DETAILS OF Dec. 1st TALK – Jeremy Richards (University of Alberta)
SEG Thayer Lindsley Lecturer; Artful Dodger @ 11:45 am

ABSTRACT – "Tectonomagmatic controls on arc metallogeny"

The fundamental control of plate tectonic processes on ore formation was realized almost as soon as the plate tectonic model was established in the late 1960s-early 1970s. The formation of seafloor massive sulfide deposits at oceanic spreading centers, various types of sediment-hosted deposits in continental rifts, porphyry and epithermal deposits in volcanic arcs above subduction zones, and granite-related ore deposits in continental collision settings were quickly established. More recently, the formation of porphyry, epithermal, and some types of IOCG deposits has been recognized to occur by remobilization of lithosphere previously affected by prior episodes of subduction (or other types of mantle) metasomatism.

At root, these ore deposit types reflect the focused convection of heat and volatiles from the mantle towards the surface. Plate boundaries provide high-permeability pathways for this heat and mass flux, which is transmitted to the surface either directly as magmas or fluids (or both). At convergent margins, the flux begins with dehydration (and in some cases melting) of subducting oceanic lithosphere, which releases water, S, Cl, and other fluid-soluble components into the mantle wedge, triggering partial melting. Ascent of these partial melts into, and interaction with, the upper plate lithosphere generates hydrous intermediate-composition magmas, which rise into the upper crust where volatiles are exsolved due to decompression and crystallization. These hydrothermal fluids may go on to form porphyry and epithermal deposits if their flow is focused and sustained by a large magma supply.

Bio -

Jeremy first became interested in economic geology at an early age while on walks across the Yorkshire Pennines with his grandmother, where the dumps from numerous small historical lead mines yielded fine samples of galena and other minerals for his nascent rock collection. After studying geology at the University of Cambridge (1980–1983), he travelled to Canada to complete his MSc on Keweenawan Cu deposits at the University of Toronto with Ed Spooner (1986), and then to Australia for his PhD on the Porgera gold deposit with Ian Campbell at the Australian National University (1990). Following a post-doctoral fellowship at the University of Saskatchewan in Canada with Rob Kerrich, he returned to the UK to take up a lectureship at the University of Leicester. In 1997, he returned once again to Canada for a position at the University of Alberta, where he resides today. His current research interests focus on regional tectonomagmatic controls on ore-formation, and in particular subduction- and collision-related systems. This work has taken him to North and South America, the Middle East, Asia, and the southwest Pacific. A second research interest is in the role of mining in sustainable development, a field in which he has graduated one PhD and three Master's students. Jeremy has been a member of SEG since 1983, and a Fellow since 1985; he served on SEG Council and several committees between 2003–2006, and has been an Associate Editor for Economic Geology from 1997–2001, and 2012 to the present. He co-edited two volumes in the Reviews in Economic Geology Series (volumes 10 and 14), and the Economic Geology 100th Anniversary Volume. He is currently chief editor of an SEG Special Publication, which will be based on talks given at the SEG meeting in Çeşme, Turkey, in September 2016.

President's Message

Believe it or not, 2016 is quickly drawing to a close. That can only mean one thing….the 2017 Saskatchewan Geology Calendar is now available! Our calendar committee (Ralf Maxeiner, Jason Cosford, Ken Ashton, Janis Dale, Monica Cliveti, Michelle Hanson, Kevin Ansdell and Tim Prokopiuk) has been working hard to bring you this edition – the second annual - and it's another beauty. The photos are spectacular (January is my personal favourite) and the committee has done a great job again this year in revealing the geological wonder of the province and, in doing so, promoting the geosciences in Saskatchewan.

Please show your support of this initiative and the hard work of the committee by picking up a copy. I was somewhat surprised last year with the first edition to find that several of my non-geoscientist friends and family members wanted a copy of their own after seeing mine. I think this speaks to the general interest of people in the geosciences and their desire to learn more about the natural features that they see around them on a regular basis. They make a great stocking stuffer and the great thing is that they're very reasonably priced and get even cheaper the more you buy! Information on the calendar and how to obtain your copy(ies) is provided in the "Other News and Events" section later in this newsletter. Also see the "Geology Calendar" portion of our website at http://sgshome.ca/outreach/geology-calendar for more information.

Apart from the calendar, the Society has a lot going this time of year. We have several upcoming high quality lunch speakers this month, including Cees van Staal (GSC Vancouver; Nov. 13th), Dave Thomas (Cameco; Nov. 23rd), and Jeremy Richards (SEG Thayer Lindsley Lecturer; Dec. 1st). Information on the talks, including time and location, is provided in the first section of this newsletter. We are extremely fortunate to have all of these speakers come to Regina, so please make it a priority to come out and support these events. As well, the 47th annual Saskatchewan Geological Open House is taking place from Nov. 28th-30th, 2017 at the Delta Bessborough Hotel in Saskatoon. This Open House is the preeminent mineral exploration and mining conference in Saskatchewan and the Society plays a large role in making this such a successful event year after year. One of our priorities with the conference is the annual Open House Public Lecture. This year we are pleased to have Dr. William Hay, Professor Emeritus at University of Colorado, coming to deliver the lecture. Dr. Hay is a well-known marine geologist, micropaleontologist, paleoceanographer, and paleoclimatologist, and will be presenting a talk entitled "Rethinking Cretaceous Climate". The lecture, co-sponsored by APEGS and the Saskatchewan Mining Association, will take place at 7:00pm on Tuesday, Nov. 29th, so please come out and enjoy it if you will be in Saskatoon that evening.

Ryan Morelli