

will be very attractive to those instructors who adopt a more experiential, nontraditional approach to their lectures, in which students occasionally break out into small discussion groups to address geology problems and report their findings.

The Earth sciences are presently faced with many "grand challenges" of great social relevance, including managing water supplies, extending the supply of fossil fuels and other energy sources, mitigating the effects of natural hazards, evaluating and improving environmental health, and

responding to and minimizing the consequences of global warming. *Exploring Geology* does a masterful job of laying out such grand challenges in the context of a clear understanding of how our Earth works and anthropogenic influences on Earth processes. For instance, several topical spreads in chapter 17 (e.g., "How can water become contaminated?") immerse the student in current concerns about groundwater contamination and the approaches taken to, and difficulties with, minimizing contamination effects. The concluding topical spread,

titled "Who polluted surface and groundwater in this place?," provides the student with requisite data to determine the source of contamination and identify remediation approaches.

The more citizens are educated about these grand challenges, the greater the likelihood that these challenges will be met. This text is well worth its cost.

—JOHN W. GEISSMAN, Department of Earth and Planetary Science, University of New Mexico, Albuquerque, and *Eos* editor; E-mail: jgeiss@unm.edu

ABOUT AGU

Outstanding Student Paper Awards

The following AGU members received Outstanding Student Paper Awards at the 2008 Joint Assembly, in Fort Lauderdale, Fla.

PAGE 368

Atmospheric Sciences (AS)

Yuanfang Fang, Princeton University, Princeton, N. J., *Estimating the episodic contribution of pollutant export from the United States in summer 2004.*

Lucas Paganini, Max Planck Institute for Solar System Research, Katlenburg-Lindau, Germany, *Nonlinear processes affecting the accuracy of microwave backend spectrometers.*

Michael C. Schwartz, University of Utah, Salt Lake City, *Cirrus cloud microphysical properties from the Calipso-CloudSat validation experiment.*

Joshua B. Williams, Utah State University, Logan, *Algorithm development for column water vapor retrieval using the SAM sensor.*

Joshua B. Williams, Utah State University, Logan, *Sun and aureole measurements (SAM) during the DOE CLASIC and CHAPS field campaigns.*

Earth and Space Science Informatics (IN)

Phuong T. Nguyen, University of Maryland Baltimore County, Baltimore, *Capturing Madden-Julian Oscillation (MJO) by establishing a record of outgoing longwave radiance from Moderate Resolution Imaging Spectroradiometer (MODIS) raw observations.*

Geodesy (G)

Noel Gourmelen, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami,

Fla., *Fault rate acceleration and low angle normal faulting: The Hunter Mountain fault, California.*

Kimberly Psencik, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, Fla., *Episodic tremor and slip on the Cocos-Caribbean subduction zone as measured by a GPS and seismic network on the Nicoya Peninsula, Costa Rica.*

Geomagnetism and Paleomagnetism (GP)

Amy P. Chen, Institute for Rock Magnetism, Department of Geology and Geophysics, University of Minnesota, Minneapolis, and Ludwig Maximilian University of Munich, Munich, Germany, *First-order reversal curve (FORC) diagrams of lava flow samples containing dipolar-interacting SD particles.*

Philip M. Nigro III, Department of Earth Sciences, Florida International University, Miami, *A rock-magnetic study of coral skeletons: A possible tool for documenting African dust deposition in the tropical Atlantic.*

Hydrology (H)

Jun Liu, University of Virginia, Charlottesville, *Residence time of swimming bacteria near porous media surfaces contributes to apparent adsorption coefficients at the macroscopic scale.*

Virginia Walsh, Florida International University, Miami, *Geochemical differentiation of injected freshwater vertical and horizontal flow through deep saline water karst aquifers.*

Ocean Sciences (OS)

Thiago B. Correa, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, Fla., *Cold-water coral mound development controlled by sea level fluctuation on the lower slope of Great Bahama bank.*

Wilson Mendoza, Division of Marine and Atmospheric Chemistry, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, Fla., *Developmental strategy for effective sampling to detect possible nutrient fluxes in oligotrophic coastal reef waters in the Caribbean.*

Paleoceanography and Paleoclimatology (PO)

Jaime Escobar, Department of Geological Sciences and Land Use and Environmental Change Institute, University of Florida, Gainesville, *An 85-ka paleoclimate record from lowland Central America.*

Seismology (S)

Ignacia Calisto, Universidad de Concepción, Concepción, Chile, *Seismic coda due to non-linear elasticity.*

Space Physics and Aeronomy (SPA)

Marina Battaglia, Institute of Astronomy, ETH Zurich, Zurich, Switzerland, *New evidence for return currents in solar flare loops.*

Susanne Benze, Laboratory for Atmospheric and Space Physics and Department of Atmospheric and Oceanic Sciences, University of Colorado, Boulder, *Comparison of CIPS and SBUV/2 using a generalized SBUV-type approach.*

Amal Chandran, Laboratory for Atmospheric and Space Physics and Department of Aerospace Engineering Sciences, University of Colorado, Boulder, *Inter-hemispheric comparison of gravity waves observed in PMC's from the CIPS experiment on board the AIM spacecraft.*