



*"Building and increasing research capacity  
to improve the health of Alaska Natives"*

# News from the CENTER for ALASKA NATIVE HEALTH RESEARCH

## Center receives \$11 million to continue health studies with Alaska Native research partners

### Inside:

From the director ..... 2  
Yup'ik genetic study ....3  
New health grant .....3  
Village takes control....5  
President's Professors. 6  
CANHR I highlights .... 7  
CANHR directory ..... 8



*UAF is an affirmative  
action/equal opportunity  
employer and educational  
institution.*



*This publication was made possible  
by Grant Number P20RR016430  
from the National Center for  
Research Resources (NCRR), a com-  
ponent of the National Institutes of  
Health (NIH). Its contents are solely  
the responsibility of the authors and  
do not necessarily represent the  
official view of the NCRR or NIH.*

For the last six years, Center for Alaska Native Health Research (CANHR) investigators have joined with Yup'ik communities, making them research partners, an aim of community-based participatory research.

That partnership has yielded clues toward understanding health disparities among Alaska Natives

"The community-based approach to research allows the resident to take part in finding solutions to the health issues commonly found in most villages," said Moses Tulum, a CANHR external advisory council (EAC) member and a Yukon-Kuskokwim Health Corporation (YKHC) board member.

"In other words, the residents are taking responsibility to work with the problems we find in our villages, instead of someone else coming up with solutions for them."

Now the collaboration



*Bert Boyer, Genetics Core leader, and Scarlett Hopkins, field research coordinator, talk with a family about upcoming CANHR projects.*

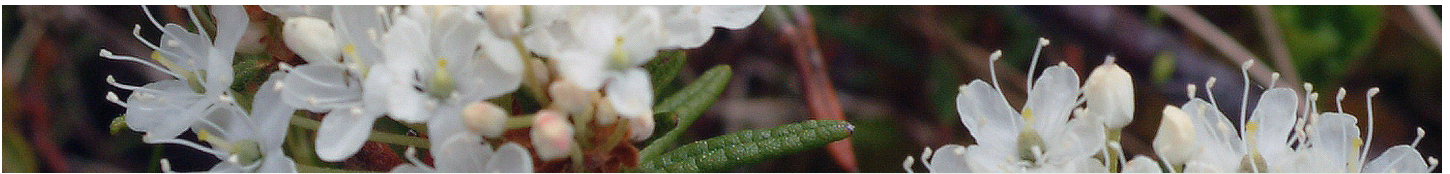
will continue for another 5 years. The Centers of Biomedical Research Excellence, part of the National Institutes of Health's National Center for Research Resources awarded CANHR an \$11 million grant last year. CANHR was initially established in 2001 with an NIH 5-year grant and the new award continues that work.

CANHR scientists and Yup'ik partners will work on projects that will address diet and nutrition,

cultural understandings of health, genetics of obesity, dietary biomarkers, stress and coping, contaminants and nutrients in subsistence foods and cultural understandings of diabetes among Alaska Natives.

"We want UAF to be a major partner in doing biomedical health-related research with Alaska Natives," said Gerald Mohatt, CANHR director and University of Alaska Fairbanks psychology professor. "The work we

CANHR II continued on pg. 4



## From the Director's desk. . .



In this new year, we at the Center for Alaska Native Health Research (CANHR) are especially thankful to have been refunded and to be working on new projects in the Yukon Kuskokwim Delta. Our appreciation goes out to all of the communities and the Yukon-Kuskokwim Health Corporation (YKHC) for their continued support and collaboration. Our experience has been that when we work in partnership with Yup'ik communities, our studies make sense because they address local health disparities important to those communities.

We have learned much from our first five years of research and we continue to share our results with communities, individual participants and the health corporations. The most important findings are detailed in this newsletter. For example we have found diabetes rates are low despite the presence of many risk factors. Our

sense is people may have aspects of their diet, such as a very high intake of polyunsaturated fatty acids (PUFAS) from fish and sea mammals, that are protective.

Our approach has been to search for both what places people at risk for chronic diseases and what protects them. Using this approach we better understand the entire person and their environment. We also may discover aspects of healthy behavior that are central to Yup'ik culture and they can become very useful for health promotion and prevention programs.

For example, we are quite excited about the discoveries of Bret Luick that vitamin D, calcium and parathyroid hormone that can perhaps lead to specific recommendations for service providers, as well as health promotion research. Cécile Lardon has received National Institutes of Health (NIH), National Heart, Lung and Blood Institute funding to continue research on health promotion at a whole community level and we look forward to what she and her community team discover that can improve overall community health. NIH National Institute of Diabetes, Digestive and Kidney Diseases has also funded Bert Boyer to continue investigating genetic factors of obesity, a key to understanding both risk and protection.

New investigators with projects that will further our interest in finding better methods to work on health disparities have promise for future basic and applied research and are also featured in this newsletter.

I continue to work with our behavioral health research projects to increase protective factors that reduce risk for substance use disorders and suicide among preadolescents and adolescents in the YK Delta through both the National Institute of Alcohol Abuse and Alcoholism and the National Center for Minority Health and Health Disparities. Our funder for the Center, the National Center for Research Resources, granted us a supplement for one year that will further our nutritional research and efforts to disseminate findings to YK providers and communities. 2008 promises to be a full and busy year, one that will lead to new directions and findings. Again we thank our research partners and the NIH centers and institutes for all of their support. —Jerry Mohatt

## Psychological association honors Mohatt

Division 45 of Cultural Diversity and Ethnic Minority Psychology of the American Psychological Association presented Gerald Mohatt, CANHR director, and psychology professor at the University of Alaska Fairbanks with the 2007 Division 45 Distinguished Career Contribution to Research Award at the organization's 2007 convention.

The award goes to a researcher with 15 or more years of

experience in the field of psychology who has made significant contributions in research related to ethnic minority populations.

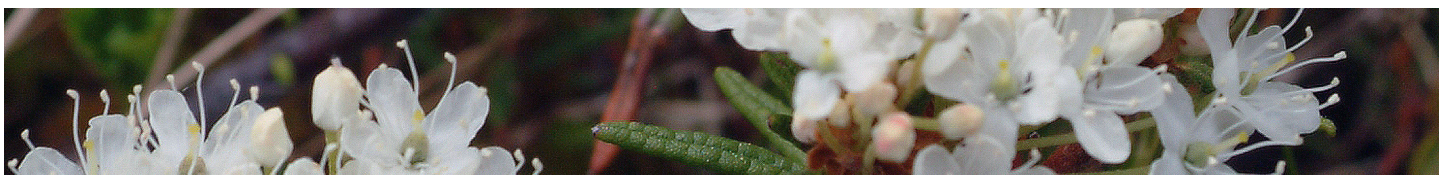
"His innovative and seminal scholarly accomplishments are stellar, born from his deep and abiding commitment to multicultural issues and topics, especially those germane to Indian and Native populations," said Joseph Trimble, psychology professor at Western Washington University, who nominated Mohatt for the award.

### New CANHR website in 2008

Sean Topkok, UAF's Alaska Native Knowledge Network web guru, will undertake the nuts and bolts of designing CANHR's new highly interactive website.

It should be fully operational by the first quarter of 2008.

For further information, visit [www.alaska.edu/canhr](http://www.alaska.edu/canhr). Also, visit Alaska Native Knowledge Network at [www.ankn.uaf.edu](http://www.ankn.uaf.edu).



## NIH awards Boyer \$2.8 million to study Yup'ik diet and genetic risk

Bert Boyer exercises, eats well, and considers himself fit.

But blood tests of many Yukon-Kuskokwim Yup'iks, who didn't appear to be as lean or active as Boyer, showed they were actually in better health, he said.

The difference? Boyer thinks it's their salmon and other cold water ocean food consumption, foods rich in omega-3 fatty acids, polyunsaturated fatty acids (PUFAs) thought to curb the development of cardiovascular disease.

The National Institutes of Health wants to explore that notion and has awarded Boyer and colleagues a \$2.8 million grant from its National Institute of Diabetes and Digestive and Kidney Diseases.

"Despite having levels of obe-

sity that are similar to the general U.S. population, we are extremely interested in knowing why Yup'ik Eskimos have such low rates of diabetes and why many individuals appear so metabolically healthy," said Boyer, the Center for Alaska Native Health Research co-director and University of Alaska Fairbanks associate molecular biology professor. "We want to know the factors that keep people healthy and we think their significant consumption of fish and marine mammals, rich in PUFAs might be a key component."

Boyer and colleagues plan to take an exhaustive look at several genes among 1,000 Yup'iks. The discovery of how PUFAs and physical activity may modify genetic risk

UAF Center for Research Services photo, © James Barker



*Bert Boyer, CANHR co-director, picks berries last fall.*

factors believed to play a role in the development of obesity could lead to a further understanding of obesity and help develop culturally meaningful interventions.

"Yup'ik Elders have always felt that their subsistence foods and lifestyle are healthy and we want to give them scientific evidence that an active lifestyle and their diet rich in PUFA's is indeed healthy," Boyer said. Boyer will spend the next five years on the genetic research.

"Dr. Boyer's grant award for an R01 strongly influenced our center's ability to gain renewed funding," said Gerald Mohatt, CANHR's director. Boyer's grant also fulfills a promise made to CANHR participants to research and provide information on their health status.

"I think we have a whole lot to learn from our participants and this knowledge needs to be shared with them and the broader scientific community," he said.

Boyer is now eating more salmon and further supplementing his diet with omega-3 fatty acids because of what he's learned from Yup'iks.

### Lardon to extend Yup'ik-based health practices project

A Yup'ik community's health promotion research project based on traditional knowledge has been awarded funds to continue work for the next two years.

*Piciryaratgun Calritlerkaq*, "Healthy living through a traditional lifestyle," has received a \$401,000 grant from the National Heart, Lung and Blood Institutes and the Office of Behavioral and Social Sciences Research, part of the National Institutes of Health (NIH).

"I'm very proud of the work we've been able to accomplish," said Cécile Lardon, the project's principal investigator and associate psychology professor at the University of Alaska Fairbanks.

The research project started with NIH funding from the first Center for Alaska Native Health Research grant and is now in its fourth year. The aim is to develop a sustainable effort by building on and developing the local expertise and infrastructure for health promotion. According to Henry Lupie and Douglas Kernak, field research assistants, the new program has three goals:

- \*Educate people about the nutritional value of traditional food,
- \*Increase opportunities for physical activities,
- \*Reduce stress.

Some things they've already started have worked, they said.

"We've been hearing about some people changing their diet to eat more traditional foods," Kernak said.

They've also developed a walking program to provide people an opportunity to exercise and held Eskimo dances to help with stress.

The new funding could help lay important groundwork to test the program on a larger scale with a bigger grant from NIH.

"I think, in the long run, it will benefit the community," Lupie said. "It's not like any other program."

Lardon says the experience has been both wonderful and challenging.

"We started with the general idea of promoting healthy lifestyles in the village and have built true partnerships with each other and with the Yukon-Kuskokwim Health Corporation (a CANHR partner)," she said.





A young girl helps clean salmon at her grandmother's fish camp. After the fish are gutted and beheaded, they are scrubbed in water to prevent spoiling when they are hung to dry. Photo by Gunnar Ebbesson

## The CANHR II Projects:

### Yup'ik Perceptions of Body Weight and Diabetes: Cultural Pathways to Prevention

Elaine Drew, Project Principal Investigator

The purpose of this project is to conduct vital preliminary research to understand Yup'ik beliefs about body weight and diabetes. Despite Indian Health Service guidelines for monitoring diabetes risk among Alaska Natives, current prevention efforts are deficient in lay perspectives about risk and diabetes. This project will move researchers toward intervention and prevention planning tailored to the context of rural Alaska and the values of Yup'ik peoples.

### Yup'ik Experiences of Stress and Coping: Intervention via Cultural Understanding

John Gonzalez, Project Principal Investigator

Yup'ik communities have voiced widespread concern about the prevalence of stress and traumatic life events and their negative impact on health. This project will develop a way of assessing stress and trauma in a Yup'ik cultural context and, more importantly, how Yup'ik people find healthy ways of coping with stress and trauma. The goal is to use the information gathered to work with the communities in developing a stress management program that can be used by other communities to help people manage their stress in culturally appropriate ways.

### Developing a Novel Set of Diet Pattern Biomarkers Based on Stable Isotope Ratios

Diane O'Brien, Project Principal Investigator

CANHR researchers seek to understand how a subsistence diet either protects or predisposes Yup'ik people to disease. To do this we need to easily and accurately measure how much subsistence foods people eat. This project seeks to develop a new method to measure subsistence intake by matching natural isotopic signatures in blood or hair samples with those in foods. Isotopes could provide practical biomarkers of diet pattern that are quick, inexpensive to measure and don't rely on memory and lengthy interviews.

### Contaminants and Nutrients in Alaskan Subsistence Foods: Striking a Balance

Todd O'Hara, Project Principal Investigator

Alaska Native Elders say subsistence foods are best, yet many Yup'iks are moving toward store-bought foods. Adding to the shift is the increased concern that environmental hazards such as pesticides and heavy metals erode the protective value of traditional Native foods. This project will measure the nutrient value and contamination of subsistence foods from the first kill to the table. The results could lead to a better model for assessing risks and benefits of contaminants and nutrients in subsistence foods. ♦

## CANHR II continued from pg. 1

do should inform policy and practice. It will give communities insights into the prevalence of diseases and identify both the protective and the risk factors for these chronic diseases."

It's very needed, Tulim agreed.

"The health disparities facing the Yup'ik people today are compounded by a number of factors: geographic distance to the hospital, the high cost of living, increasing cost of air transportation and other economic challenges in rural Alaska," Tulim said.

The new grant will support five cores and four new projects. The purpose of the cores—administrative, epidemiology and biostatistics, biological specimens and genetics, nutrition and physical activity, and culture and intervention—is to support research in these areas.

The new projects (see this page) will investigate subtle cultural beliefs that either help or hinder interventions and treatment, help identify health benefits or risks of traditional subsistence foods,



## Alaska Native community claims research project as their own

Native youth relearning Yup'ik traditions to help them have a healthy lifestyle

A small Yup'ik community, fed up with suicide, alcoholism, and drug abuse among their young, has claimed ownership of *Elluam Tungiiun*, Towards Wellness, a CANHR-affiliated research project funded by a National Institutes of Health (NIH) grant.

The attitude was more than CANHR's researchers had hoped. In the past year the community has developed and delivered 30 community, family and individual focused activities—things such as under ice fishing, seal hunting and berry picking—in an effort to show their children healthy ways of life.

"I am humbled," said Gunnar Ebbesson, *Elluam Tungiiun*'s project manager. "This community works so hard to raise themselves up. The Elders are coming together with community leaders to make real changes for the future of their youth."

*Elluam Tungiiun* is the name the community, which wants to remain anonymous, chose for the research program. It started in November 2005 with the ultimate goal of increasing sobriety and reasons for living among nearly 80 youth.

It has not been without effort, Ebbesson said. There have been about 80 community planning and intervention development meetings since the project began.

*Elluam Tungiiun* is grounded in the findings of the People Awakening Project, another NIH-funded research project. The study identified protective factors from life stories of 101 Alaska Natives who either never had a problem with alcohol or were in recovery for at least five years. They said having a sense of responsibility to be a role model, giving back to the community and having parents who take their roles as teachers seriously, were some of the protective factors.

Likely one of the most unique factors is the concept of *ellangneq*, or the Yup'ik concept of awareness.

*Elluam Tungiiun* activities, such as ice safety, Yup'ik kinship and under ice fishing, taught the protective factors by linking the particular activity to sobriety and reasons for living, Ebbesson said.

For instance, in ice safety, the youth were told and shown different types of river ice that Yup'ik culture has long identified as safe or dangerous. Instructors were local experts who told about how they survived



Youth learn life lessons while hooking fish on a frozen river last year. Pictured are the jigs they made for fishing. The students gave fish to needy families and by doing so, gained a sense of accomplishment.

Photo by Gunnar Ebbesson.

falling through ice into the river by pulling themselves out with an *ayaruq*, a long staff with a hook, and then stuffing their wet clothes with dry grass to keep warm.

At the end instructors compared alcohol abuse to how dangerous deceptively rotten river ice could be.

The activities have made a difference in the community, from what intervention specialist Debbie Alstrom has heard.


Parents in one family enrolled in the project, but really didn't think they'd see any changes, she recounted.

"After a while they noticed they would be able to talk to one another (more easily)," Alstrom said.

"One parent actually cried when he talked about how good it made him feel."

The project also developed its own web-based measuring tool to be used to determine how the activities, the protective factors and other instructions have helped the participants. Results will be analyzed and written up this spring.

"*Elluam Tungiiun* has been an incredible example of community-based participatory research," said Gerald Mohatt, CANHR's director and principal investigator of *Elluam Tungiiun*.

"We are convinced that communities have solutions within their culture that they can design and find the ways to their health. I am so impressed at the level of commitment of the community. It is quite wonderful." 



# Top scientists team up with CANHR researchers

## Grant brings biomedical research leaders to add to CANHR's depth and knowledge

The Center for Alaska Native Health Research is taking advantage of the University of Alaska's approach to increasing scientific leadership.

UA President Mark Hamilton allocated funding from the BP/ConocoPhillips Fund through the University Foundation, to bring prestigious biomedical researchers to visit CANHR over the next four years as part of the President's Professors of Biomedical Research program.

"The experience was extremely positive and I enjoyed learning about the important work that is being done with Alaskan tribes," said Beti Thompson, a president's professor from the Fred Hutchinson Cancer Research Center.

The visiting investigators will collaborate with CANHR scientists on research design, data analyses, publications and grant applications, which will improve the Center's long-term sustainability, said Gerald Mohatt, CANHR's director.

The professors are experts in genetics, epidemiology, research ethics, diabetes, nutrition, toxicology, cancer, psychology and anthropology - the same or complementary disciplines to those of CANHR researchers.

The professorship program has finished its first year with seven professors visiting Fairbanks.

### President's Professors 2007 highlights

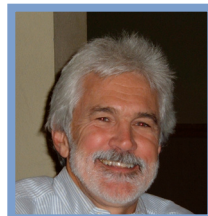


**Mary Sexton** met with several CANHR researchers and worked with faculty and staff preparing proposals and manuscripts. She presented a seminar on multi-centered National Institutes of Health trials and met with UAF administration on future directions for CANHR.

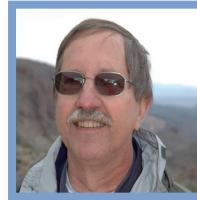
She prepared a manuscript writing course for CANHR researchers.

Sexton, former chair of the epidemiology department at the University of Maryland, has been active in developing CANHR's infrastructure. She also co-leads CANHR's epidemiology and biostatistics core.

**Kim Hopper** taught a short course on cross cultural interviewing skills that was offered as a special topics course for UAF and UAA graduate students. He also helped CANHR researchers on upcoming proposals and manuscripts. Hopper is a medical anthropologist who works as a research scientist at the Nathan S.



Kline Institute for Psychiatric Research, where he co-directs the Center for the Study of Issues in Public Mental Health. He is also professor of clinical sociomedical sciences at Columbia's Mailman School of Public Health, and lecturer at the Columbia Law School.



**Dr. William Knowler** gave presentations on type 2 diabetes and obesity in children, the prevention of type 2 diabetes, and type 2 diabetes in the Gila River Indian Community. He traveled to Anchorage and Bethel and met with representatives of the Yukon-Kuskokwim

Health Corporation. Knowler also met with tribal health officials in Fort Yukon. He is the chief of the Diabetes and Arthritis Epidemiology Section, Phoenix Epidemiology and Clinical Research Branch, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health.

**Bruce Fowler** traveled to the University of Washington to work with Dave Eaton on an NIH R01 proposal with CANHR's Todd O'Hara. In addition to meeting with several UAF researchers, Fowler presented a seminar on ALAD polymorphisms and lead toxicity. He is the assistant director for Science, Division of Toxicology and Environmental Medicine, Agency for Toxic Substances and Disease Registry.



**Nancy Schoenberg** met CANHR's Elaine Drew in Anchorage to present to staff at the Alaska Native Medical Center. At UAF, she presented three seminars on community-based participatory research, rural health disparities, and interventions for cancer prevention and control. She is the Marion Pearsall Endowed Professor at the University of Kentucky medical school.

**Edison Trickett** gave two presentations on community psychology and ecology as a framework for community research and intervention. He co-presented with President's Professor Beti Thompson on cultural competency and collaboration and participated in the Forced Acculturation Roundtable, a 2-day, multi-campus seminar. Trickett is the community and prevention research division chair and a psychology professor at the University of Illinois at Chicago.



**Beti Thompson**, in addition to working with Trickett, presented on health disparities in the Latino population and health promotion conceptual frameworks. She also participated in the Forced Acculturation Roundtable. Thompson is a full member at the Fred Hutchinson Cancer Research Center and a University of Washington health services professor.





## Looking back: CANHR I

The Center has grown from a handful of researchers to a large statewide staff with a strong infrastructure to support research on Alaska Native health disparities. Most important are the research findings and their relevance to achieving a better understanding of the current health status of our participants.

Highlights include:


- Complete data collection: 1005 participants- 867 adults, 138 children; Ethnicity: 933 Yupik, 42 Cupik, 13 other Alaska Natives, 17 non-Alaska Natives.
- Among 834 adult participants, 66 percent are overweight, but remarkably didn't show high rates of diabetes or obesity-related diseases. It is possible that Yup'ik consumption of high polyunsaturated fatty acid foods, such as salmon and marine mammals, protects them. This will be studied further in a project by Bert Boyer (see story pg. 3.)
- Another finding is that Yup'iks have high levels of vitamin D. This is contrary to the assumption that it would be low to due to little sunlight exposure during Alaska's long, dark winter. Vitamin D, along with calcium, is necessary for bone health and humans get it from sunlight and food. However salmon and other fatty fish are a few natural sources that provide adequate vitamin D. Appropriate levels of vitamin D also keeps the body's production of parathyroid hormone, needed for calcium asorption, low. Too much can cause serious bone problems such as osteoporosis. Despite high levels of vitamin D, Yup'iks also had high levels of the parthyroid hormone, indicating the need for further study. Overall it appears that the same fatty acids thought to protect Yup'iks from the ills of obesity also protect against low levels of vitamin D.
- Because evidence is growing that traditional Alaska Native foods are highly beneficial, another CANHR I project developed a health promotion program to encourage Yup'ik families to eat more subsistence foods as well as finding other healthful practices. The *Piciryaratgun Calritlerkaq*, "Healthy living throught a Healthy Lifestyle," project designed community potlatches featuring only traditional food so young people woud become familiar with them and families learn to prepare them. This project has also gained additional funding to further develop Yup'ik-based health promotion (see pg. 3 story).

### President's Professors continued

**Mary Story** is a professor in the Division of Epidemiology and Community Health in the University of Minnesota public health school and holds a joint appointment in the pediatrics department. Story is the director of the National Program Office of the Healthy Eating Research Program and the Maternal and Child Health Bureau Public Health Nutrition and Maternal and Child Nutrition Training Program. She will visit UAF in 2008.




**Dr. Wylie Burke** heads the Department of Medical History and Dthics at the University of Washington and works as an attending physician in the UW Adult Genetics Clinic. Burke's academic work addresses the ethical and policy implications of genetic information in medicine and public health. Burke is currently principal investigator of the UW Center for Genomics and Healthcare Equality. She will visit in 2008.

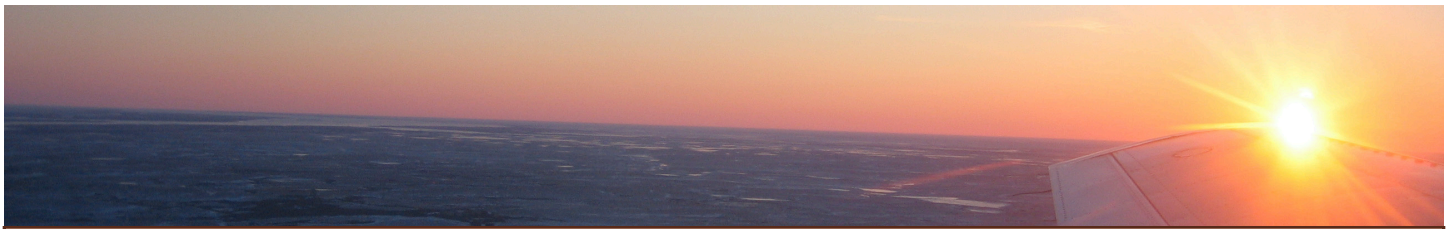
Not pictured: **Peter Bennett** and his team of investigators at the NIDDK in Phoenix, Arizona have conducted a longitudinal prospective study of type-2 diabetes among the Pima Indian population of Arizona for 40 years. He will come to UAF in 2008. 

### CANHR II continued from pg 4.

develop a new set of biomarkers and study stress as a risk factor for chronic diseases.

CANHR's first years of research showed that Yup'iks had excellent blood sugar, triglyceride and cholesterol levels despite high risk factors for diabetes and cardiovascular disease. Other milestones include the start of a Yup'ik-based health prevention program and a discovery that CANHR participants have higher than average vitamin D levels.

"CANHR's work is an important component in trying to resolve health disparities among Alaska Natives, particularly people who live in the YK area," said Dr. Joe Klejka, YKHC's corporate medical director and an EAC member. 



## CANHR Contacts

**Main Office .....(907) 474-5528**

**James Allen.....(907) 474-6132**

Culture and Intervention Core Leader  
Cuqyun, PI

**Bert Boyer .....(907) 474-7733**

Genetics of Obesity, PI  
Biological Specimens and Genetic Core  
Leader

**Diana Campbell.....(907) 474-5112**

Communications Specialist

**Elaine Drew .....(907) 474-6129**

Project PI: Yup'ik Perceptions of Body  
Weight and Diabetes: Cultural Pathways  
to Prevention

**Michelle Dondanville ... (907) 474-6230**

Program Coordinator  
Assistant to the Director

**Dawniel Dupee .....(907) 474-5528**

Travel Coordinator

**Gunnar Ebbesson.....(907) 474-5642**

*Elluam Tungiinun*, Project Director

**Scarlett Hopkins .....(907) 474-5693**

Field Research Coordinator

**Nick Hubalik .....(907) 455-9085**

CANHR Evaluation  
*Yupiucimta Asvairtuumallerkaa*  
Project Director

**John Gonzalez .....(907) 474-5214**

Project PI: Yup'ik Experiences of Stress  
and Coping: Intervention via Cultural  
Understanding

**Jean James .....(907) 474-7659**

Consultant

**Cécile Lardon.....(907) 474-5272**

Culture and Intervention Core Leader  
Healthy Promotion in a Yup'ik community, PI

**Bret Luick .....(907) 474-6338**

Nutrition and Physical Activity Core Leader

**Gerald Mohatt .....(907) 474-6415**

Principal Investigator and Director

**Diane O'Brien.....(907) 474-5762**

Project PI: Developing a Novel Set of  
Biomarkers, Based on Stable Isotopes

**Todd O'Hara .....(907) 474-1838**

Project PI: Contaminants and Nutrients  
in Alaskan Subsistence Foods: Striking a  
Balance

**Rosemarie Plaetke.....(907) 474-5486**

Epidemiology and Biostatistics  
Core Leader

**Mary Sexton .....(907) 474-6186**

Epidemiology and Biostatistics  
Core Leader

**Email: [fycanhr@uaf.edu](mailto:fycanhr@uaf.edu)**

**Web page: [www.alaska.edu/canhr](http://www.alaska.edu/canhr)**



## CENTER For ALASKA NATIVE HEALTH RESEARCH

Institute of Arctic Biology

311 Irving I

Box 757000

University of Alaska Fairbanks

Fairbanks, AK 99775-7000

Non-Profit Org

U.S.Postage

**PAID**

Fairbanks, AK

Permit No. 2