

RÉSUMÉ

JOHN W. WHITNEY

President

EDUCATION

Ph.D. in MINERAL ECONOMICS, Pennsylvania State University, 1976

M.Sc. in MINERALOGY, University of Nebraska, 1971

B.Sc. in GEOLOGY, University of Nebraska, 1970

LICENSES

Nevada Certified Environmental Manager, EM-1318, 1991-present.

PROFESSIONAL MEMBERSHIPS

American Chemical Society (ACS)

American Institute of Chemical Engineers (AIChE)

American Institute of Mining Engineers (SME) – 25 year member.

American Society of Metals International: The Materials Information Society (Previously known As American Society of Metals), Honorary Faculty Member, 1980-present.

Nevada Innovation and Technology Counsel (NITEC)

The International Precious Metals Institute, Inc. (An International Association for the Precious Metals), Member, 1998-present.

The Society of Sigma Gamma Epsilon, (National Honorary Society in the Earth Sciences), Member, 1968- present.

The Society of the Sigma Xi (Devoted to the Promotion of Research in Science), Associate Member, Nebraska Chapter, 1971-present.

AWARDS

- “Nevada Inventor of the Year 2000.” Inducted into the Inventor’s Hall of Fame at the University of Nevada, Reno.
- “Silver Star Award for Environment for the year 2000,” presented by Truckee Meadows Tomorrow.
- One of Five Finalists for 2001 Kirkpatrick Chemical Engineering Awards, a major award in the industry.
- “Scot of the Year for the year 2005” presented by the Nevada Society of Scottish Clans for work to recycle photo chemicals.
- IChemE, Second Place, Worldwide Environmental Awards for the year 2005, London England
- Itronics awarded USA Gold at International Green Apple Environmental Awards for the year 2005, London, England
- GOLD’n GRO named one of the top 10 new technologies representing the best in agricultural innovation for the year 2005 by the Canadian Association of Agri-Retailers.



- Named International Green Hero by the Green Organization for 2006, London, England
- Northern Nevada Entrepreneur of the Year-Agricultural/Environment for 2007
- Itronics named Green Company of the Year for 2008 by the Nevada's Center for Entrepreneurship and Technology (NCET)
- NCET Technology Awards/Reno Gazette Journal Entrepreneur of the Year Award, Runner up Medium Entrepreneurial Technology Company of the Year, 2012

EXPERIENCE

President, ITRONICS INC., 1988 - present.

President, ITRONICS METALLURGICAL, INC., 1981 - present.

Led the development of heavy metal removal technology for treating liquid photographic wastes and metal contaminated gold mine waste waters. Successfully established an operating business that is now profitable to apply the technology in the photographic services market in the United States. Developed successful liquid turf fertilizer derived from treated liquid photo waste.

Invented GOLD'n GRO fertilizer derived from treated liquid & photo waste. Led the development of the GOLD'n GRO fertilizers including field testing, label development, registration, manufacturing, and commercialization for 12 separate fertilizers.

Invented and led commercial development of prometallurgical method to recover and refine silver from silver sulfide bearing chemical precipitates and concentrates.

Successfully pioneered development of new patented technology for separation and purification of gold and silver from sulfide sludges and precipitates.

President, WHITNEY & WHITNEY, INC., 1977 - present. Established and developed full service mineral industry management consulting firm. Through Whitney & Whitney, Inc. achieved the following:

Participated in the review and development of more than 10 new successful operating base metal and gold mines representing more than \$800 million dollars of new investment between 1978 and 1990.

Reviewed and participated in the evaluation of more than 120 proposed gold mine projects in the United States and Latin America. Performed concept geology development including alteration mapping and structural geology definition on three epithermal gold deposits in Nevada that became operating mines.

Successfully developed techniques for cyanide heap leaching of refractory gold ores that contained up to 95% clay content. Successfully assisted metallurgical process development, preparation of the feasibility study for Board of Directors approval, and assisted in design and construction of a 2 million tons per year gold leaching operation that successfully used the technology.



Performed and continue to perform non-operator representation and field audit services for operating mines. More than 30 years' experience in this activity on behalf of clients.

Wrote and published several books and articles on Mineral Economics. Assisted in evaluation and amendment of mine taxation laws in Wisconsin, South Dakota, Nevada, Minnesota, Utah and Alaska in the United States and participated in restructuring the mining tax law for Bolivia.

Consultant, OFFICE OF TECHNOLOGY ASSESSMENT, U.S. Congress, 1977-1978. Analyzed mineral access problems in Alaska, and assessed impact of various federal laws, policies and practices on non-fuel mineral exploration and mine development in the United States.

Consultant, 1976-1977. Provided minerals resource development planning and transportation studies, preliminary feasibility studies and property evaluations and prepared and presented expert testimony on mineral tax matters for government agencies, consulting firms, law firms and mining companies.

Consultant, BKW ASSOCIATES, 1974-1975. Evaluated mining investment opportunities in Mexico and the Philippines for international mining companies, and performed geological consulting assignments for private interests. Assisted in studies of the economic impact of EPA regulations on domestic copper, zinc and aluminum smelting industries.

Penn-State Research Assistantships, 1972-1975. Conducted research on minerals end-uses in the U.S. for the U.S. BUREAU OF MINES. Participated in an international metal trade study for the RESOURCES FOR THE FUTURE FOUNDATION.

Geologist-Mineralogist, Geophysicist, 1971-1972. Two field seasons with HUMBLE OIL AND REFINING COMPANY and GEOTERREX LTD.

TEACHING EXPERIENCE

1988: Adjunct Faculty Member, Mine Engineering Department, Mackay School of Mines, University of Nevada, Reno.

1980: Honorary Faculty Member of the Academy of Metals and Materials under the seal of the American Society for Metals.

1979 - 1986: Seminars for client groups on "Financial and Risk Analysis of Mining Projects" and "Economics of International Metal Resources," presented two seminars per year that generated continuing education credits for attendees through the University of Nevada.

1978: University of Arizona, College of Mines, "Economics of Metals Industries" (3 credit graduate course).

1968 - 1971: University of Nebraska, Geology Department, lab instructor for introductory physical geology, introductory, intermediate and advanced mineralogy and petrology and semi quantitative and quantitative methods for identification of minerals.



SELECTED PUBLICATIONS AND PRESENTATIONS

John W. Whitney, "Fully Integrated Photochemical Recycling," presented to The Minerals, Metals and Materials Society (TMS) at the Fourth International Symposium on Recycling of Metals and Engineered Materials, Pittsburgh, PA, October 2000.

John W. Whitney, "Recycling Used Photochemicals into High Quality Fertilizer," presented to the 1998 Precious Metals Conference, Toronto, Ontario, Canada.

John W. Whitney and Garth H. Sibbald, "Taxation and Depletion," Chapter 2.4 in the SME MINING ENGINEERING HANDBOOK - 2nd Ed., published by the Society for Mining, Metallurgy, and Exploration, Inc., Denver, CO, in press.

Raymond F. Mikesell and John W. Whitney, The World Mining Industry: Investment Strategy and Public Policy, Allen & Unwin, Boston, MA, 1987.

Section Editor, Chapter 7, "Economics of Lead and Zinc," in Economics of Internationally Traded Minerals, published by the Society of Mining Engineers, Denver, CO, 1986.

"Canada-U.S. Resource Policy Toward the Copper Mining Industry - A Comparison," Chapter 9, Vol. 2 of the 3-volume study of Canada-U.S. natural resource policy jointly sponsored by the World Peace Foundation, Boston, and the C.D. Howe Research Institute, Montreal, 1981.

"The Physical Characteristics of the International Copper Industry," Chapter 2 The World Copper Industry by Raymond F. Mikesell, Resources for the Future Foundation, 1979.

J. W. Whitney and R. E. Whitney, South Africa Tax Supplement to Investment and Risk Analysis in the Minerals Industry, Whitney & Whitney, Inc., Reno, Nevada, 1979.

"Potential Economics Benefits of Mine Development in Alaska." Presented at the 4th Annual Alaska Miners Association Convention, October 26-27, 1979.

"Effects of the Federal Regulatory Framework on Mineral Exploration and Mine Development in the United States." Presented to the Economics of Exploration for Energy Resources Conference, sponsored by the Department of Economics and the C.V. Starr Center for Applied Economics at New York University, May 17-18, 1979.

"Resource Planning Act Mineral Values Estimate," prepared for the USDA Forest Service, Missoula, Montana, Contract No. 53-0343080881, January, 1979.

J. W. Whitney and R. E. Whitney, Investment and Risk Analysis in the Minerals Industry, Whitney & Whitney, Inc., Reno, Nevada, 1978, revised edition published in 1979, 1982.

J. W. Whitney and D. Bryan, "Assessment of Transportation Access Requirements for Minerals Exploration and Mine Development and Operation in Alaska. An Evaluation of Near and Long Term Minerals Exploration and Mine Development Scenarios Based on Geographic Study Areas," prepared for the Office of Technology Assessment, December, 1977.



"New Resource Ownership Strategies - the Philippines Model." Presented to the 2nd Annual Alaska Miners Association Convention, October 27-29, 1977.

"An Analysis of Copper Production, Processing and Trade Patterns," 1950-1972. Doctoral dissertation, Pennsylvania State University, 1976.

"Analysis of North American Porphyry Copper Occurrence and the Cumulative Copper Metal Curve Using Monte Carlo Simulation," Economic Geology, Volume 20, No. 3, pp. 59-66, May 1975.

J. D. Ridge, G.H.K. Schenk, J. E. Tilton, B. A. Hillman, K. B. Nair and J. W. Whitney, "Interrelated Data for Technical Products with Federal Standard Industrial Classification," (SIC): final report to the U. S. Bureau of Mines, Grant No. GO 122133, July 1974.

PATENTS APPLIED FOR AND ISSUED

<u>Country</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Issue Date</u>	<u>Title</u>
U.S.	786,33611	Oct. 1984	1988	Process to Manufacture Silver Chloride
Australia	485 78/85	11 Oct. 1985	1989	Process to Manufacture Silver Chloride
Canada	----	9 Oct. 1985	1985	Process to Manufacture Silver Chloride
South Africa	85/7833	11 Oct. 1985	1986	Process to Manufacture Silver Chloride

