific to our state. Sharing this and the documentaries created to bring the report to life is meaningful. To not discuss the changing climate’s effect on human health is akin to telling a patient who smokes that smoking it bad for your health.”

The films will be ready for distribution by the end of this year, at which time they could be used at medical and climate conferences, at public agency meetings and departments of health, on television, and in schools.

While Lori Byron and Rob Byron, M.D., MPH, vice chair of MtHPHC, have made the majority of author presentations across the state, CAIRHE Director Alex Adams, M.D., Ph.D., lead author of C2H2, also speaks regularly on the topic.

Her latest talk was an online presentation on April 13 sponsored by the Gallatin Valley Friends of the Sciences and co-sponsored by Hopa Mountain and the Museum of the Rockies. Adams discussed the impacts of the changing climate as well as mitigation and adaptation strategies that individuals, communities, and health care organizations can implement to reduce their effects. “As a physician, I’ve been worried about our tribal and rural communities under these worsening conditions,” Adams told the audience. “Personally, during the worst days of last summer, I was checking air quality conditions every day.”

She recalled how her oldest son was not able to leave his apartment in Seattle on the worst wildfire smoke days on the West Coast—a scenario that played out for many Montanans throughout the summer. “My motivation for doing this work is not only to protect my own children,” she said, “but also our most vulnerable communities in our tribal and rural areas.”

Adams said participants from forest fire smoke are a significant health risk in Montana that will only worsen with climate change. Increases in the number of hot days will also have consequences. “When we’re not used to heat, it can really cause a lot of stress and worsening mental health,” she said.

Food security and nutrition also suffer with drought and crop losses, she explained. Even when harvests are adequate, the elevated levels of available moisture in the atmosphere actually lower protein and micronutrient content in grains.

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“Tribal communities, in particular, are working on food security because they recognize that this is coming,” she said, noting several programs on the Blackfeet, Flathead, and Fort Belknap Reservations.

Broad, community-wide coalitions will be required to mitigate the effects of climate change at the local and state level, Adams said. “We need to recognize that public health and economic well-being are inseparable. We have to plan action on both,” she said. “We can’t divide ourselves anymore. We have to work together and understand that we’re all connected.”
RESEARCH BRIEFS

Here’s a summary of what CAIRHE’s project leaders have been working on, even amid the disruption of COVID-19.

Andreas Thorsen, Ph.D., and co-investigator Maggie Thorsen, Ph.D. (Modeling Rural Perinatal Health Outcomes and Service Systems), continue their year-long effort leading a CAIRHE project, where they have focused largely on grant writing, team development, and manuscript preparation. In March they submitted an R01 grant application, System-Level Determinants of Rural Obstetric Care and Outcomes, to the National Institute on Minority Health and Health Disparities. That application emerged from a set of working papers they wrote this year focusing on rural obstetric bypassing, which occurs when patients circumvent local facilities to give birth at a nonlocal facility. A draft of the research from one of these studies has been accepted for presentation at the American Sociological Association’s annual meeting in August.

Lauren Davis, Ed.D. (A Trauma-Informed Intervention for Positive Youth Development and Teacher Wellness in Rural Montana), recently conducted the study’s Year 1 yoga intervention in a rural Montana school district, with data analysis underway. Davis and her team are examining teacher well-being (through career satisfaction and self-efficacy surveys), with additional secondary measures assessing depressive and anxiety symptoms, changes in heart rate variability, and mindfulness. Davis also gathered classroom behavioral data from students in teacher participants’ classes as a means to assess teacher-co-regulation resulting from the intervention. While final results are still pending, qualitative feedback from participants indicates this was a highly beneficial and meaningful intervention for them on a personal level. The project will begin its second year in September.

Brandon Scott, Ph.D. (A Native Path to Courage), and his team have experienced several COVID-19 delays due to Reservation closures, but in recent weeks the project has collected focus group data from three groups of elders and one group of mental health professionals on adapting the COMPASS intervention for Native American youth. The team will complete parent, teacher, and youth focus groups during May and June. They will then work with the study’s Community Advisory Board over the summer to develop the conceptual framework for adapting COMPASS for youth residing on the Reservation. The project will begin its second year in September. Meanwhile, Scott and his CAIRHE mentor, Elizabeth Rink, Ph.D., are currently working on a paper draft focused on school engagement in tribal communities.

Cara Palmer, Ph.D. (Sleep Health Disparities and Sociocultural Risk Factors Among Montana Youth), has completed data collection for her project’s second phase, a quantitative study begun in Year 1 that included diagnostic interviews, surveys, actigraphy, daily journals, and measures of salivary cortisol. In Year 2, she has included an additional study, or Phase 3, to examine rates of sleep health disparities, examine barriers to sleep-based education and health care, and identify key community-, family-, and individual-level risk and protective factors for sleep health in a representative statewide sample of Montana adolescents. Recruitment is ongoing, and 110 families have signed up or completed the study to date. Analyses for Phase 2 and Phase 3 data collection are ongoing, but preliminary results from the objective sleep data from Phase 2 suggest that nearly all participants were not obtaining enough sleep. Preliminary descriptive data from Phase 3 further indicate high rates of sleep disturbances and provide insight into potential barriers to sleep health. Palmer will present findings from Phase 3 to medical providers across the state at the annual Montana Sleep Society conference in September.

Miranda Margetts, Ph.D. (Investigating Healthcare for Rural Females with Complex Gynecological Conditions), and the project team have made notable progress this year, including preliminary findings in electronic medical record data analysis that have revealed the presence of Congenital Uterine Anomalies across all ethnic categories. The leading variation involves bicornuate uterus stigma, which aligns with Montana hospital discharge data analyzed by the project indicating that bicornuate uterus is the most common emergency admission for women with these anomalies. A literature review has revealed a distinct lack of any qualitative research involving women with variations other than the most severe anomaly (known as uterine agenesis), as well as a lack of any research regarding rural cohorts. A draft set of initial questions for a survey, to be administered after Year 1, has been prepared and is undergoing review by the study’s advisory team. A second year of CAIRHE funding awaits NIH approval.

Emily Tomayko, Ph.D. (Development and Community Evaluation of a Traditional Foods Resource), and her team have focused on the development of toolkit materials, including training on the photogrammetry method for harvest, and digital models of the foods targeted for inclusion in the toolkit. Tomayko has conducted five visits to her tribal partners in Oregon to photograph various foods, including celery root, huckleberries, chokecherries, salmon, biscuit root, desert parsley, and sweetroot. To date, two digital models of the foods have been completed (salmon and huckleberry, pictured above), and another five are in progress. The team also has begun development of printed educational materials to accompany the digital models for use in classroom settings. There is growing momentum among the community to support this work and to facilitate reconciliation with their traditional foods, with a second year of CAIRHE funding awaited NIH approval.

On Monday Night Health and Health Disparities. That proposal will undergo peer review later this summer, with any resulting award to begin by December.

“Our work has the potential to provide much-needed insight into how rural and Native women access obstetric care, and the implications of this for access disparities,” Maggie Thorsen said. “Our findings may provide insight into ways to improve access and increase equity in maternal and infant health.”

A new pilot project led by Miranda Margetts, Ph.D., assistant research professor in the Department of Land Resources and Environmental Sciences, is building a research team across multiple institutions, including Billings Clinic, for a long-term plan of study. That project, titled Investigating Healthcare for Rural Females with Complex Gynecological Conditions, examines health care for women in Montana with Congenital Uterine Anomalies, also known as Mullerian Anomalies. Margetts has submitted a competitive renewal of the pilot project, which would begin in September.

“Our investigation provides an important opportunity to learn more about the experiences of Montana women receiving gynecological care for more complex conditions,” Margetts said. “Given the distances many Montanans travel for access to health care providers—particularly if specialist appointments or referrals are required—this work can begin to shed light on effective models of care to ultimately improve reproductive health outcomes for women living in Montana with these conditions.”

Emily Tomayko, Ph.D., newly appointed as an assistant professor in the Department of Community Health and Human Development beginning this fall (see page 3), leads her pilot project, Development and Community Evaluation of a Traditional Foods Resource, in collaboration with her partners in the Confederated Tribes of Warm Springs in Oregon. She also has submitted a competitive renewal of that project.

“This past year included truly meaningful relationship-building among our team, facilitated by the support I received from CAIRHE,” Tomayko said. “Momentum is growing within the community to engage with this project, and we’re hoping this significant community input will produce a resource with lasting impact that respects the sacredness of these traditional foods. We’re particularly excited about the creation of digital models of the various plants and animals, which represent a tangible way for community members to interact with these foods.”

CAIRHE’s third pilot project, led by second-year project leader Cara Palmer, Ph.D., assistant professor in the Department of Psychology, is Sleep Health Disparities and Sociocultural Risk Factors Among Montana Youth. Palmer’s long-term goal is to inform translational research to reduce sleep health disparities and downstream health disparities among underserved, rural adolescents. She has plans for an NIH R01 application during the coming year. “Sleep health disparities are common across the United States, but we know very little about how living in rural communities can impact sleep, for better or worse,” Palmer said. “This is a particularly important issue in Montana, where so many of our youth experience depression and high risk for suicide, which could be exacerbated by poor sleep. Results from this project will help us understand the types of sleep problems that youth experience across the state, particularly within medically underserved communities, and identify resources that are needed to improve sleep and overall psychological well-being.”

ADAMS DISCUSS BELONGINGNESS AND HEALTH IN HARVARD PRESENTATION

CAIRHE Director Alex Adams, M.D., Ph.D., gave a national presentation in late April sponsored by the Harvard University Native American Program and the Harvard Medical School Department of Global Health and Social Medicine.

The online talk on April 27, part of the Indigenous Health and Well-Being Series, was titled, “Belongingness: Impacts on Indigenous Individual and Community Health.” Adams discussed her long-term work with the Menominee Nation and her national promotion of wellness among Native families, including her leadership on the project focusing on the importance of cultivate belongingness as a pathway to health, then summarized her work at CAIRHE to build an alliance of Indigenous and non-Indigenous scholars and research partners with community partners.

The concept of belongingness and its impact on health are not well-explored in the scientific community, Adams said, citings the contributions of CAIRHE investigator Neha John-Henderson, Ph.D., and others.

“Traditionally, the understanding is that these teachings have come to me slowly, but it’s a bit like walking a labyrinth, like a journey. In this difficult time we find ourselves in now, we have to understand that it’s centuries of forgetting, the collective loss of our selves, that have brought us to where we are. We are hungry for that belongingness again.”

Adams’s work with the Menominee dates to her time as a medical resident. Alongside the Menominee Community Engagement Workgroup, which started small but now has more than 70 members, she and her partners developed the Menominee Trauma Model together, followed by the Menominee Wellness Model.

Turtle Island Tales grew out of Adams’s two R01-funded clinical trials, Healthy Children, Strong Families, when she and her team...
began to receive requests from other communities for the innovative
innovative funded research.


CAIRHE HOLDS ANNUAL CENTER RETREAT ON MAY 16
Faculty and staff assembled for team-building and reflection, with an Indigenous perspective, under the leadership of John Bird and Emily Salois. Here are a few images from the event, held at the Big Yellow Barn outside Bozeman.

Vernon Grant (center) explains his group’s reflection on Native community trauma and its impacts.

 Teams race to see which can build the highest paper card tower—without talking!

Teams explain individual and group strengths, then create an accompanying poster and chant.

What a beautiful setting for a retreat!

Sue Higgins and retreat facilitator John Bird share a laugh over a brainstormed list of ideas.

At the end of the day, Alex Adams and Emily Salois honor John Bird with a blanket ceremony.

CONGRATULATIONS TO THE FOLLOWING CAIRHE FACULTY WHO RECEIVED TENURE AND/OR PROMOTION THIS SPRING!

Promotion to Full Professor:

Ron June, Ph.D., Department of Mechanical & Industrial Engineering

Monica Skewes, Ph.D., Department of Psychology

Tenure & Promotion to Associate Professor:

Neha John-Henderson, Ph.D., Department of Psychology

Brandon Scott, Ph.D., Department of Psychology

Maggie Thorsen, Ph.D., Department of Sociology & Anthropology

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