The Rock Record - December, 2015

Please contribute to the SGS Newsletter

The SGS Newsletter is produced by the SGS executive. Letters, announcements, notices, comments, photos, news and information about SGS members, etc. are always welcome. Call an executive member or write to us at:

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Friday, December 18

SGS Montana Field Trip
Stillwater Complex, Sappington Formation, and Shonkin Sag and Laccolith
Ralf Maxeiner, Precambrian Geologist
Saskatchewan Geological Survey

CONTINUED CHANGE OF VENUE:
The Artful Dodger, 1651 11th Ave

Lunch: 11:45 a.m. (Moroccan Rice Bowls)
Meeting talk: 12:15-1:00 p.m.

For lunch the cost is:
Members: $15.00
Student Members: $5.00
Non-Members: $20.00
For those not having lunch the talk is free

RSVP to Jason Cosford at cosford@jdmollard.com

before 12 noon, Thursday, December 17, if you are going to have lunch.

DETAILS OF NEXT TALK – December 18th

The 2015 SGS Montana Fieldtrip: Stillwater Complex, Sappington Formation, Shonkin Sag and Laccolith – Ralf Maxeiner

ABSTRACT

The following text is pasted from a previous newsletter in which I reported on the field trip. The first field trip day was the most exciting for me, as we visited the 2.7 Ga Stillwater Complex. Our very knowledgeable guide Ennis P. Geraghty, Senior Project Geologist with Stillwater Mining Company, did a great job of taking us up the narrow winding roads, which allowed us access of the entire layered ultramafic-mafic complex. We got to see the three mineralized horizons (JM reef, basal Cu-Ni mineralization and chromitite layers), as well as the famous inch-scale-layering. What awesome geology. We also manage to get the two vans stuck and it took some fancy driving and a bit of pushing to get out of this one. I had brought home some samples but sadly Mike Thomas stole them all, despite the promise of some garter snakes. To finish the day off, Ennis' truck broke down and Kim Kreis' van had to tow him to the next gas station. We were the safety follow vehicle and wondered why Kim kept speeding up, despite the dangerously short (6 feet) tow chain. We later learnt that Mike Thomas, who was in Ennis' truck, told Kim over the walkie-talkie " no faster", which all occupants of Kim's van understandably heard as "go faster". Made it to Bozeman pretty late that day and went to the best restaurant of the trip, the only reason we got a table was that we didn't get to the restaurant until 9:30.

The second day was spent in the Bozeman area, where we not only saw lots of deer but also got treated to the Sappington Formation, a Bakken equivalent. Our guide Michael Hofmann, a Prof from the Department of Geosciences from the University of Montana in Missoula, was also a great field trip leader. He was aided by two of his grad students, both really nice and knowledgeable. My highlight of that day was the boundary between the Carboniferous and Devonian, some crossbedded dolomitic siltstones, some bioturbated sediments and a few crinoids. After that we went on a pretty amazing drive through the Belt Supergroup and some Tertiary intrusives and volcanics on the way to Great Falls. Evening ended with some outstanding pizza, a bunch of beer and great company.

The third and final day was spent in the Great Falls area. Our guides took us through the Shonkin Sag and eponymous alkaline laccolith were Chris J. Croff, a geological engineer, and Mr. Ron Long (a local rancher), both from the Highwood Mountain area. A great day, very hot and very smoky. The Shonkin Sag is a glacial spillway of biblical proportions and the laccolith is famous for the plutonic rocks, shonkinite, that were first described and named in this area; we also saw some phonolite and lamprophyre (minette) dykes.

All in all, a really fun and educational trip! All participants were enthusiastic, the guides were knowledgeable and our fieldtrip organizers and drivers, John Lake, Mike Thomas, Kim Kreis, and Brian Brunskill did a wonderful job putting it all together and keeping us organized.

BIGRAPHY - Ralf Maxeiner

Born and raised in Germany, near the town of Wetzlar (where Leitz microscopes used to be made) Ralf Maxeiner obtained his undergraduate degree at the Justus Liebig Universität in Giessen in 1989. After a short stint at the University of Aachen near the Dutch-German-Belgian border he took a summer job with Uranerz Exploration as a summer student in 1990, undertaking gold exploration in the La Ronge Domain

and a little bit of Uranium exploration in the Athabasca Basin. Subsequent to that, Ralf started an M.Sc. degree at the University of Regina under the combined supervision of Dr. Brian Watters, Dr. Pier Binda and his mentor Dr. Tom Sibbald. His thesis was a field-based study on the geochemistry and economic geology of the Hanson Lake volcanogenic massive sulphide camp. He has worked under contract for the Geological Survey of Canada, the University of Regina and has been a project geologist with the Saskatchewan Geological Survey since 1995. Ralf loves teaching his summer students geological field techniques and has been known to on occasion to test their physical abilities, although that is becoming increasingly more difficult.

DETAILS OF TALK - January 25th

Antarctica's sedimentary archives of past glacial history: Tools for understanding climate change – Julia Wellner

ABSTRACT

During times of past extensive glaciations, the Antarctic ice sheet extended from its current position, reaching across the continental shelf. As the ice sheet retreated to its modern extent, the shrinking ice sheet left behind seawater, rather than ancient ice, leaving behind a sedimentary signature of deglacial history. Marine geophysical survey data, including 3.5 kHz profiles and multibeam swath bathymetry, combined with sediment cores, are used to map the extent of past ice, estimate the speed at which it was flowing, and understand the style of retreat. Radiometric dating gives ages of retreat and allows comparison to other global archives. Past periods of glacial retreat, which tend to be diachronous, are compared to the modern day retreat, which is happening across large areas in a short period of time. Ongoing work is targeting records from times of past high CO_2 conditions, like those predicted in our future.

BIOGRAPHY – Julia Wellner

Assistant Professor, Stratigraphy, Sedimentology, Glacial Processes Stratigraphy
University of Houston
Ph.D., Rice University, 2001
M.S., University of Alabama, 1995
A.B., Bryn Mawr College, 1993
Research Interests:

- Antarctic Ice Sheet history since the Eocene
- Geomorphic signatures of ice sheet retreat across the continental shelf
- Holocene climate of the Antarctic
- Sedimentation patterns in fjords and relation to oceanographic controls
- Pliocene-Pleistocene sequence stratigraphy from 3D seismic data

President's Blog

Not too much of a blog this month, as I was too busy preparing for Open House and the talk announced in this newsletter. But here are a few highlights of the last six weeks.

The 2016 Geological Wall Calendar was printed and we started distributing it in early November. Sales have been slow, something I had been dreading, but I suppose it is a sign of the times. We had printed 1000 calendars and as it looks right now, we probably have about 400 left. Sales to our members have been kind of pathetic, so if you haven't already done so, would you please buy a few and give them away as gifts? Remember one of my first little write-ups of the year? You know the one where I babbled on about social engagement and such. I am obviously not a very good motivator. But it's not too late. Come to the talk on Friday next week and I will have 80 of them for sale…let's see if we can get you to buy them all.

The Open House in Saskatoon, of which the Society is a co-host, went over very well and despite a very depressed minerals sector we had near-record attendance. Great technical presentations and two excellent short courses. The public lecture, which is one of two that the Society puts on every year, was very well received. I would estimate that there were between 200 and 300 people in attendance, including many kids. Dr. Grant Zazula, paleontologist with the Yukon Survey, gave a fascinating and very entertaining presentation on Ice Age mammals. He even had brought 300 lbs worth of speciments, tusks, skulls, bones. Great show and Grant was very engaged and forthcoming. Thanks to our sponsors of the Public Lecture, who support this event every year: APEGS, the Saskatchewan Mining Association and the Saskatchewan Geological Survey.

Please scroll down to see the official 'Call for Nominations' for the next SGS Executive. We like to have some turn-over every year, so please consider putting yourself forward or nominating some other 'willing' candidate. We are in the process of planning the AGM, which as you of course know from our Geological Wall Calendar is scheduled for February 6th. Please plan to attend. I think we will have a lot of fun. Good food, good company, a great talk of course, you can throw a bun at the incoming president, that sort of thing.

NEWS AND EVENTS

Call for Nominations

The end of the SGS fiscal year is fast approaching and it is time now to start thinking about nominations or volunteers for the 2016 executive. Positions that need to be filled at the Annual General Meeting on February 7, 2015 are President, Vice-President, Business Manager, Program Chairperson, and Assistant Program Chairperson. Both the Treasurer and the Secretary have finished the first year of their two-year stint. I think the Past-President position is also taken. Nominations should be made by email to the President of the Society and head of the nominating committee, Ralf Maxeiner, by 5 pm January 15, 2016. Some of the current executive is willing to stay on in various positions, but the Society will remain a more vibrant group with some turn-over each year. **So step up please.**

Student Poster Contest

By Murray Rogers

Thank you for participating in the Saskatchewan Geological Open House student poster contest this year. We hope that students thought it was a worthwhile experience. The contest is meant to be a learning opportunity for both the students and the judges. The judges Dr. Joyce McBeth (U. of S.), Dr. Jeanette Roelofsen (U. of R.), Mr. Lynn Kelley (P.Geo.), and myself were impressed by the uniformly high quality of the posters and the interviews. As there were 13 participants in the Graduate category a 1st and a 2nd place were awarded. Dillon Johnstone took 1st place and Zenghua Li placed 2nd. In the Undergraduate Category with 6 participants only a 1st place was awarded and that went to Brodie Stroh.

This contest is sponsored by the Saskatchewan Geological Society, who is also a co-host of the Open House, together with the Saskatchewan Geological Survey (part of the Ministry of the Economy of the provincial government). All student participants of the poster contest will receive a free student membership for 2016, and if the membership for 2016 has already been paid it will be extended for 2017. A list of all contestants is given below:

Graduate Poster Contestants

Christine Shiels (U. of Saskatchewan)	Determining sedimentary provenance of the Paleoproterozoic Murmac Bay group, northern Saskatchewan, Canada, by isotopic analysis of detrital zircon
David Gebhardt (U. of Saskatchewan)	Evaluating the formation of porosity instabilities in partial melt systems as a mechanism for melt focusing at mid-ocean ridge
Devon Stuebing (U. of Regina)	Geochemistry of the supracrustal assemblages of the Pine Lake greenstone belt, Seabee mine area: preliminary results and lithostratigraphic implications
Dillon Johnstone (U. of Regina)	Structural controls of uranium mineralization in the Kiggavik East Zone, Central Zone, and Main Zone deposits and their potential extensions to the northeast
Jacklynn Kennicott (U. of Regina)	Field and petrographic study of albitization associated with uranium mineralization in the Beaverlodge uranium district of northern Saskatchewan
Jennifer Doxey (U. of Saskatchewan)	Those “other” rocks: a petrographers perspective on concrete and cementitious materials
Kaitlyn Heaton (U. of Saskatchewan)	Biogeochemical investigation of centrifuged fine tailings deposits at an oil sand mine in northern Alberta, Canada
Marissa Valentino (Queen’s U.)	Analysis of fractures in sandstones of the Athabasca Basin as records of primary and secondary element dispersion
Meagan Gilbert (U. of Saskatchewan)	Stratigraphy and sedimentology of the Belly River Group (Campanian) in the Cypress Hills region, southwestern Saskatchewan, Canada

Morteza Rabiei (U. of Regina)	Petrographic and radiogenic and stable isotope studies of the MAW Zone REE deposit: implications for potential relationship with unconformity-related uranium mineralization in southeastern Athabasca basin
Richard Boulding (U. of Regina)	Predicting Saskatchewan's fossil site potential and human-fossil interaction using geographic information systems (GIS) and suitability analysis
William Thomas Ogilvie (Laurentian U.)	Brittle deformation and associated hydrothermal alteration and mineralization in the southern Tantato Domain
Zenghua Li (U. of Regina)	Numerical modelling of structural controls on fluid flow during compressional basement fault reactivation in the Athabasca Basin, Canada

Undergraduate Poster Contestants

Brendon Samson (U. of Saskatchewan)	Geology, mineralogy and geochemistry of the Axis Lake East Zone deposit, Tantato Domain, southern Rae Province, northern Saskatchewan
Brodie Stroh (U. of Regina)	Field, petrographic and fluid inclusion studies of gold mineralization in the Tantato Domain, northern Saskatchewan
Jordan Deane (U. of Regina)	Structural connections of Santoy 6 and 7 across the Santoy shear
Katie MacKenzie (U. of Regina)	A lacustrine episode in the Cretaceous foreland of Western Canada
Nathan Reimer & Jeff Bryce (U. of Saskatchewan)	Gravity & resistivity of the Carmel linear formation
Ryan Bachynski (U. of Regina)	Structural and petrographic study of Brabant Lake VMS system

Other Upcoming Talks

And here is what is in the works for the months to come, submitted by Jason Cosford and Maria Velez. All are still quite tentative, as you can see. It has been difficult this year to firm up the AAPG talks.

- Luc Chabanole: Bakken - Jan 21st?
- Dr. Joyce McBeth, U of Sask: Environmental microbiology of mine sites - February 15-19
- William McKinnon: Public lecture on Pluto - Weeks of April 11 or 18
- Mike Demuth – U of Sask: Glaciers - Delayed until autumn

Waiting for Details:

- Dr Murray Gingras (2015-2016 W.W. Hutchison Lecturer).
- Second AAPG lecturer (details in the next few weeks).
- Colin Card (Uranium exploration).
- Kate MacLachlan (Ethics in Geoscience).
- Emily Bamforth (Royal Sask Museum) Life Before Impact: Exploring Biodiversity Trends Immediately Prior to the End

Suggestions for other potential speakers are always welcome. Please contact either Jason Cosford or Maria Velez with your ideas.

Royal Saskatchewan Museum looking for Provincial Fossil

Please visit the museum to cast your vote. Learn more details by visiting their website:
[Saskatchewan Provincial Fossil Video Contest]

OUR 2015 CORPORATE MEMBERS

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