

ARMA AWARDS SUMMARY

2003 Awards

- 1) Rock Mechanics Research Award - Leonid Germanovich and Arcady Dyskin for their paper "Fracture mechanisms and instability of openings in compression" published 2000 in the International Journal of Rock Mechanics and Mining Sciences, V37(1-2), pp 263- 284.
- 2) Applied Rock Mechanics Award - Mark Board, Richard Brummer and Shawn Seldon for their paper "Use of numerical modeling for mine design and evaluation" published 2001 in the SME book "Underground Mining Methods – Engineering Fundamentals and International Case Studies, " pp. 483-491.
- 3) Ph.D. Thesis in Rock Mechanics Award - Rajesh Chanpura for his dissertation "Fault reactivation as a result of reservoir depletion" published 2001 at Georgia Institute of Technology.
- 4) Outstanding Contributions in Rock Mechanics Award - Peter Cundall for his achievements in the development of numerical models for rock mechanics.

2004 Awards

- 1) Rock Mechanics Research Award - A. Revil with the Department of Geophysics, Aix-en-Provence, France, for the paper "Pervasive pressure solution transfer in a quartz sand", Journal of Geophysical Research, Volume 106, No. B5 pages 8665-8686, May 2001.
- 2) Applied Rock Mechanics Award - D. Tesarik, B. Seymour and T. Yanske, with NIOSH – Spokane Research Laboratory for the paper "Post-failure behavior of two mine pillars confined with backfill", International Journal of Rock Mechanics and Mining Sciences, Vol. 40, pages 221-232, 2003.
- 3) Ph.D. Thesis in Rock Mechanics - Shailesh Ekbote with Shell International for the dissertation "Anisotropic Poromechanics of the Wellbore Coupled with Thermal and Chemical Gradients," done at the University of Oklahoma 2002.
- 4) Outstanding Contributions in Rock Mechanics Award - No award recommended this year

2005 AMERICAN ROCK MECHANICS ASSOCIATION AWARDS

**AMERICAN ROCK MECHANICS ASSOCIATION
2005 Award for Outstanding Contributions to Rock Mechanics**

RICHARD GOODMAN

*For seminal work on development of
joint elements, base friction models and block theory for rock mechanics*

**AMERICAN ROCK MECHANICS ASSOCIATION
2005 N.G.W. Cook Award for
Ph.D. Thesis in Rock Mechanics**

HONG CHANG

*"Hydraulic Fracturing in Particulate Materials"
Georgia Institute of Technology, 2004*

**AMERICAN ROCK MECHANICS ASSOCIATION
2005 Award for Research in Rock Mechanics**

DAVID POTYONDY

*"A Bonded-Particle Model for Rock"
International Journal of Rock Mechanics and Mining Sciences, 2004*

**AMERICAN ROCK MECHANICS ASSOCIATION
2005 Award for Applied Rock Mechanics**

CHIN-FU TSANG

*"Geohydromechanical Processes in the Excavation Damaged Zone in Crystalline Rock,
Rock Salt, and Indurated and Plastic Clays – In the Context of Radioactive Waste
Disposal"
International Journal of Rock Mechanics and Mining Sciences, 2005*

2006 AMERICAN ROCK MECHANICS ASSOCIATION AWARDS

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Award for Outstanding Contributions to Rock Mechanics**

HERBERT EINSTEIN

*Distinguished educator, engineer and scientist in civil engineering, geotechnical
engineering and rock mechanics.*

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 N.G.W. Cook Award for
Ph.D. Thesis in Rock Mechanics**

HIDEAKI YASUHARA

*“Thermo-Hydro-Mechano-Chemical Couplings that Define the
Evolution of Permeability in Rock Fractures”
The Pennsylvania State University, 2005.*

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Award for Research in Rock Mechanics**

C. CHANG

*“Non-dilatant deformation and failure mechanism in two Long Valley Caldera
rocks under true triaxial compression”
International Journal of Rock Mechanics and Mining Sciences, 2005*

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Award for Research in Rock Mechanics**

BEZALEL HAIMSON

*“Non-dilatant deformation and failure mechanism in two Long Valley Caldera
rocks under true triaxial compression”
International Journal of Rock Mechanics and Mining Sciences, 2005*

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Award for Applied Rock Mechanics**

FULVIO TONON

*“Stresses in anisotropic rock masses: an engineering perspective
building on geological knowledge”
International Journal of Rock Mechanics and Mining Sciences, 2003.*

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Award for Applied Rock Mechanics**

BERNARD AMADEI

*“Stresses in anisotropic rock masses: an engineering perspective
building on geological knowledge”
International Journal of Rock Mechanics and Mining Sciences, 2003.*

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Rock Mechanics Case History Award**

J. RUTQVIST

*“Coupled thermal-hydrological–mechanical analyses of the Yucca Mountain Drift Scale
Test – Comparison of field measurements to predictions of four different numerical
models” International Journal of Rock Mechanics & Mining Sciences, 2005.*

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Rock Mechanics Case History Award**

D. BARR

"Coupled thermal-hydrological–mechanical analyses of the Yucca Mountain Drift Scale Test – Comparison of field measurements to predictions of four different numerical models" International Journal of Rock Mechanics & Mining Sciences, 2005.

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Rock Mechanics Case History Award**

R. DATTA

"Coupled thermal-hydrological–mechanical analyses of the Yucca Mountain Drift Scale Test – Comparison of field measurements to predictions of four different numerical models" International Journal of Rock Mechanics & Mining Sciences, 2005.

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Rock Mechanics Case History Award**

A. GENS

"Coupled thermal-hydrological–mechanical analyses of the Yucca Mountain Drift Scale Test – Comparison of field measurements to predictions of four different numerical models" International Journal of Rock Mechanics & Mining Sciences, 2005.

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Rock Mechanics Case History Award**

A. MILLARD

"Coupled thermal-hydrological–mechanical analyses of the Yucca Mountain Drift Scale Test – Comparison of field measurements to predictions of four different numerical models" International Journal of Rock Mechanics & Mining Sciences, 2005.

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Rock Mechanics Case History Award**

S. OLIVELLA

"Coupled thermal-hydrological-mechanical analyses of the Yucca Mountain Drift Scale Test – Comparison of field measurements to predictions of four different numerical models" International Journal of Rock Mechanics & Mining Sciences, 2005.

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Rock Mechanics Case History Award**

C.-F. TSANG

"Coupled thermal-hydrological-mechanical analyses of the Yucca Mountain Drift Scale Test – Comparison of field measurements to predictions of four different numerical models" International Journal of Rock Mechanics & Mining Sciences, 2005.

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Rock Mechanics Case History Award**

Y. TSANG

"Coupled thermal-hydrological-mechanical analyses of the Yucca Mountain Drift Scale Test – Comparison of field measurements to predictions of four different numerical models" International Journal of Rock Mechanics & Mining Sciences, 2005.

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 M.S. Thesis in Rock Mechanics Award**

ANDREW NYGREN

*"Geomechanics Applied to Reservoir Development in the Coso Geothermal Field"
University of North Dakota*

**AMERICAN ROCK MECHANICS ASSOCIATION
2006 Award for Research in Rock Mechanics**

JOHN KEMENEY

*"The time-dependent reduction of sliding cohesion due to rock bridges along
discontinuities: a fracture mechanics approach"
Rock Mechanics Rock Engineering, 2003*

ARMA 2007 ROCK MECHANICS AWARDS

Best research paper:

W. Zhu and J. B. Walsh, A new model for analyzing the effect of fractures on triaxial deformation, , Int. J. Rock Mech. Min. Sci., 2006, vol. 43, pp. 1241-1255.

Best applied research paper:

Morris, J.P., M.B. Rubin, S.C. Blair, L.A. Glenn and F.E. Heuze, "Simulations of underground structures subjected to dynamic loading using the distinct element method," Engineering Computations, 2004, pp. 384-408.

Best MS thesis:

Luxbacher, K.D. 2005. Four-dimensional Passive Velocity Tomography of a Longwall Panel. Masters Thesis, Virginia Polytechnic Institute & State University: Blacksburg, Virginia under the supervision of E. Westman.

Best PhD dissertation:

HiKweon Lee, "Borehole Breakouts in Arkosic Sandstones and Quartz-Rich Sandstones" Ph.D. thesis completed under the supervision of Prof. Bezalel Haimson at the University of Wisconsin, 2005.

ARMA 2009 ROCK MECHANICS AWARDS

Laboratory Study of Hydrothermal Deformation in Unconsolidated St. Peters Quartz Sand

Authors: Stephen Karner, Andreas Kronenberg, Judith Chester, Frederick Chester, Andrew Hajash.

Presented at the 42nd US Rock Mechanics Symposium; San Francisco; June 2008

Nominated by B. Mack Kennedy and Doug Blankenship - who suggested the paper be considered for the **Rock Mechanics Research Award**

Fractured Rock Hydromechanics: from Borehole Testing to Solute Transport and CO₂ Storage

Authors: Chin-Fu Tsang, Jonny Rutqvist, Ki Bok Min

Presented in Special Publication No 284 of the Geological Society of London

Nominated by Christian David - who only suggested the publication be considered for an

Applied Rock Mechanics Research Award

A Risk Evaluation Approach for Pit Slope Design

Authors: Luis-Fernando Contreras, Peter Terbrugge, Oskar Steffen, Julian Venter

Presented at the 42nd US Rock Mechanics Symposium; San Francisco; June 2008

Nominated by Anthony T. Iannacchione - who suggested the paper be considered for the

Applied Rock Mechanics Research Award

Microseismic Monitoring of a Controlled Collapse at Ocnele Mari, Romania

Authors: Cezar Trifu, Vladimir Shumila.

Presented at the 42nd US Rock Mechanics Symposium; San Francisco; June 2008

Nominated by Cezar Trifu - who suggested that the paper be considered for the **Case History Award**

ARMA 2010 ROCK MECHANICS AWARDS

2010 ARMA Award Recipients
as Recommended by the Awards Committee - revised June 2010

Rock Mechanics Research Award

Measuring Coupled Geochemical Alteration and Geomechanical Deformation in Discrete Variable-Aperature Fractures

Author: **Russ Detwiler**

Note: Presented at the 42nd US Rock Mechanics Symposium; San Francisco; June 2008

ARMA Appield Rock Mechanics Research Award Ratings - 2010

A New Strategy of Hydrofracturing for Deep Stress Measurements, BABHY, and its Application to a Field Test

Author: **Takatoshi Ito**

Note: Presented at the 42nd US Rock Mechanics Symposium; San Francisco; June 2008

ARMA Case History Award Ratings - 2010 (revised to include all authors)

Coupled Analysis of Change in Fracture Permeability during the Cooling Phase of the Yucca Mountain Drift Scale Test

Authors: **Jonny Rutqvist; Barry Freifeld; Yvonne W. Tsang; Ki-Bok Min; and Derek Elsworth**

Note: Presented at the 42nd US Rock Mechanics Symposium; San Francisco; June 2008

ARMA Dr. N.G.W. Cook Dissertation Award Ratings - 2010

Geophysical and Geochemical Analyses of Flow and Deformation in Fractured Rock

Author: **Joshua Taron (The Pennsylvania State University - December 2009)**

ARMA 2011 ROCK MECHANICS AWARDS

2011 Rock Mechanics Research Award

Investigation of CO₂ Injection Induced Coal-Gas Interactions

Zhongwei Chen, Jishan Liu, Derek Elsworth, Luke Connell, Zhejun Pan

Presented at the 43rd US Rock Mechanics Symposium; Asheville, June 2009

2011 Applied Rock Mechanics Research Award

A New Method to Estimate Paleoseismic PGA Using Dynamic Numerical Back-Analysis

Y.H. Hatzor, R. Kamai, and G. Yagoda-Biran

Presented at the 42nd US Rock Mechanics Symposium; San Francisco; June 2008

2011 Case History Award

Monitoring Steam Injection Deformation Using Microseismicity and Tiltmeters

S.C. Maxwell, J. Du, J. Shemeta

Presented at the 42nd US Rock Mechanics Symposium; San Francisco; June 2008

2011 Dr. N.G.W. Cook Ph.D. Dissertation Award

Strength of Transversely Isotropic Rocks

Jianyong Pei

Doctor of Philosophy (Civil and Environmental Engineering)

Massachusetts Institute of Technology - 2008

Thesis Supervisors: H.H. Einstein and A. Whittle