

David Alan Newman

Education:

Doctor of Philosophy - Mining Engineering
The Pennsylvania State University, 1985
Master of Science - Mining Engineering
The Pennsylvania State University, 1980
Bachelor of Arts - Geology
Vassar College, 1977

Employment Background:

Present- President, **Appalachian Mining and Engineering, Inc./Geolab**
1985 Lexington, Kentucky

2007- President, **Newman Engineering, PSC.**
1989 Lexington, Kentucky

1988- Assistant Professor of Mining Engineering,
1984 Director of Weekend/Evening Graduate Program
University of Kentucky
Lexington, Kentucky

1984- Graduate Research Assistant
1978 **The Pennsylvania State University**
University Park, Pennsylvania

1978- Assistant Drill Manager, **American Testing and Engineering Company**
1977 Indianapolis, Indiana

Professional Registration:

Commonwealth of Kentucky, Registered Professional Engineer, No. 14891
Commonwealth of Kentucky, Registered Professional Geologist, No. 2017
Commonwealth of Virginia, Licensed Professional Engineer, No. 023660
State of Indiana, Registered Professional Engineer, No. PE19300222
State of Ohio, Registered Professional Engineer, No. E-68480
State of West Virginia, Registered Professional Engineer, PE No. 11656

Professional Experience:

Present- **Appalachian Mining and Engineering, Inc./Geolab, President**
1985 Engineering consulting firm specializing in rock and soil mechanics investigations, geotechnical engineering, subsidence prediction and abatement, multiple seam mine planning and stability analysis, blast design and evaluation, mine/quarry design and ground control, slope stability, mine property valuation and reserve analysis, coal refuse impoundment design and stability assessment, rock and soil property testing through **Geolab** a state-of-the-art materials testing laboratory using a computer controlled 200,000-pound capacity SATEC load frame.

Professional Experience (continued):

- 2007-
1988 **Newman Engineering, PSC., President**
Municipal engineering projects involving urban hydrologic analysis and design, storm sewer design and evaluation, detention pond design, review of subdivision construction plans, highway design, and blasting projects.
- 1988-
1984 **University of Kentucky, Assistant Professor - Mining Engineering**
Dr. Newman directed five externally funded research projects and conducted internally funded research while overseeing M.S. theses. He developed and directed the weekend/evening graduate program with Friday evening/Saturday morning courses at the Southeast Community College campus in Cumberland, Ky. Teaching responsibilities included undergraduate and graduate courses in rock mechanics, slope stability, and mine valuation. Dr. Newman developed and taught, the "Elements of Coal Mining" and "SUBSIDE" short courses.
- 1984-
1978 **The Pennsylvania State University, Graduate Research Assistant**
Dr. Newman carried out research on four major research grants involving; development of a rock mass classification system for assessing mine roof stability,
 - yield pillar design,
 - longwall gateroad stability,
 - coal pillar design for room-and-pillar mining,
 - in-situ stress measurements,
 - in-mine seismic refraction, and
 - numerical simulation of roof behavior
- 1978-
1977 **ATEC Drilling** Assistant drill manager,
Responsibilities included scheduling drilling crews, geotechnical core logging, and the maintenance of repair shop inventory. Projects included geotechnical drilling and conducting seismic surveys to locate soil/rock interface for a municipal reservoir.

Professional Societies and Committee Positions:

- Central Kentucky Technical College – Member of Advisory Committee for Computer Aided Drafting Programs - 2004
National Academy of Science – National Research Council – Member of Committee on Coal Waste Impoundments – 2001
Organizing Committee for the International Conference on Ground Control in Mining - 2003
Society for Mining, Metallurgy, and Exploration, Inc. (SMME)
 - Rock Mechanics Award Committee, Chairman 2000
 - Professional Engineering Examination Committee
 - Student Activities Committee
 - Coal & Energy Division Membership Committee, Chairman - 2008Central Appalachian Section, SMME
Order of the Engineer
National Coal Association - Acid Mine Drainage Committee – 1999

Listings and Recognitions:

Phi Kappa Phi Honor Society
Mineral Research Institute Fellowship
U.S. Office of Education Mining, Mineral, Mineral Fuel
Conservation Fellowship

Patents and Inventions:

"A Flexible Wire Rope Roof Bolt for Use in Thin Seam Coal Mines,"
Patent disclosure document No. 246721

"An In-situ Coal Face Sampling Device,"
Patent disclosure document No. 177846

"A Method of Increasing the Bulk Density of Coal in Underground Haulage
Equipment," Patent disclosure document No. 180682

Grants and Contracts:

- 1988- **U.S. Bureau of Mines**, Generic Research Program Mine Systems Design and
1986 Ground Control Virginia Polytechnic Institute, Blacksburg, Va. Principal
Investigator "Field Investigation of the Post-Failure Behavior of Coal Pillars"
- 1988- **Arch of Kentucky**, Lynch, Kentucky Principal Investigator
1986 "Rock and Coal Property Testing for Proposed Multiple Seam
Mining Operation"
- 1986 **Arch of Kentucky**, Lynch, Kentucky Principal Investigator
"In-situ Stress Measurements at Mine 37"
- 1986 **U.S. Bureau of Mines**, Mining and Mineral Resources
Research Institute Seed Grant Program Principal Investigator
"Laboratory Investigation of the Post-Failure Behavior of Coal"
- 1984 **University of Kentucky** - Graduate School Major Research Equipment Fund
Strain extensometers for post-failure research
- 1984- **SOHIO Center For Scientific Excellence in Mining Technology**, Researcher
1982 "Longwall Pillar Design and Gateroad Stability Assessment"
- 1984- **U.S. Bureau of Mines**, Mining and Mineral Resources Institute Grant,
1982 Contract No. G5105083, Researcher
"Design Procedures for Coal Mine Tunnels"
- 1983 G.A.I. Consultants, Inc., Monroeville, Pennsylvania
U.S. Dept. of Energy, Contract No. DE-AC22-80PC30120 Contract Researcher
"Characterization of Subsidence Over Pillar Extraction Panels"

Grants and Contracts (continued):

- 1983- **U.S. Dept. of Energy**, Contract No. ET-78-G-01-3427 Researcher
1981 "Improved Design of Room-and-Pillar Coal Mining"
- 1980- **U.S. Dept. of Energy**, Contract No. ET-77-C-01-9144 Researcher
1978 "Geotechnical Investigation of Roof Conditions in the Area Mined by the Automated Extraction System"

Publications:

- Newman, D.A., "Proper Back Selection -The Critical First Step in Ground Control, Presentation at 16th Annual Underground Stone Safety Seminar," Louisville, KY. Dec 5, 2012.
- Newman, D. A., "Practical Rock Mechanics in Underground Limestone Mines," Presentation at 14th Annual Underground Stone Safety Seminar," Louisville, KY. Dec 5, 2010.
- Newman, D. A., "Pillar Stability and Coal Bumps – Case Histories of Retreat Mining in the Thick Overburden and Multiple Seam Environment of Appalachia," Proc. of the 3rd Int. Workshop on Coal Pillar Mechanics and Design, West Virginia University, Morgantown, 2010, pp. 74 - 79.
- Newman, D. A., "Multiple Seam Highwall Mining in Appalachia," Proc. of the 28th Int. Conf. on Ground Control in Mining, West Virginia University, Morgantown, 2009, pp. 284-289.
- Newman, D. A., "Coal Mine Bumps: Case Histories of Analysis and Avoidance," Proc. of the 27th Int. Conf. on Ground Control in Mining, West Virginia University, Morgantown, 2008, pp. 1-6.
- Newman, D. A., "Multiple Seam Mining In Appalachia State-of-The-Art, State-of-Practice, State-Of-The Future", 2007 Proc. Soc. Of Mng. Engrs. Ann. Mtg, Denver CO.
- Chase, F.E., Newman, D. A, Rusnak, J., "Coal Mine Geology in the U.S. Coal Fields: A State-of-the Art Review," Proc. of the 25th Int. Conf. on Ground Control in Mining, West Virginia University, Morgantown, 2006, pp. 51-56.
- Newman, D.A. and Zipf, R. K., "Analysis of Highwall Miner Stability - The Effect of Multiple Seams Prior Auger and Underground Mining on Design," Proc. of the 24th Int. Conf. on Ground Control in Mining, West Virginia University, Morgantown, 2005, pp. 208-217.
- Newman, D.A., "Rock Mechanics and the Analysis of Underground Mine Stability Adjacent to Coal Refuse Impoundments," Proc. of the 22nd Int. Conf. on Ground Control in Mining, West Virginia University, Morgantown, 2003, pp. 318-325.
- Newman, D.A., "A Case History Investigation of Two Coal Bumps in the Southern Appalachian Coalfield," Proc. of the 21st Int. Conf. on Ground Control in Mining, West Virginia University, Morgantown, 2002, pp. 90-97.
- Newman, D.A., DeCinque, J., and Dafferner, A., "The Integration of Geology and Engineering in Ground Control and Mine Planning for a Multi-Level Underground Limestone Quarry," Proc. of the 20th Int. Conf. on Ground Control in Mining, West Virginia University, Morgantown, 2001, pp. 129-136.

Publications (continued):

Newman, D.A., Agioutantis, Z., and Karmis, M., "SDPS for Windows: An Integrated Approach to Ground Deformation Prediction," Proc. of the 20th Int. Conf. on Ground Control in Mining, West Virginia University, Morgantown, 2001, pp. 157-162.

Newman, D.A., "The Role of Engineering and Geology in Analyzing Ground Control Conditions," Proc. of the 18th Int. Conf. on Ground Control in Mining, West Virginia University, Morgantown, 1999, pp. 64 - 71.

Newman, D.A., "Landslide Occurrence in Steep Slope Areas of Appalachia," Proc. of the 17th Int. Conf. on Ground Control in Mining, West Virginia University, Morgantown, 1998, pp. 309-316.

Newman, D.A., "Surface Subsidence and Structural Damage," Chapter 5 in: An Investigation of High Extraction Mining and Related Valley Fill Practices in Southwestern Pennsylvania, Audubon Society of Western Pennsylvania, 1998, pp. B-85 - B-120.

Newman, D.A., "Subsidence Prediction Techniques," Chapter 6 in: An Investigation of High Extraction Mining and Related Valley Fill Practices in Southwestern Pennsylvania, Audubon Society of Western Pennsylvania, 1998, pp. B-121 - B-131.

Newman, D.A., "Integration of Geology and Engineering Design in Mining: Multiple Seam Mining in the Southern Appalachian Coal Field," Milestones in Rock Engineering: A Jubilee Collection, Bieniawski, ed. A.A. Balkema, 1996.

Newman, D.A., "Planning and Design for Barrier Pillar Recovery - Three Case Histories," 14th Int. Conf. on Ground Control in Mining, West Virginia Univ., 1995, pp. 72-79.

Newman, D.A. and Hoelle, J.L., "The Impact and Variability in Coal Strength on Mine Planning and Design - A Case History," West Virginia Univ., 12th Int. Conf. on Ground Control in Mining, 1993, pp. 237-243.

Artrip, P.S., Nelson, J.S., and Newman, D.A., "Modern Geotechnical Exploration and Mine Design," West Virginia Univ., 12th Int. Conf. on Ground Control in Mining, 1993, pp. 249-260.

Newman, D.A. and Bennett, D.G., "The Effect of Specimen Size and Stress Rate for the Brazilian Test - A Statistical Analysis," Rock Mechanics and Rock Engineering, Vol. 23, 1990, pp. 123-134.

Newman, D.A., "In-Situ Yield Behavior of a Coal Pillar," International Journal of Mining and Geological Engineering, No. 2, Vol. 7, May, 1989, pp. 163-170.

Leonard, J.W. and Newman, D.A., "Volumetric Efficiency and the Potential for Increased Productivity in Underground Haulage Units" AIME-Society of Mining Engineers Annual Transactions, 1989, pp. 1202-1203.

Newman, D.A., "Yield Pillar Behavior in Deep Coal Mines," Proc. Sixth Annual Technical Workshop of the Generic Mineral Technology Center, Univ. of Alaska, 1988.

Publications (continued):

Newman, D.A., "Automated Data Acquisition System for Remote Monitoring of Pillar and Roof Deformation on a Longwall Panel," AIME-Society of Mining Engineers Annual Meeting, Preprint 88-64, Phoenix, Arizona, January, 1988.

Newman, D.A. and Bennett, D.B., "A Microcomputer Based System for the Prediction of Mining Costs and Mine Property Valuation," AIME-Society of Mining Engineers Annual Meeting, Preprint 88-63, Phoenix, Arizona, January, 1988.

Martin, J.S. and Newman, D.A., "The Characterization and Redesign of a Failing Highwall in Eastern Kentucky," AIME-Society of Mining Engineers Annual Meeting, Phoenix, Preprint 88-80, Arizona, January 1988.

Newman, D.A., "Evaluation of Stability in Longwall Chain Pillars - A Technical Note," AIME-SME Transactions, Vol. 281, 1987.

Newman, D.A., "Automated Monitoring of the Stress-Strain Behavior of a Yield Pillar," Proc. Fifth Annual Technical Workshop of the Generic Mineral Technology Center, Univ. of Alabama, 1987, pp. 94-100.

Newman, D.A., "A Laboratory Investigation of the Post-Failure Behavior of Coal," IMMR Highlights, University of Kentucky Institute for Mining and Minerals Research, Vol. 6, No. 5, 1987, pp. 1-2.

Newman, D.A. and Bieniawski, Z.T., "A Modified Version of the Geomechanics Classification for Roofspan Design in Underground Coal Mines," AIME-SME Transactions, Vol. 280, 1986, pp. 2134-2138.

Newman, D.A. and Bieniawski, Z.T., "A Modified Version of the Geomechanics Classification for Roofspan Design in Underground Coal Mines," Preprint No. 85-313, AIME-SME Fall Meeting, Albuquerque, 1985.

Newman, D.A., "Mine Drainage and Pumping," in: **Kentucky Coal Mine Reference Book**, Cameron ed., Dept. of Mines and Minerals and Kentucky Mining Institute, 1985, pp. 89-99.

Snodgrass, J.J. and Newman, D.A., "An In-Situ Technique for the Assessment of Failure in Coal Pillars," Proc. 26th U.S. Symp. on Rock Mech., Ashworth ed., Univ. of S. Dakota, Rapid City, 1985, pp. 1181-1188.

Newman, D.A., "A Modified Version of the Geomechanics Classification for Use in Coal Mines," Proc. 2nd Conf. on Ground Control in the Illinois Basin, Chugh, ed., S. Ill. Univ., Carbondale, 1985, pp. 64-72.

Newman, D.A., "Coal Mine Ground Control - The Effect of Geology," Proc. 12th Ann. Meeting Eastern Sec. Amer. Assoc. Petrol. Geol., S. Ill. Univ., Carbondale, 1983, pp. 68-74.

Bieniawski, Z.T., Rafia, F., and Newman, D.A., "Ground Control Investigations for Assessment of Roof Conditions in Coal Mines," Proc. 21st U.S. Symp. on Rock Mech., Missouri-Rolla, 1980, pp. 693-700.

Publications (continued):

Bieniawski, Z.T., Rafia, F., and Newman, D.A., "Performance Evaluation of Automated Extraction System, Vol. 5, Geotechnical Investigations of the Roof Conditions in the Area Mined by the AES Machine," Final Technical Report, DOE Contract ET-77-C-01-9144, 1980, 73 p.