

*“The Typical Geology Prof”*

# THE BUFFALO ROCK

The newsletter of the  
Department of Geosciences,  
North Dakota State University

Volume 12, November 2007

## THE ASHWORTH GLACIER



On April 20, 2007, the New Zealand Geographic Board, announced the naming of a glacier after Allan Ashworth, distinguished professor of Geology at NDSU. Wendy Shaw, secretary for the Board which has responsibility for assigning geographic names in Antarctica, informs Allan, *“The naming of this feature honors your significant contribution in science (palaeontology and stratigraphy) in Antarctica.”*

Ashworth Glacier is located at 85°01'36"S, 169°15'53"E, where it flows west from the Supporters Range into Mill Glacier. The glacier lies within sight of where Allan has conducted studies on Neogene fossils and associated paleoenvironments.

Jane Francis, of the Centre for Polar Science, University of Leeds, nominated Allan for this recognition. She writes, *“Allan has made spectacular discoveries at Oliver Bluffs in the Beardmore region, very close to the site of his glacier. Allan’s work in the Beardmore region, as well as his more recent expeditions to the Dry Valleys, is changing scientists’ views about the history of glaciation in Antarctica. He has made his mark on Antarctic science, and now that is recorded permanently with the glacier named after him.”*

Allan has completed four research trips to Antarctica, most recently accompanied by two NDSU Geology undergraduates (Kelly Gorz and Andrew Podoll) and by recently-appointed NDSU Geosciences research professor Adam Lewis. He plans to return there in the future for additional field studies.

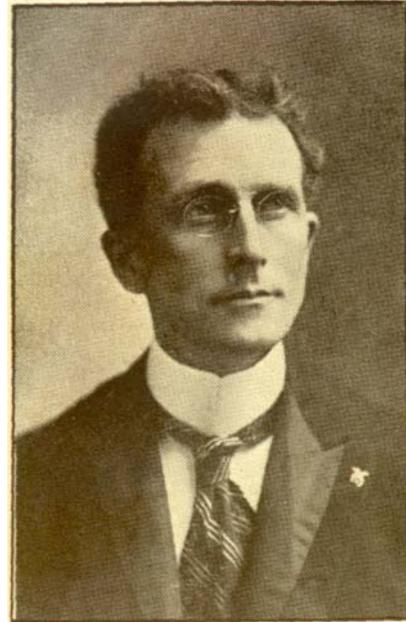
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**DEPARTMENTAL HISTORY:  
DANIEL EVERETT WILLARD  
2<sup>nd</sup> GEOLOGIST, NORTH DAKOTA AGRICULTURAL COLLEGE  
(1903 – 1910)**

Daniel Everett Willard was born on August 22, 1862 in the tiny settlement of Nile, just over the hill from where I grew up in Upstate New York. Indeed, my bedroom window faced out onto Willard Street, likely named for some close ancestor of Daniel's. In 1888, Willard received his B.S. degree from nearby Alfred University. In 1895, he received an M.S. degree in geology from the University of Chicago. From there, Willard traveled west to Mayville, N.D., where he taught at the State Teachers College from 1895 until 1903. In 1902, Willard published "*The Story of the Prairies, or the Landscape Geology of North Dakota*," a handsome, well-illustrated book that would eventually go through ten more editions.

In 1903, Willard was appointed at Professor of Geology and superintendent of the Geological Survey at the North Dakota Agricultural College (now NDSU), after the death of geologist Charles M. Hall. In his role as superintendent, Willard mapped the "artesian basin" of North Dakota and provided analyses of the mechanical and chemical nature of soils throughout the state.

In 1910, Willard left the NDAC to assess and promote natural resource development for the Northern Pacific Railway (1910-1918), then the State of Minnesota (1918-1924), and finally the Great Northern Railway (1924-1934). Upon his



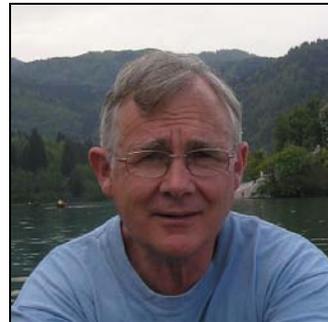
retirement, Willard moved to Nebraska City, Nebraska (the birthplace of his wife Emily) where he continued to write books. In all, Willard authored books dedicated not only to the geology of North Dakota, but to Minnesota, Montana, and California. Willard died in 1947, survived by Emily and a son, Willard Jr.

Donald Schwert

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**IN MEMORIAM:  
PETER RUSSELL SPRATT  
1950 – 2007**

Peter Spratt died unexpectedly in Wellington, New Zealand, on August 9, 2007. Many NDSU geology students will remember Peter and his family during their stay in Fargo during the 1989-90 academic year. During that time Peter taught Glacial Geology, and he worked on a fossil insect study involving Lake Agassiz-aged organics exposed at Bluestem Prairie.



Despite what turned out to be a bitterly cold winter, Peter, his wife Berys, and their three daughters seemed to greatly enjoy the warmth of the many friendships they made in North Dakota – and we all, in turn, enjoyed having them here. Peter and Berys later kept in close contact with the department – and made several visits back to Fargo. Allan Ashworth also made it a point of visiting with them in New Zealand en route to/from his field studies in Antarctica.

Since 1994, Peter has served as Senior Manager: Science and Education at the Royal Society of New Zealand (RSNZ) in Wellington.

There, he was responsible for the promotion and support of science, technology education, and the promotion and public understanding of science and technology. In an obituary posted by the RSNZ, Peter “*will be remembered by us all for his devotion to work, his quiet, self-effacing but passionate manner, his ability to relate and communicate with others, his mentoring, his leadership, and his vision and passion for science and technology education.*”

Peter is survived by Berys, and by his daughters Joanna, Amanda, and Rebecca.

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**MEET OUR NEW FACULTY:  
ADAM R. LEWIS  
RESEARCH ASSISTANT PROFESSOR OF GEOLOGY**



Dr. Adam Lewis joined the department in May, 2007, as Research Assistant Professor. In these types of appointments, the faculty member concentrates primarily on research, with most of his/her salary derived directly from research grants.

Adam is originally from southeast Idaho, where he became interested in geology at an early age accompanying his USGS-hydrologist father on field trips. He got his official start in geology at Idaho State University but admits he spent most of his time there learning fly-fishing and telemark skiing - a youth gloriously wasted. After a few years in the working world he went on to the University of Maine for an M.S. in Quaternary

Science (2000) and then a Ph.D. from Boston University (2005).

Adam comes to NDSU from Ohio State University in Columbus where he did post-doctoral research as the Byrd Fellow at the Byrd Polar Research Center. Adam's research centers on understanding the role that Antarctica has played in the Earth's climate evolution. By combining field-based studies of glacial geology with chronologic control from Ar/Ar analyses and cosmogenic-exposure dating, Adam's research has helped to show that the massive East Antarctic Ice Sheet shifted from a dynamic temperate-style configuration to its current sluggish, cold-based configuration about 14 million years ago – and that little has happened since. To obtain his data, Adam has spent seven field seasons in Antarctica, adding up to about a year and a half spent living in a tent in the Transantarctic Mountains.

The path that brought Adam to NDSU started with a happy accident during one of those long, cold field seasons: while working out the glacial history of the Olympus Range, Adam and former NDSU undergraduate Jane Willenbring discovered astonishingly ancient lake sediments. Amazingly, these sediments held well-preserved fossils of tundra plants and insects, none of which can be found there now. He asked around at professional meetings about who would best be able to identify the fossils and gauge their meaning for ancient climate. The answer (that

Jane had already given him): Allan Ashworth was the person for the job.

Three years ago Adam and Allan officially teamed up to investigate these fossil-rich lake sediments as a new source of paleoclimate information. With David Marchant of Boston University they submitted a successful NSF collaborative grant proposal. Funding from this grant currently provides salary for Adam at NDSU, and it has allowed Adam and Allan to conduct research in Antarctica for the last two years.

Now here, we should mention that Adam is happily married. To maintain this happy situation,

some new negotiations will be required with Adam's long-suffering wife, Colleen. After their first daughter, Norah (now 4), was born 5 weeks early while Adam was in the field and Norah was alone in Boston, he promised to cut down on his 3-month-long field seasons. Although Adam made it home in a record time of 40 hours, some penitence is still being worked off. After the second daughter, Emma (now 2), was born, he promised again to cut down. This year Adam will only be in Antarctica for 2 or 3 weeks – so he's sticking to the reduced-field-time plan. The problem is that the amazing discoveries just keep coming from the Transantarctic Mountains!

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## 40th ANNIVERSARY OF “THE CAMARO”

This summer marks a milestone for me. It was in June of 1968 that I got my first car, the Camaro. For me, it was love at first sight. I remember seeing it in the showroom and saying to my Mom, “Do you think Dad will let me get this car?” Getting a car had been his way of bribing me to attend college. For me getting a car was not the reason to go to college. From an early age my parents had gently nudged me in that direction.



Some of you may remember this car as being somewhat of a “bomb.” Before the extensive restoration in 1988-89 it was. The engine burned oil (I carried a case of oil in the trunk so I was ready to add oil anytime). It was rusting over the back wheels badly. With the overhaul of the engine at Quality Engine & Machine and body work by Fischer Auto Body & Repair, the Camaro

was returned to its 1968 condition. In my alumni info for the K-State geology newsletter I have mentioned the restoration and said I wish I could be restored to my 1968 condition as well!!

Through the years I have tried to keep it true to the original car. It has always been GM’s Rally Green Metallic color. The interior still remains original with the exception of the radio (now also a cassette player) upgraded from the available 1968 technology. The driver’s door armrest has been replaced due to my always leaning an elbow into it when I drive. As I came to campus this morning I noted the odometer reading 154,004 miles. Hopefully, we both have a lot of good miles left in us!!

I now store it for the winter, but as spring approaches I always have inquiries as to when the Camaro will come home. Even faculty members in Stevens Hall see the Camaro appearing in the parking lot in as a sign of spring now.

The students are crazy for this car. Fall semester lab assistants are treated to a trip to the Dairy Queen in it. I have even created a Top 10 List to recruit TA’s that includes a ride in the Camaro.

Come visit and I’ll take you for a ride, too – if it is April through October!

Elaine Hatzenbuhler

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**WHERE ARE THEY NOW?:**  
**CHANDRA BALACHANDRAN**  
**(NDSU Geosciences, 1991 – 1998)**

**Bangalored! In a different way...** After about 19 years in the USA, in 2000, I returned to Bangalore, my home town, as a citizen of two democracies – one the most populous and the other the most favored destination for migration. Many complex reasons brought me back here. Two of them were the desires to return to “home town” and to practice Geography in interesting ways. Bangalore, at the time, was going through a very interesting process of change – a very vigorous entrepreneurial spirit, a ‘can-do’ and ‘will-do’ exuberance.

This process is still underway, although now one is beginning to see a certain amount of the ‘negative’ effects of unbridled growth.

None the less, Bangalore is still a very, very interesting place.

In my view, the practice of Geography had to take two important forms: (1) supporting the developmental sector (particularly NGOs) and (2) getting young students interested in Geography, away from the tyranny of The Syllabus.

In order to accomplish precisely that kind of Geography practice, I set up The Dharani Trust in Bangalore – as a non-profit organization in 1999. Many friends advised me and helped me to do this.

In 2000, shortly before I returned to Bangalore, I set up Dharani USA, Inc., a sister organization to The Dharani Trust. Dharani USA, Inc. was set up to support the activities of The Dharani Trust, Bangalore. The Geography activities are institutionalized in Bangalore through a Dharani initiative called The Indian Institute of Geographical Studies (IIGS).

To date, the IIGS has several accomplishments to its credit including research and support projects, public lectures on Geography topics, and now Geography education. Under the aegis of GeoVidyaa, the IIGS’ Geography education program, workshops for teachers and students have begun in the past year or so. The response has been very positive.

As I write this, I have received some encouraging news from the global leader of GIS software (based in California) that they are willing

to partner with us to develop a GIS/GPS-enabled GeoVidyaa. This will be a boon to bringing both ‘traditional’ and modern IT-enabled Geography skills to children, especially to those who are socio-economically disadvantaged.

In a couple of weeks, we will also be opening discussions with Google to partner with us and help us to help in the GeoVidyaa activities.

At the moment, I am also trying to work on several things. Chief among them is setting up a Geography center where *students* can discover the joy and thrill of Geography in very practical and applicable ways, where *NGOs* (Non-Governmental Organizations) find excellent tools to enhance the work they do for various stakeholders, and where *civil society* becomes equipped with geographic information with which to help create a better living environment. For this, we need to raise resources: premises, hardware, software, funds, etc.

I invite you to visit us online at [tiigs.org](http://tiigs.org) and [geovidyaa.tiigs.org](http://geovidyaa.tiigs.org). Let me drop a very subtle hint that Dharani USA, Inc. is a tax-exempt organization in the USA and under American tax regulations, any contributions made to it are tax-deductible.

Apart from this, I am also embarking on the production of three documentaries on: Purandaradasa (15<sup>th</sup> century poet/saint), Muttusvami Dikshita (18<sup>th</sup> century musicologist/composer), and HIV/AIDS information for young people. Of course, all these will be through the optic of a cultural geographer.

A publishing house has approached me to write a Geography textbook on India. Most textbooks that I have seen here, especially for school level Geography... how shall I put this gently? ... Leave A Lot To Be Desired. This house or that house, I do plan to write a Geography book at some near date.

Life in Bangalore is very nice. The struggle to accomplish the various goals is immense. However, I am fortunate to have friends here and in my second home, the USA, whose unstinting support makes the struggle immensely bearable, but also more important.

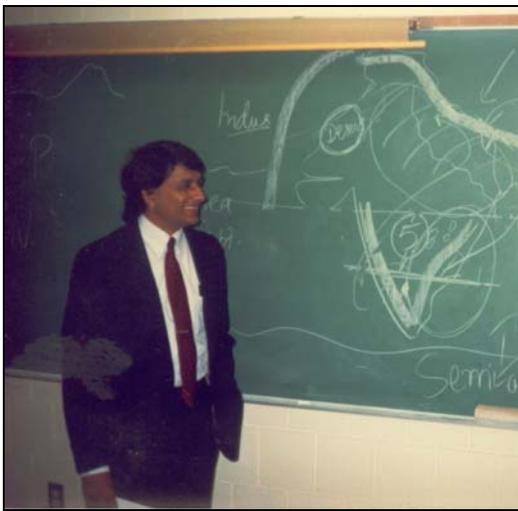
The students I have come across here, especially those who are in the middle and lower middle-class socio-economic brackets, are eager to learn Geography and things geographic. When their eyes light up as I discuss Geography with them, I have those ‘teacher moments’ that are the ultimate reward of being a teacher. I’ll do anything to help them discover the joy of Geography! As the character in the book *The Kite Runner* says, “For you, a thousand times.” For them, a thousand times.

In other news ... After a year of cook-cooked food (!), I have recently resumed cooking for myself. A collective gasp went up in Bangalore

when word got around that Chandra has turned culinary again. Now that gasp has turned to not-a-few sighs of satisfaction. Some wags, who shall remain nameless (mainly because you don’t know them), have suggested that the sighs signal quite something else: life’s many Tribulations seem as nothing after eating my cooking, and that realization causes the sigh.

Philistines! I them smite!!

Chandra  
*csbalachandran@gmail.com*



Chandra “*then*”  
(at his NDSU interview, 1991)



Chandra “*now*”  
(Bangalore, 2007)

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## 2007: A YEAR OF “GEO-PINNACLES” IN THE DEPARTMENT

### **NDSU Geoscience Students Excel in Nationwide Competition**

A group of eight NDSU students has finished among the top 25 teams in the Google “Build Your Campus in 3D Contest.” More than 350 teams from across the United States and Canada participated in the contest that ended June 1<sup>st</sup>.

The entrants were asked to construct a three-dimensional model of their campuses using SketchUp and Google Earth software. A screen capture of Stevens Hall is shown here:



According to graduate student Damion Knudsen who was the project leader, the NDSU team members were students in an advanced GIS

class instructed by Peter Oduor. “*Our team consisted of undergraduate and graduate students from geology, engineering and natural resource management,*” said Knudsen. “*It showed that when a dedicated group of NDSU students comes together to work on a project, they can accomplish much.*”

Members of the NDSU team included Geology students Knudsen, Mike Totenhagen, and Jason Braunberger.

### **Comer Foundation Awards Support to Lepper**

The Comer Science & Education Foundation was founded in 1998 by Lands’ End founder Gary Commer to support “*efforts nationwide to improve research and science education and to advance understanding of global issues, such as climate change.*” In 2007, the Abrupt Climate Change group of the Foundation invited and accepted for funding a proposal from Ken Lepper to test the chronologies of the classic shoreline locations of Lake Agassiz, along Minnesota Hwy 9 as defined by Warren Upham. Ken and his graduate student Alex Buell have collected two samples from separate locations from all four “named” beaches: Campbell, Tintah, Norcross, Herman.

### **Hatzenbuhler Inducted into Quarter Century Club**

At a dinner on May 7<sup>th</sup>, NDSU President Joseph Chapman recognized Elaine Hatzenbuhler for her 25 years of dedicated service to NDSU.



### **Oduor Receives Grants**

Peter Oduor is co-Principal Investigator on a new \$375,000 grant from the National Science Foundation. Oduor, along with Francis Casey and Thomas DeSutter from NDSU Soil Science and with Eakalak Khan from NDSU Civil Engineering will be studying the effects of animal manure storage and disposal on the fate and transport of manure-borne hormones. Peter is also Principal Investigator of a \$44,000 grant to continue development of a geodatabase for the North Dakota Forest Service.

### **Saini-Eidukat Recipient of Fulbright to Germany**

Bernhardt Saini-Eidukat was recipient of a Fulbright fellowship to the Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) in Hannover, Germany (equivalent to the Geological Survey of Germany). Through the additional benefit of a study leave from NDSU (January 1 to July 1, 2007), he researched unusual germanium mineralization in a carbonate-hosted zinc mine in Mexico. In addition, Bernie was senior lecturer on ore deposits at the University of Hannover.

### **Ashworth Named “University Distinguished Professor”**

In his October, 2007 State of the University speech, NDSU President Joseph Chapman names Allan Ashworth as one of seven inaugural University Distinguished Professors. In his remarks, Chapman notes of Allan and the other six recipients that “*each also has received many of our highest awards for teaching and research. Truly, they represent a large reservoir of intellectual wealth.*” Allan has also been named as chair of the U.S. National Committee on Quaternary Research, as well as Vice-President of the International Quaternary Association.

### **F-M Chamber of Commerce Professorship to Schwert**

Donald Schwert was recipient of the 2007 Fargo-Moorhead Chamber of Commerce “Distinguished Professor” award in recognition of his “*distinguished career as an educator and a scientist.*” Of the 24 faculty who have received this recognition, three (Ashworth, McCarthy, and Schwert) have been faculty in the Department of Geosciences.



*Geo-Alumni,*

*We think of you often and are  
very proud of you all.*

John & Peggy Brophy  
Corvallis, Oregon  
[jpbro@peak.org](mailto:jpbro@peak.org)

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## **LAS VEGAS ALUMS GATHER FOR DINNER**

Las Vegas-based graduates of NDSU Geosciences gathered for dinner on March 16<sup>th</sup> at The Hofbrauhaus in Las Vegas. Graduates present included Ned Kruger, Jennifer Lundberg, Kristi Johannes, Cathy Hendrickx, Stefanie Costa Rica, and Justin Costa Rica. Earlier that afternoon, Jennifer met with NDSU undergraduates at nearby Red Rock Canyon to present an overview of the many career opportunities available in the Las Vegas region. NDSU faculty attending the dinner were Don Schwert, Ken Lepper, Dave Hopkins (Soil Science), and Laura Overstreet (Soil Science).

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## **2007 FIELD COURSE HIGHLIGHTS**



**Geology 496  
Death Valley**

Co-offered with  
NDSU  
Soil Science.

**Geology 302  
Black Hills**




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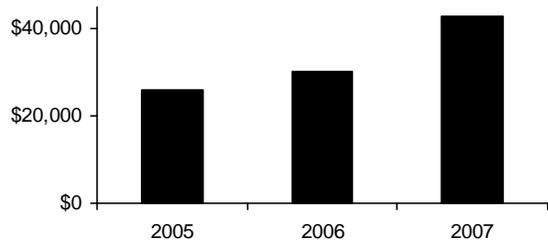
**NDSU GEOALUMNI ENDOWMENT FUND**

**Q:** When you receive a mailing or that phone call from NDSU asking for a donation, can you target it to support the students in the Geo program?

**A:** Yes! Simply specify that your gift go to the GeoAlumni Endowment. This fund supports field courses and student scholarships. Even a one-time contribution can generate income for years to come through interest accrued to the account. All contributions to the fund are tax-deductible. Many employers will match the donations of employees; for information on how to provide a match, see:

[www.ndsufoundation.com/annualfund/matchinggift.htm](http://www.ndsufoundation.com/annualfund/matchinggift.htm)

**GeoAlumni Endowment - October 1**



Enclosed is my gift of \$ \_\_\_\_\_ .

Please detach, and mail with your gift to:  
NDSU Development Foundation  
P.O. Box 5144  
Fargo, ND 58105

Make checks payable to:  
**NDSU Development Foundation – GeoAlumni  
Endowment**

Thank you!

**Payment options:**

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Charge my credit card  
    Visa                      MasterCard                      Discover  
Card No. \_\_\_\_\_

Expiration Date: \_\_\_\_\_

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**NDSU Geosciences Faculty, Fall, 2007:** Allan Ashworth, Kenneth Lepper, Peter Oduor, Bernhardt Saini-Eidukat, Adam Lewis, Donald Schwert, and Elaine Hatzenbuehler.