With the release of the Montana Climate Assessment in 2017 by the Montana Institute on Ecosystems (IoE), we are now aware of the potential for more hot days, expanding wildfires, and changes to seasonal water availability in Montana. From this work, it didn't take long to turn attention to the impacts on human health in our state. It's a story that relates to us all.

IoE, CAIRHE, and a partnership of more than 40 institutes and experts have come together to produce a special report, C2H2: Impacts of Montana’s Changing Climate on Human Health, for release in early 2020. Health and climate science partner groups include the Montana Climate Office, the Montana Department of Public Health and Human Services, Montana Healthcare Foundation, Montana INBRE, MSU Extension, tribal communities, area physicians, and other health researchers and organizations. The report will present our current understanding of climate-health links in Montana and offer an analysis of health impacts posed by climate change projected for mid-century and the end of this century. The goal is to provide up-to-date information, highlight gaps in our knowledge, identify areas for further research and monitoring, and suggest adaptation strategies to ensure positive health outcomes for communities.

Though the report will emphasize the effects of wildfires and heat, it will also address impacts related to the spread of infectious diseases, food insecurity, extreme weather events, mental illness, and any potential positive impacts. Nationally and regionally, we know that climate-health links are many, including mortality related to cardiovascular and respiratory conditions and heat stress, premature births, spread of infectious disease, and sickness and mortality from gastrointestinal disease due to mold and flood contamination of water supplies. The new report will examine our situation here in Montana.

Local climate changes that could be at play include:

- more-rapid melting of mountain snowpack;
- more late-summer drought and water shortages; and
- changes in water availability impacting access to traditional plants, which threatens cultural well-being for tribal communities.

CAIRHE’s part in the collaborative effort has been led by Community Research Associate Susan Higgins, M.S., who for years has studied water resources and their impact on communities. Anyone interested in more information may reach her at susan.higgins@montana.edu.

Understanding the effects of climate change on health is critical for our communities so they can begin to adapt now and into the future. CAIRHE is excited to be part of this important addition to the Montana Climate Assessment, and we look forward to statewide discussions about this topic once it’s complete.

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

逍en Sherman, a renowned chef of Native American cuisine and CEO of the company he founded known as The Sioux Chef, returned to Montana State University on June 27-28 for a public lecture and book-signing, as well as related events, sponsored by CAIRHE and others. Sherman’s lecture, “Ancestral Foods Across Generations,” delighted an audience of 180 people on June 27 in the Hager Auditorium at the Museum of the Rockies. The talk was a broad overview of contemporary issues in food sovereignty that have roots in a history of colonialism and trauma toward Native people across the continent.

“A war against indigenous people became a war on indigenous food ways,” Sherman said, citing past destruction of crops and seeds, bison herds, and local ecosystems as a way to weaken Native cultures. The suppression of indigenous education during the boarding school era nearly erased Native knowledge of plants that were once the mainstay of healthy diets and medicine for tribes in every region of North America.

As a result, Native communities today are largely dependent on federal food assistance programs consisting largely of processed foods. “We have real-time evidence of what happens to whole communities that don’t have access to healthy foods,” Sherman said.

“CONTROL YOUR FOOD, CONTROL YOUR DESTINY”

Today, Sherman’s company and its nonprofit arm, North American Traditional Indigenous Food Systems, or NATIFS, are leaders in the Native food sovereignty movement. But Sherman’s passion for the cause is a relatively recent development.

Although he began working in restaurants at a young age, he said, his experience and training related mostly to foods from the European tradition. He didn’t know much about the food of his own heritage. “It was kind of eye-opening to think, ‘What were my ancestors eating?’” he said.

Then in 2012 Sherman started experimenting with indigenous foods and conducting research into Native history, culture, and trauma. In 2014 he opened The Sioux Chef as a caterer and food educator in Minnesota. He and his business partner, Dana Thompson, also designed and opened the Estanka Track, which featured foods common in the Dakota and Minnesota territories before Europeans arrived. Now the main focus of the company, Sherman said, is reclaiming indigenous health and culture through food. He and his colleagues collaborate with seed banks, indigenous farms, Native restaurateurs and chefs, and indigenous educators to design and sustain an indigenous culinary infrastructure. “We wanted to be leaders, and have been leaders, in that movement,” he said, adding, “If you can control your food, you can control your destiny.”

The next step is the 2020 launch of the NATIFS Indigenous Food Lab, a Minneapolis center that will house an indigenous restaurant and training center; oversee research and development in indigenous food identification, gathering, cultivation, and preparation; and teach all components of starting and running a successful culinary business based around Native traditions and indigenous foods.

“PLANT KNOWLEDGE IS POWER”

Sherman, who is Oglala Lakota, was born in Pine Ridge, S.D., and has been cooking across the United States and Mexico over the past 30 years. His first book, The Sioux Chef’s Indigenous Kitchen, was awarded the medal for best American cookbook in 2018 from the James Beard Foundation, the famed New York-based nonprofit focused on the culinary arts.

Sherman is eager to pass along all he’s learned. Just hours before his June 27 lecture, he led a three-hour cooking class in MSU’s Rendezvous Dining Pavilion that included invited participants from five tribal nations across Montana, as well as representatives from MSU Culinary Services. The menu included artful dishes of elk, trout, rabbit, and duck, as well as a variety of plant foods native to Montana. The thorough use of plants found within easy reach of everyday life—for food, medicine, and crafting—is especially important to Sherman, who often says, “Plant knowledge is power.”

The morning after the cooking class and lecture, Sherman and Thompson held a one-hour question-and-answer session for the public in Inspiration Hall, located inside MSU’s new Norm Asbjornson Hall. He then met with MSU faculty and other officials interested in advancing the indigenous foods movement on campus.

Throughout his visit, Sherman toured MSU as a national leader in incorporating indigenous foods into its campus food operations, which serve 10,000 meals a day in its dining halls. “We tell others to look at the example you’re setting here,” he said.

Sherman’s visit was co-sponsored by CAIRHE, Montana INBRE, MSU Culinary Services, and the MSU Department of Native American Studies.
Vanessa Simonds, Sc.D. (Guardians of the Living Water), continued her project's after-school programs on the Crow Reservation during Fall 2018 and followed up with its annual summer camp in June. Over the past year, her research programs have implemented projects undertaken by children—collecting and interpreting data to build new knowledge and determine needed action related to the cultural importance of water. The CAIRHE project, which will conclude this August, has developed several activities to teach students about the cultural significance of local springs and how to protect them. These activities have contributed to a curriculum, booklet, video, and activities that will be resources for local schools for years to come. Carmen Byker Shanks, Ph.D., RDN (The UnProcessed Pantry: Project UP3: A Novel Approach to Improving Dietary Quality for Low-Income Adults Served by Rural Food Pantries), worked last fall to create the UnProcessed Pantry Framework, protocol, and process for conducting a single-group, 16-week trial called UP3, designed to change the food supplies at two rural food pantries in Bozeman and Livingston, Mont., and deliver a behavioral intervention to participants. Recruitment of 45 participants began in January, and the 16-week trial occurred during February through June. The two food pantries changed policies and practices around donations and ordering of unprocessed and ultra-processed foods, Byker Shanks said. UP3 was conducted in partnership between Bozeman Health, the Gallatin County Health Department, HealthPartners, Gallatin, and the Livingston Food Resource Center. Preliminary results suggest that UP3 registered significant changes in social-ecological outcomes, health outcomes, and dietary intake among participants. The team is now working on the coming months.

Monica Skewes, Ph.D. (Development and Pelo Test: Indigenous Relapse Prevention for American Indians), together with her Community Advisory Board and other members of the research team, developed and implemented a focus group study to understand community members' perceptions of the project's planned relapse prevention intervention. The team conducted seven separate focus groups as part of a process of analyzing that data, in addition to data collected from a previous questionnaire survey of 200 tribal members. Tribal members are showing strong interest in the intervention, Skewes said. Based on focus group results, the intervention will ask participants to consider what activities they might engage in to protect them from substance use and help them re-create those circumstances to maximize their chances of changing their substance use patterns. “The community's enthusiasm about this strengths-based focus, and we believe it will help us recruit and retain participants in the pilot trial,” she said. Kelly Knight, Ph.D., and Colter Ellis, Ph.D. (Responding to Secondary Trauma), have collected an enormous amount of data over the past year, including around 1,250 surveys from victim service providers in Montana and MSU students. Analysis is ongoing. They also piloted a five-week intervention among 30 victim service providers, in this summer training they are assessing the results of that intervention. “As our analysis continues, we hope to show that the intervention has a positive influence on participants' trauma-related health symptoms,” Knight said. In related news, the team was invited to Browning, Mont., to present a day-long training on the neurophysiology of secondary trauma to a statewide group of child and family protective services. Knight and the project team also were awarded a significant program evaluation contract related to their current intervention.

Neha John-Henderson, Ph.D. (A Study of Trauma, Daily Sleep, Stress, and Blood Pressure in American Indian Adults), has collected data from more than 70 participants to date in the Blackfeet community. The project team has utilized an ecological momentary assessment app to collect data from participants as they move through their lives over a seven-day period. The project also has collected measures of daily sleep, stress, and blood pressure, and immune system inflammation, and the team is examining the way in which these outcomes relate to childhood trauma and historical trauma. John-Henderson will begin analysis soon in conjunction with her Community Advisory Board.

Maggie Thorsen, Ph.D., and Andreas Thorsen, Ph.D. (Adult Criteria Evaluation of Efficiency, Access, and Outcomes at Health Centers), have continued to examine variation in outcomes and health care delivery among community health centers related to prenatal health and chronic diseases. They have discussed their results with key stakeholders in the health care field. Together with their co-investigator from the University of Missouri, Dr. Ronald McGarvey, they have formulated a novel measure for determining facility locations that maximize health care access in a way that considers equity across space, called the cumulative opportunity index. This work will lead directly into a new CAIRHE research project that will begin in September.

The new Translational Biomarkers Core Lab, located in MSU's Health Sciences Building, completed equipment installation in November, began accepting service to CAIRHE investigators, and other MSU facility under the direction of Core Director Selena Ahmed, Ph.D. The Core supports investigators by providing consulting and fee-based analytical services on validated biomarker assessments pertinent to lifestyle, chronic disease, and human health. For more information on lab capabilities and contacts, see the Core's website. 

The two workshop days involved mentoring with senior faculty drawn from five institutions, as well as presentations by mentors and NIH program officers from the National Cancer Institute, the National Institute on Drug Abuse, and the National Institute of General Medical Sciences. Each workshop participant was selected from applications received by CAIRHE last December, and each had submitted a major grant proposal to NIH last year under a program called Research to Improve Native American Health. Their proposals—seeking multi-year, multimillion-dollar R01 grants, or a smaller two-year R21 grant—were not awarded funding at the time. The purpose of the workshop at MSU, Adams said, was to provide those researchers with grant-writing guidance, small-group revision opportunities, and one-on-one mentoring to help them resubmit their applications successfully in May 2019. That mentoring continued during the weeks following the workshop. CAIRHE is currently evaluating how many of the faculty investigators resubmitted their grants in the spring or upgraded their submissions from R21 to R01, and what their results are. This will help CAIRHE and the NIH determine whether or not to hold the workshop again next year. All 10 participants reported they were “very satisfied” or “satisfied” with the workshop overall. “I would not have been ready to take the leap to submit this R01 without this workshop,” said one participant in an anonymous evaluation. “It will be my first. I believe between the support of my program mentor and the support of my mentors at my institution, I will be able to do this.”

The workshop included presentations by Adams and CAIRHE investigators Suzanne Held, Ph.D., and Elizabeth Rink, Ph.D.

CAIRHE Scores Well on NIH Renewal, Now Awaits Notice of Grant Award

Earlier this spring CAIRHE received the score for its NIH renewal application and now awaits word about funding for the next five years.

In mid-March, CAIRHE received an overall impact score of 17 for the application it submitted last September for renewal of its Centers of Biomedical Research Excellence (COBRE) grant from the National Institute of General Medical Sciences. Scores range from 10 to 90, with 10 being a perfect score. CAIRHE's score is, by all accounts, an outstanding result.

“We are very happy about this score and are cautiously optimistic that this means we will be refunded,” CAIRHE Director Alex Adams, M.D., Ph.D., announced to colleagues at the time. “This was a huge team effort, and many congratulations go out to all involved.”

The Center received its review by the NIGMS Advisory Council in mid-May, and CAIRHE has supplied additional requested information as part of the review process. The final funding decision rests with the Institute's director. CAIRHE expects a Notice of Award from the Institute later this summer.

Funding for Phase 2 of CAIRHE's COBRE grant, totaling $10.7 million, would begin September 1 and run through August 2024.

CAMPUS COMMUNITY MEETS “HERB,” THANKS REIJO PERA FOR HER SUPPORT

On May 29 CAIRHE and Montana INBRE staged an open house to launch the Health Education and Research Bus, affectionately known as HERB. The event took place outside the MSU Health Sciences Building, home to CAIRHE, and included remarks by CAIRHE Director Alex Adams, M.D., Ph.D.

Seven years of COBRE funding, totaling $1.5 million, comes to an end this year. INBRE investigators were awarded a new $10.7 million grant for Phase 2, which begins September 1 and runs through August 2023. The final funding decision rests with the Institute's director. CAIRHE expects a Notice of Award from the Institute later this summer.

Funding for Phase 2 of CAIRHE's COBRE grant, totaling $10.7 million, would begin September 1 and run through August 2024.

“WE ARE very excited to show you MSU's newest resource that will support our work and our research mission to pursue health equity projects across rural Montana,” Adams said.

At the event CAIRHE and Montana INBRE also honored Reijo Pera with a blanket ceremony in recognition of her support of the two programs during the past two years. Reijo Pera will leave MSU this fall to take the position of Vice President of Research and Economic Development at Cal-Poly University. (continued on p. 6)
“I will miss our monthly meetings and her advice,” Adams said at the event.  
For more information on HERB, its purpose, and how to receive it for use, faculty researchers should contact Susan Higgins at susan.higgins@montana.edu. (See photo on p. 8.)

HELD AND MCCORMICK RECEIVE NATIONAL AWARD FOR CROW-MSU PARTNERSHIP

The leaders of a longtime collaborative partnership between Montana State University and members of the Apsáalooke (Crow) Nation have been recognized nationally for their work to promote health equity and social justice.

Last fall, Messengers for Health Co-Directors Suzanne Held, Ph.D., and Colter Ellis, Ph.D., received the Robert Wood Johnson Foundation Award for Equity Health presented by Community.  
Campus Partnerships for Health, Health. McCormick is a member of the Apsáalooke Nation, and Held is a community health professor in the MSU College of Education, Health, and Human Development.

Messengers for Health, which is not a CAIRHE project, originally focused on culturally-appropriate ways to increase cancer screening rates among Apsáalooke women. The partnership has since expanded to multiple topic areas including women’s health, men’s health, healthcare provider cultural competency, healthy relationships, and chronic illness self-management.

“We are honored to receive this award, as it showcases the power of a true partnership, where all members contribute, and of using the strengths of the community to effect positive change and see significant results,” Held said.

Held and McCormick accepted the award November 11 at the event. For more information on HERB, its purpose, and how to receive it for use, faculty researchers should contact Susan Higgins at susan.higgins@montana.edu.
HERB has a new look! The Health Education and Research Bus now features a mountainous landscape on one side (shown) and a Montana plains scene on the opposite side. For more, see p. 5.

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