

Sunday – 2/10/13

5:00-7:30 pm **Alumni Center Banquet Room**
Registration / Pre-Conclave Welcome Reception

Monday: Design of Geothermal Systems – 2/11/13

7:00 am **Student Center Browsing Lounge**
Registration

7:00 am **Cardinal Hall**
Breakfast

8:00 am **Cardinal Hall**
Welcome: On Being Stewards of the Future
President Jo Ann Gora

8:30 am **Cardinal Hall**
Design: The Ball State Geothermal Story

- Accumulating individual building load profiles
- Determining total heating and cooling demand
- Segmenting the campus districts
- Profiling conductivity of land strata
- Running models of differing bore-hole depths and bore-hole spacings
- Patterning bore-hole groupings into service pods with headers
- Laying out primary and secondary distribution loops
- Laying out bore-hole pods and header hierarchies
- Determining mechanical equipment switch-outs needed at each campus building

9:30 am **Ballroom**
Break

10:00 am **Breakout Sessions:**

Forum Room
PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS

Pineshelf Room
PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS

Room 301
PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS

11:30 am **Cardinal Hall**
Lunch
Look Before You Leap: The Importance of Knowing Local Geology
Scott Bair, Speaker

1:00 pm **Breakout Sessions:**

Forum Room

Going Underground on Campus: Tapping the Earth for Clean, Efficient Heating and Cooling: An NWF Panel

Julian Keniry, Stan Cross, and David J. Eagan, National Wildlife Federation

Participants will be introduced to this guide, which features examples from more than 160 campuses in 42 states, examining ground-source heat pumps, direct geothermal, aquifer and lake-based, geothermal electricity, and earth-sheltered buildings.

This guide finds that energy savings over conventional heating and cooling systems on campus range from 50-75% for ground-source heat pumps, 30-40% for earth-sheltered buildings, and even more for direct use geothermal (which can also cover electricity). Going Underground on Campus is produced by National Wildlife Federation in partnership with the Geothermal Energy Association, The Geothermal Exchange Organization (GEO), and APPA: Leadership in Educational Facilities.

The workshop will involve audience explorations of how the geothermal technologies might be scaled to fit home campus situations; including design, installation and operation as reflected in the conclave themes.

Pineshelf Room

PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS

Room 301

PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS

2:30 pm **Ballroom**
Coffee Break

3:00 pm **Campus Tour**
The Ball State Geothermal System

4:30 pm **Dinner and Evening On Your Own**

Tuesday: Installation of Geothermal Systems – 2/12/13

- 7:00 am** **Student Center Cardinal Hall**
Breakfast
- 8:00 am** **Cardinal Hall**
Greetings: The New Use of a Bricks and Mortar Campus
Provost Terry King
- 8:30 am** **Cardinal Hall**
Installation: The Ball State Geothermal Story
- Issuing bids
 - Managing multiple drilling contractors
 - Determining bore-hole drilling sequences
 - Managing temporary on-campus relocations of parking lots and athletic fields
 - Real time quality assurance techniques
 - Sign-offs and certifications
 - Determining pressure tightness of system
 - Integrating installation with other campus improvements
- 9:30 am** **Ballroom**
Break
- 10:00 am** **Breakout Sessions:**
- Forum Room**
 PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS
- Pineshelf Room**
 PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS
- Room 301**
 PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS
- 11:30 am** **Cardinal Hall**
Lunch,
Shawn Naylor, speaker
Characterizing Thermal Properties of Glacial Sediments to Facilitate the Optimization of Ground-Source Heat Pumps: The Indiana Shallow Geothermal Monitoring Network

1:00 pm **Breakout Sessions:**

Forum Room

A Panel Discussion on Geothermal Systems

Charles Remund, Geo Pro, Inc. Elkton, SD

Jim Lowe, BSU Facilities

Mike Luster, MEP Associates, LLC Eay Claire, WI

Adam McLane, The Nature Conservancy, Indianapolis, IN

Ted Clutter, The Geothermal Exchange Organization (GEO)

Pineshelf Room

PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS

Room 301

PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS

2:30 pm **Ballroom**

Coffee Break

3:00 pm **Special Video Presentation**

“Switch” – Discover the Future of Energy

5:30 pm **Cardinal Hall**

Dinner and Keynote

The Geothermal Heat Pump Industry in the United States

Douglas Dougherty, The Geothermal Exchange Organization (GEO)

Wednesday: *Operation* of Geothermal Systems – 2/13/13

- 7:00 am** **Student Center Cardinal Hall**
Breakfast
- 8:00 am** **Cardinal Hall**
Reflections: The Role of Geothermal in a Global Energy Security Context
Senator Richard G. Lugar (*Invited*)
- 8:30 am** **Cardinal Hall**
Operations: The Ball State Geothermal Story
- Commissioning the system in segments and as a whole
 - Flushing piping distribution
 - Ramping up heat pump chillers
 - Monitoring terminal performance
 - Determining input from bore-hole fields and heat pump chiller
 - Determining responsibilities for energy station management
 - Cross-checking building performance with system delivery
- 9:30 am** **Ballroom**
Break
- 10:00 am** **Breakout Sessions:**
- Forum Room**
PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS
- Pineshelf Room**
PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS
- Room 301**
PAPERS/PRESENTATIONS, PANELS AND/OR WORKSHOPS
- 11:30 am** **Grab Lunch ‘n Go**
Conference Ends