Stanford



Marco Einaudi

Welton Joseph and Maud L'Anphere Crook Professor of Applied Earth Sciences, Emeritus

Earth & Planetary Sciences

Bio

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Earth & Planetary Sciences

ADMINISTRATIVE APPOINTMENTS

- Geologist, The Anaconda Company, (1968-1971)
- Project Geologist, The Anaconda Company, (1971-1975)
- Assistant Professor of Applied Earth Sciences, Stanford University, (1975-1977)
- Associate Professor of Applied Earth Sciences, Stanford University, (1977-1980)
- Professor of Applied Earth Sciences, Stanford University, (1980-1993)
- Visiting Investigator, Geophysical Laboratory, Carnegie Institute of Washington, (1981-1982)
- Chairman, Applied Earth Sciences, Stanford University, (1982-1986)
- Professor, Department of Geological & Environmental Sciences, Stanford University, (1993-2003)

HONORS AND AWARDS

- Thayer Lindsley Distinguished Lecturer, Society of Economic Geologists (1982)
- Welton J. and Maud L. Crook Professor of Applied Earth Sciences, Stanford University (1984-2003)
- Hugh Exton McKinstry Memorial Lecturer, Harvard University (1986)
- Fellow, Geological Society of America (1988)
- Award for Excellence in Teaching, School of Earth Sciences, Stanford University (1993)
- Silver Medal, Society of Economic Geologists (1993)
- International Exchange Lecturer, Society of Economic Geologists (1994)
- Distinguished Lecturer, Society of Economic Geologists (2003)
- Brian J. Skinner Award, SEG (2005)
- Penrose Gold Medal, SEG (2008)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Publications Board, Society of Economic Geologists (2001 - 2002)
- Faculty Leader, Stanford Alumni Association, Travel-Study Program, Antarctic Expedition (2001 - 2001)
- Faculty Leader, Stanford Alumni Association, Travel-Study Program, Austrian Alpine Hike (2000 - 2000)
- Lecturer, Janus-II Symposium, Society of Economic Geologists, Geological Society of America, Reno, Oct 2000 (2000 - 2000)

- Field Trip Leader, SEG/GSA Fall Meeting, November 2000 (2000 - 2000)
- Invited Lecture, Krauskopf Symposium, Stanford University (1999 - 1999)
- Invited Lecture, Geological Society of Nevada, Elko, NV (1999 - 1999)
- Invited Lecture, Janus-I Symposium, Society of Economic Geologists, Geological Society of America, Denver, Oct 1999. (1999 - 1999)
- Publications Advisory Board, Society of Economic geologists (1998 - 2000)
- Invited Lecture, Dept. of Geosciences Colloquium, University of Arizona (1998 - 1998)
- Faculty Leader, Stanford Alumni Association, Travel-Study Program, Arctic College (1998 - 1998)
- Councilor, Society of Economic Geologists (1997 - 2002)
- Committee on Libraries, Senate of Academic Council (1997 - 2000)
- Member, School of Earth Sciences Library Committee (1996 - 2002)
- Editor-in-Chief, Economic Geology (1996 - 2002)
- Board of Directors, Economic Geology Pub. Co. (1993 - 2002)
- Associate Dean for Academic Affairs, School of Earth Sciences (1991 - 1993)
- Chair, Ten-Year Planning Committee, School of Earth Sciences (1990 - 1991)
- Associate Dean for Research, School of Earth Sciences (1986 - 1991)
- Member, Dean's Council, School of Earth Sciences (1982 - 1990)

PROFESSIONAL EDUCATION

- Ph.D., Harvard University , Geology (1969)
- M.S., Harvard University , Geology (1965)
- B.A., Cornell University , Geology (1961)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Research

Detailed field studies of magma-hydrothermal systems, focused on the origin of porphyry-copper-(gold) and skarn copper-(gold) deposits. Application to mineral exploration.

Teaching

none (emeritus)

Professional Activities

Consultant to the mining industry.

Publications

PUBLICATIONS

- **The Bingham Canyon Porphyry Cu-Mo-Au Deposit. I. Sequence of Intrusions, Vein Formation, and Sulfide Deposition** *ECONOMIC GEOLOGY*
  Redmond, P. B., Einaudi, M. T.
  2010; 105 (1): 43-68

- **Copper deposition during quartz dissolution by cooling magmatic-hydrothermal fluids: The Bingham porphyry** *EARTH AND PLANETARY SCIENCE LETTERS*
  Landtwing, M. R., Pettke, T., Halter, W. E., Heinrich, C. A., Redmond, P. B., Einaudi, M. T., Kunze, K.
  2005; 235 (1-2): 229-243

- **Copper deposition by fluid cooling in intrusion-centered systems: New insights from the Bingham porphyry ore deposit, Utah** *GEOLOGY*
  Redmond, P. B., Einaudi, M. T., Inan, E. E., Landtwing, M. R., Heinrich, C. A.
  2004; 32 (3): 217-220

- **Henderson porphyry molybdenum system, Colorado: I. Sequence and abundance of hydrothermal mineral assemblages, flow paths of evolving fluids, and evolutionary style** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  Seedorff, E., Einaudi, M. T.
  2004; 99 (1): 3-37

- **Henderson porphyry molybdenum system, Colorado: II. Decoupling of introduction and deposition of metals during geochemical evolution of hydrothermal fluids** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  Seedorff, E., Einaudi, M. T.
  2004; 99 (1): 39-72

- **Extreme S-34 depletions in ZnS at the Mike gold deposit, Carlin Trend, Nevada: Evidence for bacteriogenic supergene sphalerite** *GEOLOGY*
  Bawden, T. M., Einaudi, M. T., Bostick, B. C., Meibom, A., Wooden, J., Norby, J. W., Orobona, M. J., CHAMBERLAIN, C. P.
  2003; 31 (10): 913-916

- **Nukundamite (Cu3.38Fe0.62S4)-bearing copper ore in the Bingham Porphyry Deposit, Utah: Result of upflow through quartzite** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  Inan, E. E., Einaudi, M. T.
  2002; 97 (3): 499-515

- **Geochemical and mineralogical controls on trace element release from the Penn Mine base-metal slag dump, California** *APPLIED GEOCHEMISTRY*
  Parsons, M. B., Bird, D. K., Einaudi, M. T., Alpers, C. N.
  2001; 16 (14): 1567-1593

- **Porphyry-epithermal transition: Maricunga belt, northern Chile** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  Muntean, J. L., Einaudi, M. T.
  2001; 96 (4): 743-772

- **Porphyry gold deposits of the Refugio district, Maricunga belt, northern Chile** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  Muntean, J. L., Einaudi, M. T.
  2000; 95 (7): 1445-1472

- **Ar-40/Ar-39 geochronology of Cu-Au and Au-Ag mineralization in the Potrerillos District, Chile** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  Marsh, T. M., Einaudi, M. T., McWilliams, M.
  1997; 92 (7-8): 784-806

- **WALL-ROCK ALTERATION AND HYDROTHERMAL FLOW PATHS ABOUT THE ANN-MASON PORPHYRY COPPER-DEPOSIT, NEVADA - A 6-KM VERTICAL RECONSTRUCTION** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  Dilles, J. H., Einaudi, M. T.
  1992; 87 (8): 1963-2001

- **GEOLOGICAL CHARACTERISTICS AND TECTONIC SETTING OF PROTEROZOIC IRON-OXIDE (CU-U-AU-REE) DEPOSITS** *PRECAMBRIAN RESEARCH*
  Hitzman, M. W., Oreskes, N., Einaudi, M. T.
  1992; 58 (1-4): 241-287

- **ORIGIN OF PETROLEUM AND MERCURY IN THE CULVER-BAER CINNABAR DEPOSIT, MAYACMAS DISTRICT, CALIFORNIA** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*

PEABODY, C. E., Einaudi, M. T.
1992; 87 (4): 1078-1103

- **OXYGEN AND HYDROGEN ISOTOPE CHARACTERISTICS OF HYDROTHERMAL ALTERATION AT THE ANN-MASON PORPHYRY COPPER-DEPOSIT, YERINGTON, NEVADA** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  Dilles, J. H., Solomon, G. C., Taylor, H. P., Einaudi, M. T.
  1992; 87 (1): 44-63

- **ORIGIN OF HYDROTHERMAL FLUIDS AT OLYMPIC DAM - PRELIMINARY-RESULTS FROM FLUID INCLUSIONS AND STABLE ISOTOPES** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  Oreskes, N., Einaudi, M. T.
  1992; 87 (1): 64-90

- **ZONING AND GENESIS OF THE DARWIN PB-ZN-AG SKARN DEPOSIT, CALIFORNIA - A REINTERPRETATION BASED ON NEW DATA** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  Newberry, R. J., Einaudi, M. T., EASTMAN, H. S.
  1991; 86 (5): 960-982

- **EPITHERMAL DEPOSITION OF GOLD DURING TRANSITION FROM PROPYLITIC TO POTASSIC ALTERATION AT ROUND MOUNTAIN, NEVADA - A REPLY** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  SANDER, M. V., Einaudi, M. T.
  1991; 86 (4): 894-897

- **EPITHERMAL DEPOSITION OF GOLD DURING TRANSITION FROM PROPYLITIC TO POTASSIC ALTERATION AT ROUND MOUNTAIN, NEVADA** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  SANDER, M. V., Einaudi, M. T.
  1990; 85 (2): 285-311

- **ORIGIN OF RARE-EARTH ELEMENT-ENRICHED HEMATITE BRECCIAS AT THE OLYMPIC-DAM CU-U-AU-AG DEPOSIT, ROXBY DOWNS, SOUTH AUSTRALIA** *ECONOMIC GEOLOGY AND THE BULLETIN OF THE SOCIETY OF ECONOMIC GEOLOGISTS*
  Oreskes, N., Einaudi, M. T.
  1990; 85 (1): 1-28

- **PHASE-RELATIONS AMONG SILICATES, COPPER IRON SULFIDES, AND AQUEOUS-SOLUTIONS AT MAGMATIC TEMPERATURES - A DISCUSSION** *ECONOMIC GEOLOGY*
  Einaudi, M. T.
  1987; 82 (2): 497-501

- **GENESIS OF THE SPAR LAKE STRATA-BOUND COPPER-SILVER DEPOSIT, MONTANA .1. CONTROLS INHERITED FROM SEDIMENTATION AND PREORE DIAGENESIS** *ECONOMIC GEOLOGY*
  Hayes, T. S., Einaudi, M. T.
  1986; 81 (8): 1899-1931

- **MINERAL-DEPOSITS IN NORTHERN ALASKA - INTRODUCTION** *ECONOMIC GEOLOGY*
  Einaudi, M. T., Hitzman, M. W.
  1986; 81 (7): 1583-1591

- **A SPECIAL ISSUE DEVOTED TO SKARN DEPOSITS - INTRODUCTION - TERMINOLOGY, CLASSIFICATION, AND COMPOSITION OF SKARN DEPOSITS** *ECONOMIC GEOLOGY*
  Einaudi, M. T., Burt, D. M.
  1982; 77 (4): 745-754

- **ZINC-LEAD SKARNS OF THE YEONHWA-ULCHIN DISTRICT, SOUTH-KOREA** *ECONOMIC GEOLOGY*
  Yun, S., Einaudi, M. T.
  1982; 77 (4): 1013-1032

- **SKARN DEPOSITS IN THE YERINGTON DISTRICT, NEVADA - METASOMATIC SKARN EVOLUTION NEAR LUDWIG** *ECONOMIC GEOLOGY*
  Harris, N. B., Einaudi, M. T.
  1982; 77 (4): 877-898

- **SKARN FORMATION AND MINERALIZATION IN CONTACT AUREOLE AT CARR FORK, BINGHAM, UTAH** *ECONOMIC GEOLOGY*

Atkinson, W. W., Einaudi, M. T.
1978; 73 (7): 1326-1365

- **PROSPECTOR - COMPUTER-BASED CONSULTATION SYSTEM FOR MINERAL EXPLORATION** *JOURNAL OF THE INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY*
  Hart, P. E., Duda, R. O., Einaudi, M. T.
  1978; 10 (5): 589-610
- **PETROGENESIS OF COPPER-BEARING SKARN AT MASON VALLEY MINE, YERINGTON DISTRICT, NEVADA** *ECONOMIC GEOLOGY*
  Einaudi, M. T.
  1977; 72 (5): 769-795
- **ENVIRONMENT OF ORE DEPOSITION AT CERRO-DE-PASCO, PERU** *ECONOMIC GEOLOGY*
  Einaudi, M. T.
  1977; 72 (6): 893-924