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CERENA SEMINARS
2025/2026

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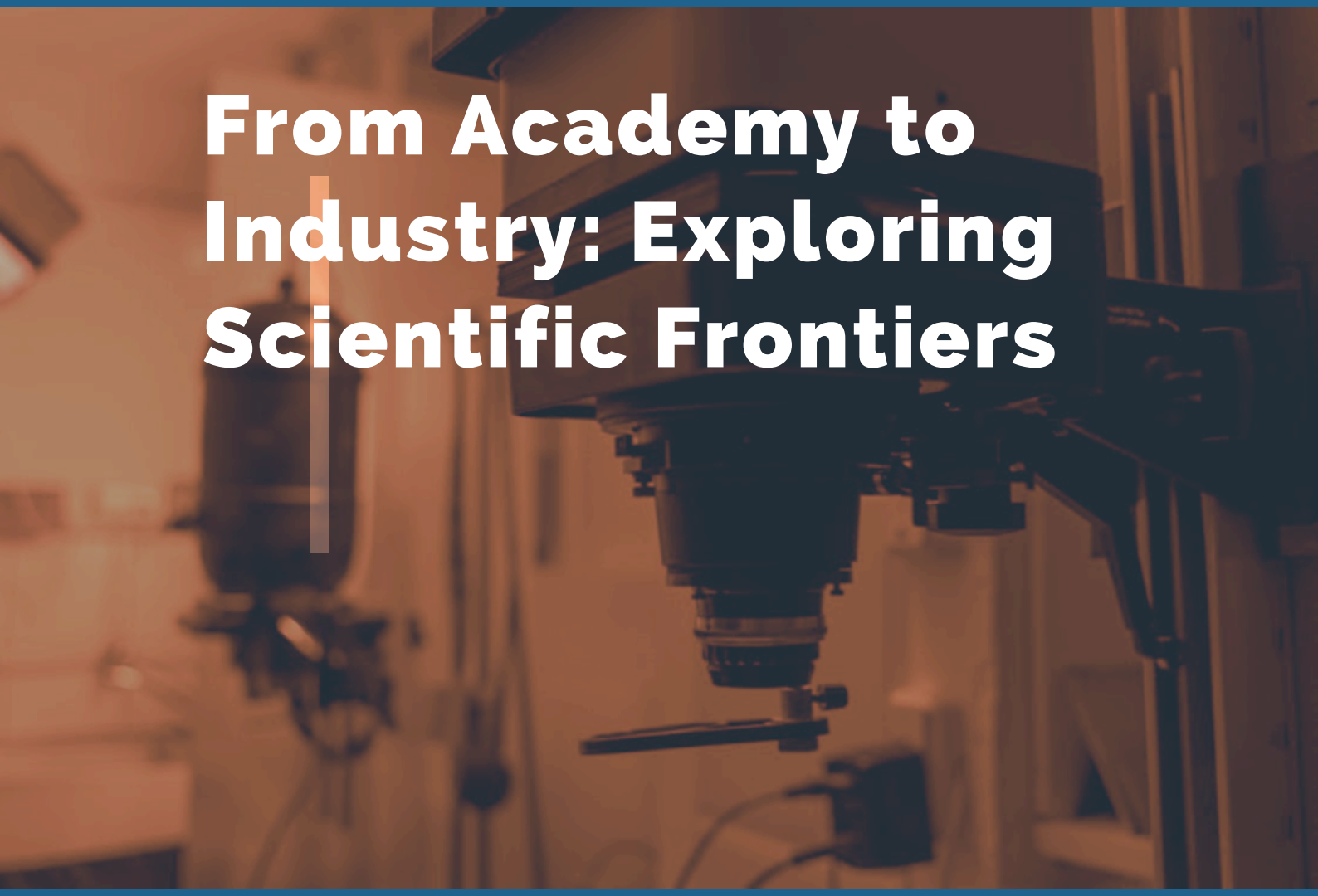

From Academy to Industry: Exploring Scientific Frontiers

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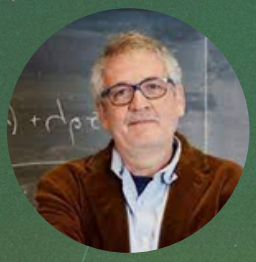
The Modern Mining Engineering Transformations (I)

September 25th, 2025
13:00
Room C13 - IST
Room F405 - FEUP

The concept of digital mining innovation lies at the heart of the transformation of modern Mining Engineering. Digital innovation in mining involves the adoption of Industry 4.0 technologies—such as artificial intelligence (AI) and data analytics—to optimize production, improve safety, and enhance sustainability across the mining value chain.

This presentation highlights two key areas of digital innovation:
i) The application of spatial data science methods and technologies for mineral resource prediction, and the integration of risk into production scheduling through stochastic mine planning. **Professor Amílcar Soares**.
ii) Digitization in underground mining operations to increase safety and optimize production and / or productivity leading to improved economics in a globally competitive industry, including a discussion about communications options, automation, and the Internet of Things (IoT). **Engº António Salvador.**



Amílcar Soares is a Full Professor at the Instituto Superior Técnico (University of Lisbon) and a Visiting Professor at several other institutions in the UAE, Australia, and Brazil. He was a Distinguished Lecturer for the International Association of Mathematical Geosciences.
His core research and development work centers on geostatistics and spatial data science methods applied to environmental, mineral, and energy resource assessments.
In the environmental and health domains, his recent projects have focused on extreme drought risk characterization and COVID-19 risk assessment.
In the energy sector, his latest work involves geostatistical seismic inversion for geomechanical characterization and risk assessment of subsurface targets of CO_2 sequestration.
He has coordinated numerous international research projects in mineral resource assessment, with recent efforts emphasizing critical raw material resource evaluation.

António Salvador is a seasoned mining executive with over three decades of international experience spanning four continents. As Managing Director of SOMINCOR SA, he led Europe's largest zinc mine and sixth largest copper mine—Neves-Corvo—through transformative growth, overseeing a workforce of 2,600 and managing capital projects exceeding €500 million. His strategic leadership not only elevated production but also strengthened the mine's role in Portugal's economy, engaging with stakeholders from local communities to EU-level institutions.
Antonio's career is defined by his ability to bridge technical expertise with operational excellence. From his early days in rock mechanics in South Africa and Canada to senior roles in Brazil, the UK, and Portugal, he has consistently driven innovation and performance. His tenure as Director of Operational Technology at Lundin Mining Corporation saw the rollout of cutting-edge automation and digital infrastructure across global assets, including private LTE networks and advanced process control systems.
He holds a BASc in Geological Engineering from the Department of Civil Engineering at the University of Toronto and is a Chartered Engineer with multiple professional affiliations, including IOM3 (UK), AusIMM (Australia), and the Chamber of Mines (South Africa).

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