

The Coal Geologist

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Meet the New Management



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Message from the Division Chair

The Coal Geology Division is the second oldest Divisions of GSA, founded 53 years ago. In recent years our membership has fluctuated, but this past year we saw a modest gain thanks to the efforts of Past Chair Chris Carroll. I hope to continue this trend, drawing from all areas of coal science and related fields. These alliances are indicated by the breadth of our recent topical sessions, including those proposed for Denver, 2007 (see p. 2). Geologic interests such as sedimentology and micropaleontology are natural CGD associates. More recently, those interested in air and water quality issues, energy policy, and the future of energy use, have found their way to our sessions in increasing numbers. I encourage you to extend a CGD membership hand to colleagues working in coal science, however you define it.

For their contributions to the Division, I thank outgoing Chair Chris Carroll, Past Chair Gretchen Hoffman, and long-time Secretary/Treasurer Thomas Demchuk. Please join me in welcoming new board members Glenn Stracher, Ron Affolter, and Anupma Prakash. I look forward to working with them this year, as well as with continuing Member-at-Large Jingle Ruppert. Special thanks to Anupma Prakash for updating our newsletter.

With the return of the GSA Annual Meeting to Denver, October 28 to 31, 2007, this promises to be an exciting year, with a full slate of field trips and topical sessions proposed. In addition, the Denver meeting is linked to the kickoff of the multi-year International Year of Planet Earth <http://www.esfs.org/> whose theme is Earth Sciences for Society.



Report: 2006 Annual Meeting



Gilbert H. Cady Award: This prestigious award was given to Dr. James C. Hower in recognition of his significant and lasting contributions to the field of coal geology through research, service, and teaching. With expertise in coal petrography and his current position as Editor-in-Chief of the *International Journal of Coal Geology*, Jim is regarded as one of coal geology's most forceful advocates. A copy of the complete citation for Dr. Hower is available on the Division website at <http://www.uky.edu/KGS/coal/GSA/>

Antoinette L. Medlin Award: Two recipients were selected for the 2006 Medlin Award, Jennifer O'Keefe and Sarah Mardon. Jennifer's project is entitled "Paleogene mirelands of the Upper Mississippi embayment, Kentucky and extreme Northern Tennessee." Sarah's project involves determination of coalbed methane and CO₂ adsorption potential of Illinois Basin coals in western Kentucky. Both recipients are students at the University of Kentucky.

Field Award: The recipient of the 2006 Field Award is Philip Morath of Penn State University. The award is given to support field-based student research. Phil's project is entitled "A transient heating event as the cause of Late Cretaceous methane seeps, Western Interior Basin, United States."

For more information on GSA 2006 CGD news read our archived newsletters (pdf versions) at: <http://www.uky.edu/KGS/coal/GSA/newsletter.htm>



GSA 2007: Field Trips & More

Stratigraphy of Coal Beds: Multiday trip including

- Sequence stratigraphy of Book Cliffs, eastern Utah and western Colorado by Simon Pattison.
- Stratal architecture and sequence stratigraphy of the Mt Garfield Formation, Grand Junction area, Colorado by Diane Kamola.
- Stratigraphy, sedimentology of the Green River Formation, Piceance Basin by Yuval Bartov.
- Coal geology in the Mesaverde Group along the eastern edge of the Greater Green River Basin in northwestern Colorado and south central Wyoming by Nick Jones.

Mining of Coal and Extraction of Coal Bed

Methane: A trip lead by Romey Flores of USGS includes tours of active mines and CBM properties. The trip takes you to a cornucopia of coal and coal bed gas in the Powder River Basin: from mining and utilization to methane and methanogens.

Mine Challenges: Revisiting the South Canyon Number 1 coal mine fire with Glenn Stracher and his colleagues. This trip will examine surface evidence of active underground coal fires.

A Wild New Idea: Laramide paleoseismites of the Bighorn Basin; This trip lead by K.G. Stewart to the Red Lodge area will examine the history of development of the coal-bearing strata along the formerly seismically active Beartooth Front.

Topical Sessions:

1. Materials flow in coal utilization (19360)
 2. Microbial origin of hydrocarbon gasses in coal beds and sedimentary basins (19573)
 3. Modern and ancient fire systems (19579)
- Stay tuned to <http://www.geosociety.org> for meeting updates.

Other highlights: "Coal Geology: 2007 and Beyond," theme session at the GSA Southeast Section meeting in Savannah, GA, March 29-30. Thanks to Glenn Stracher and Karen McCurdy for arranging this session.



Featured article: Landslide in Trapper Mine, Colorado

On October 8, 2006, the Trapper Mining Company reported a large earthflow-type landslide at their surface coal mine in Moffat County, Colorado. Nearly 9.4 centimeters (3.7 inches) of rain over the previous month, including a 5.9 cm (2.33 inches) rain event in 24 hours on Sept 16th, triggered a massive landslide within the mine's active G dip-line and strike-line pit areas.

Landslide movement was first noticed by the dragline operator working in the G dip-line pit when the highwall across from where he was located started to move intact downhill. Soon the coal (K bed) in the pit floor heaved upward and dozer operators working in the pit moved safely away. The floor heaved and buckled upward about 12.9 m (40 ft) vertically as a shear ridge on the edge of a gigantic landslide (Figure 1). The highwall moved approximately 200 ft down dip relative to the dragline. Overall, the landslide is nearly one section in area, estimated at 106 hectares (264 acres).



Figure 1. Dragline in the uplifted G dip-line pit.

The Trapper Mine extracts coal from the Upper Coal Group of the Williams Fork Formation (Upper Cretaceous). These beds dip north (8-11 degrees) and are mined on a north-sloping hillside, dipping steeper up the hill to the south. It is postulated at this time that a weak claystone layer above the

L coal bed may have failed due to increased saturation. This layer is approximately 33 m (100 ft) deep within the landslide complex. Most of the thick mineable coals remain beneath the 19.9 million m³ (26 million yds³) of landslide debris.

The landslide toe is situated across the bottom of a large basin where coal mining in the strike-line pit occurred in 2005. In August 2005 this pit became unstable after mining just a few months and a high-wall failure resulted in closing the pit. This instability on the uphill side of the pit was graded over and the pit was backfilled. The landslide toe of the October 2006 event pushed up those spoils from the old strike-line pit into a 33 m (100-ft) high landslide toe (Figure 2).



Figure 2. Upturned sign on a haul road uplifted by the landslide toe.

No personnel or equipment were lost in the landslide which moved over a four hour period. Graben features formed where the upper part of the landslide separated from the headwall. En echelon downdropped blocks occur with regularity at various locations throughout a complex series of head scarps. This event shut down about one-third of Trapper's mining operation and will limit future reserves on the east side of their permit.

Chris Carroll, Ph.D.
Colorado Geological Survey



Thanking RockWorks Inc.



The Coal Geology Division would like to thank Rockware Incorporated, the sponsors for the 2006 GSA Coal Division Meeting.



A.L. Medlin Scholarship

GSA's Coal Geology Division announces the availability of the Antoinette Lierman Medlin Scholarship in Coal Geology for 2007–2008. The scholarship provides full-time students who are involved in research in coal geology with financial support for their project for one year. The application [deadline has been extended to February 28, 2007](#). For more information visit the Division web site or send an email to Dr. Glenn Stracher (stracher@ega.edu).



Wish to Sponsor?

The activities of the Coal Geology Division are possible due to the generous contributions from our members and sponsors, and we remain indebted for this support. Should you wish to sponsor any of our activities, please send an email to Dr. Anupma Prakash (prakash@gi.alaska.edu).