

Break new ground in extraction and processing, improve operations, and turn waste into consumer products.

RESEARCH FOCUS AREAS

- Geophysical sensing techniques
- Mineral & chemical characterization
- Mineral processing, geometallurgy & extractive metallurgy
- Rock strength, fracturing & excavation
- Sustainability & development
- Technology & automation

ONE-OF-A-KIND RESOURCES

- Geotechnical Center of Excellence: multidisciplinary risk mitigation
- Hyperspectral Mine Consortium: ultramodern data collection
- Mine Automation and Autonomous Systems Lab: advanced autonomous lab systems
- San Xavier Underground Mining Lab: industry-level training

DEGREES

PhD • MS • ME *(online option)*

CERTIFICATES WITH ONLINE OPTIONS

- Mine Production & Information Technology
- Mineral Processing & Extractive Metallurgy
- Mining Occupational Safety & Health
- Rock Mechanics

ARIZONA

No. 1

U.S. copper production
(USGS)



“ Participating in the master’s program at the mining department has been an incredible experience. It has opened up new avenues for my career and connected me with a network of peers and mentors who are equally passionate about making a difference in our field. ”

- Pedro Lopez, MS student



FUNDING OPTIONS THROUGHOUT DEGREE LIFECYCLE

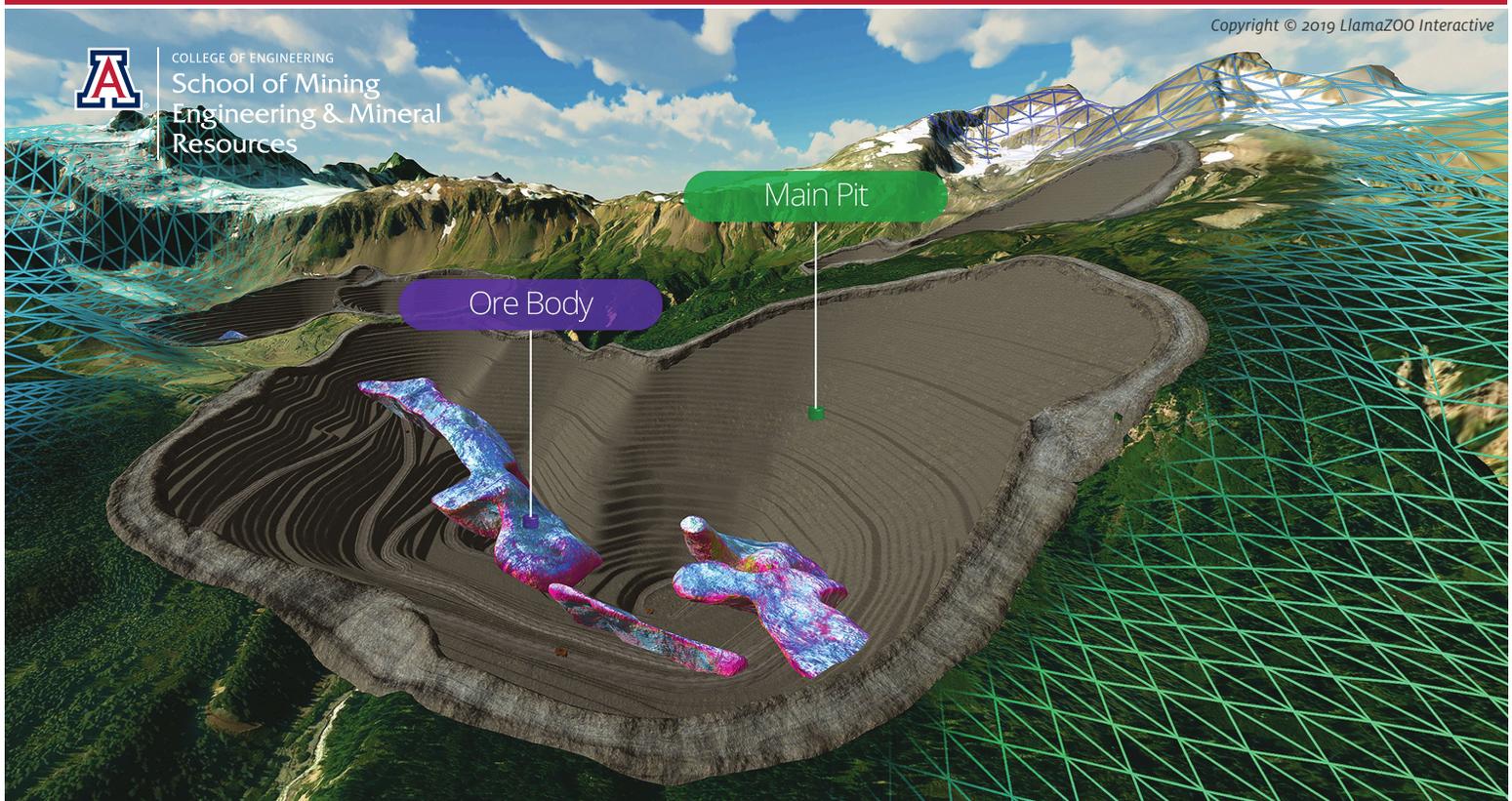
APPLICATION DEADLINES

Fall – All Programs
 Domestic: July 15 | International: April 30
 Funding Consideration, All Students: Jan. 15
Spring – ME and Certificates Only
 Domestic: November 18
 International online: Nov. 18,
 International on campus w/Visa: Sept. 30

CONTACTS

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“ Between having their own student run mine and strong industry connections, the MGE program at the U of A provided me with the exact right experience in and out of the classroom to exceed in my professional career’ ”

- Brody Rastall, ME graduate, Staff Engineer, WSP



FACULTY EXPERTISE

Angelina Anani – angelinaanani@arizona.edu
system modeling and optimization • planning and production scheduling • sustainable mining systems • equipment reliability studies • tunneling and underground works • energy and water efficiency • ethnographic research • machine learning • 3D planning • supply chain

Isabel Barton – fay1@arizona.edu
geomaterials • materials characterization • economic geology • geochemistry • extractive metallurgy • mineralogy

Bo Hyun Kim – bohyunkim@arizona.edu
rock mechanics • ground control engineering • underground excavation stability • numerical modeling • stress redistribution and confinement loss • pillar and roof failure mechanisms • dynamic loading and rockburst mechanics • forensic geomechanics • mine-scale geomechanical design • coupled field-numerical validation

Kray Luxbacher – kraylux@arizona.edu
ventilation • atmospheric monitoring • risk assessment and management • fire simulation sensing and characterization

Moe Momayez – moe.momayez@arizona.edu
geomechanics • ground control • slope stability monitoring • geosensing • big data • machine learning • health and safety • ventilation • nondestructive testing • renewable energy

Selo Ndlovu – ndlovus@arizona.edu
hydrometallurgy • bioleaching • extractive metallurgy • mineral processing • recycling

Dean Riley – deanriley1@arizona.edu
mapping acid mine drainage • hyperspectral imaging and advanced sensors • geomaterials • mineral exploration • mine tailings

Nathalie Risso – nrisso@arizona.edu
mine automation and operations • renewable energy and sustainability • machine learning • cyber-physical systems • process optimization • data mining

Victor Tenorio – vtenorio@arizona.edu
underground mine design • mine examination and valuation • underground mine design • digital mining • moon mining • smart mining technologies • decision support systems

Muhammad Waqas – waqas@arizona.edu
discrete element modeling • artificial intelligence modeling • mining equipment operations • geomechanics

Edward Wellman – ecwellman@arizona.edu
rock mechanics • engineering geology • geotechnical monitoring • tunneling and underground construction • tailings design and construction • mine reclamation

Jinhong Zhang – jhzhang@arizona.edu
mineral processing • froth flotation • surface chemistry • water treatment • atomic force microscopy