

**Global Minerals Education and the Society  
of Mining Professors/Societät der  
Bergbaukunde:  
A Vision for the Future and a Plan of Action**

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# The Positive Side!

- Minerals education, globally, is undergoing considerable change and even transformation!
- Programs are becoming more innovative, seeking new partnerships, developing joint educational and research opportunities and expanding into new areas.
- A number of developments and initiatives, can be highlighted as “best practices” in minerals education and research around the world (to be discussed under Part II of this Session).
- A full discussion can also be found in study commissioned by the Society of Mining Professors/Societaet Der Bergbaukunde, (2004): *Global Minerals Education and the Society of Mining Professors/Societaet der Bergbaukunde: A Vision for the Future and a Plan of Action.*

# The History of the Societät der Bergbaukunde

- The "Societät der Bergbaukunde" (Society of Mining Sciences) was established in Schemnitz by Ignaz Von Born in 1786, as the first international professional/scientific society.
- Membership included many great scientists of the day (Sir Humphrey Davy was a notable member and participant of the group).
- The Society developed branches and offices in 15 countries and, at its peak, listed 154 members.
- After the death of Von Born in 1791, the Society began to fold and eventually closed few years later.

## The Society of Mining Professors/Societät der Bergbaukunde (SMP)

- Even without an official Society, the links between the mining professionals in Europe continued to be strong.
- In 1990, in light of the imminent changes to European laws (i.e., each member of the EU must recognise the degrees of every other member state) 34 mining professors from 20 countries founded a new "Societät der Bergbaukunde" under the name of "Society of Mining Professors (SMP)".
- This initiative was lead by Professor Gunther Fettweis, who proposed the formation of the Society during the 150th anniversary of his home institution, the Montanuniversität Leoben.
- The SMP was then formed in 1990 with some 70 members, representing 39 mining faculties (or colleges) in 27 countries (mainly in Europe).

# Original Agenda of the SMP

- Develop a common mining engineering curriculum:
  - ◆ Comparison of 109 curricula from 96 universities in 49 countries
  - ◆ Recommendations on minimum content for agreed subjects for establishing a basic curriculum
  - ◆ Agreement on core subjects, while preserving time for “electives,” i.e. giving each university flexibility to incorporate material relevant to its circumstances
- Identify all institutions, worldwide, which offer a degree in mining engineering - 270 institutions in 84 countries have been identified so far!

# Major SMP Initiatives

- Networking and Collaboration
  - ◆ Annual General Meetings (2005 in Ankara, Turkey)
- Educational Programs
  - ◆ The European Mining Course (1996), a joint program developed by Delft (Netherlands), Imperial College/CSM (England), Helsinki (Finland) and Aachen (Germany)
  - ◆ The new (2004) course in European Geotechnical and Environmental by Kosice (Slovakia), Miskolc (Hungary), Wroclaw (Poland) and Berlin and Freiberg (Germany)
  - ◆ A special joint meeting (2002) with AISEMIN, the association of Spanish speaking mining schools with members in South and Central America and Spain. The result is a closer link with the South American schools.

# Major SMP Initiatives (cont.)

## ■ Research Programs

- ◆ Promoted and facilitated co-operative research efforts.
- ◆ Worked with industry and national governments to support the case of minerals research funding.
- ◆ The General Annual Meeting of 1998 in Italy, jointly organised with Eurominerals and Euromines, (i.e., the professional and trade organizations representing minerals activity in Europe), focused on the theme of research in the minerals industries.
- ◆ A database of the research interests of the Society Members is currently under development.

# Major SMP Initiatives (cont.)

## ■ Public Outreach Program:

- ◆ Undertaken several initiatives to improve the image of the discipline and serve as the global representative of mining engineering academia.
- ◆ In 1999, after the Minetime 99 conference in Düsseldorf, Germany, the Society co-organised an international press conference aimed at improving the image of mining and emphasizing the positive societal contributions of the sector.
- ◆ Organized technical site visits and special symposia, e.g., a special symposium in 2000 “The Port of Rotterdam, the Largest Mine in the World”.

# Major SMP Initiatives (cont.)

## ■ Sustainable Development

- ◆ At the 2003 Annual General Meeting, in Milos, Greece, the SMP co-sponsored, with many other organizations, including SME, an International Conference on Sustainable Development Indicators for the Mining Industry (SDIMI 2003).
- ◆ A Declaration for Sustainable Development, known as the “Milos Declaration” was presented, and endorsed, by the major professional and scientific international minerals groups.
- ◆ A landmark statement, the Milos Declaration defines the role, responsibilities and opportunities of the scientific and professional societies in the transition to Sustainable Development.

# **“Milos” Signatory Organizations**

- **The American Society of Mining and Reclamation**
- **The Australasian Institute of Mining and Metallurgy**
- **The Canadian Institute of Mining, Metallurgy and Petroleum**
- **The European Federation of Geologists**
- **The Iberoamerican Association of Mining Education**  
(The Asociación Iberoamericana de Enseñanza Superior de la Minería)
- **The Institute of Geologists of Ireland**
- **The Peruvian Institute of Mining Engineers**  
(Peruvian El Instituto de Ingenieros de Minas del Peru)
- **The Society for Mining, Metallurgy and Exploration**
- **The Society for Mining, Metallurgy, Resource and Environmental Technology**  
(Gesellschaft fuer Bergbau, Metallurgie, Rohstoff- und Umwelttechnik e.V.)
- **The Society of Mining Professors**  
(Societaet der Bergbaukunde)
- **The South African Institute of Mining and Metallurgy**
- **The Spanish Association of Mining Engineers**  
(Consejo Superior de Colegios de Ingenieros de Minas)

# SMP Today

- Over the last 14 years, Society membership has increased to 140 members representing 60 mining schools in 36 countries.
- Continues to act as a catalyst and platform for developing innovative programs, seeking international partnerships and promoting co-operation.
- Fosters information exchange and dissemination of “best practices” in minerals education and research around the world.
- **However, the emphasis in membership has been concentrated in Europe and was restricted to mining engineering academics in a strict sense and was reserved for those holding the rank (or equivalent) of full-professor**

# A New Vision for the Society of Mining Professors/Societät der Bergbaukunde

- Global discussion to transform and position the Society of Mining Professors/Societät der Bergbaukunde as the premier global voice of the academic minerals disciplines and to lead the effort of restructuring minerals education.
- It was recommended that the Society should be a vibrant global Society, representing the majority of minerals academics and should make a significant contribution to a sustainable future.
- The main goal of the Society should be to “*protect and guarantee the scientific, technical, academic and professional knowledge required to ensure a sustainable supply of minerals for mankind*”.

**Global Minerals Education and the  
Society of Mining Professors / Societaet der  
Bergbaukunde:  
A Vision for the Future and a Plan of Action**

**A Report Submitted to the Society by the Planning  
Subcommittee, March 2004**

**Members:**

Agioutantis (Greece)

Archibald (Canada)

Badino (Italy)

Cedron (Peru, South America)

Drebenstedt (Germany)

Durucan (Britain)

Galvin (Australia and Oceania)

Karmis, Chair (USA, North  
America)

Martens (Germany)

Palarski (Poland)

Pasamehmetoglu (Turkey)

Phillips (South Africa/Sub-Saharan Africa)

Ramirez (Spain)

de Ruiten (Netherlands)

Scoble (Canada)

Shaw (Britain)

Wagner (Austria)

# The New Objectives of the Society (SMP, 2004) state:

- To ensure that university-based education at the highest level, in the minerals disciplines, can be sustained.
- To ensure that advancement through research, of the scientific and engineering knowledge in the areas of relevance to the provision of mineral resources continues.
- To establish a network of academics involved in achieving the above goals.
- To enhance the image of the minerals-producing industries, promote development of educational courses within these disciplines and foster pride in the disciplines.
- To establish and maintain ongoing contacts with the global mineral industry.
- To promote co-operation in education and research and identify co-operative opportunities.

# The New Membership of the SMP

- The full spectrum of engineers and scientists, actively participating in minerals education and research, should be eligible to be members of the Society.
- A **new organizational structure** is recommended to assure global coverage and inclusion of the minerals disciplines.
- These recommendations were accepted at the Annual General Meeting in Freiberg, Germany (2004) and final ratification of constitutional changes will be requested at the Annual General Meeting in Ankara, Turkey, June 2005.

# What is the Future Role of the SMP?

## ■ Academic Programs:

- ◆ Guardianship and leadership of academic knowledge and standards
- ◆ Awareness of health, safety, environment, community and sustainability in minerals education programmes
- ◆ Development of clusters/networks between universities, industry, governments, NGOs to facilitate exchanges, sharing facilities and joint course offerings
- ◆ Review and assessment of participating programs
- ◆ Establishment of a register and data bank of programs, personnel, facilities and other resources associated with global minerals education and research
- ◆ Recognition of undergraduate, postgraduate and post academic programmes of participants
- ◆ Guidance in training future academics in the minerals disciplines

# What is the Future Role of the SMP?

## ■ Research Programmes:

- ◆ The Society will actively seek to enhance the funding base for minerals-related research with governments and industry.
- ◆ Actively promote coordination of research grants and the undertaking of major research initiatives.
- ◆ Promote interdisciplinary research and joint research initiatives amongst member institutions.
- ◆ Play a particular role in assisting colleagues in emerging countries.

# What is the Future Role of the SMP?

## ■ Communications:

- ◆ The Society will pursue the resumption of the Mineral Resources Journal (MRJ) and upgrade its current newsletter to a more substantial communication journal. Each issue will feature a Minerals Program, with details of staff, student numbers, curriculum, research programmes, etc.
- ◆ The Society will be actively engaged in communication programs that promote
  - ◆ Pride in the minerals industry and protecting and enhancing its image
  - ◆ Involvement and coordination of external stakeholders

# What is the Future Role of the SMP?

## ■ **Mobility and Exchange Opportunities:**

- ◆ Develop new and enhance existing international joint programs aimed at improving the quality of mining education and promoting mobility and intercultural understanding.
- ◆ The Society believes that multinational undergraduate and post-graduate programs and clusters can offer a great opportunity for a sustainable minerals global education (similar to the ongoing EMC, EMEC and EGEC).

# What is the Future Role of the SMP?

## ■ Development of Conferences and Short Courses

- ◆ The Society will support with publicity and participation the development of conferences and short courses to benefit its members.
- ◆ One good example is the role of the Society in conceiving, developing and participating in the 1<sup>st</sup> International Conference on Sustainable Development Indicators in the Mineral Industries (SDIMI 2003).
- ◆ This is continuing with SDIMI 2005 (May, Germany) and SDIMI 2007 (Greece).

# Conclusions

- It is a time of a unique opportunity for revitalizing, if not reinventing, the old paradigm of minerals education.
- In cooperation with other organisations, the Society of Mining Professors/Societät der Bergbaukunde is ready to pursue a new global vision, revitalize its goals and objectives and ensure that university-based education, at the highest level, can be sustained in the minerals disciplines.
- Diverse international partnership opportunities in research and education are now needed. The Society can provide a vital link for establishing and implementing these global partnerships in the minerals field.

# SMP and “Sustainable Engineering”

- “Sustainable Engineering” in the minerals industry is a concept based on an educational process that promotes an understanding of the environmental, ethical, social and business aspects of the profession.
- An educational process that motivates students, instills a desire to pursue learning and emphasizes individual, as well as interdisciplinary learning.
- Finally, minerals education focusing on sustainable development incorporates a global and geopolitical understanding of the industry and the communities of interest.