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# Introducing CAIRHE:

HEALTH DISPARITIES RESEARCH FOR MONTANA'S BIG SKY COUNTRY



MONTANA STATE UNIVERSITY Center for American Indian and Rural Health Equity

### **FROM THE DIRECTOR**



Alex Adams

Welcome! Please allow us to introduce you to the **Center for American Indian and Rural Health Equity** (CAIRHE).

In this, our first newsletter, you'll learn about CAIRHE ("Care") through the accomplishments of our eight research projects and their leaders— Montana State University faculty and our many invaluable partners across

the state. Together we're working to reduce significant health disparities in Montana's tribal and rural communities through community-based participatory research that embraces and upholds the local cultures of our partners.

We've achieved a lot in a short amount of time.

CAIRHE began in September 2014 as a new beneficiary of the Institutional Development Award (IDeA) program at the National Institutes of Health. We were first known as the Center for Health Equity in Rural Montana, and our founding director, Dr. Allen Harmsen, was also in his seventh year as director of Montana INBRE, the state's best-known IDeA grant. Allen has continued to lead INBRE and remains with CAIRHE as a faculty mentor and trusted advisor.

The IDeA program encourages health-related research and enhances the competitiveness of investigators at institutions in states like Montana, where the success rate for applications to

the NIH has historically been low. Like our colleagues at INBRE, we too are supported by an IDeA award from the National Institute of General Medical Sciences of the NIH. Ours, however, is a Centers of Biomedical Research Excellence (COBRE) grant, one of two at MSU.

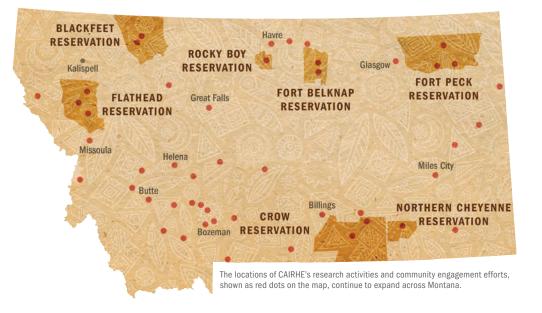
While we currently sponsor three primary research projects and another five developmental projects led by newer faculty members, we aspire to be much more than just a funding source. As the word "center" implies, we belong in the thick of things an interdisciplinary group working diligently among local service providers, university researchers from across the state, tribal college faculty and students, tribal officials, other centers with shared goals, state government agencies, private foundations, and citizens from all walks of life. We aim to bring people together—to work in collaboration with multiple partners as we conduct community-based, groundbreaking research and interventions that will make a profound, sustainable difference in the lives of Montanans.

In the areas where we work (see map below), we're already off to a great start. Special thanks go out to our vitally important community advisory boards and the dozens of people in our tribal and other rural communities who have made our work possible through their participation. There's a lot more work to be done, however, and as CAIRHE grows, we'll apply the efforts of our current investigators and additions to our team to confront more public health challenges across our state. We'll be reaching out to new partners of all kinds in every corner of Montana, and we'll welcome the ideas of potential collaborators who share our goal of improving health equity statewide.

In upcoming issues of this newsletter we'll also spotlight CAIRHE's community engagement efforts, led by a talented team of professionals who work hand-in-hand with our faculty project leaders to build new relationships in tribal and nontribal communities and ensure the highest levels of collaboration and mutual understanding.

Thank you for reading. We invite you to learn more about our exciting work and how we might partner with you for healthier communities under the Big Sky.

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



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# **UP CLOSE AND PERSONAL**

TALKING OPENLY ABOUT REPRODUCTIVE HEALTH CAN BE DIFFICULT, BUT FOR THESE TRIBAL COMMUNITIES IT MAY BE A CRUCIAL FIRST STEP TOWARD SOLVING A VEXING HEALTH PROBLEM.

CAIRHE Research Project:

THE FORT PECK SEXUAL HEALTH PROJECT



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The Fort Peck Reservation.



Beth Rink doesn't like to consider how many hours she's spent behind the wheel on Montana's lonely highways. "Hundreds, maybe thousands," she sighs. This year marks a complete decade since she first collaborated with partners on the Fort Peck Reservation in the state's far northeastern corner, a region as hauntingly beautiful as it is remote. Working three different projects at Fort Peck over that 10-year span, including her current CAIRHE study, Rink has made the seven-hour drive from Bozeman with regularity.

On the plus side, after 10 years of meetings and presentations, everyone on the reservation knows her pretty well.

That's a definite advantage anywhere when your job involves talking

frankly to people about reproductive health, healthy relationships, and risky adolescent behavior. The fact that Rink does so in tribal communities, where discussion about such topics can be even more reserved and uncomfortable, is testament to the level of trust she's developed in close collaboration with her local partners.

"The true beauty of a well-constructed and -executed CBPR project is the ability to enhance the voices and perspectives of those who do not always get to have a say."

ADRIANN RICKER, PROJECT RESEARCH CONSULTANT, FORT PECK RESERVATION

"We've come a long way in 10 years," says Rink, a longtime practitioner of community-based participatory research (CBPR), "but I still need to be mindful that I'm an outsider, and I can't forget that. I still need to be respectful and consult with my colleagues for their input."

Though at times awkward for community members to talk about (at first Rink had to refer to her study as just the "Fort Peck Health Project"), the attitudes and behaviors that she discusses with her focus groups and in one-on-one interviews may be one complex part of a significant health problem and disparity for perhaps the state's most isolated region. The rate of sexually transmitted infections (STI) on the Fort Peck Reservation is roughly three times higher than that for the general U.S. population, and unplanned teen pregnancy rates are also much higher. Currently a single nurse handles pregnancy testing and reproductive health for the Fort Peck population of around 7,000.

The objective of the *Fort Peck Sexual Health Project*, Rink explains, is to identify a multitude of factors that may influence sexual and reproductive health among 15- to 18-year-old adolescents living on the reservation, which is home to the Assiniboine and Sioux tribes. "We think high STI rates and unplanned pregnancies could be a marker for deeper underlying health issues operating and interacting at the individual, family, community, and environmental levels," she says.

Rink's local partner, Adriann Ricker, describes how close working relationships with the community have engendered strong support

and participation, which in turn have resulted in a project timeline running right on schedule.

"As a researcher, Beth is always willing to ride in the passenger seat, if you will, and let us take control of the wheel," says Ricker, who serves as the project's research consultant. "This makes the research we're doing and the work that we're trying to accomplish more personal, and it's also much easier to convey to the community and to our tribal leadership what exactly is going on, what exactly we're seeking to accomplish, and how exactly we intend to execute the plans.

"It also makes it easier for me, a person who's a staunch supporter and protector of our communities and people, to feel like I can tell

> others to trust Beth and the work that she's doing," Ricker adds, "because really it was directed in response to the needs of our community and people."

#### A Multifaceted Problem

Work got underway quickly in late 2014. Rink set up her collaboration with Fort Peck Community College,

including faculty investigator Loy Sprague and project coordinator Paula FireMoon. She also convened a five-member community advisory board that has met quarterly since the project's beginning. Her team conducted 10 focus groups among 50 tribal members, and earlier this year they concluded the last of 30 key informant interviews.

Although the study targets issues among 15- to 18-year-olds, the project's data collection includes an equal distribution of adults and adolescents, men and women, Assiniboine and Sioux. Elders have preferred interviews to focus groups, while the focus groups with teens—no surprise—have tended to fall into one of two extremes. "Either you couldn't get them to stop talking," Rink says with a smile, "or you couldn't get them to say *anything*." Follow-up solo interviews with some of the adolescents, adults, and elders have resulted in clearer, more candid answers, she adds.

As Ricker notes so eloquently, "The true beauty of a wellconstructed and -executed CBPR project is the ability to enhance the voices and perspectives of those who do not always get to have a say."

Whether in groups or one-on-one, project participants talk generally about issues, attitudes, and cultural norms surrounding reproductive health and relationships in the communities. For example, how do parents talk to their children about these topics? How do traditional and contemporary religious beliefs come into play? And how might access to drugs and alcohol, excessive free time in isolated areas, and limited access to family planning services contribute to risk-taking behaviors among adolescents?

## **Oral Health for a Better Life**

AN INNOVATIVE COMMUNITY APPROACH TO DENTAL DISEASE COULD SAVE THE YOUNGEST MONTANANS FROM A LIFETIME OF HEALTH ISSUES.

ver her distinguished career in nursing, split between Ohio and her native Montana, Elizabeth Kinion has just about seen it all. But until a few years ago, she had never considered that oral health—the realm of *dentists*, not nurses, for most Americans—could figure so prominently in her own career and the well-being of rural Montana families.

Shortly after her 2006 arrival at MSU's College of Nursing, where she had received her nursing degree to start her career, Kinion teamed up with an MSU colleague from the Fort Belknap Reservation who proposed a study on tribal lands examining links between oral health and diabetes. Diabetes was something Kinion knew a lot about; oral health, not so much. One of the first things

she discovered was research showing that tooth decay is caused by bacteria, *streptococcus mutans*, that can be traded among family members.

During Kinion's conversations with the community, that finding in particular caught the attention of women at Fort Belknap, who urged

the MSU team to look instead at *strep mutans* and tooth decay among pregnant women. Kinion and her colleague wrote a new proposal, and the idea gained steam. "The community really got behind the fact that we were doing something for pregnant women and were able to help them get the dental care they needed through the tribal health department," Kinion recalls.

It wasn't long before a follow-up project funded by Montana INBRE determined that *strep mutans* also occurs at unhealthy levels in some young children on the reservation—possibly contributing to high rates of Early Childhood Caries (ECC) there. With encouragement from the community, Kinion focused more and more of her attention on ECC and possible approaches to tackling the problem wherever it occurs in Montana. "I just immersed myself in it," she says.

#### **Devastating Problem, Unique Solution**

ECC is an acute and virulent form of dental decay that destroys the primary dentition of infants and toddlers, resulting in devastating impacts to child development and well-being and lasting consequences into adulthood, Kinion explains. Children afflicted with ECC often have significant decay and tooth loss before their 5th birthday, which can lead to poor nutrition, failure

"... if we focus on what can be done to help children, I do believe that can make a difference for generations to come." ELIZABETH KINION

to thrive, poor self-esteem, pain, infection, and—in extreme cases even death. It's a common problem among tribal and other rural communities around the state, where access to primary dental care is limited. Making matters worse, in some communities there may be a kind of "dental fatalism"—a belief among some parents that because they and their parents had bad teeth, their children and grandchildren are destined to as well.

Kinion hopes her latest project, supported by CAIRHE, may result in lasting changes in the way communities approach oral health at the very beginning of life. "Everyone is passionate about their children," she says. "They are very precious and important to these communities, so if we focus on what can be done to help

children, I do believe that can make a difference for generations to come."

Using community-based participatory research, this groundbreaking partnership between MSU and community members at Fort Belknap hopes to develop and implement an ECC-prevention program that can

be community-centered, data-driven, and—most importantly *sustainable* in rural settings of all kinds. During the project's first year, Kinion has worked to build a research team consisting of a local project director, a community oral health specialist, a project dentist, a representative from the Fort Belknap Tribal Health Department, an Aaniiih Nakoda College faculty member, and several student research assistants.

"This opportunity at Fort Belknap will help to alleviate an oral health crisis," says Velva Doore, director of Tribal Health for the Fort Belknap Indian Community. "Oral disease is rampant in our communities due to poverty, isolation, and a dental care shortage. Natives in Montana suffer with the worst oral health of any population, with high rates of untreated tooth decay among children and untreated decay and gum disease among adults."

At the center of the project's aims is the community oral health specialist (COHS), a trained professional who, in sufficient numbers, may offer a more efficient way to deliver preventive dental care and education to rural populations when compared to services provided by dentists alone. Currently a single dentist serves the population of around 6,000 at Fort Belknap, home to the Gros Ventre and Assiniboine tribes.



Left: With some playful interaction, a boy on the Fort Belknap Reservation learns the importance of good oral hygiene. Right: Students at Aaniiih Nakoda College have developed a wide range of educational materials for ECC prevention.

#### CAIRHE Research Project:

INCREASING ACCESS TO ORAL HEALTH CARE: EVALUATING THE OUTCOMES OF A COMMUNITY HEALTH SPECIALIST PROGRAM



AANIIIH NAKODA

COLLEGE

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While a COHS with only on-the-job training can't provide dental care directly, he or she can conduct motivational interviews with patients, work with a dentist or dental hygienist to give referrals, or help people get to the public health department, where they may receive financial assistance to travel to more urban areas for dental work. "They use whatever means they can, especially with kids, to get people's teeth taken care of," Kinion explains.

In the future, she adds, a special training program serving the community might produce ancillary oral health providers able to offer billable services that address oral health needs on the reservation.

#### **Community Involvement**

Beginning this year, the project at Fort Belknap will begin testing in a two-part group design the effectiveness of an ECC-reduction plan implemented by a single COHS. Kinion hopes to involve up to 120 Fort Belknap children, ages 3 to 5, and their families. All children who participate in the study will receive dental care from the project's consulting dentist, Jane Gillette, DDS, a clinical research dentist from Bozeman who specializes in oral health disparities.

Because educating children and their families about the importance of good oral hygiene is crucial to any attempt to combat ECC, Kinion is particularly excited that Aaniiih Nakoda College students have developed age- and culture-appropriate health education materials, including posters and a children's book written in the tribes' native languages. Recently the students presented their work to Fort Belknap tribal members.

"The elders were amazed," Kinion says. "They thought these students had done such a wonderful job." Many of the students have young children, she points out, so they developed ideas that would work with their own kids—such as a story about becoming "tooth warriors."

This kind of involvement from the entire community has flourished only after Kinion's decade of relationship-building among the Fort Belknap Tribal Council, the Tribal Health Department, Aaniiih Nakoda College administrators, and the Fort Belknap Head Start program, among others. It's a kind of community outreach that Kinion says comes naturally.

She spent her early years in the Seeley Lake area of Montana, where her grandparents had close friends in nearby tribal and rural

communities. The older generations hunted and fished together in the Bob Marshall Wilderness. "One of the things I enjoy most is working in these beautiful parts of our state among communities with long and storied traditions," she says.

When she first begins pursuing ideas with local partners, Kinion participates as a listener first. "It doesn't matter what I want," she says. "It's what the community would like and what's important to them. Successful partnerships are built on trusting relationships."

#### "Where I Can Help"

Given her years of service as a practicing nurse and a teacher of nursing, at both the University of Akron (Ohio) and MSU, Kinion says it's hard not to feel that she's a nurse before all else. "But I do thoroughly enjoy research," she admits.

In a relatively short time, in fact, her work in oral health disparities and her expertise in interprofessional education (she holds an Ed.D. in educational administration) have made her a respected authority among community members, scholars, and practitioners, even outside of nursing. Now she's using that influence to shape the career trajectories of young nurses about to head into rural practice—nurses who, like Kinion herself once, may never have considered oral health to be any of their concern.

When Kinion arrived at the College of Nursing a decade ago, there wasn't any oral health curriculum at all. Now she and Gillette teach a seminar to nurse practitioner students, and Kinion mentors graduate students who undertake projects related to oral health. One of her students, Jennifer Show, a member of the Assiniboine tribe, recently completed and successfully defended a project for her Doctor of Nursing Practice degree that examined oral healthcare among Type 2 diabetics in an American Indian population.

"I learned that oral health is where I can help students the most," Kinion says, "and it's something that's desperately needed among graduate nurses, especially those who will work in rural areas."

In time, the next generation of nurses in Montana may view oral health in an entirely different light—as both an essential determinant of well-being for life and a routine part of the job.

## **Agents of Change**

f you had to pick a single theme among many that run through Vanessa Simonds's young career, the phrase *returning to her roots* comes most easily to mind. A native of Bozeman and a member of the Crow Tribe, Simonds has felt Montana's draw ever since she first left after high school. A year at college in Missouri wasn't the right fit, so she finished at MSU, where her father had taught for many years.

Six years at Harvard for graduate school weren't enough to keep her on the East Coast. Soon she was back at MSU—this time as an adjunct instructor, her advanced degrees in hand. Next she was on to Iowa City for a three-year stint at the University of Iowa, but in 2014 she returned for a third and perhaps final time to her alma mater. She even lives in her childhood home now.

As if that weren't enough geographical gravity to hold her in place, Simonds's recent work has taken her to her family's ancestral lands, the Crow Reservation, where she visited often while growing up and where lots of extended family still live. Her research project, not even two years old, has more "Students are learning to have a proper relationship with the water, and they're learning what the current issues are concerning water in their community. The learning is directly related to their lives."

#### JASON CUMMINS, PRINCIPAL OF CROW AGENCY SCHOOL

than 20 local partners whom she's quick to name, not counting the two dozen school children who form the core of her study. For her it's all about the people, the land.

"It's nice to go back there and get to know people even better," Simonds says. "I'm really happy. It's so helpful when you already have those relationships with people who can help you get things going."

Those kinds of deep ties to the land, in a way, are also related to the problem that her project hopes to address. As the largest reservation in Montana, the Crow lands are especially blessed with natural resources: grazing lands, farmlands, fossil fuel deposits, three mountain ranges, and two river basins, including the scenic Little Bighorn River. But with that great bounty comes a need for heightened awareness, Simonds explains. That's because native communities, in general, are at particular risk for exposure to environmental contaminants due to subsistence diets and cultural practices that increase their likelihood for contact with contaminated soil and water.

#### **Enter the Guardians**

Simonds thinks that she and her local partners might have a way to reduce that risk, and the means for doing so may prove nothing short of revolutionary. Existing and past interventions for mitigating environmental risks on tribal lands have focused primarily on educating the community through the adult population. But Simonds's project, developed with CAIRHE support in collaboration with Apsáalooke community members, hopes to develop and pilot an intervention to increase *children's* environmental health literacy. As "Guardians of the Living Water"—a name the community gave the project as a replacement for its academic-speak title—the children then transfer that knowledge to others in their schools, families, and communities.

The idea of children serving as agents of change in their community has rarely been explored outside of the developing world, Simonds

> explains. "I think we use it implicitly sometimes," she says, "but it hasn't been tested well at all." If the approach shows promise in this project, the community could expand the idea to other health topics, such as obesity prevention. And once results are published, the approach could be used anywhere, in both native and non-native communities, she says.

*Guardians of the Living Water* is a partnership among the Crow Environmental Health Steering Committee, Crow Agency School, Montana State University, and Little Big Horn College. Through a system of summer camp and after-school activities involving art and science—all grounded in the Apsáalooke culture—children in grades 4 through 6 learn about the relationship between waterrelated environmental issues and human health, then apply their knowledge in practical applications and dissemination tasks. Researchers will evaluate the effectiveness of the intervention through pre- and post-tests of students' knowledge and environmental health attitudes, as well as through interviews with students and parents.

Environmental stewardship is nothing new in Crow communities. The local Environmental Health Steering Committee had been conducting water quality tests for about 10 years when Mari Eggers of MSU's Center for Biofilm Engineering first approached Simonds in 2014 and told her about the tribe's work. Discussions with John Doyle, a longtime committee member, led to an initial idea for the project and, ultimately, enthusiastic support from the tribe. Although Simonds had been pursuing a different idea in environmental health literacy, her academic specialty, that focused more on the organizational level at the Indian Health Service and less on the community itself, she switched her attention to a project involving a bunch of fourth-graders. TRIBAL COMMUNITIES MAY LEARN TO LISTEN TO THEIR MOST VALUABLE ASSETS—THEIR CHILDREN— WHEN IT COMES TO PROTECTING WATER RESOURCES AND HUMAN HEALTH.

CAIRHE Research Project:

INCREASING ENVIRONMENTAL HEALTH LITERACY IN A NATIVE AMERICAN COMMUNITY (AKA "GUARDIANS OF THE LIVING WATER")



Att AR

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LITTLE BIG HORN College



As part of the Guardians of the Living Water summer camp, students made field trips to the Little Bighorn River.

## **CASUALTIES OF CARING**

## Victim-service providers often relive their own suffering as former victims themselves. In rural Montana, it may affect their ability to help others in need.

What is a "community"? To a sociologist the idea is more complicated than the everyday notion of main streets, PTAs, and Saturday soccer tournaments. The fact that people share a place doesn't necessarily mean there's a *community* present, and more than just geography can forge human connections. In their study of victimization issues across Montana, MSU sociologists Kelly Knight and Colter Ellis confronted the question early on.

"One of our first challenges was deciding what our community is," Knight says. "How do we study this problem that's statewide?"

Little is known about victimization and its detrimental effects on health disparities in rural Montana. But early results from Knight and Ellis's research suggest that one of the biggest challenges relates to a community, if you will, of service providers—the professionals and volunteers who may be isolated from one another physically but who share a common interest of helping victims with crises such as sexual assault, domestic violence, and child abuse. Sadly, they often share a common history, too, as former victims themselves.

"People often choose these professions because of their own victimization experiences," Ellis explains. "They're working every day with people who have had profound and traumatic experiences, which can lead to trauma of their own."

Providers reliving the emotional wounds of their own victimization, in fact, can exhibit the symptoms of primary trauma, including significant mental and physical health problems and substance abuse. That, in turn, may jeopardize their ability to help others in rural areas where public health resources are already scarce.

#### **Secondary Trauma**

While this kind of victimization, what Knight and Ellis term secondary trauma, can occur anywhere, the rural Montana landscape may make it more acute, since rural providers may not have the resources or health support systems they need to combat this side effect of their work. Providers may not be doing the job as effectively as they know they can do it, and often they're the only professionals of their kind serving an entire area. Organizations may have difficulty finding, training, and keeping qualified and

CAIRHE Developmental Project:

#### RURAL MONTANA VICTIM NEEDS ASSESSMENT



Project Leaders Kelly E. Knight, Ph.D., and Colter Ellis, Ph.D.

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effective providers because of the emotional rigors of the job.

"So not only does it have health impacts for them, the providers, but it interferes with their service provision to others," Ellis says.

When Knight and Ellis began their needs assessment in early 2015, they didn't know where the work would lead them. "Our initial goal was simply to discover the biggest issues in Montana in terms of victimization," Knight says.

While the two are married, their collaboration on this project came about as a purely professional match. Both joined MSU in 2014, when Knight first proposed a victimization study for CAIRHE in keeping with her primary research focus. The challenge of studying these issues in Montana brought in Ellis, who is interested in rural settings and specializes in qualitative research.

After reaching out to the Montana Coalition Against Domestic and Sexual Violence, they began with focus groups and key informant interviews in Gallatin County and the oil- and gas-impacted region of eastern Montana, where they met with around 50 service providers such as domestic violence counselors, shelter workers, advocates, police officers, lawyers, nurses, and others. "We were surprised how candid people were about their own substance abuse and their physical health issues," Knight says.

While their study is still examining other broad issues in victimization, Knight and Ellis have refined their data collection to find out more about secondary trauma and its lasting effects. This year they will conduct additional site visits in central and northwestern Montana, and a separate but related project will examine secondary trauma among victim-service providers on the Blackfeet Reservation (see page 16).

#### Sense of Urgency

The problem they're studying is in many ways uncharted territory, Knight explains. "We're learning everything we can about secondary trauma, and what we're finding is that it's understudied, it's not well-defined, and there's no known effective intervention," she says. "It's a challenging issue to study and address, but we think there's some real room for growth in our understanding."

The topic is receiving more consideration on a national level. Last November, Knight and Ellis chaired a panel discussion at the American Society for Criminology's national meeting in Washington, D.C., where they brought together the top five scholars who study victimization in rural places. The event was packed, and the concept of secondary trauma got lots of attention.

Closer to home, there's also a sense of urgency among some service providers on the front lines, many of whom have been working for years as the only practitioners in their communities. As they age and approach retirement, some wonder if they will be able to retire at all, fearing that there may be no one willing to take their place. "They think, 'If I don't do it, nobody will,'" Ellis says.

Shining light on a heretofore hidden problem could be the first, best step toward a major advance in helping victims across Montana.

#### CAIRHE Developmental Project:

MATERNAL MENTAL HEALTH, CHILD TEMPERAMENT, AND BIOLOGICAL MARKERS OF CHANGES IN EMOTION IN NEW MOTHERS



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## THE RURAL REALITY

How do the Montana landscapes that new mothers and growing families call home affect their mental well-being?

Montana is the first place where psychologist Rebecca Brooker has thought about "rural" as a *mechanism*. Life can be so different in remote areas, where access to resources is often limited and isolation can take an emotional toll, that profound but understudied effects on mental health may occur, particularly among new parents, she explains.

"There are so many good reasons for raising your children in a small town, but there are also things parents say they wish could be different," says Brooker, who grew up in rural Iowa. "I think my parents thought our small town was great. It was safe, and everyone knew their neighbors. But some of those things became annoying too. Everybody knew everybody's business, for example, and there were fewer opportunities in school."

Studies show that rural populations have some of the highest rates of unmet mental health needs in the country, Brooker adds, and rural parents especially may be underserved, have more health problems, feel more isolated, and have less access to parenting and mental health resources. Particularly during stressful times, such as the arrival of a new baby, this may leave parents feeling lonely or misunderstood.

"These are ideal times to provide new mothers with extra support and resources in the community," Brooker says.

#### "A More Holistic Understanding"

In Brooker's Development of Mind and Emotions Lab at MSU, one portion of her research examines infants' temperament and multiple biological factors in search of a more complex picture of the elements that affect mental health and illness in new mothers. Her Montana Minds of Mothers Study (MOMS) involves visits with women during the second and third trimesters of pregnancy and again when their babies are 4 months old. Understanding how emotions develop in mothers during pregnancy and the early postpartum period may offer clues as to which mothers do well, and why, and which mothers may be at risk for problems such as anxiety or depression, Brooker explains. The study also should reveal what resources rural mothers have or need access to, as well as the many ways that babies' personalities—such as how positive, soothable, responsive, or fussy they are—can impact additional changes in maternal emotions over time.

"With insight into each of these dimensions, we hope to develop a more holistic understanding of the origins of positive and negative emotional changes in rural Montana families as they adjust to life with a new baby," Brooker says.

#### **Rural and Resilient**

Research has proceeded swiftly for Brooker, who is in her third year in the Department of Psychology at MSU. A separate longitudinal temperament and biology study of more than 100 children and their parents, work also supported by CAIRHE, is already in its second year. Work also has begun with the 45 mothers recruited to date for the MOMS study.

Brooker hopes that her MOMS results will one day inform practices by doctors, nurses, and early childcare centers in rural Montana and similar areas around the country. The challenges and benefits of rural life continue to impress her as she travels across the state—things she also observed in rural central Pennsylvania, where she conducted research while in graduate school at Penn State University. "Montana feels more rural," she says when pressed for a comparison, noting that you "can't just drive a couple of hours to Pittsburgh."

And yet, despite the extra effort that rural life involves, people are staying in these isolated areas or even moving back once they've left. Most rural residents are in perfect mental health, Brooker points out, so there may be something about the remote setting that affirms and enriches their well-being. "That's really understudied," she says. "I would love to look at that next—where we start talking about *resilience.* Why, when people are so isolated and there are so many risk factors, are so many of these mothers and children just fine?" (%)

CAIRHE Developmental Project:

PRISONER REENTRY & RECIDIVISM IN MONTANA: ACCESS TO AND UTILIZATION OF COMMUNITY RESOURCES



Project Leader Cody Warner, Ph.D. MSU Department

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of Sociology and

## **A COMMUNITY OF OFFENDERS**

Parolees and probationers in Montana face unique health challenges as they try to get their lives back on track and remain crime-free.

"It's equally fascinating and tragic," Cody Warner says of the oftquoted fact that the United States keeps over 2 million people behind bars, more than any other country on Earth. Now in his third year in MSU's Department of Sociology and Anthropology, Warner has focused his research on the reentry side of the criminal justice landscape, where millions more under community supervision try to resume a normal life. That got him thinking about parolees and probationers as their own intact community of sorts—a "community of offenders," often overlooked but with a unique set of health disparity challenges, particularly in Montana.

National studies show that people who enter the correctional system often bring chronic health conditions, high rates of infectious disease, untreated mental illness, and substance abuse problems. "The research is pretty clear that people who go to prison are really disadvantaged on all of those indicators," Warner says, adding that offenders reentering society may battle the same issues and place their families and communities at risk.

Urban parolees typically live in areas with the health-service providers they need, such as clinics, mental health counseling, drug testing, and substance abuse treatment. Research done in California—where single facilities have more prisoners than the entire state of Montana—shows that these services are often overburdened by high demand. "I started to wonder what that might look like in a Montana context, a more rural context," says Warner, a native of Wyoming. "Would we see the same access to providers but less of a demand, or would we see a bigger physical disconnect between where people live and the services they need?"

Not surprisingly, in Montana's rural settings, service providers are often few and far between, with possible consequences to a parolee's health and reentry to society. In Montana, 40 percent of people released from prison are back within three years, Warner notes.

#### **Better Health, Positive Reentry**

When Warner first proposed his project in 2014, Montana had about 10,000 offenders under supervision in its communities, with more than 2,000 individuals released from prison each year. Research shows that released prisoners who connect with community-based resources are more likely to desist from crime and are less likely to return to prison. But without information on the locations and types of resources in a given community, Warner says, it can be difficult for parolees to connect with potential providers during the critical period after their release. In cooperation with the Montana Department of Corrections (MDOC),

Warner and his student research assistants have begun to compile a first-of-its-kind database for the state that shows the location of returning citizens and the reentry-related resources they need. This may help identify what are commonly called "resource deserts," where few providers are located. In time, an updated database on the MDOC website may help parolees and probationers—and even other disadvantaged populations—locate services while allowing the state to be more proactive in fostering continuity of care.

That, in turn, could have a significant effect on rates of recidivism in Montana, something Warner hopes to examine next. He offers the example of a parolee who has to travel 100 miles just to do his routine drug testing or to see a chemical dependency counselor.

"What impact does that have on their reentry outcomes? Does having access to these providers in their community do anything in relation to their recidivism?" Warner asks, noting that most returns to prison are due to technical violations of parole or probation such as a missed appointment, not a new crime. "If we can identify places in the state where resources are lacking, maybe we can collaborate to figure out a way to bring in some of those needed services in those areas."

#### **Shift in Thinking**

Today Warner is a member of the Montana Prisoner Reentry Task Force, a multiagency committee charged with making recommendations for how to reduce recidivism in the state. His focus on health issues among Montana's "community of offenders" coincides with a major political shift in which correctional reform has become a bipartisan issue.

"Candidates on both sides are talking less about punishment and more about reducing the size of prisons," Warner says. "But they still don't seem to be paying much attention yet to the long-term impacts of having a criminal record and what it means for your ability to find a job or your ability to get health services you need."

But with some states' recidivism rates topping 50 percent and health care issues still dominating headlines, a discussion of health services for this disadvantaged community may be entering the national conversation soon.

## THE HARD ROAD

#### Tragic statistics prove that rural Montana youth have a drinking and driving problem. But why do they do it?

The magnitude of the problem behind Kaylin Greene's research is apparent during her focus groups around Montana, when she asks participants what their friends, parents, and community members can do to protect people from the dangers of drinking and driving.

"Right now," Greene says, "people just generally say, 'I don't know."

It's a vexing situation but also an urgent one, because alcohol and rural Montana are a deadly mix. The state's high rates of drinking, binge drinking, driving after drinking, and alcohol-related car accidents rank consistently among the nation's worst. Studies show that young adults binge-drink more frequently than older adults and drive more after drinking—problems that could be exacerbated in a rural setting, where youth may feel there's little else to do.

Over the course of her project, Greene hopes to understand the reasons behind alcohol use and driving after drinking among young adults in Montana. Although there's a large body of quantitative research about drinking and driving nationwide, including a focus on youth, those studies have not touched on rural Montana. "I don't know of any qualitative research that has specifically looked at reasons for drinking and driving and why reasons might be different for rural young people," Greene says.

#### **The Rural Question**

Greene began her work in early 2015 with a pilot focus group, followed by seven focus groups across Montana with plans for two more. By talking to young adults between 18 and 25 years old, she's learning how this rural demographic thinks about drinking and driving, how they decide to drink and drive, why they're motivated to drink and drive, and how the rural setting plays into their dangerous decisions. "I'm also interested in understanding the protective factors that people can leverage to try not to drink and drive or to mitigate risks," she says.

Greene's rapport with the groups has helped produce good discussion, even if she does maintain a researcher's disinterested demeanor throughout. "I actually love doing them," she says of the focus groups, which have spanned from Thompson Falls to Broadus. "It's amazing how people open up immediately. And it's impressive how similar things come up in totally different parts of the state."

She notes, for example, that young people in different regions use a similar term, "driving the loop," to refer to a group activity of drinking and driving on county roads seldom patrolled by police. There also seems to be a common rural custom of not questioning

#### CAIRHE Developmental Project:

#### DISCUSSIONS OF DRIVING AFTER DRINKING AMONG YOUNG ADULTS IN MONTANA



Project Leader Kaylin Greene, Ph.D.

MSU Department of Sociology and Anthropology

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"You might be able to say to a friend your age, 'No, don't drive home,' but you certainly couldn't say that to someone with a higher status in the community than you," Greene says, adding that youth in urban areas don't seem to share similar qualms.

#### **Working Toward Solutions**

Greene is no stranger to research on alcohol use. As a postdoctoral researcher at MSU, prior to her 2015 faculty appointment, she collaborated on an NIH grant with sociologists David and Tami Eitle (also CAIRHE mentors) that studied substance use and HIV risk behaviors in American Indian populations. A new grant proposal of her own will focus on understanding disparities in alcohol use across immigrant generations.

Montana's high rates of alcohol use and alcohol-related crashes made her wonder what underlying causes might be at work—the basis for her CAIRHE research. "All of those things made me interested in alcohol use in the rural context, and especially thinking about drinking and driving," she says, "which is something that I've never really looked at before."

Her next step following analysis of the focus group data will be to share her findings with the communities, which will inform community-led interventions and policy strategies aimed at reducing driving after drinking. Greene also hopes her results will lead to a larger quantitative study using an "intensive measurement burst methodology" to examine alcohol use and alcohol-related behaviors day by day—even hour by hour—among young adults. "To inform that kind of study, what I first need is to understand the rural context in the state of Montana," she says.

In time, as communities themselves gain a better understanding of why young people drink and drive, the ideas for how to address the problem may no longer seem so elusive.





The Fort Peck Reservation.

### **BURDEN AND RESILIENCE**

The stories of addiction in tribal communities are heartbreaking, but research into social factors behind the problems reveals a remarkable underlying strength.

The study of addiction brings a researcher front and center into people's lives. Monica Skewes has known this at least since graduate school, when she first began to study smoking among Mexican-Americans in Texas. In her current work on the Fort Peck Reservation in Montana, she asks community members *generally* about social and cultural norms surrounding substance abuse, but their answers always seem to lead to very personal stories—their own, a close relative's, a friend's.

The people she meets want to know about her, too, and her family. Where is she from? Who are her people? Her husband, Scott, a trained mental health professional, volunteers on the project and often accompanies her on the long drives from Bozeman. Having family present seems to give Skewes more authenticity with her participants, for whom family is everything, and has helped advance her deepening relationships at Fort Peck after one and a half years of work there, she says. She even shares the history of alcohol abuse in her own extended family. Bonds form; trust develops.

When asked to recount any of those dozens of stories she's heard, Skewes catches herself, vigilant as she is to safeguard privacy. Everyone at Fort Peck knows who's struggling with addiction, she explains, and merely leaving out names or exact circumstances isn't enough to make a person anonymous in these tightly knit communities. There's no hiding or avoiding the overwhelming problems behind the stories, however. They're real, and they're terrifying.

#### **A Deeper Understanding**

As with the general population, alcohol and drug use can vary significantly among American Indian tribes depending on where you look. High rates of abstention and success stories following addiction,

for example, are easy to find on reservations. Yet American Indians nationwide still face disparities in the incidence of substance abuse and related health risks such as depression, suicide, and domestic violence. One survey by the Substance Abuse and Mental Health Services Administration covering an eight-year span showed that American

"... as Native Americans, we've developed a cautious outlook about outsiders coming in and telling us what's good for us without even understanding or knowing us. This project has respect for the culture and maintains a responsible awareness without prejudice."

PAULA FIREMOON, PROJECT CO-INVESTIGATOR

Indians or Alaska Natives were more likely than persons from other racial/ethnic groups, or 17.5 percent vs. 9.3 percent, to have needed treatment for substance use in the past year.

At Fort Peck, home to the Assiniboine and Sioux tribes, community members talk about alcohol abuse and an alarming rise in methamphetamine use as two of the most pressing health challenges they face. "People are more motivated to deal with meth right now because it's so scary and new," Skewes says, noting that while meth is used mostly by youth, it plagues a wider age range than she would've expected, including people in their 40s and 50s. Adults struggling with substance abuse on the remote reservation have only one local treatment option, an overburdened outpatient facility.

The problems are well-known, but the objective of the *Fort Peck Substance Abuse and Resilience Project* is to move beyond merely describing the challenge to understanding local cultural views of substance abuse and resiliency among the reservation's communities, Skewes explains.

She has spent her first 18 months of the project making frequent trips to Fort Peck, where she has established trusting, equitable relationships with tribal members, local leaders, and collaborators at Fort Peck Community College (FPCC). Her community advisory board has been involved in every aspect of the research.

Paula FireMoon, the project's co-investigator at FPCC, helps solidify those critical relationships with tribal members and agencies. "What we've done with the relationship-building process so far has given the project stability for an effective research outcome," FireMoon says. "I say this because as Native Americans, we've developed a cautious outlook about outsiders coming in and telling us what's good for us without even understanding or knowing us. This project has respect for the culture and maintains a responsible awareness without prejudice."

Skewes, FireMoon, and their team have conducted more than 40 key informant interviews involving a wide range of ages and experiences. "We talk to people who have never used, people in long-term recovery, and people who are trying to quit who are struggling," Skewes says. The continuing analysis of nearly 80 hours of session time to date will ultimately lead to a tribal needs assessment and the design of an evidence-based intervention that will focus on a particular subset of the population, such as pregnant women. "We really want to do something that could be sustained beyond the project," Skewes says, though she is quick to temper expectations.

> Even a 30 percent reduction in the negative consequences of drinking or drug abuse would be a huge accomplishment, though to some it might seem inadequate in light of the tremendous problem. "We're going to make things a little bit better," Skewes says. "We need to get on the same page about what success means and set achievable goals."

Getting on the same page often means talking about her role as a researcher and the value of research, since many first-time acquaintances often mistake her for a therapist who's going to do rehab. "That's really what they want at first," she says. "They say, 'We need providers."

#### "We're Still Here"

Prior to her arrival at MSU in 2014, Skewes worked at the University of Alaska–Fairbanks, where she studied substance use among college students, a subject she still examines, among others, in her REACH Lab at MSU. Before that she completed a post-doc in alcoholism etiology and treatment research.

But even with her extensive experience studying addictive behaviors, Skewes found plenty of surprises at Fort Peck.

"I was expecting even higher rates of problems," she says. And she was shocked to find some people who are in recovery against all apparent

odds, such as individuals recovering from meth addiction who live around current users and still somehow manage to stay clean. "I can't even conceive how they can do that. There's some *resilience* and strength that people have, so I'm trying to understand what that is."

It's why her project title specifies "resilience" rather than "recovery"—implying that one comes before the other. "That's something that people keep telling me, even before I started collecting data," Skewes says. "They would tell me, 'We are really resilient people. We have problems and weaknesses, but we've been through so much

and we're still here.""

www.montana.edu/cairhe

#### CAIRHE Developmental Project:

#### THE FORT PECK SUBSTANCE ABUSE AND RESILIENCE PROJECT



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## **CAIRHE NEWS**



Alex Adams

#### **CAIRHE Welcomes Alex Adams as New Director**

Alexandra Adams, M.D., Ph.D., succeeded Allen Harmsen as director and principal investigator of CAIRHE on January 1, 2016. She will relocate to Bozeman in July 2016 from Madison, Wisconsin, where she has worked since 1999 in the Department of Family Medicine at the University of Wisconsin School of Medicine and Public Health. Dr. Harmsen remains a CAIRHE advisor and faculty mentor.

Adams brings a wealth of experience to CAIRHE as a nationally recognized and highly respected health disparities researcher. In addition to her work as a professor in the Department of Family Medicine and the Interdepartmental Graduate Program in Nutritional Sciences at UW, she has held several leadership positions relating to community-based and health disparities research. These include her role as director of the Collaborative Center for Health Equity from 2008 to 2015, and director of the UW Cancer Center's Cancer Health Disparities Initiative from 2009 to the present.

Adams maintains an active research agenda and clinical practice relating to childhood obesity in American Indian communities. Her current work in obesity prevention partners with five American Indian communities nationwide, including the Blackfeet Nation in Montana. For this and other community health and health disparities project work as principal investigator, co-PI, or faculty mentor, she currently receives major funding support from 10 different sources. These include multiple National Institutes of Health programs such as the Centers of Biomedical Research Excellence (COBRE); the National Heart, Lung, and Blood Institute; the National Center on Minority Health and Health Disparities; the Wisconsin Partnership Program; and the National Cancer Institute.

Earlier this year Harmsen praised the hiring of Adams as a major win for MSU. "When I tell people around the country that Alex has joined us," he said, "the first question they ask is, 'How did you get her?' That makes me very proud."

Adams, for her part, is excited about the future. "We have such a great opportunity to advance CAIRHE as a research center and a resource for people and communities all across Montana," she said in January. "I'm very enthusiastic about our team, and I'm eager to get started."

She received her M.D. from the University of Illinois College of Medicine at Urbana-Champaign and her Ph.D. in Nutritional Sciences from the University of Illinois at Urbana-Champaign. She completed her residency in family medicine at the University of Wisconsin Hospital/St. Mary's Hospital in Madison. Adams's husband, Erik Adams, M.D., Ph.D., teaches in the WWAMI Medical Education Program at MSU and also serves as a faculty mentor for CAIRHE.

#### **CAIRHE Seeks Board of Regents Recognition**

CAIRHE will request formal designation as a Montana research center by the Board of Regents of the Montana University System. The application process is already underway, with approval granted by MSU's Vice President for Research and Economic Development, Renee Reijo Pera; Provost Martha Potvin; the Dean's Council; and the Faculty Senate.

The Board of Regents will introduce the application at its May 19-20 meeting in Havre, followed by a vote at its September meeting.

"The process should help to forge our identity around the state and validate the important work we do, and will continue to do, for the people of Montana," says CAIRHE Director Alex Adams.

#### **Center Researchers Win New Grant for Blackfeet Project**

CAIRHE investigators Kelly Knight, Ph.D., and Colter Ellis, Ph.D., have received a \$25,000 grant from the Montana Healthcare Foundation to extend their work to the Blackfeet Reservation. Knight and Ellis had submitted one of only two applications selected by MSU for consideration by the MHCF as part of its 2016 Call for Proposals in Behavioral Health.

The new project, *Responding to Secondary Trauma Among Blackfeet Victim Service Providers*, will build upon Knight and Ellis's current CAIRHE work (see page 10) and use community-based participatory research to develop a strategic partnership with Blackfeet victim-service providers. They also will work with local partners to create a culturally sensitive toolkit for addressing secondary trauma on the reservation.



CAIRHE's project leaders assembled for the Center's annual meeting in January. Front row, left to right: Cody Warner, Elizabeth Rink, Colter Ellis; Back row, left to right: Monica Skewes, Kaylin Greene, Vanessa Simonds, Kelly Knight, Rebecca Brooker, Elizabeth Kinion.



Community-based participatory research doesn't happen overnight. Trusting, mutual relationships first must be nurtured by professionals who know the state's tribal and nontribal rural communities. CAIRHE's Community Engagement Core research associates are (*left to right*) Sara Young, Emily Matt Salois, and Anna Buerhaus. Look for more detail about their crucial work in an upcoming issue of this newsletter.



One important part of CAIRHE's mission is the development of new faculty researchers into independent investigators with their own major grant funding—a transformation achieved through research support and mentoring by established faculty investigators. CAIRHE's mentors are: (front row, left to right) Director Alex Adams, Jessi Smith, and Suzanne Held; (back row, left to right) Allen Harmsen, Tami Eitle, Erik Adams, and David Eitle.

"A response to secondary trauma and its health consequences in Montana is desperately needed," Knight says. "There's much work to do, and we're excited to get started."

Work on the two-year project will begin later this spring, beginning with the creation of a community advisory board and the completion of a community needs assessment. "We're very grateful for the opportunity to collaborate with Blackfeet victim-service providers," Ellis says. "This partnership will provide increased support for the amazing and dedicated people doing this important but difficult work."

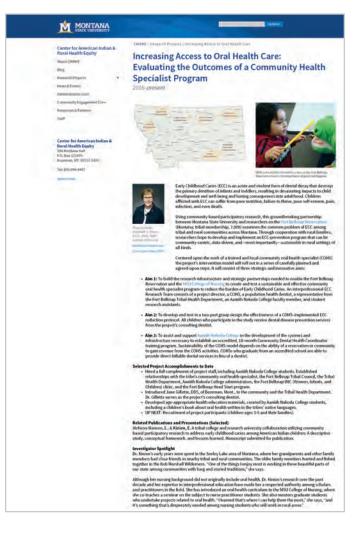
#### **CAIRHE to Unveil New Website Design**

This spring CAIRHE will launch a redesign of its website, www.montana.edu/cairhe, that should serve as an important introduction to the Center for people around the state, as well as a constantly changing source of content on health disparities research, says James Burroughs, CAIRHE's project coordinator.

The project is the result of weeks of collaboration with University Communications at MSU, including designer Alison Gauthier and staff in Web and Digital Communications.

New to the site will be individual pages devoted to each of CAIRHE's eight current research projects (*right*), Burroughs says. These will highlight up-to-date accomplishments by project leaders and offer insights into their personal approach to the work. A new blog authored by Director and Principal Investigator Alex Adams, as well as other Center investigators from time to time, will spotlight current issues in health disparities around Montana and nationally. CAIRHE will stimulate discussion from the blog through its social media presence on Facebook and Twitter, also coming soon.

"We want CAIRHE as a center to be a go-to resource for our partners and potential partners around the state, and making the website a rich source of content in health disparities research is just one way we can achieve that," Burroughs says. "It's also a great opportunity to share the exciting and groundbreaking work being done by our faculty investigators, who are working with communities across Montana to tackle some very significant problems."





For their work at Fort Peck, CAIRHE project leaders Beth Rink and Monica Skewes (left and center) collaborate with project development and grants specialist Elizabeth Bird (right) of MSU's College of Education, Health and Human Development.

"We're getting really great results, and people are excited," Rink says.

After analysis of the focus group and interview information, Rink hopes to design and administer a quantitative survey among 15- to 18-year-olds in community schools later this fall. The next step would be to design an intervention targeting that age group, which would round out the five-year timeline for the project.

"The intervention is going to be a multi-level approach," Rink explains, adding that the exact design won't be determined until later, after her team and advisory board have reviewed all the data collected. "Even though the target population is teenagers, we might do something with families, policy-makers, the schools, tribal leaders, and so on. It's not just going to be with the teenagers." She pauses. "It never works when you just target the teenagers."

#### A Global Community

Rink's current work at Fort Peck builds on the successes, and valuable lessons, of two previous CBPR projects, the *Fort Peck Men's Sexual Health Study* and the *Fort Peck Ceremony of Research Project*. The latter, with support from Montana INBRE, helped the tribe build its research infrastructure and establish its own Institutional Review Board at Fort Peck Community College.

During the course of the men's project—which Rink calls "very different" with its less indigenous, quantitative approach and its peer-education intervention—tribal leaders asked her to expand her work into what has become her latest study. "They said, 'We really want you to work with women too, and we want you to do research on younger people,'" she recalls. "'We really think these problems start in adolescence.' So it was the Fort Peck Tribal Council that got our new study going." Since 2007, Rink also has conducted research in Greenland examining sexual and reproductive health among the Inuit, who make up about 80 percent of the island's small population of 50,000. Around the time she started work at Fort Peck, a former MSU colleague and epidemiologist, Dr. Dionne Gesink (now at the University of Toronto), was conducting research that mapped STI rates in indigenous populations in the Northern Hemisphere. She and Rink noticed that the farther north they went, with Greenland being the farthest, the STI rates were nearly five times higher in the Inuit population there compared with Montana. They prepared a presentation for a circumpolar health conference, which led to some key contacts and two successive National Science Foundation grants that have supported Rink's work in Greenland.

Earlier this year, Rink also traveled farther east to Finland, where she has a new project exploring the development of ethical guidelines for CBPR among the indigenous Sami peoples.

Still, there remains enough work to do south of the 49th parallel to keep Rink interested for years to come. She points to her MSU and CAIRHE colleague, Monica Skewes, who also works at Fort Peck (See "Burden and Resilience" in this issue), as a future collaborator. With partner Carl Yeoman, an MSU microbiologist, Rink is also in the process of adding a biological component, bacterial vaginosis testing, to her work at Fort Peck—a step that must be very thoughtful with explicit tribal approval, she explains. "It involves multiple meetings with community stakeholders to get up and running, due to the sensitivity of biological sampling with indigenous populations," she says.

All of which means more days ahead for Rink on Montana's lonely roads.

#### "Agents of Change" continued from page 8

Simonds smiles at that. "Honestly," she says, "I thought it would be more fun."

#### **Summer Camp Science**

After Simonds formed a project steering committee, which meets regularly, she and Jason Cummins, principal of Crow Agency School, charged ahead with a pilot summer camp in July 2015. Cummins even secured additional outside funding. That first camp, designed by MSU students as a way to test project measures and practice activities, involved fifth- and sixth-graders in a one-time trial run. The camp was a big hit.

"It's a terrific project because the content knowledge being taught to the students reflects their cultural background and worldview, as well as the scientific perspective," Cummins says. "Students are learning to have a proper relationship with the water, and they're learning what the current issues are concerning water in their community. The learning is directly related to their lives."

Among the lessons learned by project leaders during the pilot camp were the need for smaller groups for certain tasks and the inclusion of relevant Crow words in the activities. They also infused the curriculum with more storytelling, songs, and cultural site visits, Simonds says.

Now a group of 20 enthusiastic fourth-graders are participating in an after-school program that started in the fall of 2015, meeting one or two times per month. That group will attend camp this summer, followed by the after-school program again during the

2016-17 school year and culminating with a second summer camp in 2017. Over the course of the study, they'll cover a curriculum that spans an introduction to water, water conservation issues, and water's role in human health, with field trips to Cold Springs and the Little Bighorn River,

"Everyone loves the idea of summer camp, but for the community these activities can be a lot more. It's a way to educate young people to be stewards of their water resources, and if they can go a step further, they might even be leaders among their families and communities for lasting change."

both sacred water sources for the Apsáalooke people. Students even conduct water testing at the two sites with oversight from the Environmental Health Steering Committee.

How much do the kids enjoy it? Cummins notes that one student recently moved to another town but convinced her mother to let her stay at Crow Agency School because she loves participating in *Guardians of the Living Water*.

Students from Little Big Horn College (LBHC) in Crow Agency, with direction from program coordinator Velma Pickett, run the after-school program and will co-lead this year's summer camp along with MSU students. Teachers and staff at Crow Agency School observe and advise. The experience has been rewarding for LBHC students, Pickett says.



The logo for *Guardians of the Living Water* was designed by Allen Knows His Gun based on guidance from members of the Crow community.

"It's provided students with the opportunity to be in the teacher role and experience what it's like to work with fourth-graders," she says. "They get to work on improving their personal skills, get the experience of working with kids, and they get to learn along with our curriculum."

Pickett hopes the project internships will lead to more student majors in Community Health and Education at the college. "We need more of them here on the Crow Reservation to address health disparities," she says, "and we need educators who know, use, and understand how to implement both cultural knowledge and

Western-based knowledge."

#### **Critical Health Literacy**

The end-goal, Simonds explains, is a higher level of environmental health literacy among the elementary students. "It's a meaning of 'literacy' that's more broad than the way most people think of the word," she says. By developing *interactive* and *critical* levels of health

VANESSA SIMONDS

literacy, students can begin analyzing information they've learned about water resources and human health, then use the information to talk to family members and even officials in the community.

Although the young "guardians" moving through the study will officially end their participation with the summer camp in 2017—they'll be rising sixth-graders by then—Simonds, Cummins, Pickett, and their team are looking for ways to make the program sustainable for years to come, especially if results prove promising.

"Everyone loves the idea of summer camp," Simonds says, "but for the community these activities can be a lot more. It's a way to educate young people to be stewards of their water resources, and if they can go a step further, they might even be leaders among their families and communities for lasting change."

