

VITA

J. Richard Kyle

Third C. E. Yager Professor of Geology, Department of Geological Sciences
<http://www.geo.utexas.edu/faculty/kyle.htm>

Research Professor, Bureau of Economic Geology
John A. and Katherine G. Jackson School of Geosciences
1 University Station, C9000
The University of Texas at Austin
Austin, TX 78712-1101

Phone: 512/471-4351; FAX 512/471-9425; E-mail: rkyle@mail.utexas.edu

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EDUCATION:

Ph.D., Geology, 1977, University of Western Ontario, London, Canada
M.S., Geology, 1973, University of Tennessee, Knoxville, Tennessee
B.S., Geology, 1970, Tennessee Technological University, Cookeville, Tennessee

SIGNIFICANT PROFESSIONAL EXPERIENCE:

1990 to date Professor; Department of Geological Sciences, University of Texas at Austin
2005 to 2010 Research Professor, Bureau of Economic Geology, University of Texas at Austin
2003 to date Registered Professional Geoscientist, Texas License #4148
1980 to date Consulting Geologist, various clients
1984 to 1990 Associate Professor; Department of Geological Sciences, University of Texas
Spring, 1983 Research Associate, Bureau of Economic Geology; University of Texas at Austin
1978 to 1984 Assistant Professor; Department of Geological Sciences, University of Texas at Austin

1976 to 1978 Exploration Geologist; Exxon Minerals Company, U.S.A; Rhinelander, WI

PROFESSIONAL AWARDS:

Society of Economic Geologists Thayer Lindsley Lecturer (2002)
Gulf Coast Association of Geological Societies Excellence of Presentation Award (2001)
Mineral Deposits Studies Group, Geological Society of London, Keynote Presentation (1988)
Society of Economic Paleontologists and Mineralogists Excellence of Presentation Award (1986)
Society of Economic Paleontologists and Mineralogists Gulf Coast Section Best Paper Award (1984)
Society of Mining Engineers Robert Peele Memorial (Best Paper) Award (1981)

UNIVERSITY AWARDS:

Third C. E. Yager Professor in Geological Sciences (1998 to date)
Shell Oil Company Teaching Fellow in Geological Sciences (1995 to 1998)
Getty Oil Company Centennial Teaching Fellow in Geological Sciences (1989 to 1995)
Geology Foundation Advisory Council Centennial Teaching Fellow (1985 to 1989)
Houston Oil and Minerals Faculty Excellence Award (1992)
Natural Sciences Council Teaching Excellence Award (1981)
Houston Oil and Minerals Faculty Excellence Award (1980)

RESEARCH INTERESTS:

Ore deposits geology, mineralization in volcanic terranes, tectonic controls of mineralization, minerals exploration, industrial mineral resources, origin of ore-forming fluids in sedimentary environments, fluid inclusions, stable isotopes, halokinesis and cap rock formation, carbonate diagenesis, multimedia development for K-12 and university geoscience education, high resolution X-ray computed tomography applications to ore deposit studies.

PROFESSIONAL SOCIETIES:

American Association of Petroleum Geologists
 Austin Geological Society
 Geological Association of Canada (Fellow)
 Geological Society of America (Fellow)
 International Association on the Genesis of Ore Deposits
 National Association of Geoscience Teachers
 Society of Economic Geologists (Fellow)
 Society for Geology Applied to Mineral Deposits
 Society for Mining, Metallurgy, and Exploration
 Society for Sedimentary Geology

PROFESSIONAL SERVICES:

[Society of Economic Geologists Mentoring Program](#) for minerals industry careers
 Society of Economic Geologists Program Representative for 2008 GSA annual meeting, Houston, TX.
 Society of Economic Geologists Distinguished Lecturer Committee 2004 to 2006, Chair 2006.
 Chair, Central Texas Section, Society for Mining, Metallurgy, and Exploration, 2000 to 2002.
 Secretary, Central Texas Section, Society for Mining, Metallurgy, and Exploration, 1999 to 2002.
 Editor-in-Chief of *Ore Geology Reviews* (Elsevier) 1990 to 2003.
 Scientific Correspondent, *Chronique de la Recherche Miniere*, BRGM, Orleans, France 1994 to 2000.
 Petrology and Geochemistry Panel, National Science Foundation, 1998
 Chairman, Committee on Committees, Society of Economic Geologists, 1997-1998.
 Short Course Instructor, The Earth Resources Foundation, University of Sydney, Sydney, New South Wales, Australia: "Sedimentary Pb-Zn Deposits" (two-day short course)
 Research Committee, Society of Economic Geologists, 1992 to 1995.
 Board of Advisors, Dept. of Geological Sciences, University of Tennessee, Knoxville, 1993 to 1996.
 Associate Editor, *Economic Geology*, 1990 to 1992.
 Leader of field trips to examine salt dome cap rock geology and mineral resources for the Society of Economic Geologists (1995), the American Association of Petroleum Geologists (1993), and the New Orleans Geological Society (1992).
 Leader of a Society of Economic Geologists field trip to examine industrial mineral resources of the Delaware Basin for the 1990 Geological Society of America Annual Meeting, Dallas, Texas.
 Convener of a Society of Economic Paleontologists and Mineralogists Special Session on "Fluid-rock Interactions in the Salt Dome Environment", 1987 Midyear Meeting, Austin, Texas.
 Program Policy Committee, Society of Economic Geologists, 1983 to 1986.
 Society of Economic Geologists Program Chairman for 1986 GSA annual meeting, San Antonio, TX.
 Convener of Society of Economic Geologists Special Session on "Precious Metals in Carbonate Replacement and Skarn Environments", Geological Society of America Annual Meeting, San Antonio, Texas.
 Reviewer of manuscripts for *American Association of Petroleum Geologists Bulletin*, *Economic Geology*, *Geological Society of America Bulletin*, *Geology*, *International Geology Reviews*, *Journal of Geophysical Research*, *Journal of Petrology*, *Mineralium Deposita*, *Mining Engineering*, *Ore Geology Reviews*, and *Tectonics*, for Special Publications of the American Association of Petroleum Geologists, the Geological Association of Canada, the Society for Mining, Metallurgy, and Exploration, the Society for Sedimentary Geology, the International Association on the Genesis of Ore Deposits, and the Bureau of Economic Geology.
 Reviewer of professional accomplishments for tenure and/or promotion for universities in Australia, Canada, Saudi Arabia, and the United States (many).

Reviewer of research proposals for the Petrogenesis and Mineral Resources, Petrology and Geochemistry, Surficial Processes, and Special Projects divisions of the National Science Foundation, for the Petroleum Research Fund of the American Chemical Society, and for the United States Geological Survey.

Reviewer of books for *Economic Geology*, *Journal of Geological Education*, *Journal of Sedimentary Petrology*, and *Ore Geology Reviews*.

ADMINISTRATIVE SERVICE TO THE UNIVERSITY AND DEPARTMENT:

2009 to date	Jackson School Representative, University Graduate Assembly: Academic Committee (2009-10), Administrative Committee (2010-11), Admissions Committee (2011-12)
1996 to 1998	College of Natural Sciences Committee on Admissions
1995 – 1996	CNS Director of Corporate Relations and Placement Search Committee
1992 – 1993	College of Natural Sciences Staff Excellence Awards Committee
1990 to 1995	College of Natural Sciences Undergraduate Education Committee
1982 – 1983	College of Natural Sciences Course and Curriculum Committee
2008 to date	Assistant Graduate Advisor, Energy & Earth Resources
2005 to date	Energy & Earth Resources Admissions and Awards Committee
2007 to date	Department of Geological Sciences, JSG Internal Reappointment Committee
2007 to 2008	Department of Geological Sciences Faculty (JG) Promotion Committee
2007 to 2008	Department of Geological Sciences BA Curriculum Review Committee
2003 to 2006	Assistant Graduate Advisor, Department of Geological Sciences
2003 to 2005	Department of Geological Sciences Post-tenure Review Committee
2003 to 2005	Department of Geological Sciences Research Scientist Review Committee
2000 to 2003	Graduate Advisor, Department of Geological Sciences
2000 to 2003	Department of Geological Sciences Graduate Advisor
2000 to 2003	Chair, Department of Geological Sciences Graduate Studies Committee
1998 to date	Member, Energy & Earth Resources Graduate Studies Committee (Petroleum & Geosystems Engineering; Jackson School of Geosciences)
1998 to 2003	Chair, Department of Geol. Sciences Graduate Admissions & Support Committee
1992 to 1999	Department of Geological Sciences Gem & Mineral Collections Committee
1995 to 1998	Department of Geological Sciences Graduate Admissions & Support Committee
1990 to date	Department of Geological Sciences Budget Committee
1992 to 1996	Department of Geological Sciences Library Resources Committee
1985 to 1995	Department of Geological Sciences Undergraduate Advisor
1986 to 1995	Chairman, DGS Undergraduate Advising and Awards Committee
1985 to 1992	Chairman, DGS Cartography Committee
1988 to 1991	Geology Foundation Faculty Review Committee
1986 – 1987	DGS Research Scientist Review Committee
1980 to 1982	DGS Executive Committee

COURSES TAUGHT REGULARLY:

- (1) GEO 401 Physical Geology
- (2) GEO 335 Geology and Mineral Resources of Texas (Upper Division Elective)
- (3) GEO 341 Mineral Resources, Society, & the Environment (FLAG Upper Division Elective)
- (4) GEO 358K Volcanology (Upper Division Elective; co-taught)
- (5) GEO 386E Economic Geology (Graduate)
- (6) GEO 381R Regional Studies in Mineral Resources Geology (Graduate)
- (7) GEO 386R Geology of Earth Resources (Core course for graduate Energy and Earth Resources program of the Jackson School of Geosciences; co-taught)

SPECIAL STUDENT SERVICES

In addition to having served as the departmental Undergraduate Advisor from 1985 to 1995 and Graduate Advisor from 2000 to 2003, I have served as an informal advisor for students at all levels for career opportunities in the mineral resource industries. I also serve in the Faculty Contacts Program coordinated by the University Career Center. Further, I have enhanced my classroom teaching by organizing and leading more than 30 local, regional, and international field trips for students to examine mineral resources within their regional geologic setting and/or to attend major research symposia, thus providing opportunity for interaction with current applied and research activities.

- 2011 Geology and production of Texas lignite
- 2010 Geology and production of Texas lignite
Geology of Trans-Pecos Texas volcanic field (organized)
- 2009 Mineral resource geology of West Texas and New Mexico
- 2008 Cretaceous volcanism of central Texas
- 2007 Geology of the Llano Uplift.
Geology and production of Texas lignite.
- 2006 Geology of the Llano Uplift.
Geology and production of Texas lignite.
- 2005 Regional studies of the geology and mineral resources of the Great Basin and the Window
on the World Geological Society of Nevada meeting, Reno, NV
Cenozoic Volcanism and Mineralization, Trans-Pecos Texas
Geology of the Austin area
- 2004 Geology of the Austin area; Geology of the Llano Uplift.
- 2003 Regional studies of the geology and mineral resources of Western Australia
- 2003 Diverse carbonate-hosted Zn-Pb-Ag deposits, Trans-Pecos Texas and Chihuahua, Mexico
Cretaceous volcanism of central Texas
- 2001 Regional studies of the geology and mineral resources of the Iberian Peninsula
- 2000 Regional studies of the geology and mineral resources of Peru
Tectonics, magmatism, sedimentation, and mineralization in west Texas & New Mexico
- 1999 Geology and mining of central Texas lignite deposits
Regional studies of the geology and mineral resources of the central Andes, Chile
- 1997 Regional studies of mineral resource geology of West Texas and New Mexico
- 1996 Regional studies of mineral resource geology of the Southwestern United States
- 1993 Tectonic, magmatic, sedimentation, and mineralization history of the southern Midcontinent
- 1992 Mineralization, magmatism, and tectonism in the Southwestern United States
- 1990 Geologic setting of intrusion- and skarn-hosted copper deposits of Arizona & New Mexico
- 1989 Regional geology and ore deposits in Oklahoma, Missouri, Kentucky, and Tennessee
- 1988 Geology and extraction of south Texas uranium deposits
- 1987 Regional geology and ore deposits in Missouri, Arkansas, and Oklahoma
Regional geology and ore deposits in Trans-Pecos Texas and New Mexico and the
inaugural meeting of American Current Research on Fluid Inclusions, Socorro, NM
- 1985 Regional geology and mineral resources associated with salt domes in the Gulf Coast
- 1984 Regional geology and ore deposits in Durango, Zacatecas, San Luis Potosi, and Coahuila
- 1983 Regional geology and mineral deposits in the Delaware Basin in Texas and New Mexico
- 1982 International Conference on Mississippi Valley-type Lead-Zinc Deposits, Rolla, Missouri
Regional geology and ore deposits in Guanajuato, Durango, Zacatecas, San Luis Potosi,
and Coahuila, Mexico
- 1981 Regional geology and ore deposits in Missouri, Arkansas, and Oklahoma
Regional geology and ore deposits in Trans-Pecos Texas and New Mexico, and the
symposium on Relations of Tectonics to Ore Deposition in the Southern Cordillera,
Tucson, AZ
- 1980 Regional tectonics and ore deposits in Alabama, North Carolina, Tennessee, & Arkansas
Regional geology and ore deposits in Trans-Pecos Texas, New Mexico, and Arizona
- 1979 Regional geology and ore deposits in Arkansas and Missouri
American Institute of Mining, Metallurgical, and Petroleum Engineers Annual Meeting,
New Orleans, LA

Student outreach and other educational publications

Contributing Author, Using Material Resources, in Holt Science and Technology California, Student Edition 6th grade SE ISBN: 0-03-042658-8, p. 138-143, 2007.

The Geologic History of Texas: The Making of Texas over the Past 1.5 Billion Years: Department of Geological Sciences, Outreach Lecture Series, v. 4 (CD-ROM), University of Texas at Austin, 2000.

GRADUATE STUDENT SUPERVISION:

Ph. D. Dissertations Supervised (four completed, 1 in progress):

Lyons, James I., Mesozoic tectonic evolution and mineral deposit distribution of western Mexico. Graduation expected May 2012.

Li, Ning, 1998, "Depositional controls and genesis of the Jinding sandstone-hosted Zn-Pb deposit, Yunnan province, southwest China".

Present Position: Exploration Data Management, Saudi Aramco, Dhahran, Saudi Arabia

Edgerton, David G., 1997, "Geologic models of sediment-buffered hydrothermal vents: a case study of the Red Dog Zn-Pb-Ag orebody, western Brooks Range, Alaska"

Present Position: Exploration Manager, Xminco Exploration and Mining Co., Accra, Ghana

Rubin, Jeffrey N., 1996, "Skarn formation and ore deposition at the Gunung Bijih Timur (Ertsberg East) Complex, Irian Jaya, Indonesia".

Present Position: Emergency Management Program Manager, Tualatin Valley Fire & Rescue, East Division, Oregon City, OR

Farr, Mark R., 1988, "Compositional variation of late dolomite cement as a guide to parent fluid flow directions in the Cambrian Bonneterre Formation, southeast Missouri" (co-supervisor L. Land).

Present Position: Research Associate, Geology Department, University of Kansas, Lawrence, KS

M. S. Theses Supervised (32 completed 1980 to date; three in progress):

Hanson, Cory, "Mass Balance Assessment of Veins and Metasomatic Features of the Ertsberg Intrusive Complex and Associated Skarns; Ertsberg Mining District, Papua, Indonesia" Graduation expected May 2012

Kallstrom, Michael, "Nature and origin of the native silver deposits of the Batopilas district, Chihuahua, Mexico". Graduation expected May 2012

Michaelides, Michael, 2011, Depositional and Diagenetic Processes in the Formation of the Eocene Jackson Group Bentonites, Gonzales County, Texas.

Present Position: Associate Geoscientist, Ryder Scott Company, Houston, TX

Gryger, Sean M., 2010, "Geologic Framework of the Sierra Mojada Mining District, Coahuila, Mexico: An Integrative Study of a Mesozoic Platform-Basin Margin"

Present Position: Geologist, Marathon Oil Co., Houston, TX

Ahn, Hyein, 2010, "Mineralogy and Geochemistry of the Non-sulfide Zinc Deposits in the Sierra Mojada District, Coahuila, Mexico"

Present Position: Internship, Bureau of Economic Geology, University of Texas, Austin, TX

Baline, Lorraine, 2007, Hydrothermal Fluids and Cu-Au Mineralization of the Deep Grasberg Porphyry Deposit, Papua, Indonesia.

Present Position: Geologist, Fort Worth East Division, EOG Resources Inc., Fort Worth, TX

Gandler, Laurel, 2006, "Calc-silicate alteration and Cu-Au mineralization of the Deep MLZ skarn, Ertsberg District, Papua, Indonesia".

Present Position: Geologist, Global Exploration, Hess Corp., Houston, TX

Rambaud, Fabienne, 2005, "Nature and source of the mineralizing fluids at the Presidio mine, Shafter district, Presidio County, Texas".

Present Position: Permit Coordinator, Texas Commission on Environmental Quality, Austin, TX

Mote, Alison, 2004, "A kinematic investigation of the Cripple Creek District, central Colorado:

Implications regarding structural controls influencing the location and distribution of gold ore zones".

Present Position: Research Scientist Associate, Computed Tomography Lab, Jackson School of Geosciences, University of Texas at Austin, Austin, TX

- McGuire, James, 2003, "Geology and carbonate-replacement Zn-Pb-Ag mineralization in the Hecla area, southwestern Montana".
Present Position: Attorney, Locke Lord Bissell & Liddell, LLP, Dallas, TX
- Head, Jennifer, 2002, "Stratigraphic and structural controls of Permian carbonate-hosted silver (Pb-Zn) mineralization, Shafter Presidio County, Texas".
Present Position: Geologist, Predictive Stratigraphy, Conoco-Phillips Inc., Houston, TX
- Muzaffar, Asif, 2001, "Relations among sedimentation, diapirism, and cap rock formation at the Davis Hill salt dome, Liberty Co., Texas".
Present Position: Geoscientist, Saudi Aramco, Dharan, Saudi Arabia
- Gilmer, Amy K., 2001, "Age and characterization of the Red Hills porphyry copper-molybdenum deposit and its relationship to the Chinati Mountains caldera, Presidio County, Texas".
Present Position: Geologist, Virginia Department of Mines and Geology, Charlottesville, VA
- Harrison, Jeffrey, 1999, "Hydrothermal alteration and fluid evolution of the Grasberg porphyry Cu-Au deposit, Irian Jaya, Indonesia".
Present Position: Geologist, Alaska, Conoco-Phillips, Anchorage, AK
- Smith, Virginia, 1998, "Geology and geochemistry of hydrothermal alteration at the Tyrone porphyry copper deposit, New Mexico".
Present Position: Geoscientist, Offshore Division, Chevron-Texaco, New Orleans, LA
- Smith (Enos), Jennifer S., 1996, "Origins of calcite and pyrite cements in the Carrizo Sandstone on the flank of Butler dome, East Texas Basin: Petrographic and isotopic evidence for fluid circulation near salt domes".
Present Position: Geologist, Alaska Asset Team, Marathon Oil Co., Houston, TX
- Mertig (Murray), Heidi J., 1995, "Origin of the Dom copper skarn deposit, Ertsberg district, Irian Jaya, Indonesia". Present Position: Engineering Geologist, Barrick Corp., Elko, NV
- Agee, William N., Jr., 1990, "Relation of metal sulfide mineralization to anhydrite cap rock formation, Hockley salt dome, Harris County, Texas".
Present Position: Project Hydrogeologist; Fluor Daniel Corp.; Dallas, TX
- Coel, Becky J., 1990, "Biogeochemical cycling of gold in a placer deposit, Livengood, Alaska".
Present Position: Los Alamos National Laboratory, Los Alamos, NM
- Prikryl, James P., 1989, "Origin of salt dome limestone cap rocks in the U.S. Gulf Coast".
Present Position: Research Scientist, Southwest Research Institute, San Antonio, TX
- Chieruzzi, Gianni O., 1988, "Geochemical flow modeling of supergene alteration of porphyry copper deposits". (Co-supervised with L. Lake, Department of Petroleum Engineering).
Present Position: Chester Engineers, Pittsburgh, PA
- Standen, Allan R., 1987, "Mineralization of the Scotia-Vanderbilt vein system, Silverton, Colorado".
Present Position: Geologist, LBG-Guyton; Austin, TX
- Gutierrez, Gay N., 1987, "Controls on ore deposition in the Lamotte Sandstone, Goose Creek mine, Indian Creek subdistrict, southeast Missouri".
Present Position: Project Hydrogeologist; OHM Corporation; Austin, TX
- Vasconcelos, Paulo, 1987, "Gold geochemistry in a semiarid weathering environment: a case study of the Fazenda Brasileiro deposit, Bahia, Brazil".
Present Position: Professor and Head, University of Queensland, Brisbane, Queensland, Australia.
- Rubin, Jeffrey N., 1986, "Mineralogy and ore genesis at the San Martin mine, Zacatecas, Mexico".
Present Position: Emergency Management Program Manager, Tualatin Valley Fire & Rescue, East Division, Oregon City, OR
- Bobeck, Patricia A., 1985, "Igneous petrology and structural geology of Nine-Point Mesa, Brewster County, Texas". (co-supervised with D. Barker)
Present Position: Geologist; Texas Natural Resources and Conservation Commission; Austin, TX
- Hardwick, James F., Jr., 1984, "Epithermal vein and carbonate replacement mineralization related to caldera development, Cunningham Gulch, Silverton, Colorado".
Present Position: Consulting Geologist; Lafayette, LA
- Barrie, Tucker, 1984, "Geology of the Khayyam and Stumble-on Deposits, Prince of Wales Island, Alaska".
Present Position: Research Scientist; Geological Survey of Canada; Ottawa, Ontario

Johns, David A., 1983, "Geologic controls of massive sulfide mineralization in late Mesozoic metamorphic rocks, Tizapa, Estado de Mexico, Mexico".

Present Position: Geologist, City of Austin Department of Environmental Protection, Austin, TX

Logan, William S., 1983, "Geology of the Agalteca magnetite skarn deposit, central Honduras".

Present Position: Senior Staff Officer, Water Science and Technology Board, National Research Council, Washington, DC 20001

Herwig, Jonathan C., 1982, "Stratigraphy, structure, and massive sulfide potential of late Mesozoic metamorphic rocks near El Cirian, Estado de Mexico, Mexico".

Present Position: Technical Director; Ogden Consultants; Honolulu, HI

Craig, Lisa E., 1982, "Silicification and porosity development in upper Knox Group carbonate rocks, Burkesville, Kentucky".

Present Position: Geologist; Environmental consulting group; New Orleans, LA

Allie, Adrienne D., 1981, "Stratigraphic controls of carbonate-hosted sulfide mineralization, Iron Rock Creek area, Blanco and Gillespie Counties, Texas".

Present Position: Senior Geologist; Shell Offshore, Inc.; New Orleans, LA

Immitt, James P., 1981, "Skarn and epithermal vein mineralization in the San Carlos caldera region, northeastern Chihuahua, Mexico".

Present Position: Financial Analyst, Motorola, Austin, TX

Masterson, W. Dallam, 1981, "Hydrothermal alteration and mineralization, Velvet district, Nevada".

Present Position: Manager, North Slope Satellite Exploration, Phillips Alaska, Anchorage, AK

Fredericks, Paul E., 1980, "Volcanic lithofacies and massive sulfide mineralization, East Shasta, California"

Present Position: Principal; MineraLogic; Missoula, MT

I have served on supervisory committees of eight Ph.D. candidates and 20 Master's candidates in the Department of Geological Sciences. I have served on supervisory committees of one Ph.D. and three Master's candidates in the Department of Petroleum Engineering. I have served on the supervisory committees of 5 Master's students in the Energy and Earth Resources program.

I served as External Examiner for Ph.D. dissertations at the University of North Carolina at Chapel Hill (Harry Posey, 1986), at Dalhousie University (Casey Ravenhurst, 1987; Nick Wilson, 1998), the University of Queensland (Stephen Andrews, 1998), and the University of Western Australia (Richard Kempton, 1999).

Undergraduate Honors Students

Mills, Stephanie, "Relation of calcite chemistry and fluorescence in silver-rich veins, Batopilas, Mexico".
Graduation expected May 2009.

POST-DOCTORAL AND VISITING SCIENTISTS:

Huan-Zhang Lu, Professor, Université du Québec à Chicoutimi, Chicoutimi, Québec, Canada, 1998
Stay in Austin, Research on porphyry ore formation and on bacteriogenic calcite formation;
funding from the Université du Québec à Chicoutimi (sabbatical).

Eric James, Research Scientist, University of Texas at Austin, 1995-97, Research on isotopic character of Ertsberg district Cu-Au deposits, Irian Jaya, Indonesia; Funding from Freeport-McMoRan.

Youn-Ho Jang, Associate Professor, Samchock Technical College, Kangwon-do, Korea, 1989-90 Stay in Austin, Research on Samhwa skarn iron deposits, Korea (co-sponsored with D. Barker);
funding from Korean federal science agency.

Aroldo Misi, Professor, Federal University of Bahia, Salvador, Bahia, Brazil, 1988-90 Stay in Austin, Research on phosphate and metal sulfide deposits in Late Proterozoic carbonate strata, Irece, Bahia; funding from CNPQ (Brazilian federal science agency).

Harry H. Posey, 1987-88 Stay in Austin, Research on salt dome cap rock geochemistry; funding from National Science Foundation grant EAR-8709319.

MAJOR RESEARCH SUPPORT (last 20 years):

2009-12 American Chemical Society Petroleum Research Fund New Directions Grant (submitted) (\$100,000): "Relation of Non-sulfide Zinc Mineralization to Mesozoic Sedimentary Basin Processes and Cenozoic Climatic History of Southwestern North America"

- 2009-10 PT Freeport Indonesia Research Grant (\$60,000): "Ertsberg District Ore Studies"
- 2008-09 PT Freeport Indonesia Research Grant (\$20,000): "Ertsberg District Ore Studies"
- 2007-08 PT Freeport Indonesia Research Grant (\$40,000): "Ertsberg District Ore Studies"
- 2006-07 PT Freeport Indonesia Research Grant (\$40,000): "Ertsberg District Ore Studies"
- 2005-06 PT Freeport Indonesia Research Grant (\$40,000): "Ertsberg District Ore Studies"
- 2005-06 National Science Foundation Equipment Grant (\$107,400): "Acquisition of a Fourier Transform Infrared (FTIR) Spectroscopy System: Measuring Volatiles in Magmatic and Ore-Forming Systems" (Co-PI J. Gardner and J. Lassiter).
- 2004-05 PT Freeport Indonesia Research Grant (\$40,000): "Use of High Resolution X-ray Computed Tomography in Ore Mineralogy".
- 1997-00 American Chemical Society Petroleum Research Fund Grant PRF#32557-AC8 (\$50,000): "Bacterial Processes in Sedimentary Environments: Origin of "Bacteriogenic" Calcite-Sulfur Concentrations in the Delaware Basin, West Texas".
- 1994-00 Freeport Indonesia Ertsberg (Gunung Bijih) District Research Grant (\$355,000): "Tectonics and Mineral Deposits of Irian Jaya, Indonesia: Phase II Ore Studies".
- 1995-98 National Science Foundation Research Grant EAR-9405546 (\$110,000): "Genesis of Metallic Mineralization in Continental Rift Basins: A Study of Sandstone-hosted Pb-Zn-Sr Deposits in a Tertiary Rift Basin, Yunnan, China".
- 1989-93 Freeport Indonesia Ertsberg (Gunung Bijih) District Research Grant (\$662,000): "Tectonics and Mineral Deposits of Irian Jaya, Indonesia" (M. Cloos Co-PI).
- 1987-89 National Science Foundation Research Grant EAR-8709319 (\$105,730): "Petrologic, Geochemical, and Isotopic Investigation of Gulf Coast Salt Dome Cap Rocks".
- 1987-89 American Chemical Society Petroleum Research Fund Grant PRF#19624-AC2 (\$32,595): "Paleomagnetic Investigation of Salt Dome Growth Rates" (W. Gose Co-PI).
- 1985-87 National Science Foundation Research Grant EAR-8407736 (\$117,000): "Nature and Origin of Sulfide Deposits in Gulf Coast Salt Dome Cap Rocks".

More than 20 other companies have provided support for student research projects totaling over \$500,000, exclusive of invaluable proprietary data. In addition, cooperative research agreements have been established at various times with federal agencies in the United States (U. S. Geological Survey), Canada (Geological Survey of Canada), China (Institute for Geosciences), Mexico (Centro de Geociencias, Consejo de Recursos Minerals), Honduras (Instituto Geografico Nacional), and Brazil (CNPQ). These agencies provided logistical, per diem, and analytical support for research projects in their countries. The University Research Institute has contributed more than \$50,000 in support of minor research activities, typically as seed money acquired through competitive awards to stimulate the development of external grant proposals.

INVITED LECTURES (Last 12 Years):

- 2010 "The Central Texas Lead District: Geologic, geochemical, and genetic comparisons to the supergiant MVT deposits of southeast Missouri": Geological Society of America, North Central-South Central Sectional Meeting, Ore Deposits of the Central U.S. Symposium
- 2009 "Stratigraphic controls of calc-silicate alteration and Cu-Au mineralization in the Deep MLZ skarn, Ertsberg District, Papua, Indonesia" 2009 Joint Assembly, American Geophysical Union and Geological Association of Canada, Toronto, Ontario, Canada
- 2008 "Geology of Texas Industrial Minerals": 44th Forum on the Geology of Industrial Minerals, Oklahoma City, OK

 "Regional Geology of Texas and Oklahoma": Transportable Array Earthquake Recording Station Reconnaissance Workshop (IRIS), Jackson School of Geosciences, The University of Texas at Austin

- 2007 “High Resolution X-ray Computed Tomography Studies for Geological Materials: Emphasis on Contributions to Gold Ore Genesis and Processing”: Department of Earth Sciences, The University of Hong Kong.
- “Application of high resolution X-ray computed tomography to fluid inclusion studies of opaque minerals”: International Conference on Geofluids and Fluid Inclusions (Guangzhou, China)
- 2006 “High Resolution X-ray Computed Tomography Studies for Geological Materials: Emphasis on Contributions to Gold Ore Genesis and Processing”: Seminario de Geociencias, Centro de Geociencias, UNAM, Queretaro, Mexico
- 2005 “Texas Energy Resources”: UT Forum Adult Enrichment Program, University of Texas at Austin Continuing Education Program, Austin, TX
- 2004 “Geology of Texas Dimension Stone”, Association for Preservation Technology Texas Chapter and the Building Industry Council of Preservation, 2004 Preservation Day Seminar, Austin, TX
- 2003 “Historical Silver Mining in Central Texas: Myth vs. Reality”, Society for Mining, Metallurgy, and Exploration, Central Texas Section, Austin, TX.
- 2002 “The Economic Geology of Microbes: Relation between Mineral Resources and Bacterial Processes”, and “Giant Pliocene porphyry-skarn Cu-Au deposits, Ertzberg District, Papua, Indonesia: Exploration, production and research in a challenging environment”: Society of Economic Geologists Thayer Lindsley Lecture Tour (17 presentations at 12 sites in the U.S., Canada, and Mexico)
- 2001 “Origin of the Tertiary sandstone-hosted Jinding Zn-Pb-Ag deposit, Yunnan, China” Society of Economic Geologists’ Symposium on Sediment-Hosted Lead-Zinc Deposits, Geological Society of America Annual Meeting, Boston, MA.
- 2000 “Formation of giant Pliocene porphyry-skarn Cu-Au deposits, Ertzberg District, Irian Jaya, Indonesia”, and “Dynamic interaction of salt tectonics, depositional and diagenetic systems, and mineralization in the Gulf of Mexico Basin”, Institute for Science and Technology, Xi’an, China.
- “Formation of giant Pliocene porphyry-skarn Cu-Au deposits, Ertzberg District, Irian Jaya, Indonesia”, and “Dynamic interaction of salt tectonics, depositional and diagenetic systems, and mineralization in the Gulf of Mexico Basin”, Xinjiang Bureau of Geology and Mineral Resources, Urumqi, China.
- “Origin of the Tertiary sandstone-hosted Jinding Zn-Pb-Ag deposit, Yunnan, China”, Society of Economic Geologists’ Symposium on New Silver Deposits, Society for Mining, Metallurgy, and Exploration, Salt Lake City, UT.
- “Relation of energy and mineral resources in the Gulf of Mexico Basin to the dynamic interaction of salt tectonics, depositional systems, and formation waters”, Department of Geosciences, The University of Tulsa, Tulsa, OK
- 1999 “A Century of Fire and Brimstone: The Rise and Fall of the Gulf Coast Frasch Sulfur Industry”, Austin Geological Society, Austin, TX
- “Delaware Basin sulfur deposits: Genetic relations among evaporites, petroleum, bacteria, formation waters, and tectonics”, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM

- “Formation of the supergiant Grasberg porphyry Cu-Au deposit, Irian Jaya, Indonesia”, Department of Geology, University of Chile, Santiago, Chile.
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