University of Kentucky Department of Mining Engineering

Rick Honaker
Chair and Professor

Department of Mining Engineering
University of Kentucky

Kentucky Professional Engineers in Mining
Lexington, Kentucky

August 17, 2012
Dr. Kot Unrug Retirement

- Initially hired at UK on November 21, 1978.
- 33+ years of service at the University of Kentucky.
- Retirement party on April 14 had around 150 attendees who represented 22 graduating classes.
- His initial discussions with Catesby Clay resulted in the formation of the UK Mining Engineering Foundation.
## Number & Quality of Freshmen

<table>
<thead>
<tr>
<th>Semester</th>
<th>Number of Incoming Freshmen</th>
<th>Average High School GPA</th>
<th>Average ACT Composite</th>
<th>Average ACT Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2006</td>
<td>39</td>
<td>NA</td>
<td>25.9</td>
<td>27.4</td>
</tr>
<tr>
<td>Fall 2007</td>
<td>37</td>
<td>NA</td>
<td>26.4</td>
<td>27.5</td>
</tr>
<tr>
<td>Fall 2008</td>
<td>39</td>
<td>NA</td>
<td>25.9</td>
<td>27.4</td>
</tr>
<tr>
<td>Fall 2009</td>
<td>66</td>
<td>3.73</td>
<td>26.8</td>
<td>27.6</td>
</tr>
<tr>
<td>Fall 2010</td>
<td>92</td>
<td>3.61</td>
<td>27.7</td>
<td>29.4</td>
</tr>
<tr>
<td>Fall 2011</td>
<td>59</td>
<td>3.85</td>
<td>28.0</td>
<td>28.3</td>
</tr>
<tr>
<td>Fall 2012</td>
<td>57</td>
<td>3.74</td>
<td>27.8</td>
<td>28.0</td>
</tr>
</tbody>
</table>
Scholarships

Total Scholarship Awards ($)

- 2005-06: $148,000
- 2006-07: $260,000
- 2007-08: $358,000
- 2008-09: $395,567
- 2009-10: $506,408
- 2010-11: $653,924
- 2011-12: $627,950

$75,000 Friends of Coal Scholarship donation!

$9,000 PEM scholarship donation in 2011-12! Thank You!
Friends of Coal/UK Tailgate
2011-12 Fiscal Year

- Total Research Funding = $1,954,875
- Total Collaborative = $1,989,875

- Major projects initiated.
- Completion of the Automation and Control Laboratory.
<table>
<thead>
<tr>
<th>Principal Investigators</th>
<th>Project Title</th>
<th>Funding Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honaker/Taulbee</td>
<td>Development of Advanced Systems for Preprocessing and Characterizing Coal-Biomass Mixtures as Next-Generation Fuels and Feedstocks</td>
<td>U.S. Department of Energy/Virginia Tech</td>
</tr>
<tr>
<td>Honaker/Lusk</td>
<td>Appalachian Research Initiative for Environmental Sciences (ARIES)</td>
<td>Virginia Tech</td>
</tr>
<tr>
<td>Perry/Lusk</td>
<td>Development of 15 PSI Safe Haven Polycarbonate Walls for Underground Coal Mines</td>
<td>KY Energy Environment Cabinet</td>
</tr>
<tr>
<td>Tao</td>
<td>Innovative RTS Tech for Efficient Separation of Dolomite from Phosphate</td>
<td>Florida Institute for Phosphate Res</td>
</tr>
<tr>
<td>Wala/Honaker</td>
<td>Advancing Critical Health &amp; Safety Aspects of Mine Ventilation Through Technical Development and Training</td>
<td>CDC/NIOSH</td>
</tr>
</tbody>
</table>
Mine Health & Safety Training Program

Principal Investigators: 
Rick Q. Honaker & G.T. Lineberry

Funding Agency: 
National Institute for Occupational Health and Safety (NIOSH)

Funding: 
$1.2 million (2 years)
$232,000 (Mining)
UK Experimental Mine Feasibility Study

- Principal Investigators: Braden Lusk & Rick Honaker

- Goal: Design and feasibility study for an underground laboratory dedicated to developing, testing, and improving all aspects of mining technologies.

- Funding Agency: Kentucky Department for Energy Development and Independence

- Funding: $350,000
An In-Depth Respirable-Dust Study for Kentucky Coal Mines

Thomas Novak, Ph.D., P.E.
Joseph Sottile, Ph.D.

Funded by:
KY Dept of Energy Development and Independence
$200,000

Cost matching by:
Alliance Coal, LLC
$200,000

July 1, 2011 – December 31, 2012
Objectives

- The objective of the project is to conduct an in-depth study of respirable dust, including detailed statistical analyses to determine the impact of the proposed respirable-dust rule on the Kentucky coal industry.
- The University of Kentucky has partnered with Alliance Coal, LLC to conduct this study.
- Alliance Coal has committed to provide $200,000 as a 100% match to obtain up to 1000 respirable-dust samples from several coal mines (apx. 600 samples collected to date).
Some Elements of the Work Plan

- Side-by-side comparisons of the CMDPSU and CPDM will be conducted to determine if there is strong, moderate, weak, or no correlation between the two devices when used in actual mining conditions (instead of a controlled environment).
Some Elements of the Work Plan

- Characterization of dust levels measured by the CPDM for different mechanized mining units (MMUs), different operators, and different mines.

- Impact of using the CPDM as proposed (i.e., single-shift compliance measurements).

Coal Mine Dust Personal Sampler Unit (CMDPSU)

Continuous Personal Dust Monitor (CPDM)