Dr.-Ing. Jürgen F. Brune

- Research Professor, Mining Engineering Department, Colorado School of Mines
- Previous to CSM:
  - CDC NIOSH, Consol Energy, RWE Rheinbraun AG, Germany
- Consulting experience:
  - Mine Ventilation and Explosion Prevention, Slope Stability Engineering, Mine Refuge Alternatives, Mine Dust Management
- Degrees:
  - Dr.-Ing, Mining Engineering, TU Clausthal, Germany
  - MS, Mining Engineering, Colorado School of Mines
  - Dipl.-Ing. Mining Engineering, TU Clausthal
- Licensed Professional Engineer in Colorado, Germany, and Europe

Jürgen F. Brune: Teaching and Research

Academic Activities:

- CSM Courses (in past 5 years):
  - MNGN 316 “Coal Mine Design”
  - MNGN 424 “Mine Ventilation”
  - MNGN 524 “Advanced Mine Ventilation”
  - MNGN 470 / 570 “Mine Safety and Health Management”
  - MNGN 406/506 Design and Support of Underground Excavations (F 2012)
- Education Innovation:
  - New Course Development
    - MNGN 524 – Fall 2012
    - MNGN 470 / 570 – Fall 2013

Research Activities:

- Prevention of coal dust explosions
- Prevention of spontaneous combustion mine fires
- Detection and mitigation of methane explosion hazards in coal mine gobs
- Wireless communications in underground mines
- Underground mine exploration with unmanned aerial systems

Jürgen F. Brune: Current Research Projects

Development of a New Rock Dust Sampling Instrument

- Funded by: the Alpha Foundation
- PI: Jürgen F. Brune; Co-PIs: Gregory E. Bogin and Masami Nakagawa

Combustion Modeling for Fire and Explosion Prevention in Longwall Gobs

- Funded by: CDC NIOSH
- PI: Jürgen F. Brune; Co-PIs: Gregory E. Bogin and John W. Grubb

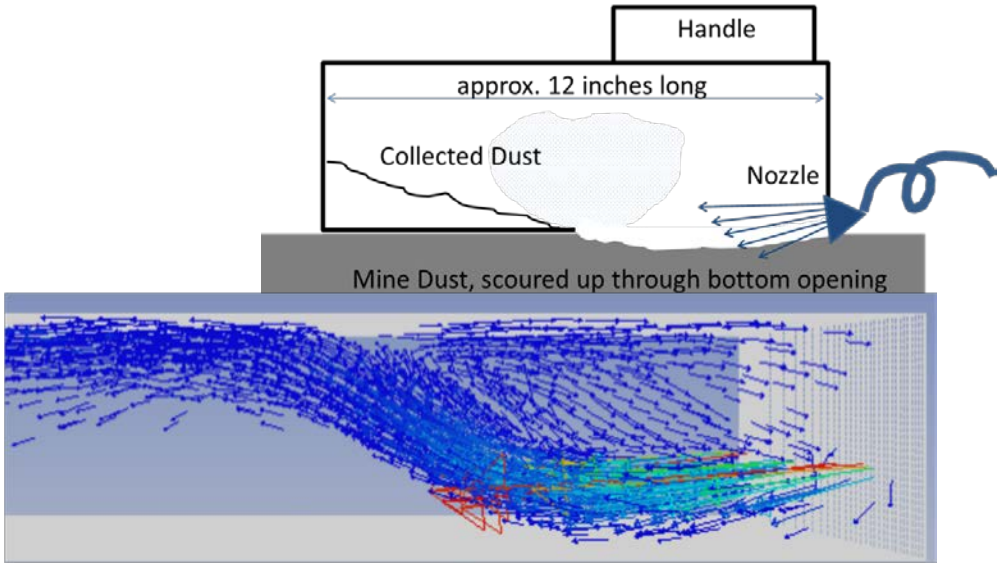
Methane-air Explosion Propagation through Mine Rubble

- Funded by: the Alpha Foundation
- Co-PIs: Gregory E. Bogin, Jürgen F. Brune, and John W. Grubb

Development of a New Rock Dust Sampling Instrument

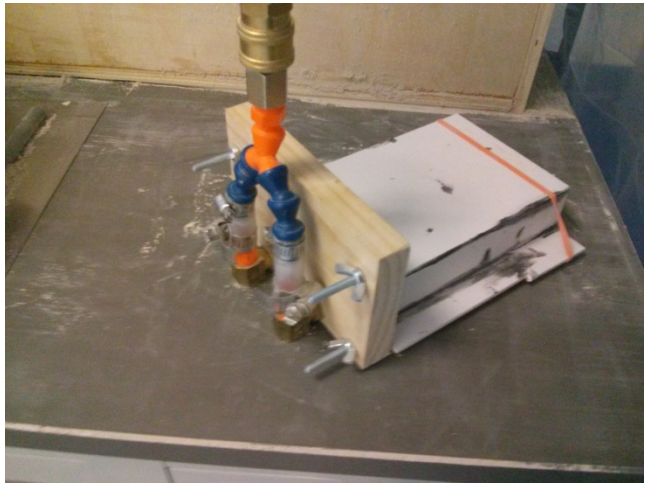
Project objectives:

- To develop a pneumatic mine dust sampler to sample coal and rock dust for explosibility analysis.
- To improve dust sampling accuracy.



Funded by:
Alpha Foundation
Funded Period:
2013 to 2015, $529,000

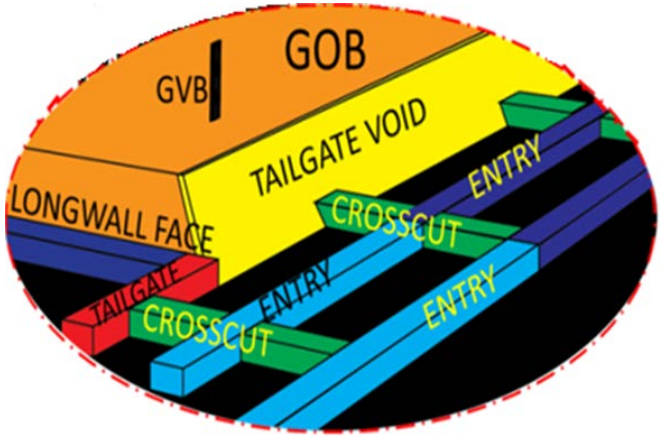
Principal Investigators:
Dr. Jürgen F. Brune
Dr. Gregory E. Bogin
Dr. Masami Nakagawa

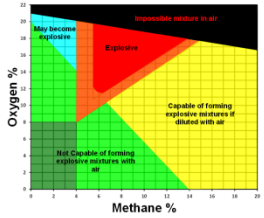


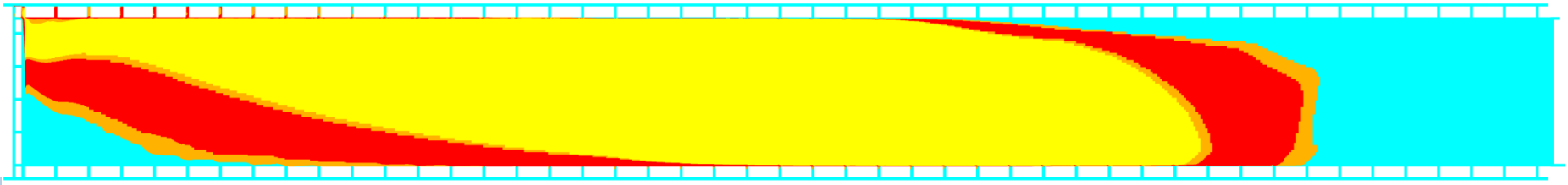
Combustion Modeling for Fire and Explosion Prevention in Longwall Gobs

Project objective:

- Analyze explosion hazard risk for longwall gobs through CFD numerical and physical explosion modeling.







Funded by: CDC NIOSH

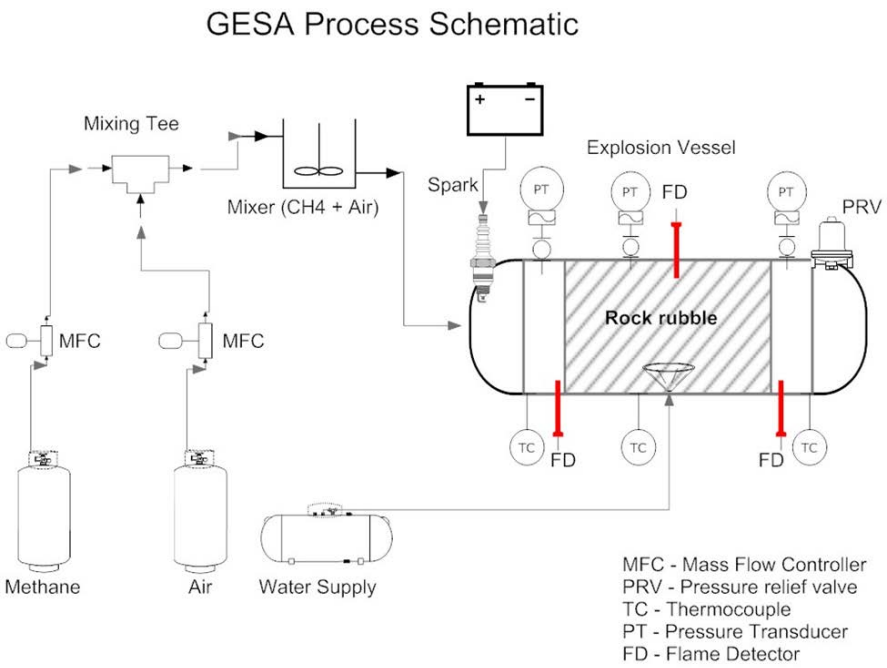
Funded Period: 2014 - 2019
$209,000 - $296,000 annually

Principal Investigators:
Dr. Jürgen F. Brune
Dr. Gregory E. Bogin
Dr. John W. Grubb

Methane-air Explosion Propagation through Mine Rubble

Project objectives:

- Conduct physical testing and CFD modeling of methane explosions in a confined space filled with rock rubble.



Funded by:
Alpha Foundation

Funded Period:
2014 to 2015, $150,000

Principal Investigators:
Dr. Gregory E. Bogin
Dr. Jürgen F. Brune
Dr. John W. Grubb