

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



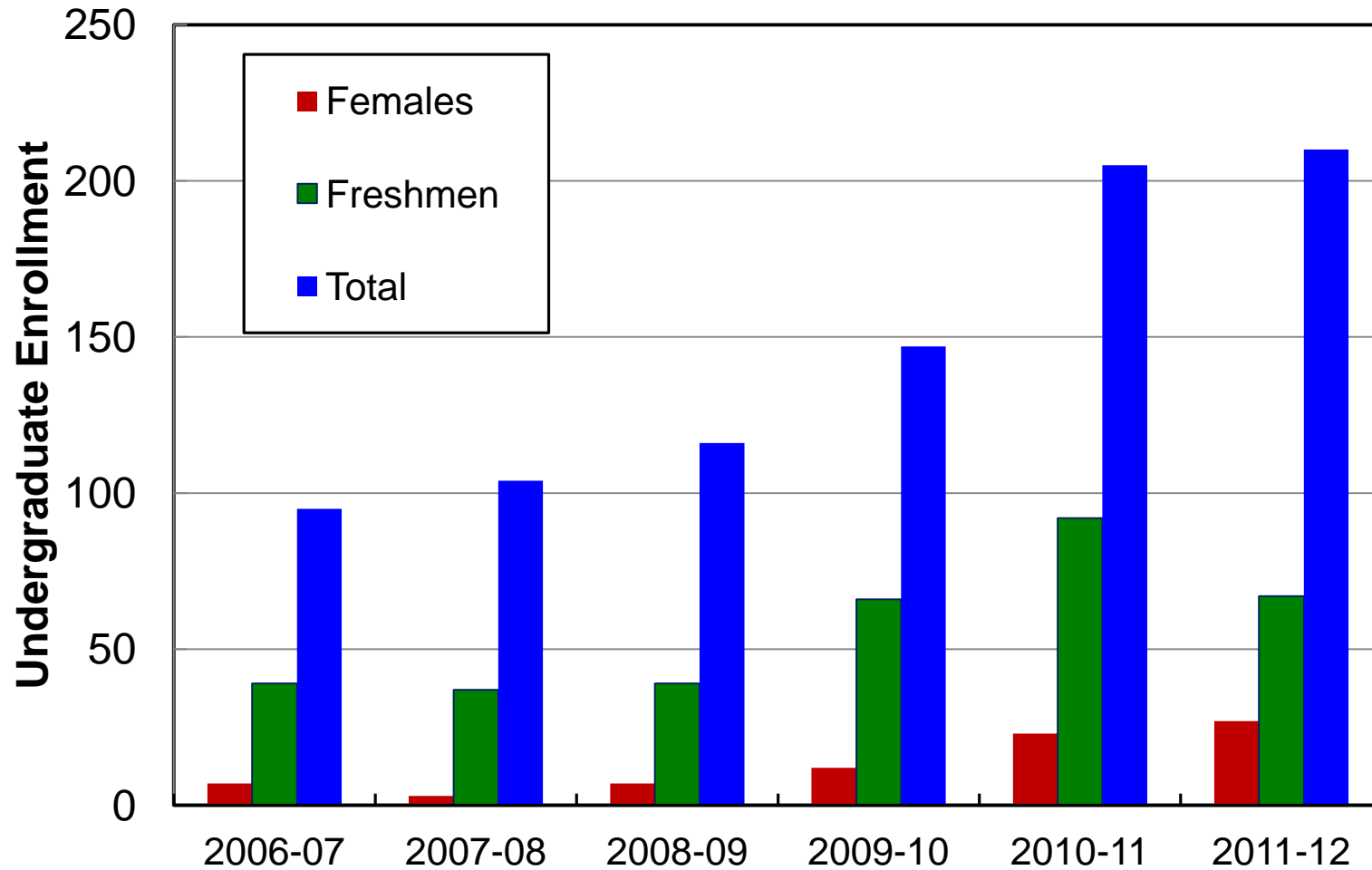
Dr. Kot Unrug Retirement

- ❑ 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.



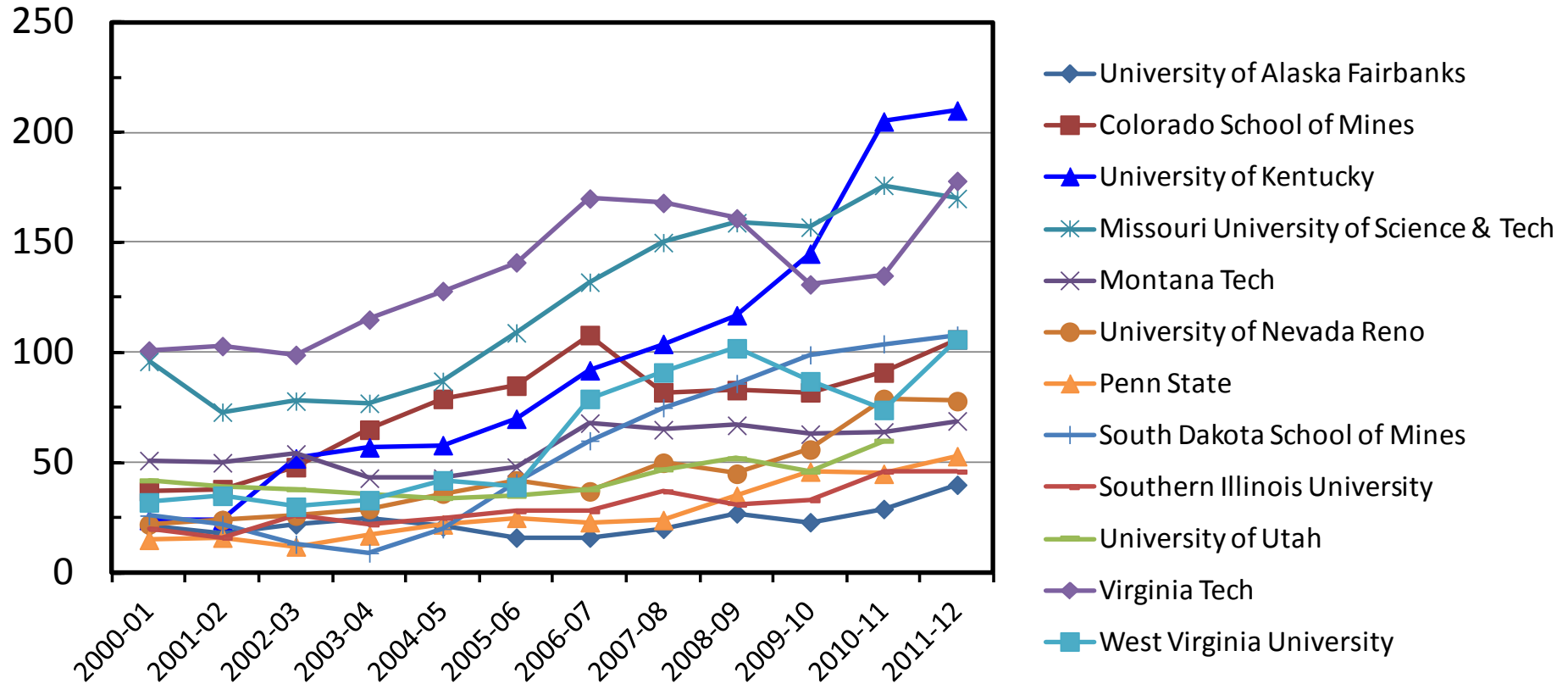


Undergraduate Enrollment Trend





U.S. Undergraduate Enrollment



	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
U.S.	458	498	528	595	679	851	913	965	968	1108	1164
U.K.	24	52	57	58	70	92	104	117	145	205	210

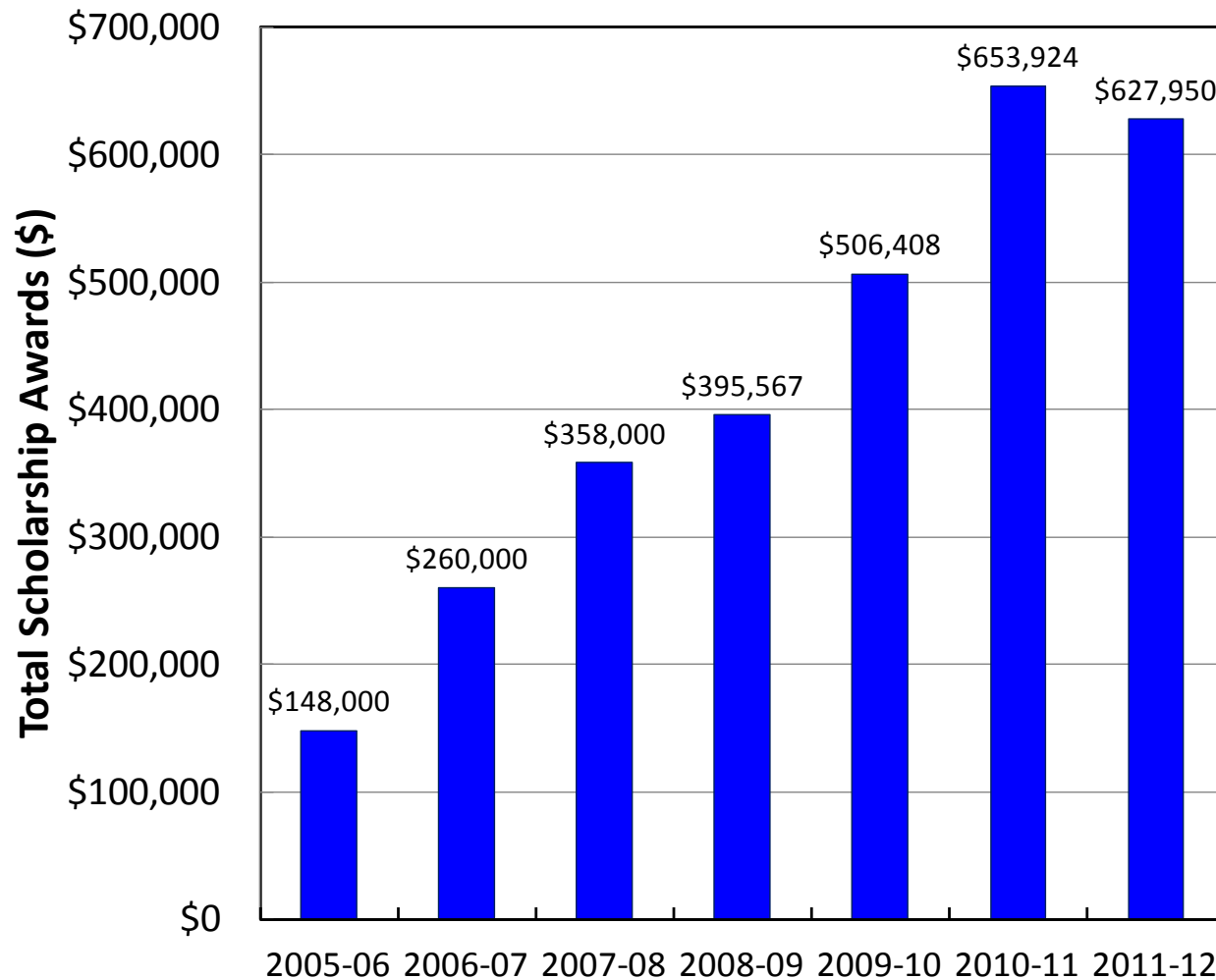


Number & Quality of Freshmen

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



Scholarships

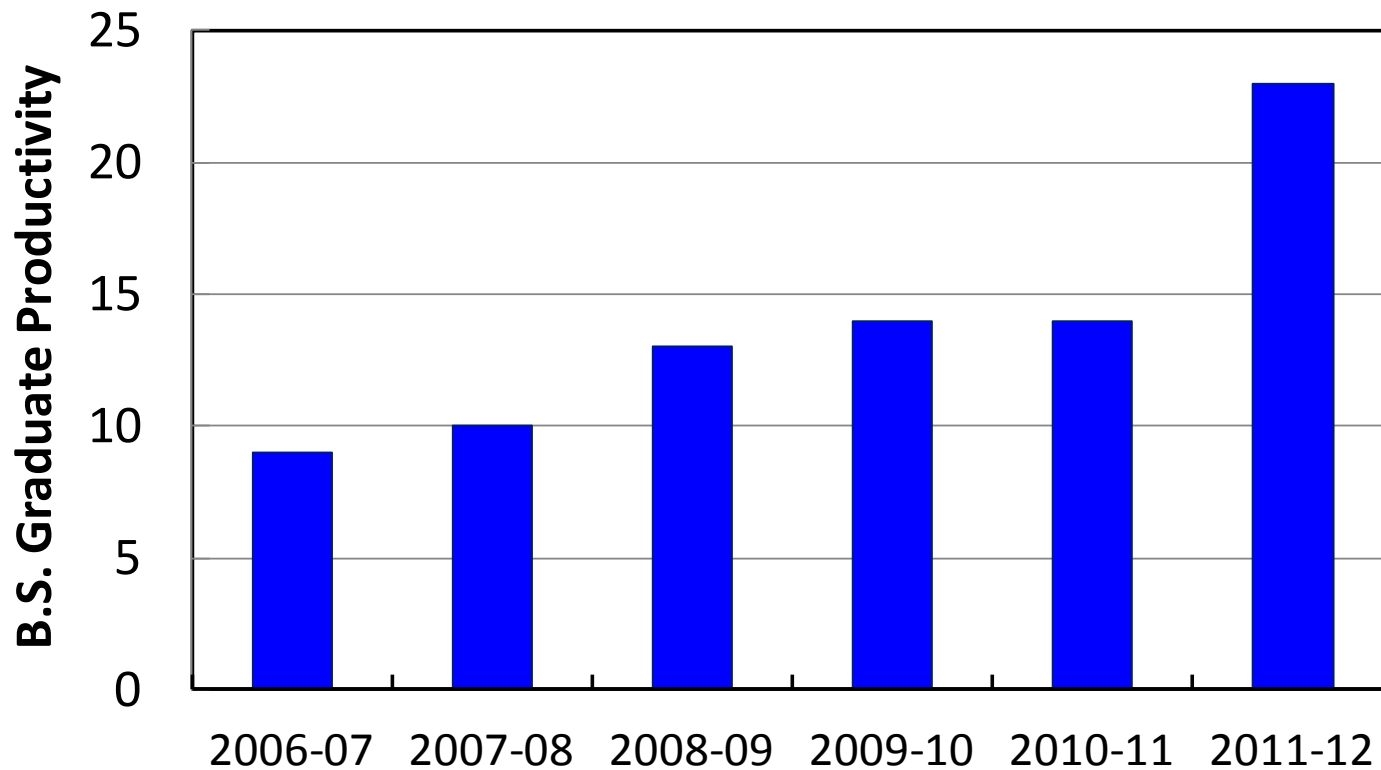


\$75,000
Friends of
Coal
Scholarship
donation!

\$9,000 PEM scholarship donation in 2011-12!

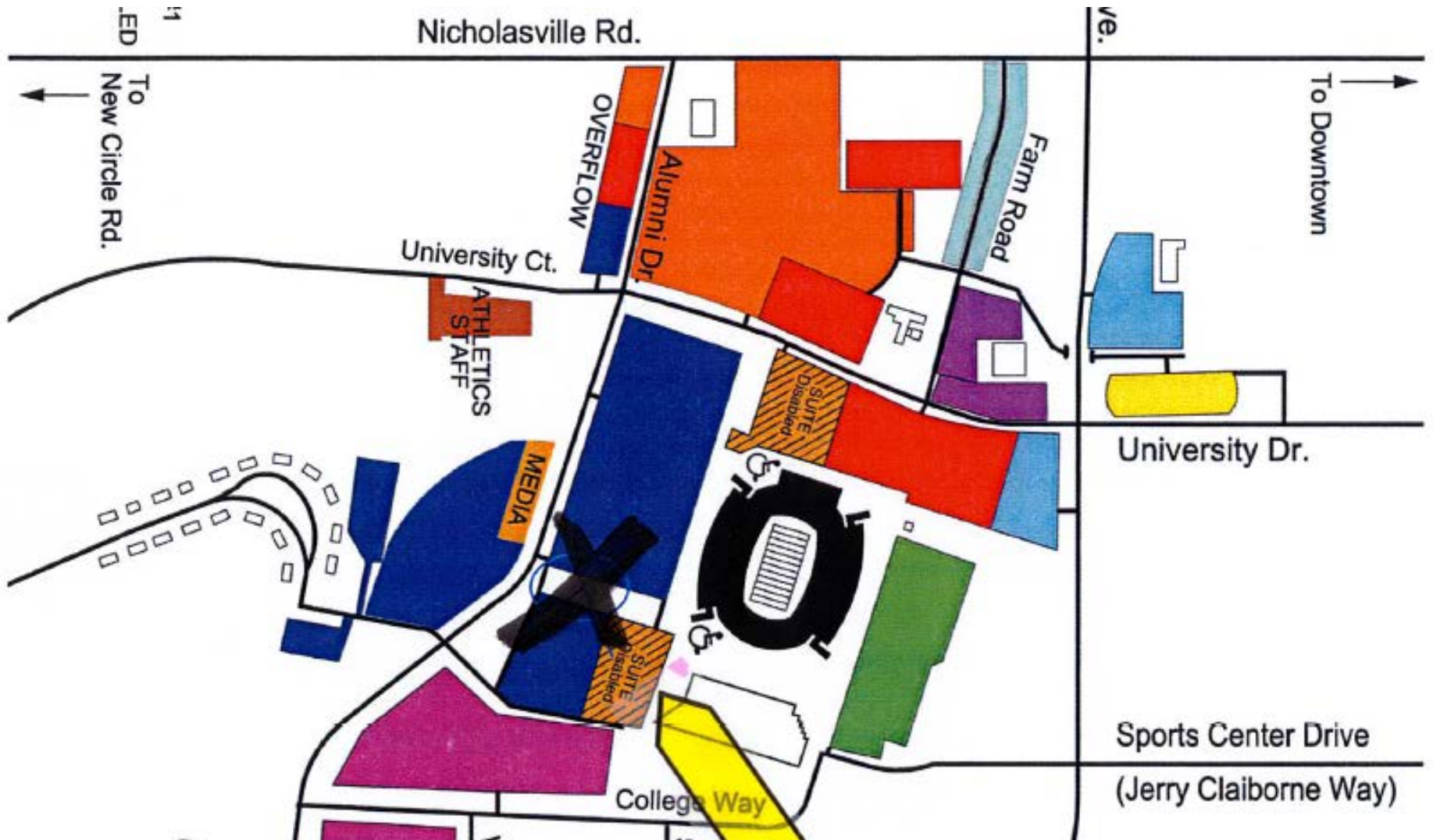
Thank You!

B.S. Graduate Production





Friends of Coal/UK Tailgate





UK Mining Engineering Research

□ 2011-12 Fiscal Year

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

□ Major projects initiated.

□ Major renovation of the Rock Mechanics Lab.

□ Completion of the Automation and Control Laboratory.





New 2011-12 Research Projects

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



Central Appalachia Regional ERC



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

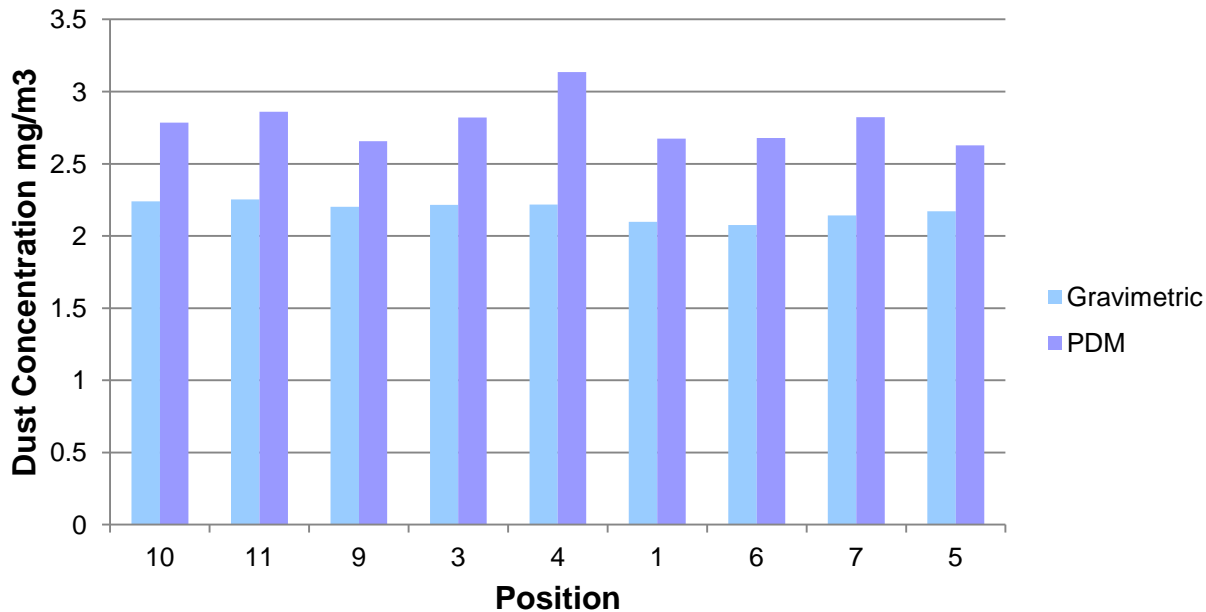


Objectives

- ❑ 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).



Coal Mine Dust Personal Sampler Unit (CMDPSU)



Continuous Personal Dust Monitor (CPDM)

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)