

Alumni Newsletter



December 2002

our History, our Future



this issue...

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Geological Sciences

Message from the Head

It has been another eventful year. Fund raising and design for the Ed Leith Cretaceous Menagerie is almost complete and we will shortly proceed with the first elements of the construction. Debate within the University has resulted in the creation of a new faculty, which will encompass Geological Sciences, Geography, Environmental Sciences, Environmental Studies and Natural Resources. Another retirement will take effect; Lorne has been seduced by the siren call of western shores.

Over the last 6 months we have been putting the finishing touches to the museum design including everything from the “demolition” of the existing space (mainly removing that overhead red grid) to commissioning the artwork for the explanatory panels that will accompany the fossils. The fossils have been ordered and built – we have taken delivery of the turtle – it is huge. It is currently stored in all of room 314! I have to tell you that at the time of writing we are still \$55,000 short of our goal. We need to raise these funds to complete the museum. There are great expectations here and stories of the arrival of the dinosaurs have started to appear in the local press. Please help us finish this project. It is important that the Earth Sciences hold a prominent place in the public eye.

The proposal to create a more cohesive faculty dealing with resources, Earth systems, and human impact on the environment has been on the books here, in one form or another, for the last 10 to 15 years. Your own experiences in the field will no doubt reflect the intensity of the debate

that was held here. I am sure you will all agree that it is necessary to sustain mining, mineral processing and energy generation in an environmentally conscious way. Recent consideration of the NSERC reallocation report and documents like “Breaking New Ground” (which will set the scene for this years Mines Ministers Conference) indicate we need to build new partnerships and that ideologically driven arguments will do little to help humanity make sensible use of its resources. I have no doubt either that you will all agree that the Earth Sciences have a major role to play in a sustainable future – and that is exactly what we are exploring.

Whether we like it or not we are all advancing in years. Lorne Ayres has reached the point where sunset over a sandy beach in Tofino is more attractive than another spell at field school or expanding horizons in Global Tectonics – go figure! Many of you will recall the thump of his boot on the dormitory steps followed by his dulcet tones delivering your wake up call “BREAKFAST”!!! I bet that brought back memories of rolling over in your sleeping bag. Humour aside, Lorne has been responsible for forming the geological and mapping skills of generations of students. Many of the reports and maps you have produced have benefited from his encyclopedic knowledge and teaching. While we may be able to re-staff the position, he cannot be replaced. He will be sorely missed as one of the most generous and contributing faculty members this department has seen. We are in the active planning stage for some form

Bob Elias, custodian, Bill Last and Neil Ball helping find the turtle a new home. It appears that there is some assembly required.



of retirement celebration. One of the ideas we had was to hold a “sleepover” at field school. This would have to be some time in May 2003 – timing and Lorne’s moving plans would need to be considered. Alternatively we may have a retirement dinner at the University Faculty Club, which would be held early in the new year. I will keep

you posted, but if any of you have ideas please let me know. And yes, I think it would be appropriate that he receive a gift. I will coordinate the contributions.

Looking to the future, student numbers and enrollments are healthy and somewhat constant. We seem to be graduating 14-15 majors and honours students per year. As usual, they are enthusiastic, just like you were. We have some very capable mappers and some that are very motivated by their research opportunities. They continue to feel good about, and confident in, our program. By all accounts, employment prospects, despite what some may think, still appear to be solid. Remember that I asked you as alumni to help future graduates – it seems we have a good network.

This is my last year as head; I’m not sure what the future holds. As Bill Brisbin has said in the past “this has been a slice.....of life!”

Norman



Lorne Ayres describing flow features on the Yellowstone field trip.

New Faculty Member: Andrew Fredericksen

Andrew Fredericksen joined the faculty in July, 2002 from a post-doctoral fellowship with Dr. Justin Revenaugh at the University of California, Southern California. Andrew earned his M.Sc. and Ph.D. from the University of British Columbia where he was supervised by Dr. M.G. Bostock. While studying seismic imaging techniques of the upper mantle Andrew developed a forward-modelling and inversion tool for data sets from the Canadian National Seismograph Network (CNSN).

Andrew will continue to develop and apply innovative techniques in imaging the crust and mantle using earthquake data. He currently is developing scattering tomography techniques for datasets generated by the Canadian POLARIS project. Andrew continues to collaborate with Justin Revenaugh on applying methods to the data network for Southern California with the objective of imaging faults and zones of concentrated strain.



Faculty News

Petr Cerny

As usual **Petr Cerny** is keeping busy with hunting and photography, and occasionally even with pegmatites. Field work with his former research associates Miguel Galliski and Florencia Marques-Zavalía (CRICYT Mendoza) in the Pampean pegmatite province of Argentina gave a boost to joint projects on the Nb-Ta mineralization, phosphate associations and late metastable feldspar assemblages. A cancer scare (which turned out to be a false alarm) forced Petr to cancel a lecture trip to Europe in the fall of 2001, but his papers at the conferences in Brno and Vienna were presented by his co-authors and colleagues. After the *constitutionally guaranteed* bunch of presentations at GAC-MAC, Petr collaborated with Dave Teerstra (MSc 1992, PhD 1997) on several feldspar and pollucite studies over the past summer, when Dave visited the Department on **Frank Hawthorne's** invitation. Petr's Canada Day heart attack turned out to be real, but convalescence progresses rapidly, thanks to work therapy on Red Cross Lake pegmatites, several papers on Tanco, and other miscellaneous recreational preoccupations.

Nancy Chow

Nancy Chow is currently on research leave at the Geological Survey of Canada and University of Western Australia, working on several projects on Devonian reef complexes in western Canada and northwestern Australia. Nancy has just completed a three-year term as a Geological Association of Canada Councillor and Chair of the GAC Communications Committee.

Bob Elias

Last year, **Bob Elias** and **Graham Young** participated in an international program on "The Great Ordovician Biodiversification Event" (Riverside, California), and attended the Canadian Paleontology Conference (London, Ontario). They presented papers on various aspects of Ordovician coral faunas in Laurentia and in southern Manitoba. At GAC-MAC in Saskatoon this year, Graham gave a talk on Ordovician coral-sponge symbioses from China, co-authored by **Shaochun Xu** (former postdoc). Also, Bob and Graham were among the co-authors of a presentation on giant trilobite trace fossils in the Ordovician near Churchill, Manitoba. Bob attended the International Paleontological Congress in Sydney, Australia (any excuse for a visit to Australia!). He gave a

talk co-authored by Graham on Laurentian Ordovician-Silurian coral communities, and displayed a poster on the remarkable Churchill trilobite traces.

Shaochun (Simon) Xu moved to Windsor, Ontario, following a postdoctoral fellowship with Bob Elias and Graham Young from 1997-99. Last year he completed an M.Sc. in computer science at University of Windsor, and is currently working on a Ph.D. at Wayne State University in Detroit. Simon was recently hired as an Assistant Professor of Computer Science at Algoma University College in Sault Ste. Marie, where his geological background was considered an asset.

Ian Ferguson

Ian Ferguson attended the International Workshop on "EM Induction in the Earth" at Santa Fe, New Mexico in June and presented several posters co-authored with other members of the EM geophysics "group", including Xianghong Wu, Xiaobing Ma, Grant Wennberg and Marcelo Orellano.

Norman Halden

As a faculty member **Norm Halden** has two students working in the Fox River Belt – **Dave Benson** (M.Sc.) and **Guy Desharnais** (Ph.D.) where they are doing research on the sedimentology of the Fox River Belt and the petrogenesis of the Fox River Sill, respectively. The goal is to find out where the sulphur is and how and where it is incorporated in to the sill. The study is being done in collaboration with Falconbridge Inc.. Norm is still active in the world of oscillatory zoning in minerals. He is currently supervising an NSERC-NATO Post-Doctoral Fellow, **Dr. Natasha Bryxina**. Dr. Bryxina comes from the Institute of Mineralogy and Petrology at Novosibirsk State University in the Russian Federation. Coming from Siberia, Manitoba should not be too much of a surprise!

The analysis of various fish parts still makes up part of Norm's work and provides useful insight into where fish pick up trace elements in their environment. Recent work done with **Michelle Saquet** (BScHon 2001) showed that some fish that have been in contact with tailings have galvanized otoliths with very high Zn contents. However, Zn is also an important trace nutrient needed in reproduction and one that can be connected with the size of the fish. In the right quantities at the right time it can contribute to growth. Where are those trophy trout?

Preliminary work on sturgeon is finding some regional variations in samples taken across Manitoba. If anybody has a decent recipe for this species please send it in.

Over the next few summers Norm will be looking at more work around the Superior Boundary Zone. New outcrop at Gull Rapids on the Nelson exposes the contact between the Proterozoic and the Archean. There are also supracrustal rocks, which may be Ospwagan Group-type sediments such as are found at Thompson and maybe also Fox River, or they may be old Archean sediments such as is found at Assean Lake. In connection to this there is more to be done in the Pipe open pit, despite the number of times geologists have walked over it! It is the “usual” question – where is the nickel belt? Manitoba Hydro is going to build a control structure on the rapids so the pit has to be mapped and sampled before it is flooded.

Adrienne Larocque

Last year, *Adrienne Larocque*, Jim Stimac, Jeff Keith and **Michelle Huminicki** (BScHon 2000) received the Hawley Medal from MAC for their paper “Evidence for open-system behavior in immiscible Fe-S-O liquids in silicate magmas: implications for contributions of metals and sulfur to ore-forming fluids”. In August 2001, Adrienne gave birth to Samira, a baby sister for Cameron. In April 2002, Adrienne was promoted to Associate Professor.

Jim Teller

In September 2001, *Jim Teller*, Post-Docs **Matt Boyd** and **Dave Leverington**, and a drilling team from the Limnological Research Center at the University of Minnesota, cored the late Quaternary sediments of West Hawk Lake meteorite impact crater, southeastern Manitoba. During the past year, Jim has been coordinating the efforts of 10 researchers on the West Hawk Lake project, who are trying to decipher the sedimentological, ecological, and climatic history of this basin. Immediately after coring, Jim left for a meeting in Europe, and was in Istanbul on September 11—the thoughtful and friendly people of Turkey helped soften the shock.

Most of the past year was spent working on the cores from West Hawk Lake and preparing research papers on Lake Agassiz and on the late-glacial history of North America’s drainage (9 papers published, 3 with **Dave Leverington** and **Jason Mann**, plus 2 special issues of

journals edited). **Dave Leverington** has now moved on to a position at the Center for Earth and Planetary Studies at the Smithsonian Institute in Washington (although collaboration on several projects continues), and **Jason Mann** is working with KGS Group consultants in Winnipeg. **Matt Boyd**, who has been an NSERC Post-Doc with Jim for two years, has accepted a teaching position at Brandon University, and also got married during the summer of ’02.

In 2001, Jim was appointed to a 4 year term on the Scientific Board of UNESCO’s IGCP Program, and he is now both Rapporteur and the Chair of the Quaternary, Environmental, and Engineering Geosciences Committee. In 2002, he was asked to serve on the International Union of Geological Sciences (IUGS) Committee on Research Development. The 5-year International Geological Correlation Project on “Glaciation and Reorganization of Asia’s Network of Drainage” that Jim co-leads comes to an end this year, and two special issues of journals are planned. During the past year, invited talks were given at AGU (San Francisco), CGU (Ottawa), Univ. of Minnesota, Whitehorse, Germany, and a Plenary Talk was given at the International Assoc. of Great Lakes Research meeting in Winnipeg. “Calcareous sand dunes of the Arabian Peninsula and Noah’s Flood” was the topic of Jim’s talk at the Geology Department’s Awards Banquet at the Univ. of North Dakota. It’s been a busy year.

Al Turnock

Al Turnock continues to take care of 2 Distance Education courses and the thin section equipment. He has written a paper on the relic augites in the Flin Flon volcanics, with Eric Syme, which is published as a report by the Manitoba Geological Survey.



Drill platform in West Hawk Lake used to core lake sediments for paleoclimate research.

Faculty and Student News

Petr Cerny Retires?

-J.Young

Although Petr officially retired several years ago, it was not until this summer that he slowed down long enough for us to wish him the best in his retirement. There is not a lot of evidence that he has really taken that step, but he

- now arrives at his office after 7:00 a.m.;
- is rarely seen on weekends;
- carries only one brief case instead of two; and
- no longer clogs the print queue with messages from Radio Prague.

Petr's retirement dinner was held at the University Club where the people in attendance were treated to a wonderful meal of wild game. There were numerous family and friends, professional and otherwise in attendance. Presentations were made to Petr and Eva by Norm Halden on behalf of the Department and by Peter Vanstone on behalf of Tanco. Bob Ferguson reminisced about Petr's coming to Canada with(out) Iva, Frank Hawthorne summarized his scientific impact and Norm Halden spoke about the role Petr has had in the Department and in Norm's life. Eموke Szathmary, President of the University of Manitoba also spoke about their unique and unexpected friendship.

Petr has had a remarkable career. He has won two of

the most prestigious geoscience honours in Canada: the Logan Medal from GAC and the Past President's Medal from MAC, besides having won more than 25 international awards. He has written over 250 scientific articles in pegmatology (a term coined by his students) and continues to fill mineralogical sessions at GAC-MAC.

Luckily we won't miss him, because between his hunting excursions for grouse and his love of nature he continues to research pegmatites. And with the new electron microprobe he should be able to do even more.



*Petr is contemplating how to probe his mineral gift from the Department as **Norm Halden** and **Iva Cerny** look on.*

September Homecoming at the University

Three members from the class of 1952 came for a visit on September 20th, 2002. Those members included Lionel Kilburn (Oakville, Ontario, retired after a career with Falconbridge), Hugh McCabe (Winnipeg, retired stratigrapher of Manitoba Geological Services) and Robert McPherson (Calgary, retired consulting geologist). Retired professors Bruce Wilson and Bob Ferguson and some faculty and students met the alumni for lunch in our lounge. There were many discussions of student days, career paths and adventures in exploration.

The alumni were also joined by David R. McDonald (BScGen 1952) and Brian McKay (BScGen 1952) who had successful careers in the resource industry and are now retired. David went into the oil patch doing contract geophysics. In 1965 he moved to Australia where he had a distinguished career rising to executive positions in Burma Oil. Brian headed to Alberta after graduation where he was involved in geological exploration. In the 1960's he too felt the call of Australia where he worked for the Australian Bureau of Mineral Resources and set up their Petroleum Technology Laboratories.

-Al Turnock & Bill Brisbin

Student Awards 2002

Dr. George M. Brownell Memorial Prize

Edlyn Bruni
Andrea Letkeman
Aaron Lussier
Lyndsey Macbride

Paul R. Beaudoin Memorial Geochemistry Scholarship

Cameron Rennie
Rob Mackie

Marty Morrice Field Geology Award

Rob Mackie

Irving Levi Prize

Tashia Dzikowski

C.K. Bell Memorial Research Prize

Dave Benson

Mark Smerchanski Memorial Prize

Lisa Friedrich

Douglas Bartlett Fahlgren Memorial Award

Tashia Dzikowski

NSERC Summer Undergraduate Award

Aaron Lussier
Tashia Dzikowski
Colin Morancy
Lisa Friedrich

Rita Wadien Memorial Scholarship

Danielle Huminicki

Faculty of Science Graduate Studentships

Sasha Herwig
Lyndsey Macbride
Yulia Uvarova

Donald McIvor Scholarship

Tashia Dzikowski
Evan Gowan

Mineral Society of Manitoba

Aaron Lussier (Mineralogy)
Raegan Porter (Paleontology)

MAC Student Prize

Sasha Herwig
Lyndsey Macbride

Student Updates

Jarrold Brown finished his thesis on feldspar assemblages of the Tanco pegmatite and is now working as an exploration geologist in British Columbia.

Xiaobing Ma was a Visiting Scholar from the Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing who stayed for six months in the Department during 2002. She worked on the analysis of magnetotelluric data and recordings of geomagnetically induced currents.

Marcelo Orellana continues work on his M.Sc. thesis on the analysis and interpretation of magnetotelluric data from northern Manitoba while working full time with Exxon/Mobil in Calgary.

Kim Tait won the Best Poster Award at the Western Inter-University Geological Conference (WIUGC). The poster presentation was entitled "Crystal Chemistry of the

Alluaudite-group". Kim successfully defended her MSc thesis and is off to Los Alamos to start a PhD program.

Grant Wennberg recently got married, obtained a full-time position with Petro-Canada, and submitted his M.Sc. thesis on the analysis and interpretation of magnetotelluric data from northern British Columbia. Busy guy.

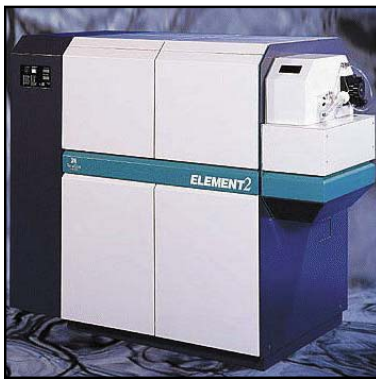
Xianghong Wu has worked as a LITHOPROBE-funded Post-Doctoral fellow, on the analysis of magnetotelluric data from the Western Superior Province. She visited Ottawa to collaborate with Mr Jim Craven at the Geological Survey of Canada on this project and presented a paper on the work at the International Workshop on EM Induction in the Earth at Santa Fe, New Mexico. In 2002/2003 Xianghong will gain experience, teaching the Physics of the Earth: Seismology and Heatflow.

Research and Outreach

Research Equipment Acquisitions

The new Cameca SX-100 electron microprobe was installed in June and Ron Chapman is gathering a few more gray hairs making it run. Unlike its predecessor, which was controlled by a PDP11 using an arcane language, this has a nice new *Dell* with windows. Mind you, with half a dozen windows open, it can be a challenge to keep track of the operation. The instrument is equipped with 5 WDS spectrometers and an EDS spectrometer. We chose large format crystals to provide better sensitivity and we have spectrometers set up exclusively for light element analysis. We will shortly be hooking up the image analysis system so that side of the operation will be up and running as well.

The new Laser Ablation Microprobe ICP-MS is intended for trace element analysis of minerals and solutions. For the minerals and elements we are interested in, we should be able to achieve detection limits in the *ppb* range. We, of course, will also have an isotopic capability. High precision U-Pb ages really need a SHRIMP, however, we should be able to achieve precisions in the +/- 10-15 range sufficient for reconnaissance age dating. The laser system on the microscope will be the main sampling tool; the intention is to analyze fine-scale oscillatory zoning in minerals.



Ron Chapman and student **Patrick Norman** are examining a chondritic meteorite using the new Cameca SX-100 electron microprobe.

-N.Halden

Portable Arrays for Lithospheric Analysis and Research Investigating Seismicity (POLARIS)

POLARIS is a national geophysical project, recently funded by the Canadian Foundation for Innovation, involving scientists from universities in Ontario, Manitoba, Alberta and British Columbia, and two divisions of the Geological Survey of Canada (GSC). The project involves the establishment of four geophysical arrays: three 30-instrument teleseismic arrays and an array of magnetotelluric (MT) instruments. Initial deployments of the arrays are in southern Ontario to study crustal structure and seismicity in Canada's economic core, in the Slave craton to study lithospheric structure, and in BC to study crustal structure and seismicity. The MT array will be deployed progressively on each seismic array and used for geomagnetically induced current studies in Manitoba.

The POLARIS MT work commenced in the Summer of

2002 with a preliminary survey across southern Ontario. The survey was done by Ian Ferguson, Xiaobing Ma and John Wenham from the University of Manitoba with help from Alan Jones, Shane Evans, and Jessica Spratt from the GSC.

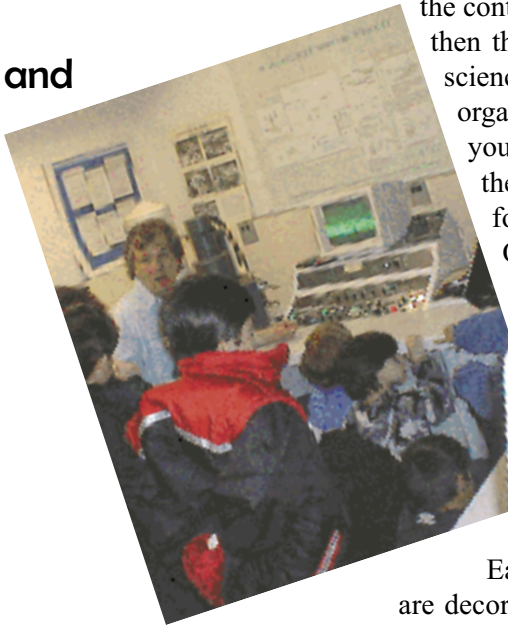
-I.Ferguson



John Wenham is checking equipment for the POLARIS survey.

Career Trek

and



A number of years ago the Science Teacher's Association of Manitoba recognized the contributions that Ed Leith had made to science education in Manitoba. Since then the Department has established a program that responds to the changing science curriculum. This year we entered into a different relationship with an organization called Career Trek. Career Trek is a career-focused program for young people, aged ten and eleven years old that are considered "at risk" by their school. The goal of Career Trek is to increase awareness of the need for post-secondary education for many jobs including the geosciences. Our students develop and direct interactive sessions promoting various possible career paths. By being involved in this program our students get experience in promoting the geosciences.

Members from the Department have made numerous visits to schools over the years. Last year I made my first visit to Prince Edward School in

East Kildonan where the hallways are decorated with pictures of alumni and their success. I recognized the name of one of their graduates and ours, Donald K. McIvor (see student awards), who went on to a successful career with Imperial Oil and Exxon. Using these relationships helps make the connection between us and the K-12 system more successful.



Other

Outreach Activities

-J.Young

Earth & Space Science: The Manitoba Perspective

-J.Young

In 1997 the Provincial Ministers of Education signed the Pan-Canadian Protocol for Science Education in Canada. The Protocol recognized Earth and Space Science as an important component of science education in Canada. Manitoba Education and Training started to implement the new curriculum several years ago, but adopted an Integrated Science program in Grades 11 and 12, which will allow teachers the freedom to focus on topics of their interest. At the same time the Western Canadian Protocol on Social Studies has proposed to delete most, if not all, aspects of Earth Science from the Social Studies / Geography curriculum. Changes in the Social Studies curriculum came in response to the protocol on science education.

I first heard of the Pan Canadian Protocol about 7 years ago when I helped develop the Manitoba position for Earth and Space Science. Excited by the prospects of having Earth Science taught in grades 11 and 12, I bet Bill Mandziuk that Earth and Space Science would become an integral part of the science curriculum. Unfortunately, he had better insight into the education system than I do. The most recent changes to the science curriculum will allow teachers to introduce Earth Science in high school through the Integrated Science curriculum, but we expect this to be uncommon.

As we move into our new Faculty we face many challenges including how to attract students to the Geological Sciences. Our course, *Earth and Planetary Science* (aka "Rocks for Jocks"), is no longer eligible as a Science elective for Arts or Science students. These changes make me pause and wonder how students will discover geology in the future? Where did you discover the geosciences? We would appreciate your comments to help us design a program that attracts a future generation of geologists and geophysicists.

Field School: today

Back in the 1980's there was a movie entitled "The Gods must be Crazy". I (*J.Young*) can't remember much about the movie, but I think it was about an aboriginal and his family that lived near the Kalahari Desert. The aboriginal is almost hit by a pop bottle that falls from the air. This incident sets off a series of events. What does this movie have in common with field school you ask? The name of the movie for one, but also a series of events that made for a memorable, albeit infamous, camp.

When our esteemed Department Head (potentially a god, but not the god of field school) dropped field school in my lap for 2002 I knew I was better prepared than the aboriginal with his pop bottle. After all, I assisted at field school numerous times over the years and had seen Lorne and Bill seemingly handle the load with ease. Besides, Liz, our administrative assistant, handled the logistics including hiring the cook and getting Physical Plant to open the camp in the spring. That allowed me to focus on the geology and the mapping projects.

During the 1980's there was a concerted effort by a number of TAs, such as Neil Ball and Tim Schweyen, to increase the exposure on the detailed project areas. Unfortunately, once exposed the outcrops have gradually degraded due to heavy lichen cover. Those fine sedimentary structures that were unearthed on the Crowduck were now hidden from even the best of our sedimentologists (i.e., Nancy Chow).

The smart thing to do would have been to ignore the lichen cover and follow the format established in the recent past. But why do something tried and true when you can make mistakes. So, out with the stratigraphic section on Round Lake and in with a new stratigraphic section that we had recently stripped on the east side of Shoal Lake Road. I also renamed some projects just to confuse the students (or as it turned out, the staff) and added another day doing some introductory air photo mapping at the boundary between the Wabigoon and Winnipeg River subprovinces. Being short a day meant that I had to trim the schedule. I am not superstitious so these changes or modifications should have had no bearing on the success of field school. Unfortunately, superstition amongst others runs rampant. Rumours of angry gods circulated as I made the changes. I was warned about the wrath of the gods, but plunged ahead anyways.

Two days to launch and the news was not good. Physical Plant had returned home the day before the advance team went out to the field camp to clean up from a winter

of frolicking mice. The plumbers had spent several days trying to connect the plumbing, but freezing night time temperatures led to broken water and sewage lines every day. They had used up all their supplies and returned to their base at the University. There was no water for the foreseeable future.

Hauling water to clean up the camp, for cooking and cleaning and to use in the toilets was not what I expected. For four days we hauled water in large garbage containers to each of the toilets that worked and for cooking. Our bodies heaved a collective sigh of relief when the plumbers finally plugged all the leaks. Now that we had overcome the water problems the rest of the field school should have been a piece of cake.

What happened next was a series of events that were completely unexpected. Many of the events were created by a cook undergoing a mid-life crisis and the remainder created by the weather. Now I have been at field school long enough to know that weather is always a factor, but this year was one of those extreme weather years. We received precipitation, most of it snow, almost every day.



Surviving another day at field school 2002.

Not only did it snow, but we faced two days working in white out conditions. My first field season I learned to peel moss. Ever since then I have always enjoyed peeling moss. I even enjoy spring cleaning the field school outcrops. But I draw the line at removing snow from the rocks after a winter of shovelling. Especially when it is difficult to keep up with the continued snowfall.

By now, only semi-detailed air photo mapping remained. With less than a week to go we were well on the way to our final report. Blessed by a clear warm day for the first time since the start we were tricked into thinking our luck had changed. The snow and rain came and the snow and rain stayed. (*Continued on page 13*)

Geophysics Field School

Geophysics field school was taken by eight eager students ranging in background from a second year geophysics student to a fourth year geology student. As in previous years, students participated in work that progressed from more-defined introductory level projects to more advanced level projects in which they coordinated the survey planning. Each project involved an initial field component followed by analysis, interpretation, and report writing back in Winnipeg. By the end of field-school the students found the physical efforts of data collection in the field and the accompanying snow a welcome relief from the analysis and report writing in the warmth of the Wallace Building!

Projects included:

- (1) Introductory projects mainly set in Bird's Hill Provincial Park. Students were introduced to gravity, magnetic, magnetic susceptibility, terrane conductivity, VLF, seismic refraction, and radiometric methods.
- (2) Mapping of the shallow geological structure and distribution of saline fluids in sandy soils at Virden, Manitoba.
- (3) Delineation of the magnetic and gravity anomalies of the Golden Boy prospect, south of Selkirk.
- (4) Examination of the geophysical responses of iron

rich rocks in the Whiteshell and of the Falcon Lake Intrusive Complex.

- (5) Investigation of abandoned gold mine tailings at Central Manitoba and Ogama-Rockland sites in Nopiming Provincial Park.

Many people are thanked for their contributions to the field-school especially the T.A.'s who this year were Lisa Wolyneec, now at the University of Victoria, and Grant Ferguson from Civil Engineering. From the Department, Bill Brisbin helped with the Selkirk project; Norman Halden, Bill Mandziuk, and Al Turnock with the Whiteshell Projects; and Barbara Sherriff with the Nopiming project and Jeff Young coordinated the three day "merger" of the geology and geophysics field schools at Star Lake. Geophysical equipment was borrowed from the Manitoba Mines Branch, the University of Victoria, and ChevronTexaco. Helios Hernandez at Manitoba Parks and Natural Areas Branch of Manitoba Department of Conservation provided assistance in arranging access to work in provincial parks. Finally, I must especially thank ChevronTexaco and our contacts, Kathy Harvey and Darcy Strain, for both coordinating the field project at Virden and for providing funding for accommodation and supply of pizza for the complete field school party in Virden.

-I.Ferguson



Ian Ferguson (back row, far right) and the Geophysics Field Crew.

Field School: yesterday & today

Falcon Lake Intrusive Complex (nee Stock)

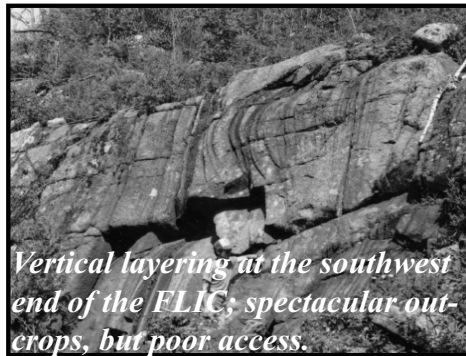
In 1982 I was introduced to the Falcon Lake Stock. It was one of those detailed mapping projects at field school where students cut their teeth before being thrown into the aerial photographic mapping. We spent two days hunting for the elusive contacts between the various intrusive rock units that comprise the stock. At the time there was a lot of ideas about the stock, the unit distribution and its formation, but, as Lorne would say, "we needed more data". Since then the stock has become a prime target of the Department for research, teaching and outreach purposes.

The Geological Survey of Canada were the first to document the mineral occurrences associated with the stock. In the early 1900's Marshall and Bruce offered descriptions of the Sunbeam, Moonbeam and Waverley mineral occurrences. Bruce described these mineral occurrences as being associated with a "granitic boss".

Brownell published the first significant study of the Falcon Lake Stock in 1941, but it was not until the 1950's that Ramberg, from Northwestern University revisited the area. The Department renewed its relationship with the stock when Ian Haugh contributed to the story with a M.Sc. thesis in the 1960's. When Norm Halden joined the

Department in the 1980's he renewed interest in the stock again. With the help of some funding from the Mineral Development Agreements several studies were undertaken that brought us to our current understanding of the stock or Falcon Lake Intrusive Complex, (FLIC for short) as coined by W.S. Mandziuk.

The FLIC has become an important teaching tool in the past couple of decades. Students at field school not only complete detailed mapping of a part of the FLIC, but commonly integrate geophysical methods such as radiometrics and magnetics to try to identify unit contacts. A sample suite collected for thesis research is used as a lab assignment in igneous petrology. This year the students in *Igneous Petrology* got the chance to compare the geochemical and petrographic suite in the lab with features in the outcrop.



Vertical layering at the southwest end of the FLIC; spectacular outcrops, but poor access.

Ed-Geo has also introduced scores of K-12 teachers to the Sunbeam gold occurrence and other FLIC rocks along the way.

There is much more for the FLIC to contribute in the future. As students of the Earth, we owe much to this unique set of rocks.

-J. Young

General References

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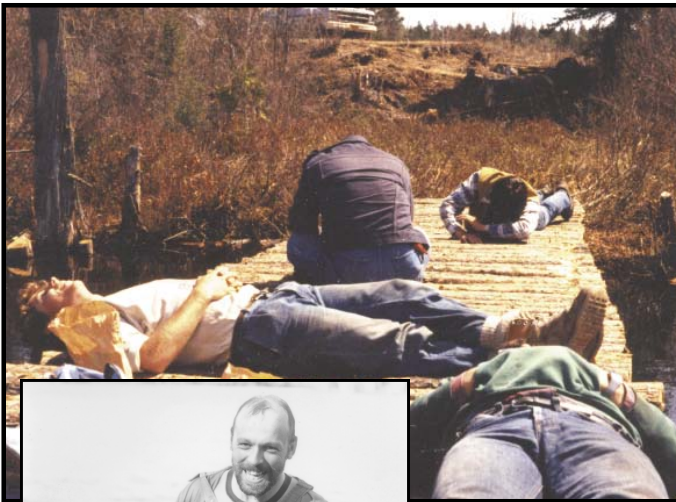
Field School (continued)

Just thinking about all those water logged days made me nostalgic about my own field school experience. When we were their age we were charged with mapping the area around Baubee Lake (post-grid days). Lorne, in his infinite wisdom, decided that we had to submit a map that included the area adjacent to us that was being mapped by another group. No matter how we tried we just couldn't correlate several of our felsic metavolcanic rock units with the massive mafic metavolcanic rocks of the mapping group beside us. In a final panic we decided, in our finite wisdom, that another mapping day in pouring rain would be helpful. About the only thing I remember of that day was watching a couple of squirrels run up and down a tree in front of us as we ate our soggy sandwiches for lunch.

As the rain and snow fell during the final week mapping progress slowed considerably. Amazingly the students held up fairly well, but with only a few days to the finish line two events finally did us in. Our first serious accident sent one of the students packing and a second accident led to another shutdown of the water system. The latter event sent the rest of us packing. I wasn't interested in hauling water for a couple of more days. What had started as a great opportunity ended with a fizzle. Hopefully "The Gods won't be Angry" next time I coordinate field school.

A special thanks to all those that contributed including the staff that participated: Nancy Chow, Norm Halden and Bill Mandziuk. Thanks also to a number of guest TAs: Kim Tait, Lyndsey Macbride and Sasha Herwig. A special thanks to the two who had to bear the brunt of it all: Cam Rennie (TA) and Jared Etcheverry (Expediter).

Memories of Field School



*Clockwise from upper left: start of another day of detailed mapping; bunkhouse fun; **Norm Halden** paddling in the bay at Star Lake and the consequences.*



Through the Years

1956

Sam Root (BScHon 1952, MSc) retired in 1996 from the College of Wooster, Ohio where he held the Shoolroy Chair as Professor of Natural Resources. Sam had an active program of research in basement tectonics and in understanding the architecture of sedimentary basins.

1969

Al Higgins (BScHon) is Exploration Manager (western) for Segue Energy Corporation.

1973

Allan Juhas (BScHon 1962, PhD) is a Consulting Geologist who was recently appointed a “Harry Krumb” distinguished lecturer by the Society of Mining, Metallurgy and Exploration.

1974

John Beard (BSc) retired this year as Manager of Geological Services with Petrotrin (the State Petroleum Company of Trinidad and Tobago) after serving 27 years in various exploitation and joint ventures. John continues to live in Trinidad.

1980

Boe (Allan) Baskerville (BScHon; MBA U of Calgary, 1987) is a Senior Geologist at Talisman Energy in Calgary. Most of the year is spent searching for oil and gas in the Peace River Arch area of N.W. Alberta. The remainder of the year is spent doing regional geology of the Lake of the Woods while trolling for pickerel.

1981

Russell Krasey (BScGE) is an Engineering Manager (Australia Division) with Nexen Petroleum. He is also a member of the Editorial Review Board with JCPT.

Brent Kristof (BScGE) was transferred to Newmont’s Holloway mine near Marathon, Ontario where he is Mine Manager. In 2001, he completed a three year term as Chair of the Mining Committee that advised the federal Minister of Natural Resources. Brent reports that it is true: “Gold is where you find it!”

1983

Samuel Proskin (BScGE, MSc 1989 Alberta, PhD 1998 Alberta) is a Senior Project Engineer with EBA Engineering Consultants in Edmonton Alberta. He has ongoing projects in permafrost engineering and the design of ice roads.

1987

Pat Osachuk (BScGE) has been promoted to Manager of Production Engineering with the Palliser Business Unit of PanCanadian Energy Corporation.

1992

Scott D. Anderson (BScHon) recently returned to Manitoba as a Mineral Deposits Geologist with the Manitoba Geological Survey.

Nick Hudyma (BScGE) is an Assistant Professor in the College of Computing Sciences and Engineering at the University of North Florida.

1993

Stacey Richter (BScGE, BTheol 2001) was ordained as a priest in the Orthodox Church in 2001. He is an assistant priest at St. Herman’s Orthodox Church in Edmonton. Stacey worked for three years with HBM&S at the Rutan Mine in Leaf Rapids before returning to school at St. Andrews College in Winnipeg. In the summer of 2000 Stacey worked in the geotechnical department at Acres Manitoba. Stacey is married to Trudy and they have one daughter, Michal.

Joe Taylor (BScGE) is a Production Superintendent with Marathon Oil Company in the Gulf of Mexico. He supervises the production of oil and gas from three platforms. Joe is married to Venees Rampain and they have one daughter, Jillian.

Brent Wolfe (BScHon 1990, MSc) was awarded an NSERC Northern Research Chair in the Department of Geography at Wilfred Laurier University. Brent’s goal is to formulate a 1000-year high-resolution flood and drought history in the Peace-Athabasca Delta, Slave Delta and Mackenzie Delta using lake sediment records. The results will help industry, governments and First Nations communities develop effective strategies to minimize the

impact of increasing demand on water resources.

1996

Terry Lukie (BScHon) completed an M.Sc. at Queen's University. There, he got involved in a side project with another student, Rob MacNaughton. That study, published in the May 2002 issue of "Geology," has received international media coverage. It documents the earliest known terrestrial footprints, made by large amphibious arthropods in a marginal-marine, eolian dune-field some 480-500 million years ago! Terry now works for Nexen in Calgary.

1998

Victoria (nee Moore) (BScHon) and **Andrew Bishop** (BSc) are working together as Processing Geophysicists with Western Geco in Houston. In the past year the Bishops moved to office-based positions after two years on marine seismic vessels.

1999

Clair Messing (BScHon) is a Project Geologist with EBA Engineering Consultants in Calgary. She has been con-

ducting hydrogeological and environmental site assessments for various clients in the oil and gas sector.

2000

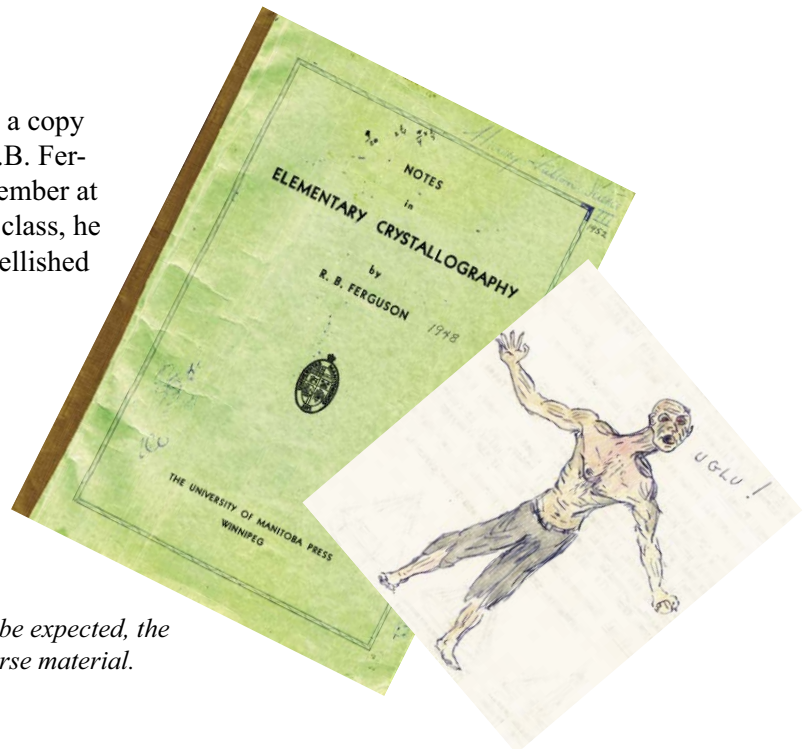
Curtis Moffat (BScHon) is currently employed as an Engineer with Schlumberger

Lisa Wolyneć (BScHon) is completing her M.Sc. thesis in geodynamics at the University of Victoria. She has been collecting GPS data to combine with gravity and leveling data for the purpose of studying crustal deformation across the northern Cascadia Subduction Zone.

2002

Simon Wong (MSc) completed his thesis, supervised by Bob Elias and Graham Young, on "Paleoenvironmental and Paleoecological Reconstruction of the Tyndall Stone, Selkirk Member, Red River Formation (Late Ordovician), Southern Manitoba." Last year, Simon received the Best Student Poster Award for his presentation at the Canadian Paleontology Conference in London, Ontario. He's now working for Suncor in Calgary.

Harvey Fulton (BSc 1955) sent the Department a copy of "Notes in Elementary Crystallography" by R.B. Ferguson. Professor Ferguson was a new faculty member at the time. Not finding a suitable textbook for the class, he produced this forty page book. The book is embellished with Harvey's artwork.



Student artwork never changes. As might be expected, the artwork has little in common with the course material.

Odds and Ends and Obituaries

Corrections and Additions from 2001

Last year the newsletter introduced **Dr. Elena Sokolova**, a new Research Associate with Frank Hawthorne. In the article, her name was misspelled and there were some typographical errors. I have made some of those corrections here. Elena comes to us from Moscow State University and will be working on the crystal structure of minerals including amphiboles from the Kola superdeep drillhole.

Milan Novak, former postdoctoral fellow of Petr Cerny and close associate of Petr and Frank Hawthorne is Chairman of the Department of Mineralogy at the Masaryk University in Brno, Czech Republic. Milan was promoted to full Professor in 2001.

The Alumni Challenge

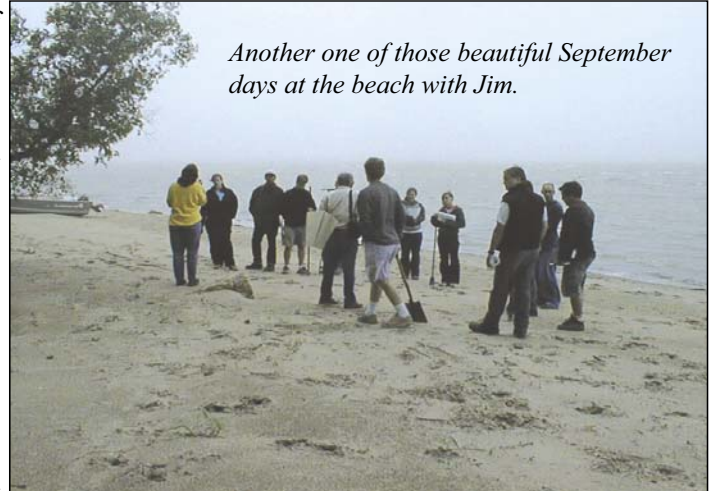
Last year we challenged the class of 72 to identify the people in their field school photograph. Unfortunately nobody was able to rise to the challenge, although Ed Solonyka (BScGE 1971, MSc 1974) supplied the closest answer.

This year we open up the challenge to all alumni. On the front cover there are several images of staff and students, past and present. Identify these people and the prize is yours. We are offering a bottle of scotch to the alumnus who identifies the *most* people in the pictures, but the winner must pick up the prize during the Alumni Homecoming at the University of Manitoba in September 2003. In the event of a tie we will draw for the winner. Once the news gets out about the prize George (Clark), Norm (Halden) and Petr (Cerny) will probably try to stuff the ballot box. To make it fair, only alumni that are not teaching at our University are eligible to enter.

Field Trips

Field trips are an important component of any geoscience program. Under the direction of Jim Teller students spent several days examining the Quaternary geology in southern Manitoba. Students also went on shorter field trips in *Structural Geology* (Whiteshell),

Mineral Deposits (Campbell Mine, Red Lake), *Engineering Geology* (Red River in southern Winnipeg) and *Igneous Petrology* (Falcon Lake Intrusive Complex). The students, in cooperation with Explorit and the local CIM also organized a field trip to the Mayville Property, which contains significant PGE mineralization. There are never enough field activities so hopefully more of these will oc-



Another one of those beautiful September days at the beach with Jim.

cur in the future. In particular, longer field excursions to places such as Yellowstone, the Rockies and California are particularly valuable to a student's education. Thanks to the financial support from alumni we have been able to offer these field trips in the past and hopefully we will be able to continue in the future.

The Grape Vine

Karen Ferriera (nee Olson; MSc 1984), who married **Bill Ferriera** (MSc 1984), is the latest addition to the ranks of our sessional lecturers. She has been teaching introductory geology this fall.

With Karen teaching the introductory courses, **Bill Mandziuk** (BSc 1983, MSc 1989, BEd 1995) has been able to cover Igneous Petrology and Mineral Deposits. **Tim Schweyen** (MSc 1984) has been part of the IT business in the Twin Cities area. **Laurie Slezak** (BScHon 1983, MSc 1989) also moved into the IT



Tim Schweyen was recently looking for alumni in the Twin Cities area; maybe he wants to relive his field school memories.

business and is an owner of Tamarack Computers in Yellowknife. Using MANTES on those 300 baud modems finally paid off. **Michelle Boulet Nicolas** (BScHon 1995, MSc 1997) gave birth to her first child this fall. **Pamela Fulton** (MSc 1999) and **Jason Regula** officially tied the knot this fall. Jason has returned to school on a part-time basis to get his education degree. **John Rayburn** (MSc 1997) will soon be finishing his doctoral studies at the University of New York (Binghamton). **Trish Court** (BScHon 1998) recently published her BSc thesis work with **Barbara Sherriff**. Trish continues to work in the petroleum industry in Calgary.



Another birthday, another party. From left, Liz Ross, Al Turnock, Neil Ball, Anton Chackmouradian and Bill Mandziuk.

If you drop by the Department try to pick a day when we are celebrating birthdays. Not easy, but it will be worth your time. Normally a coffee and donut affair, Bill Last and Anton Chackmouradian put on a real spread last month and the trend is continuing. You are always welcome.

-J. Young

Obituaries

Sam Epstein (BSc Chemistry and Geology 1941; LL.D. (Manitoba); Foreign Fellow R.S.C.), who examined tree rings of 8,000-year-old bristlecone pines in the California Mountains; ice cores from glaciers in Antarctica, Greenland and Alaska; and fossilized marine creatures from the world's oceans to determine climate shifts through the millenniums, passed away in September 2001. Sam is recognized as the father of stable-isotope geochemistry. In the early 1950s, he used the oxygen isotopic composition of carbonate shell material to develop the paleotemperature scale. His early work laid the foundation for light stable-isotope geochemistry and he continued at the forefront of the science by contributing to an incredibly diverse set of problems in the Earth and biological sciences. Sam is survived by his wife Diane, two sons, Reuben and Albert, and three grandchildren.

David Richard James (BSc 1971, MSc 1972) died peacefully at home in Winnipeg on September 24, 2001 after a lengthy illness. David was born in Winnipeg and attended Ravenscourt school. After graduating from the University of Manitoba he had a notable career as a mining analyst. He loved the prairies, the lake and the outdoors and had a passion for collecting antique firearms related to the history of the west and the buffalo hunt.

Brian "Sam" Maxwell (MSc 1982) passed away suddenly on September 1, 2002 in Lagos Nigeria. Sam was born on October 2, 1954 in a small cabin on Miminiska Lake, Ontario. Sam graduated from the University of Manitoba, with a Bachelor of Science degree in 1978. He took a year off to try the music industry with a new band, The Geeks, in Thunder Bay, but returned to the U of M to complete his Masters in Geophysics. Sam started with Texaco in 1982. After working in Calgary, he soon moved around to Brazil, Southeast Asia and Nigeria. He married Orasa Nee in Thailand in 1990. In 1994 they settled in Lagos Nigeria, but regularly returned to Canada to visit friends. Sam leaves behind his wife, Orasa "nee" and children, Ben, Angela and Daniel.



Brian working the cash at WIUGC in 1982.

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E-mail Exchange and Lost Sheep

At the request of alumni we are publishing e-mail addresses. In order to be able to do so, the University requires that we obtain written authorization from the owner of the address. To this end we have included a line on the Alumni Update. Alternatively, you can advise me by e-mail that you agree to have your address included. Thanks.

-J.Young, Ed.

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Lisa Wolyneec	<i>lwolyneec@uvic.ca</i>

Lost Sheep

The newsletter is provided free of charge to all graduates of the Department of Geological Sciences and to graduates from the Geological Engineering program. Please help us reduce mailing costs by keeping your address current. Are any of the following names familiar and if so, could you help us locate them?

Richard Balon, BScHon 1988	William F. Morrison, BSc 1938	James Racicot, BScGE 1989
Robert Carter, BScGE 1997	Mir J. Muhammad, MSc 1973	Abdool Safdar Rayman, BScMaj 1985
P. Chagarlamudi, MSc 1971, PhD 1980	John Murray, BSc 1974	John L. Reid, BSc 1976
Sha-Pak Cheung, MSc 1978	Gerald Noga, BSc 1977	Russell W. Richardson, BSc 1938
James Davidson, BScHon 1977	Lloyd O'Brien, BScMaj 1986	Edward Robins, BScGE 1961
Garnet Dawson, BScMaj 1981	Fortunatus C. Obinna, MSc1974	William J. Russell, BScHon 1983
Peter Dorrins, BScHon 1980	Eduwu Bernard Ojiamien, BScGE 1978	Lisa Sanford, BScHon 1998
James Johnson, BScHon 1969	Walter J. Papirchyk, BScGE 1956	Donald R. Scott, BScHon 1963
Douglas Lavoie, BScHon 1951	Monika A. Pietrowicz, BScGe 1998	Hans G. Schmidt, BScGE 1966, MSc 1967
Brian Lobb, BScGE 1971	Victor K. Prest, BScHon 1935, MSc1936	Rambajan Sieunarine, BSc 1977
Dawn May, BScMaj 1984	Abul Ata Quariashi, MSc 1967	Timothy Warman, MSc1991

Editor's Comments & Acknowledgments

The newsletter is now published on the web in *pdf* format. It can be accessed from our homepage. We welcome contributions to the newsletter from Alumni. We would be interested in publishing your stories about your student days (assuming that you can remember that far back) or other activities that you have been involved in since you graduated.

Thank you to all the contributors this year including the alumni that updated their personal information. A special thanks to the staff for their added contributions, especially

- **Ian Ferguson** for his articles on POLARIS and field school
- **Norm Halden** for his article on research equipment and
- **Al Turnock** and **Bill Brisbin** for their notes on the reunion of 1952 and Al for passing on the letter from Harvey Fulton.

-J.Young

Alumni Update

Could you take a few minutes to update us on your recent activities? Information that is submitted will be used in subsequent newsletters.

Name:

Change of Address (if applicable):

Phone (Home):

(Work):

E-mail:

Will you allow us to release your e-mail address through the newsletter and/or the Geological Sciences web page:

Yes

No

Please sign:

U of M Degree(s) and Year of Convocation:

Other Degree(s) (please note institution and year of convocation):

Present position, company or institution and address:

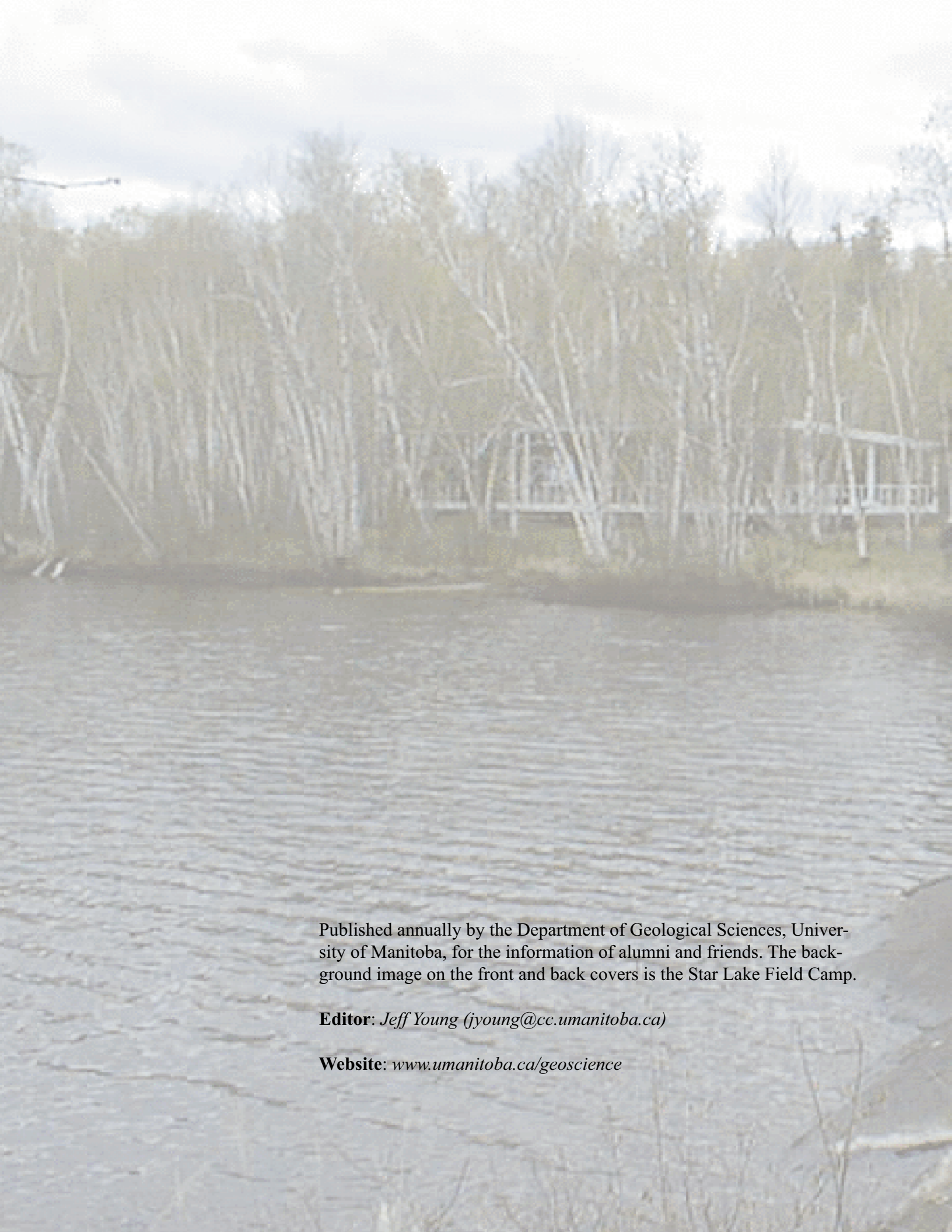
Recently transferred, promoted or retired?

Professional and other activities (current work, research studies, awards, etc.):

News of other alumni (other information for inclusion in the newsletter):

Any suggestions for improving the newsletter?

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Published annually by the Department of Geological Sciences, University of Manitoba, for the information of alumni and friends. The background image on the front and back covers is the Star Lake Field Camp.

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