

August 25, 2015

Clayton Christian, Commissioner of Higher Education
Office of the Commissioner of Higher Education
Montana University System
2500 Broadway Street
Helena, MT 59620-320

Dear Commissioner Christian:

Based on his outstanding contributions as a scholar, teacher and as an educator who has brought international recognition and attracted stellar students and colleagues to Montana State University and our great state, I am honored to nominate Dr. John Priscu as a Montana University System Board of Regents Professor.

The extent of Dr. Priscu's professional recognition was exemplified recently when he was offered a position of an institute director at Stanford University. The resources at Stanford were excellent, colleagues would be outstanding and the prestige was undeniable. Yet, he stayed to continue what he had built at MSU and continue serving the Montana University System. John began his journey into science in his undergraduate years at the University of Nevada – Las Vegas. John was a music major who found science through a core curriculum course and then went on to obtain an MS degree, work on the Alaskan pipeline and become an ecologist through doctoral studies at the University of California – Davis where he focused on plankton in a lake near Mount Shasta in California. He always asked questions and became fascinated early on with Antarctica, especially when told that it was “a lifeless place.” That designation sparked his work for the next decades and to this day.

John has worked in the subglacial Lake Whillans (SLW) for many years. This lake is on the lower portion of the Whillans Ice Stream in West Antarctica. It is part of an extensive and evolving subglacial drainage network and lies beneath approximately 800m of ice. In a paper in *Nature* (2014), John and his team provide the first geomicrobiological profile from direct sampling of water and surficial sediments from this lake. They found that the water column of SLW contained active communities of microorganisms; moreover, gene sequencing and biogeochemical data indicate that SLW is inhabited by a diversity of bacteria and archaea. Further, they suggest that the “area provides globally relevant pools of carbon and microbes that can mobilize elements from the lithosphere and influence Southern Ocean geochemical and biological systems.”

These studies built on others as noted on John's CV that include studies of photoadaptation of phytoplankton to the polar nights, analysis of the modular community structure of life in Antarctica and development of strategies to insure microbiological integrity of the sampling methods. This later subject addresses consideration of capturing life while avoiding the contamination of the sampling in order to both protect novel life forms from invasive species and insure experimental integrity of data. Regarding life form discovery, the latest research of John's has elegantly documented the relationships of the community dwellers of SLW with those we are more familiar organisms. In addition, as noted by John and colleagues, in consideration of the

prevalence of subglacial water in Antarctica, data from the SLW suggest that aquatic microbial ecosystems are common features of the subsurface environment that exists beneath the Antarctic Ice Sheet and likely to be very significant in terms of roles in Southern Ocean primary productivity.

The significance of Dr. Priscu's research is reflected in many ways. He is a fellow of the American Academy for the Advancement of Science and the American Geophysical Union. Among his many awards are the 2003 Richard P. Goldthwaite Award from the Byrd Polar Research Center for novel research in glaciology and the 1987 Antarctica service medal from the National Science Foundation. He supports his research through a sustained successful progression of competitive grants from NSF, NASA and private companies. These grants are not limited to support for his research but also include grants from NSF for Research for Undergraduate Education and graduate student support. His commitment to the educational mission of the university is demonstrated in his contributions to teaching a freshman level principles of biology course, a senior level algal ecology-phycology course and three graduate level courses. He has advised 20 graduate students and 20 post-doctoral students. In addition his program has employed over 30 research technicians.

It should be noted that while we often focus on his research in Antarctica, Dr. Priscu has also contributed important research on issues important in Montana. He has conducted several studies on the relationship of nutrients and algal growth in waterways. These studies have examined aquatic nitrogen cycling and plankton productivity in response to acidification, phosphorus and regulation of nitrogen fixation by organic matter in aquatic ecosystems. The nutrient dynamics of aquatic systems is important to understanding and controlling algal growth in the important watersheds of Montana as influenced by mining and agricultural practices.

Today, there exists a stream in Antarctica that was named for John in 1996 following the close of the first expedition to the Murdock Dry Valley (Priscu Stream). He has dedicated his life to addressing the big questions, and because of his studies, we know that the earth contains greater diversity of life than expected – “of something rather than nothing.” We know that extensive communities of life exist in remote places and likely have been there for a very, very long time. In the future, we will learn more of the origins of these communities, their distribution and contributions to local and global carbon and microbiological pools. We will also know whether these communities will provide clues to the identity and function of other similar communities in much more distant places in the universe. His contributions will continue as he pursues research funded by NASA to develop life detecting instrumentation for the Mars 2020 landing and with continued support for his subglacial research

In closing, and without being too sentimental, I would like to draw upon the words of the poet Robert Service who in the year, 1907, published on the lure of distant lands and how they shape the lives of their inhabitants. Mr. Service wrote:

“There's a land where the mountains are nameless,
And the rivers all run God knows where;
There are lives that are erring and aimless,
And deaths that just hang by a hair;

There are hardships that nobody reckons;
There are valleys unpeopled and still;
There's a land—oh, it beckons and beckons,
And I want to go back—and I will.”

With those words, I ask that the nomination of Dr. John Priscu be carefully considered. He is a true pioneer in the spirit of the great discoverers and explorers and is most worthy of the recognition Montana Regents Professor, the most prestigious position that may be attained by a professor in the Montana University System.

Sincerely,

Waded Cruzado
President