



## Introduction

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The editors are delighted to present to you this compilation of papers in honour of John Tilton's 80th birthday and his many intellectual contributions. John set out on his professional path with his Ph.D. thesis on international trade patterns of nonferrous metals in the 1960s at Yale University under the tutelage of Bela Balassa. After a hiatus of a few years, he returned to what would be his life's work and profession—Mineral Economics. This return point was when he joined the Mineral Economics Program at Penn State as an Associate Professor in 1972 with a promotion to full in 1975. A joint research initiative, the Mineral Economics and Policy program, between Resources for the Future (RFF) and Penn State was started in the early 1980s with John as the driving force at Penn. During these years, his research included articles, book chapters, and conference proceedings that looked at cartels and competitiveness in metal industry, public policy and metal trade patterns, causes and effects of metal market instability, metal demand and substitution, metal demand forecasts, fear of shortages, the meaning or resources, and intensity of use. These themes set the stage for much of John's later contributions. Of the 21 books and monographs he has authored, co-authored, or edited over the years, five of them were published during his employment at Penn State. His latest book, *Mineral Economics and Policy*, co-authored with Juan Ignacio Guzmán, which had the same title as the RFF program, carried on his legacy and was published at the spry age of 77.

By the time he reached the Colorado School of Mines (CSM) in 1985 as the William J. Coulter Professor of Mineral Economics, his strong economic abilities, poised and polished communication skills, and extensive institutional knowledge of mineral markets had made him a leading schol-

ar in the field of Mineral Economics. Shortly after arriving at CSM, he added another theme to his repertoire of research topics and expertise, resources, and development.

John served as Division Director from 1988 to 1998 and helped to build the distinctive Mineral Economics Program in stature. Of the four US Ph.D. degree granting programs in Mineral Economics when John came to CSM, three (Penn State, Arizona State, and West Virginia) have fallen by the wayside. Only CSM's Mineral Economics Program, with Energy added to the title in 2007, marches on in John's shadow.

Despite his administrative responsibilities, John continued supervising masters and Ph.D. theses for a prodigious number of graduate students and maintained an active regimen of academic publications and conference presentations. The effect of metals on the environment and sustainability became another prominent interest of his.

In 2005, John gave up his tenure and Coulter professorship at CSM and started spending part of his time as a professor at the Pontifical Catholic University of Chile. He taught part time for more than a decade and put his mark on their up and coming program in Mineral Economics. Graduate students at the School of Mines still had the benefit of taking his metals course once a year until the sad day he turned in his office key in 2015. All the while, he continued supervising students and maintaining an active research agenda.

John's love of travel, his stature in the field of mineral economics, and the universal appeal of his work are witnessed by all his national and international activities. A number of his articles have been translated into Spanish. He has served on the editorial boards of a number of journals: Mineral Economics, the Journal of Energy and Natural Resources Law, Journal of Resource Management and Technology, and the Natural Resources Forum. He has been on advisory boards in Colorado, Australia, and Sweden, among others. He has been on numerous commissions and committees for the US National Research Council of the National Academy of Science. He has held visiting positions in a number of countries including France, Japan, and Switzerland.

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Accolades he has garnished along the way include University Professor Emeritus from the Colorado School of Mines, University Fellow at Resources for the Future, Hayden Williams Fellow at the Western Australia School of Mines and Curtin University of Technology, Honorary Doctorate at Luleå University of Technology, President of the Mineral Economics and Management Society, the Distinguished Service Award from the Mineral Economics and Management Society, Senior Fulbright Scholar at the École Nationale Supérieure des Mines de Paris, and the Mineral Economics Award from the Society for Mining, Metallurgy, and Exploration.

As a further testament to our appreciation and John's influence on the profession, a rich array of authors have contributed to this issue. They are authoritative, well-known academics, civil servants, and industry captains from countries where John has been active. Their contributions range from full length original articles representing John's solid academic work to personal reflections illustrating John's personality.

We have also asked John to look back as an introduction to this special issue. The 22 articles are divided into 6 groups, which resonate with John's research interests over the years all put into the setting of today's burning issues:

- Personal reflections
- Critical metals
- Fossil free future
- China emerging dragon
- Resource rich countries
- Mineral policy

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