GIRLS ON ICE
immersion teaches fluency in science

ALSO:
undergraduate research
new at all excellence in teaching
Welcome to the Spring 2009 CNSM newsletter!

The year is underway and it has been a busy time for me as I make the transition to the position of interim dean.

With Dean Joan Braddock’s retirement on January 31, I know that I have some big shoes to fill and a lot to learn. I want to thank the office staff and department chairs for helping me make a relatively smooth transition from being a faculty member to being interim dean (and moving 30 feet down the corridor in the Reichardt Building!). Joan was also very helpful in preparing me for the job and I wish her health and happiness in her retirement. I am also grateful to John Craven, former department chair of Physics, who agreed to serve as associate dean. John has a tremendous knowledge of the university and is an asset to the college.

Over these last few months, I have had the opportunity to visit each of our seven departments and learn about all of our programs, to see the facilities, and get a feeling for the variety of research opportunities that we offer our students. Although I have been at UAF for almost 20 years, it seems that every day I learn about some ‘new’ lab or field area that has been in operation for years. In our newsletters, we hope to have the opportunity to tell you about some of these ‘hidden’ treasures, such as the Advanced Instrumentation Laboratory featured on page six.

In March I attended the Alaska Cooperative Fish and Wildlife Research Unit annual meeting which featured presentations by several of our students in Biology and Wildlife. I have also learned a lot by reading theses of our students. It has been a long time since I last took a biology class or a computer class and I am amazed by the research that our students and faculty are doing.

An exciting area of growth in CNSM is in our outreach programs. ASRA (the Alaska Summer Research Academy) has been growing rapidly and this year we saw a record number of applicants. This July we will have our largest ASRA camp ever with about 145 students! Kudos to Jeff Drake (ASRA Director), Kate Pendleton (ASRA Program Coordinator), and to our ASRA sponsors for allowing ASRA to become one of the highlights of summer at UAF. I am also pleased to report a new affiliation for CNSM – the Girls on Ice program – described in more detail on page 12 of this newsletter. Erin Pettit, research assistant professor in CNSM brought this program to UAF, and CNSM is proud to join as a partner. Finally, spring in Fairbanks would not be complete without the Science Potpourri in early April. Once again, the weather was perfect for volcanic eruptions and liquid nitrogen ice cream, and I thank all the volunteers who make it a success.

Although the deanship occupies a lot of my time, I still have an active research laboratory and am writing proposals and mentoring graduate students. In addition, this year I had the opportunity to mentor Geology senior John Sommerfeld on an undergraduate research project funded by the UAF Center for Research Services. We were looking at the composition and age of a unique suite of rocks that occurs in Interior Alaska, from Fairbanks to the Canadian border, that point to a discrete tectonic event that had not been well constrained or documented. John prepared a manuscript and a presentation to be delivered at the Undergraduate Research Symposium in April. Next year, John will start graduate school at San Francisco State University on a project studying the geology of the Himalaya Mountains.

As dean, I want to encourage all faculty to involve undergraduate students in research projects. My hope is to use donations to CNSM to help fund these projects and to augment support from other sources.

As you can see on page four, we are building up a long list of donors to CNSM programs. Thank you to all of you that contributed in these difficult economic
times. Your support allows us to build our outreach programs and fund student travel and undergraduate research opportunities. Thank you also to the alumni who have contacted the college. I enjoy hearing what are alumni are up to and how CNSM faculty have helped them in their careers. CNSM is a great college and I am excited about being interim dean. I can see challenges ahead of us with regard to space for our academic programs, funding to grow programs, and student recruiting and retention, but I feel that the college has a good team of faculty, staff and students to tackle these challenges. I know I still have a lot to learn and I look forward to hearing from all of you.

I begin my first contribution to the college newsletter as your associate dean with two simple answers: yes, TRS believes me to be retired and is treating me as such; and no, I am not tired. Instead, I am looking forward to work on several funded research projects at the Geophysical Institute and to a continued association with the college.

The only limitation is that I can only acknowledge actually having worked less than fifty percent of full time. However, such a fib would not be much different from the fib many of you tell on your time sheets each time when you state that you only worked 40 hours in a week.

First on the list of college obligations assigned to me by Paul is outcomes assessment in the natural science core curriculum. To that end, I am awaiting completion of workload agreements so faculty members will have been identified for the several natural science courses that are scheduled for assessment in the upcoming academic year.

Meanwhile, I am reading the most recent assessment reports submitted to the Dean’s Office and I will be offering encouraging words to those who have not yet completed their assessment reports. I will then work backwards in time to review all reports submitted in the five-year cycle. Lastly, it is my intention to write a few comments concerning each report and to share them with the author and department.

I know that outcomes assessment is not the first thing one looks forward to at the beginning of each semester, but this next year will be notable by the increased attention we can expect from the provost as preparations begin for the UAF academic accreditation review.
HONOR ROLL OF DONORS
& Industry Partnerships

CNSM needs your support! Gifts to CNSM directly support and enhance undergraduate research, student travel, outstanding outreach opportunities, and much more.

When you make a gift to CNSM you may give an unrestricted gift and allow the CNSM dean to use your contributions where the need is the greatest. Or, you may designate your gift to any program, department or scholarship within the college.

Attractive educational tax benefits are available for your contribution. Visit the University of Alaska Foundation web site at:

www.alaska.edu/giving/taxCredit.pdf.

We’d like to publicly thank donors and industry partners of the College of Natural Science & Mathematics. Through contributions or hands-on involvement, they help support our commitment to academic excellence, research and service. We hold these relationships with donors and industry partners in high regard. They lend strength to the college and support our mission to produce outstanding graduates and a well-qualified workforce.

• Brian and Cami Fulkerson for Math & Chemistry Support
• Summit Consulting Services for ANSEP
• Ray and Jill S. Cameron for Biology Support
• Jim and Beth A. Hawkings for Biology Support
• Kathleen and Richard Weber for Biology Support
• Robert and Mary Parsons for Physics Support
• Diane L. Phillips for Chemistry Support
• John D. and Anthea Craven for Physics Scholarship
• Carmen N. Mölders and Gerhard Kramm for ATM program
• Ling-Hsiao Lyu for General Support
• Gwen E. Flowers for Girls on Ice
• Karen M. Blanton for Girls on Ice
• Sigma Xi Alaska Chapter for Science Potpourri
• ASHSSS for Science Potpourri
• EPSCoR for Science Potpourri
• Alaska Local Section of the American Chemical Society for Science Potpourri
• AAAS - Arctic Division for Science Potpourri
• Marlys Ross Schneider for Science Potpourri
• Renate A. Wackerbauer for Physics Scholarship
• Golden Key National Honor Society for Science Potpourri

We also wish to thank Alaska Summer Research Academy sponsors:

• New York Life
• Flint Hills Resources
• Alaska Department of Transportation
• Fairbanks Memorial Hospital
• Golden Valley Electric Association
• Springboard
• UAF School of Fisheries & Ocean Sciences
• Alaska Department of Fish & Game
• EPSCoR
• INBRE
• AHEC
• The Lawson Family
• ASRA Alumni and Friends
• The National Park Service
• University of Alaska Museum of the North
• Douglas Schamel Memorial Fund

Thank You!
Student opinion surveys are one measure of teaching excellence.

While high student opinions of a course do not assure that a course is an excellent course, engaging students is an important step in the process of learning.

At the end of each semester, an Instructional Assessment System survey (IAS), also known as the student opinion of instruction, is formally given to every class in the university system.

We would like to recognize members of the CNSM faculty, instructors, adjuncts, and lecturers who taught courses highly rated by students during the last semester.

The criteria for recognition is having received an overall IAS score of greater than or equal to 4.5 (median of terms 1-4) in courses with at least eight students responding. A score of 4.5 indicates that 75% of students rated the course as very good to excellent.

Congratulations on your efforts in teaching during 2008.

**SPRING 2008**

**Biology & Wildlife**
- Diane Wagner
- Gary Laursen
- Mike Harris
- Karsten Hueffer

**Chemistry & Biochemistry**
- Marina Castillo
- William Howard
- Tom Green
- Tom Clausen
- John Keller
- Tom Trainor
- Cindy Fabbri

**Geology & Geophysics**
- Paul Layer
- Rainer Newberry
- Sarah Fowell
- Wes Wallace

**Mathematics & Statistics**
- Tony Rickard
- Andrei Ghenciu
- John Rhodes
- Ron Barry

**Physics**
- David Newman
- Channon Price

**FALL 2008**

**Biology & Wildlife**
- Perry Barboza
- Mary Beth Leigh

**Chemistry & Biochemistry**
- Tom Green
- Tom Kuhn

**Computer Science**
- Orion Lawlor
- Kara Nance

**Geology & Geophysics**
- Anupma Prakash
- Sarah Fowell

**Mathematics & Statistics**
- Elizabeth Allman
- Ron Barry
- Jill Faubree
- Andrei Ghenciu
- Latrice Laughlin
- David Maxwell
- Julie McIntyre
- Dana Thomas

**Physics**
- David Newman
- Channon Price
AIL: Snow, Birds & Volcanoes
Written and compiled by Ken Severin, Director, Advanced Instrumentation Laboratory

The wide suite of instrumentation at CNSM’s Advanced Instrumentation Laboratory (AIL) has been busy with a variety of projects over the past few months.

Perhaps the most immediate and spectacular use has been in the analysis of samples from the recent and continuing eruption of Mt. Redoubt. Alaska Volcano Observatory scientists have used the scanning electron microscope (SEM), electron microprobe (EPMA), and x-ray fluorescent spectrometer (XRF) to detail the structure and chemistry of Redoubt’s eruptive materials in an effort to better understand the current eruptive phase and better predict the future activity of the volcano.

AIL’s inductively coupled plasma - mass spectrometer (ICP-MS) was used by students in the Analytical Instrumental Chemistry lab (CHEM 413). Samples were analyzed by ICP-MS, assisted by staff at AIL, for a suite of elements. Preliminary data indicated levels of elements in the Chena River were typical of natural sources, but that the air and snow samples showed evidence of anthropogenic activity, being elevated in barium and zinc. Sources of barium are believed to be related to emissions by the power plant, as a result of coal combustion, whereas levels of zinc are likely related to the burning of waste oil throughout the Fairbanks Northstar Borough. Other elements associated with metal alloys found in automobiles were also enriched in the air and snow samples, for example, antimony, copper, and cadmium. The ability to incorporate the ICP-MS into the undergraduate curriculum has provided a fantastic opportunity for students, providing some great data!

AIL is pleased to announce the addition of an advanced X-ray Diffractometer (XRD, PI Tom Trainor, Chemistry and Biochemistry, funded through NSF) and a Fourier transform infrared spectrometer with IR microscope (FTIR, PI Jess Larson, Geophysical Institute, funded through the MJ Murdock Charitable Trust). These instruments add new dimensions to AIL’s capabilities: The Panalytical MRD XRD allows for conventional and high resolution/quantitative powder X-ray diffraction, surface and thin film diffraction, and texture analysis. The Thermo Scientific, Nicolet 6700 FTIR with attached Continuum microscope will provide high-resolution infrared spectra of volatile species in volcanic glasses, snow/ice impurities, aerosols, and attenuated total reflectance of sample surfaces.

Caroline Van Hemert, in collaboration with UAF advisors Todd O’Hara and Diane O’Brien and the USGS Alaska Science Center, is studying a recent epidemic of beak deformities in black-capped chickadees and other Alaskan bird species. In afflicted birds, the keratin layer of the beak becomes overgrown, resulting in noticeably elongated and crossed presentation, sometimes accompanied by abnormal skin and feathers.
Current research is addressing the pathology of this condition using histology and assessment of structural and chemical changes in keratin tissues. Van Hemert is using the X-ray microscope (housed in AIL and purchased by the Office of Electronic Miniaturization) to measure the underlying bone core and examine the bone/keratin interface in normal and deformed birds. (Images 2, 3)

(Image 2) X-ray of a deformed chickadee with elongated and crossed beak. ~ Image courtesy of Caroline Van Hemert

(Image 3) Zoomed view of bone/keratin interface. ~ Image courtesy of Caroline Van Hemert

AIL sponsors a program for researchers wishing to try out a new technique using AIL’s instrumentation. This seed grant program has no specific deadline for proposals, the next set of proposals will be reviewed May 31 with a starting date of July 10.

For more information, contact Ken Severin, fnkps@uaf.edu or 907-474-5821, www.uaf.edu/ail
Atmospheric Sciences
Student Stacy E. Porter defended her M.S. thesis on the impact of ship emissions on air quality and deposition of atmospheric contaminants into Alaska National Parks and coastal waters.

Student Debasish Pai Mazumder defended his Ph.D. on a new concept to evaluate the performance of a soil model simulating permafrost in a fully coupled GCM.

Student Michael Dos Mequitos successfully gave his thesis proposal.

The department accepted two new students, Huy Tran and Trang Thu Tran.

Graduate students attended the Alaska Weather Symposium during spring break. Various students gave oral or poster presentations at that event.

Rebecca Legat, who is an atmospheric science M.S. graduate student advised by Igor Polyakov, has been awarded a scholarship for the RAP/IARC summer field school and another scholarship for the 2009 IPY Field School in Svalbard.

Biology & Wildlife
Karsten Hueffer, Assistant Professor and Christa Mulder, Associate Professor were named National Academies Education Fellows in Life Sciences for the current academic year.

Undergraduate student Celia Miller, will receive the 2009 Barry Goldwater Scholarship.

Professor Abel Bult-Ito was selected as the 2009-2009 Feist/Schamel Outstanding Undergraduate Faculty Advisor.

Chemistry & Biochemistry
Chemistry Researcher Sarah Pettito was recognized by UAF Nanook student athletes Brianne Wassmann (volleyball) and Courtney Miller (swimming) for exceptional assistance in their progress toward a degree.

Mist D’June-Gussak, Administrative Assistant of Chemistry was also recognized by UAF Nanook student athlete Theresia Schnurr (Alaska Ski team.) For more information about this program, contact Pamm Hubbart with UAF Athletics at 474-5601.

Geology & Geophysics
The Geology Department awarded four scholarships for the 2008-2009 academic year: Cole Kingsbury is the recipient of The Don Hodges Memorial Scholarship ($1,000); Steve Polkowski and Grant Shimer each received a $1,000; scholarship from the Brian R. Zelenka Memorial Scholarship Jason Amundson is the recipient of the Peter MacKeith Memorial Scholarship ($1,000).

Students Stephanie A. Mrozek and David Larimer each received a Society of Economic Geologists Foundation Graduate Student Fellowship in the amount of $10,000.

Mathematics & Statistics
Associate Professor Elizabeth Allman is an invited participant in the National Security Administration’s “Women in Mathematics Symposium” this May. The NSA, the world’s largest employer of mathematicians, is concerned with promoting diverse mathematical talent.

Associate Professor Edward Bueler recently received a NASA grant to support his work on a Parallel Ice Sheet Model. Collaborators on the project include Assistant Professor David Maxwell and Research Scholar Constantine Khroulev (DMS), and Associate Professor’s Martin Truffer (Physics/GI) and Regine Hock (G&G/GI).

ARSC postdoctoral fellow Andreas Aschwanden, from ETH Zurich, will join DMS this spring to work with Associate Professor. Ed Bueler this spring, on ice sheet modeling.

Associate Professor John Rhodes will be a Visiting Erskine Fellow in the Department of Mathematics and Statistics at the University of Canterbury in Christchurch, NZ, for three months beginning in July.

Associate Professors Elizabeth Allman and John Rhodes are invited speakers at the Phylogentics 2009 meeting sponsored by the Renyi Institute of Mathematics in Budapest.

Physics
The UAF Society of Physics chapter was selected as an Outstanding Chapter for 2007-2008. Selections are based on the depth and breadth of SPS activities by each chapter in such areas as physics research, public science outreach, physics tutoring programs, hosting and representation at physics meetings and events, and providing social interaction for chapter members. More information may be found at www.spsnational.org
Nobel Prize-winning physicist Murray Gell-Mann (lower right), held a round-table discussion with students in Channon Price’s college physics class in March. The meeting was coordinated by David Newman (Physics). Gell-Mann won the Nobel Prize in 1969 for his work leading to the discovery of quarks. Pictured: Murray Gell-Mann with CNSM physics students. (Inset) Murray Gell-Mann. ~Photo Credits: Amie Pappas

A cow moose & calf take a detour through the Reichardt Building parking lot, saving on spring maintenance by trimming the decorative foliage. UAF police arrived on scene to ensure everyone’s safety. ~Photos by Kayley Moen & Matt Hutter
In Memoriam:

Heinz Wiechen
Born
June 5, 1958
Died
November 21, 2008

Science Potpourri 2009 - A REAL BLAST!

Physics Associate Professor Channon Price cools off a 20 gallon drum with water as he uses vacuum power to crush it like a tin can.

Chemistry’s Sarah Pettito steps back from an exploding bottle of diet soda during the “Diet Coke & Mentos” experiment.

Helena Buurman, a Geology & Geophysics graduate student, simulates a volcanic eruption outside the Reichardt Building.

Science Potpourri volunteer and CNSM Geology student Trish Gallager pours lava over a plastic toy dinosaur community.

The Olas Murie Caribou Fellowship was established through the efforts of Professor Emeritus David Klein to provide student travel grants to students studying caribou and their ecosystems.

For more information and applications, visit: www.uaf.edu/cnsm/student-travel-grants/
The Alaska Summer Research Academy (ASRA) has received a record-breaking number of applicants! Over 160 students applied to the program in the first two weeks. Though ASRA was able to offer more spaces than ever before, there is now a waiting list of applicants.

ASRA is offering 16 modules (classes), some of which are popular modules from years past, and some of which are new. This year we are offering:

- Archaeology
- Biomedicine
- Creative Writing
- Earth & Space Science
- Earthquakes in Denali National Park
- Engineering Design - Remotely Operated Vehicles (ROV)
- Extreme Photography
- Fisheries
- Human Physiology
- Sustainable Energy & Climate Change
- Marine Biology in Kasitsna Bay
- Marine Mammals & Seabirds
- Programming
- Radical Math
- Robotics
- Sounds of Science

ASRA is thrilled to be able to offer scholarships from two major sponsors this year. New York Life is offering financial support for nine rural Alaskan students per year for three years. The scholarships will pay for tuition, room and board, airfare and program support. Their sponsorship will help disadvantaged students from rural areas where cost are high, and the gift will help ASRA keep tuition low. Flint Hills Resources has offered program support this year, which will help maintain low tuition rates and aid students who would otherwise be unable to attend ASRA.

Continuing partners who provide significant financial and other support for ASRA are: Fairbanks Memorial Hospital, Golden Valley Electric Association, Springboard, UAF School of Fisheries and Ocean Science, the National Park Service, the Alaska Department of Fish and Game, EPSCoR, INBRE, AHEC, the Lawson Family and many others. A complete list of sponsors may be found at our website: http://www.uaf.edu/asra.

These donors and partners are vital to the success of ASRA. We sincerely appreciate their commitment.
Girls on Ice

Using Immersion to Teach Fluency in Science
Written by Erin Pettit, Research Assistant Professor of Glaciology, CNSM/ESTES

Each year, a new Girls on Ice team spends eleven days exploring glaciated Mt. Baker in Washington State guided by myself, a mountaineer, and an artist/naturalist. The nine teenage girls on the team learn not only about alpine geology, glaciology, and mountaineering, but they also challenge themselves and gain self-confidence in their physical, intellectual, and social abilities. Girls on Ice is the science version of a “language immersion” experience — we connect science with all aspects of daily life with the goal of creating lifelong advocates for the scientific process.

Girls on Ice grew out of a close collaboration with the North Cascades Institute (an educational partner to North Cascades National Park) and continues through a new partnership with UAF’s College of Natural Science and Mathematics. We designed the program with three underlying philosophies in mind: that teaching the whole process gives them ownership of the science; that teaching to the whole student puts the science in context; and that diversity inspires new ideas, new approaches, and better science in the end.

The Whole Process
In school, students often learn the scientific method as a linear process of moving from observation to question to experiment to conclusion. Those of us in science know there is rarely linearity in “real” science: the original question and hypothesis may lead to data which cause us to rewrite the question and redesign the experiment.

We approach teaching the scientific process in Girls on Ice through encouraging the girls to interact with and explore the alpine setting first, before we tell them the ideas and theories of other scientists. As we teach them the basics of glacier travel and safety, we guide them through various activities aimed at getting them to use all of their senses to interact with the environment. We use techniques of teaching art to get the girls to see the glacier as various shadings of color and shadows, shapes and boundaries, and textures rather than as a “glacier”. The eye of an artist is not that different than the eye of a scientist; both need to be open to seeing something new and different.

Their observations of the landscape lead to questions and discussions and finally to the design of experiments. Each year the experiments are different. In 2008, one team of girls studied the behavior of ice worms, another measured the slow glacier change through mass balance techniques, and another team measured the faster changes through time-lapse photography. The girls define hypotheses, collect data, and discuss ideas and conclusions. After coming down off the mountains, they write a description of their project for themselves to take with them and for future Girls on Ice teams.

The Whole Student
It is sometimes too easy to judge an outreach or education program on the number of students it reaches, rather than the impact it has on each student’s life. Girls on Ice is intended to be a high-impact program focused on a few students, with the goal of creating life-long science learners and teachers. By showing them how science is integrated into everything they do — from packing their backpack to carrying weight efficiently to interpreting the clouds for signs of coming weather — the girls begin to see science as an integral part of their life, not just something they study in school. We also challenge the girls’ thoughts and ideas through open discussions of the philosophy of science, the role of science in society, how
Girls on Ice is a unique, free, wilderness science education program for high school girls. Each year a team of 9 teenage girls and 3 instructors spend 11 days exploring and learning about mountain glaciers and the alpine landscape through scientific field studies with professional glaciologists, mountaineers and, most recently, artists.

The Expedition
Each year the day-to-day details of the expedition change due to weather and glacier conditions.

- Day 1: Meet the team.
- Day 2: Hike to basecamp at 6000 ft on Mt Baker.
- Day 3-8: Explore the glacier, surrounding alpine meadows, and the upper mountain.
- Day 9: Hike back to the trailhead and travel to the North Cascades Environmental Learning Center.
- Day 10: Continue exploring the landscape through closure activities.
- Day 11: Head home.

The Experience
The aim is to challenge the girls physically, intellectually, socially, and emotionally. We provide a unique environment that brings out their natural curiosity, inspires their interest in science, connects the arts and sciences, frees them from gender-imposed roles, provides a less competitive atmosphere, and encourages them to trust their physical abilities. The girls will:

- Experience strenuous hiking, rock scrambling, off-trail travel, and stream crossings.
- Learn Leave-No-Trace wilderness ethics and discuss relationships with the natural world.
- Learn rope-up glacier travel as a balance between self-reliance and group dependence.
- Design scientific experiments to answer questions about the landscape.
- Take responsibility for aspects of living and working as a team.
- Trade turns in leadership positions.
- Learn critical thinking skills through observation, directed and open ended questions and experiments.
- Experience the connection between art and science and the role each plays in the large context of society.
- Express themselves through art, writing, philosophical discussion, and more.

Diversity in Science
The creative side of science – how and what questions are asked – benefits from a diversity of viewpoints: the larger variety of questions asked, the higher the chance of finding the right questions that will lead to major new discoveries. For this and other reasons, we choose a team of girls (from among 100 or more applicants) who are diverse in all aspects of their personalities. The program is tuition-free to ensure that girls from all walks of life can participate. The all-girls format is intended to provide the young girls with a comfortable environment to challenge themselves and discover their own abilities and self-confidence.

Since 1999, over 60 girls have participated in Girls on Ice, many have graduated from college (in fields such as geology, mechanical engineering, environmental science, and many other science fields), and at least one is now pursuing a PhD (in microbiology).

Ultimately, I hope that this “science immersion” program will continue to influence girls’ lives and create life-long advocates for the value of earth science in our society and for minimizing human impact on the earth.

Dr. Erin Pettit is the founder of Girls on Ice. She specializes in glacier dynamics and their role in the climate system and she has studied glaciers and ice sheets from the North Slope of Alaska to the interior of Antarctica. She is originally from Seattle, WA and completed her graduate studies at the University of Washington. She is a fellow of Wings Worldquest and winner of their 2007 Earth Award. For general information, please contact Erin Pettit at pettit.erin@gmail.com
**CNSM Profile: Dr. Gary Laursen**

by Amie Pappas

Biology adjunct professor Gary Laursen has learned a thing or two about teaching, research and public service and how they translate into providing opportunities for students over the last four decades, and he shows no signs of letting up.

“The three things I am most passionate about are teaching, research and public service,” Laursen said. “And I get really excited about what it is I do on all fronts.”

He passes on this enthusiasm to his biology students by removing inhibiting boundaries and gaining their trust.

“After so many years, I have learned how to read students. From the moment I meet them, I can tell where they are coming from…and I always remember that a student will rise to some level of expectation.”

From day one, Laursen makes sure he gets to know the students’ names, so they feel he really knows them. Once he has established a level of confidence, the shifting of gray matter begins.

“If I can get them to believe that I know everything about them…they can no longer be shrinking violets, I want them to know it is my job to provide opportunities for them to succeed.”

Laursen graduated with a B.A. in Biology, Chemistry, and Geology and a B.A. in Education from Western Washington University in 1965. He received his M.S.T. degree in Botany, Summa Cum Laude, in 1970. He pursued his Ph.D. in biology with a Botany/Mycology emphasis at Virginia Polytechnic Institute and State University, graduating Magna Cum Laude in 1975.

With 20 years of teaching high school punctuated by a Presidential science-teaching award presented by President Reagan and 35 years teaching at the university level under his belt, he has learned a lot about what does and does not work with students. He has also worked in science administration as interim technical director and as scientific director for the Naval Arctic Research Laboratory in Barrow before going on to Washington, DC as program manager for biophysics and biochemistry at the Office of Naval Research and, most recently, assisting the Academy of Applied Science in Concord, NH in developing a $20 million endowment for innovative science, technology, engineering and mathematical secondary outreach.

He is perhaps best known for his work as a researcher, especially when it comes to his love of our most down-to-earth friends – the often, overlooked fungi.

Through his 39 years of granted research work, Laursen has assembled one of the largest high-latitude fungal collections in the world, one that includes one of the largest collections of subantarctic fungi. “Everyone thinks I’m crazy,” Laursen laughs, “but the beautiful truth is that my avocation has taken me all over the world to study with some pretty phenomenal folks.”
In rows of 16 hermetically-sealed cabinets containing 416 boxes of 21,800 collections in his lab, boxes upon boxes of dried “extreme” fungi are tucked away in cool dry places. Laursen estimates the intrinsic value of his myco-herbarium to be around $11 million. He still has his first collection - taken at an altitude of 6,000 feet from the Rocky Mountains of Montana in 1970.

His enthusiasm is contagious as he examines samples from both high and low latitudes, including the Sub Antarctic’s South Polar ocean island archipelago.

This year Laursen has been nominated for the Emil Usibelli Distinguished Service Award.

His plans for the future include getting a little help with his endeavors. He brought in professor Abbe Bult-Ito as Associate Director of ASHSSS and Michelle Bartlett, Director of Summer Sessions, as Associate Advisor for Golden Key. Teaching, research and outreach keep him on the move with no signs of slowing down. “I can’t! There is just too much to do and so much fun in doing these student-centric tasks”.

Another important aspect of Laursen’s career is public service. He is president of the Alaska Chapter of Sigma Xi, the Scientific Research Society, one of the oldest and largest scientific organizations in the world that facilitates public understanding of science.

He is also the founder and director of the 24-year running Alaska Statewide High School Science Symposium (ASHSSS), a hands-on/minds-on research, writing and oral intensive opportunity for high school students. It is an outreach program in support of students conducting scientific research performed outside regular classroom settings.

Laursen is also advisor to the UAF Chapter of Golden Key International Honor Society.
ENGINEERING SCIENCE TECHNOLOGY EXPERIMENT STATION

Interested in learning about research projects conducted by ESTES faculty? Undergraduates interested in research? Talk to your professors about opportunities to get involved.

www.uaf.edu/cnsm/estes

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