
Charles Frederic Rand and Robert Earl McConnell: The Men Behind the Awards

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Charles Frederic Rand: A Life of Mining Achievement



Born in Canaan, Maine, on 7 August 1856, Charles Frederic Rand was to become, according to the *Engineering and Mining Journal-Press* (15 July 1922), “one of the leaders in all engineering movements for many years.” Although now little is known about his life, it is evident he was a skilled leader and a man of intense drive—a self-

educated engineer, president of numerous companies throughout the world, and developer of iron, steel, and manganese mines and iron mining processes.

One can glean some idea of the nature of his achievements from the honors he received. In 1913, the Spanish government presented him with the Grand Cross of Knight Commander of the Orden de Isabel la Catolica (Order of Isabella the Catholic). Since it was established in 1815, this honor has been bestowed upon notable people outside Spain in recognition of services that benefit that country. In 1922, Rand also received the Croix de Chevalier de la Legion d’Honneur [Chevalier (Knight) Cross of the Legion of Honor] from the French government. Normally reserved for French nationals, this honor can be conferred upon those outside France who have served the country or advanced its ideals.

The *New York Times* (NYT) cites, on 3 July 1921, a cable received by the American Institute of Mining Engineers (AIME) headquarters noting Rand’s “election as honorary member of the Iron and Steel Institute of Great Britain.” The NYT describes him as “one of the leaders of post-war [i.e., WWI] research in American industry.” It states further, “He is identified with the construction of railways and the opening and operation of iron mines in Cuba, besides being largely interested in mines of manganese and copper ores.”

Beginning his career in the railroad industry, Rand later turned to mining. By 1886, he was president and general manager of the Aurora, Ashland, Atlantic, Iron Belt, Superior, Palms, and Comet iron mining companies, representing

oil tycoon John D. Rockefeller’s interests. He went on until 1902 to represent his principals’ interests in the Monte Cristo, Washington, and Coeur d’Alene, Idaho, mining districts. Rand’s attention then turned also to steel and manganese.

In 1904, Rand, as president of the Spanish-American Iron Company, ventured to the Mayarí (pronounced like “fiery”), a name given by engineers for a plateau of sweeping pine forests that stood between the lowland jungles of Nipe Bay, on the north coast of Cuba, and the cloud-covered peaks of the north-eastern Cuban mountains. There, he uncovered a huge trove of iron ore.

According to *Cuba and Railroads*, by Mark Reutter, “The Spanish had known about the red pellet-like earth of the plateau for centuries. They called the area *tierras de perdigones* or the shot grounds. What lay beneath the surface soil, however, had never been examined until Charles F. Rand, president of the Spanish-American Iron Company, began to assay the plateau in 1904. Eventually, 3,030 borings were made to a depth of 50 ft. The analyses showed that the plateau—covering 10 miles by 4 miles—contained 500 million tons of soft hematite ore, with a potential worth of USD 1 billion [in current dollars, more than USD 25 billion].”

The company went on to secure surface and mineral rights to 27,850 acres of the Mayarí. Rand participated in developing the mine as well as the railroad system needed to transport the ore out of the area for processing and shipping.

Origins of the Award

The award is intended to honor distinguished achievement in mining (i.e., metallurgy, petroleum, or any other field in the mineral industry) administration. This is the area in which Rand excelled. In addition to his leadership roles in industry, he was elected president of AIME in 1913, served as its treasurer from 1910 to 1912, and was the AIME District of New York director from 1914 to 1927. He also served as president of the United Engineering Society and as a member of the National Research Council, American Society of Testing Materials, Naval Consulting Board, John Fritz Medal Board of Award, and Committee on Military Engineering in New York.

Three years following his death in 1927, admiring colleagues contributed USD 10,000 to a fund to memorialize Rand, whose “purpose shall be such as to promote the general

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welfare of the institute [AIME]) and to constitute a permanent memorial of the usefulness of Mr. Rand, who for many years gave unstintingly of his time and talents in its services." Among other initiatives, the foundation endowed the Charles F. Rand Memorial Gold Medal.

Robert Earll McConnell: Man of Many Talents



A few years after McConnell was born in 1889 in Montrose, Colorado, the family moved to the pioneer town of Durango, Colorado, which had no paved streets or sidewalks. But it was a great area in which to grow up, where the boy could learn about mining from clients of his father's bank and from observing the activity

at the gold and silver mines close to his home. He imbibed a strong work ethic from his father, who owned the Smelter City Bank and was elected mayor several terms. From the age of 12,

McConnell held various summer jobs, working with cattle, as a blacksmith, and at nearby mines.

When he attended the University of Colorado, he worked in the Esmeralda Mines near Silverton, Colorado, joined the Colorado National Guard, and worked during the summer as a chainman on a township survey team. He soon followed his dream by moving to New York to study mining engineering at Columbia University School of Mines. After his father's bank failed, McConnell struggled to pay tuition, working part-time and borrowing money from relatives. He chanced to room with Harvey S. Mudd Jr., the son of a man McConnell would soon proclaim was "one of the most capable and successful mining engineers in the United States." Following McConnell's graduation, Harvey Mudd Sr. employed both his son and McConnell at various mines, seeing that both young men worked their way up through the mines until they learned every responsibility. In this way, McConnell advanced over 5 years to mine foreman at Tumco Mines, superintendent of Big Horn Mines, and mining engineer with S.W. Mudd & Associates.

When the US entered WWI in 1917, McConnell joined the Navy, where he was assigned the task of developing a stable

Rand and McConnell Award Recipients



The Charles F. Rand Memorial Gold Medal and Robert Earll McConnell Award can be given each year through the Society of Petroleum Engineers.

They can also be awarded through SPE's sister societies affiliated through the American Institute of Mining, Metallurgical, and Petroleum

Engineers [AIME]. These include the following:

- ▶ Society for Mining, Metallurgy, and Exploration
- ▶ The Minerals, Metals, and Materials Society
- ▶ Association for Iron and Steel Technology

Charles F. Rand Memorial Gold Medal Petroleum Industry Recipients

Since the Charles F. Rand Memorial Gold Medal was inaugurated in 1932, among its recipients have been 13 people in the petroleum industry:

Harry Carothers Wies	1949
Eugene Holman	1953
Michael L. Haider	1970
Robert O. Anderson	1975
John E. Swearingen	1980
Ralph E. Bailey	1985
Fred H. Poettmann	1992
M. Scott Kraemer	1997
Donald G. Russell	2000
William G. Lowrie	2001

David F. Mothersill	2003
K. Terry Koonce	2004
Claudio Descalzi	2012

Robert Earll McConnell Award Petroleum Industry Recipients

Since the Robert Earll McConnell Award was established in 1968, among its recipients have been 19 people in the petroleum industry:

Rollin Eckis	1969
Robert F. Bauer	1971
C. Paul Besse	1974
Robert H. McLemore	1976
Geoffrey G. Hunkin	1977
J. Douglas Jr.	1979
D. Peaceman	1979
H. Rachford Jr.	1979
Franklyn K. Levin	1981
Howard A. Koch	1988
Frank J. Schuh	1994
Ronald L. Geer	1995
R. Lyn Arscott	1998
Franklin M. Orr Jr.	2001
L. Kent Thomas	2002
William L. Fisher	2004
James J. Metcalf	2009
Ben W. Ebenhack	2011
Norman Warpinski	2012

Rand and McConnell Awards Basics

Both the Rand and McConnell awards are AIME major awards. No AIME major award winner is eligible to be nominated for another AIME major award. The winner of either the Charles F. Rand Memorial Medal or the Robert Earll McConnell Award is also not eligible for the John Franklin Carl Distinguished Professional Award or the Lester C. Uren Technical Excellence Award for a period of 5 years. The nominators will be required to resubmit the nominations with updated materials covering the intervening 5 years.

Charles F. Rand Memorial Gold Medal Nominee Eligibility

The Charles F. Rand Memorial Gold Medal was established in 1932 and is awarded for distinguished achievement in mining administration, including metallurgy and petroleum. Charles F. Rand was president of AIME in 1913 and treasurer from 1922 to 1927. Rand was a developer of mines and new processes in iron mining. He was president of several mining companies.

- ▶ You cannot nominate yourself.

Charles F. Rand Memorial Gold Medal nominees are not eligible for the following reasons:

- ▶ They have received the Anthony F. Lucas Medal or the Robert Earll McConnell Award.
- ▶ They are a recipient of SPE Honorary Membership.
- ▶ They are on the current SPE Board of Directors, Charles F. Rand Memorial Gold Medal award committee, or have served in these positions during the past 2 years.

Robert Earll McConnell Award Nominee Eligibility

The Robert Earll McConnell Award was established in 1968 and recognizes beneficial service to humanity by engineers through significant contributions that advance a nation's standard of living or replenish its natural resource base. This includes the discovery of a major source of mineral supply, development of an engineering process to extend

present minerals supplies, or outstanding engineering contributions, all of which enhance the standard of living in other ways. Robert Earll McConnell was a member of AIME and a prominent mining engineer.

- ▶ You cannot nominate yourself.

Robert Earll McConnell Award nominees are not eligible for the following reasons:

- ▶ They have received the Anthony F. Lucas Medal or the Charles F. Rand Memorial Medal.
- ▶ They are a recipient of SPE Honorary Membership.
- ▶ They are on the current SPE Board of Directors, Charles F. Rand Memorial Gold Medal award committee, or have served in these positions during the past 2 years.

To Nominate for the Rand or McConnell Award

- ▶ Follow the instructions at www.spe.org/awards to find the nomination form.
- ▶ Complete all required information on the nomination form; incomplete nominations will not be reviewed.
- ▶ Include a complete statement of the reasons for proposing the candidate, with a record of the candidate's professional and industrial achievements in detail.
- ▶ Submit the nomination by 15 February 2013.
- ▶ Encourage no more than three colleagues to send letters supporting the nomination to awards@spe.org.
- ▶ All information must be included on the nomination form. Attached resumes or CVs will not be reviewed. Nominations and letters of recommendation are confidential. Candidates remain on the active consideration list for 3 years. If a candidate is not selected during the 3-year active consideration cycle, they can be renominated the following year if all other eligibility requirements are met.
- ▶ Questions? Contact awards@spe.org.

catalyst to convert atmospheric nitrogen and hydrogen into an active nitrate form, an indispensable compound in manufacturing ammunition. Natural nitrates were in scarce supply, but Germany had developed a stable catalyst about 1912. McConnell did not discover the catalyst. Instead, in January 1919, he performed a dangerous assignment in Germany. According to a US Department of the Interior National Register of Historic Places document, "Wearing his long Navy overcoat, Lieutenant McConnell entered Germany's I.G. Farben Haber nitrogen plant and surreptitiously removed and pocketed nitrogen-hydrogen nodules from a catalyst chamber. His courageous act brought about mass nitrate production and secured national defense" in many countries.

After looking into silver mines in Mexico following the war, he began investigating the stock market. In his spare time, he

developed logarithmic charts called analagraphs to monitor the stock of major corporations and industries and analyze them over a 15-year span. In 1922, he published a book explaining the analyses. He then established an investment securities partnership. After a few months, the firm bought a seat on the New York Stock Exchange.

The company focused on groundbreaking industrial innovations of the early 20th century. Following this, McConnell served as president and director of Mayflower Associates; president and director of the Pilgrim Exploration Company, producing oil; and chairman of the board and president of General Aniline and Film Corporation. Because of his wise investment strategy, Mayflower Associates survived the stock market crashes of 1929 and the depression in the years that followed.

Spurred by what he predicted to be a lengthy war, McConnell agreed to serve as business advisor to the US Department of Commerce for USD 1 a year during WWII. The *Washington Post* proclaimed his appointment brought “one of the nation’s highest priced executives to augment the already imposing panel of special experts whom Secretary Hopkins [Department of Commerce] has gathered about him.” In addition to many other services performed during WWII, McConnell was appointed by US Secretary of the Treasury Henry Morgenthau as chief executive officer of General Aniline and Film Corporation, which had formerly been a German chemical subsidiary of I.G. Farben. Following the war, President Harry S. Truman presented him with the Certificate of Merit for forming the Engineers Defense Board to assist the US government on engineering problems.

The Robert Earl McConnell Foundation and the Award

The *Washington Post* expounded on McConnell’s career, “which included the occupations of miner, blacksmith, cowboy, timberman, assayer, chemist, surveyor, engineer, geologist, mine shift boss, foreman, superintendent, mine manager, organizer of a stock exchange firm, corporation founder, president and director in more huge mining and manufacturing firms than you can shake a Moody’s register at.”

Along the way, this multifaceted man amassed quite a fortune. In 1936, McConnell established the Robert Earl McConnell Foundation to share his fortune to advance education, charitable, and religious purposes. A major endeavor of the foundation is to provide gifts to colleges to establish the Thomas Jefferson Awards. This award is presented to university faculty members who most exemplify the character, professional attainments, and ideals of US President Thomas Jefferson.

Following McConnell’s death on 17 April 1971, his foundation presented AIME with an award fund. The AIME Engineering Achievement Award, established in 1968, was renamed in McConnell’s memory. With McConnell’s broad experience in engineering, finance, and public service, he evolved a philosophy based on the engineer’s role in society—a role the award’s winners emulate: “The production of mines is new wealth contributed to the world; the return to the mining engineer comes from the Earth, not from the pockets of any individual. Metals and minerals with age-old uses for civilization, and newly discovered products of the Earth as well as discovery of their usefulness, enrich society as a whole. The engineer, then, is one of the original entrepreneurs, one of the basic motive forces of capitalism.” **JPT**