Society of Economic Geologists
Advancing Science and Discovery

- Established in 1920
- 7,400 members in 107 countries

Member Affiliation

- Industry (58%)
- Students (24%)
- Academia/Gov’t. (18%)

Membership Distribution

North America
South & Central America
Australasia
Europe
Asia & N. Eurasia
Africa & Middle East
Benefits of Membership

Education & Training Curriculum
- Short Courses & Workshops
- Field Courses

Conferences & Symposia

Traveling Lecturers Program

Networking with Professionals

Foundation Support for Students

Publications
- Economic Geology
- SEG Newsletter
- Books & Maps

- Grants, Fellowships
- Student Field Trips
- Student Chapters
- Mentoring
Student Chapters

The Society of Economic Geologists (SEG) Student Chapters seek to bring together like minded individuals interested in better understanding our resource-rich environment and the minerals it contains. SEG encourages the formation of such Student Chapters to help promote the Society’s objectives, firstly by advancing the study of mineral deposits and applying geological science to exploration, evaluation, and production, and secondly by disseminating scientific information through publications, courses, meetings, and field trips. Student Chapters are the key to linking students with other students and with professional geoscientists in industry, academia, and government.

SEG has 91 active Student Chapters in 30 countries. Please contact studentprograms@segweb.org for further assistance and visit the Operations Guidelines page for more information on:

- Forming a new SEG Student Chapter
- Activating a dormant Student Chapter
- Applying for Student Chapter funding
- Operational Guidelines for Student Chapters
- Student Chapter forms

http://www.segweb.org/
Benefits of SEG Student Chapter and SEG Memberships

- A student chapter member has the opportunity to participate in Student Chapter activities, including field trips, seminars and other activities organized by the student chapter, typically with financial assistance provided by SEG. Commonly these events are attended by professional economic geologists from industry, government and other academic institutions.
- Through its activities, the Student Chapter provides direct access to the economic geology community at large for its members who as individuals might not otherwise have such opportunities.
- Student Chapter members may develop leadership and management skills through participation in Chapter activities.
- Online access to the journal, Economic Geology, published eight times a year, is provided to all SEG Students Members, as a benefit of membership. The journal is recognized as the foremost publication of its kind in the world.
- The SEG Newsletter is published quarterly for the entire SEG membership. The Newsletter presents features of current interest to economic geologists, contains news of Society affairs around the world, and announces upcoming events.

Student Chapter Stewart R. Wallace Funding Support

Student Chapter funding support is available from the SEG Stewart R. Wallace Fund. Wallace was a renowned exploration geologist whose discoveries included the Cereso Ridge molybdenum deposit at the Climax and Henderson Mines in Colorado. Read the article from the July 2009 SEG Newsletter about Stewart R. Wallace and his significant impact on the Society. Through his legacy, funds are available via the Stewart R. Wallace Fund. Active Student Chapters may submit a request for funding for field-based educational activities. Applications are accepted twice per year, April 30 and October 31, however a chapter may only be awarded funding once per calendar year.
SEG Graduate Student Fellowship Program

The Society of Economic Geologists Foundation, Inc. (SEGF) under its Graduate Student Fellowship Program has awarded one-year fellowships, ranging from US$2,500 to US$15,000 each year since 2007 to students who intend to pursue a course of study in economic geology leading to a Professional Master’s, Master of Science (M.Sc.) and/or Ph.D. degree. Students from throughout the world with an expressed interest in pursuing graduate studies in economic geology are encouraged to apply. Awards are competitive and based on merit and qualifications of the applicant.


Student Membership Application
How to apply for the SEGF Graduate Student Fellowship Program

Application submission deadline is February 1, 2015. Applications, references and/or required supporting documentation, should be submitted electronically to studentprograms@segweb.org, or if mailed, must be received by the posted application deadline at the following address:

Chairman
SEGF Graduate Student Fellowship Program
Society of Economic Geologists Foundation, Inc.
7811 Shaffer Parkway
Littleton, CO 80127-3732
USA

Applicants Must Meet the Following Requirements

△ Have completed, or are in the process of completing, a BS or equivalent degree in the geosciences or a related field.
△ Have been accepted, in the process of being accepted, or currently enrolled, as a first-year (ever) graduate student at a recognized college/university offering a graduate program leading to a Professional Master’s, M.Sc., and/or Ph.D. in economic geology as it relates to the study of mineral and ore deposits, geochemistry, or geophysics with applications to minerals exploration and mine geology.
△ Applicants who have completed a first year of graduate school, regardless of degree or field of study, are not eligible.

http://www.segweb.org/
About SEG Student Chapters

SEG Student Chapters are the future of the Society of Exploration Geophysicists. With 388 student chapters in 66 countries, SEG Student Chapters give you the chance to enhance your education, jump-start your career, and build ties with the new generation of up-and-coming international geoscientists. The opportunities that come from belonging to an SEG Student Chapter will benefit you for years to come!

Benefits

Forming an SEG Student Chapter earns you a series of immediate benefits:

- Monthly issues of SEG’s flagship publication THE LEADING EDGE for your chapter’s library
- Bimonthly issues of the renowned geophysics journal GEOPHYSICS for your chapter’s library
- A copy of each year’s SEG Distinguished Instructor Short Course on DVD
- A copy of each year’s SEG Distinguished Lectures on CD
- A copy of the Expanded Abstracts from the Technical Program of the SEG Annual Meeting on CD
- Opportunities for visits from the SEG Distinguished and Honorary Lecturers!
- FREE books through The Fred and Kathi Hilterman/SEG Student Chapter Book Program, sponsored by Geokinetics, Inc.

*Email SEG University and Student Programs to see if your chapter is eligible.*

http://www.seg.org/education/university-student-programs/
Geoscientists Without Borders®  
Apply to GWB

GWB Applications are accepted twice a year. Watch The Leading Edge and social media for deadlines.

You’ll first be asked to complete a short project narrative – commonly called Phase I application. This application outlines the purpose, team and cost of the project (organizational capacity, project needs and benefits and technical merit).

Apply Now
You will be directed to an outside server to complete your application.

Begin application

Application Instructions
Read or print off step-by-step instructions in PDF format.

Sample Application
Download a sample application in PDF format.

Guidelines for Succeeding Proposals

http://www.seg.org/gwb/
The SGA offers great value to Student members. The SGA attributes prizes for oral and poster presentations, and support student participation to its Biennial Meetings. The SGA sponsors student activities.

Download the SGA Student Program flyer!

NEW! SGA Keynote Speaker Program >>more info here

The SGA is on Facebook! Visit us! and get the latest news on SGA-sponsored events!

The SGA has Student Chapters!

SGA Student Chapter at Charles University Prague.
Contact: Ondrej Kraliky, SGA Student Chapter Prague
Visit the SGA Student Chapter Prague on their website and on facebook

SGA Baltic Student Chapter.
Contact: Joanna Kolodziejczyk, SGA Baltic Student Chapter
Contact (for Sweden): Tobias Kampmann
Contact (for Finland): Jukka-Pekka Ranta
Visit the SGA Baltic Student Chapter on their website and on facebook

SGA Student Chapter - Siberia.
Contact: Maria Cherdantseva, SGA Student Chapter Siberia
Visit the SGA Student Chapter Siberia on their website

SGA Student Chapter - Barcelona.
Contact: Maria Clara Roman, SGA Student Chapter Barcelona
Visit the SGA Student Chapter Barcelona on their website and on facebook

SGA Student Chapter - Colombia.
Contact: Jorge Armando Gamboa Herrera, Javier Eduardo Hernández Bobadilla, SGA Student Chapter Colombia
Visit the SGA Student Chapter Colombia on their website and on facebook

http://e-sga.org/students/
The West African Exploration Initiative

Mark Jessell CET, UWA
The WAXI Team

WAXI - West African Exploration Initiative
IXOA - L’Initiative d’Exploration Ouest Africaine
Significant mineral deposits: World
Discovered since 2000

Note: Supergiant >60 Moz Au, >10 Mt Ni, >25 Mt Cu equiv
Giant >6 Moz Au, >1 Mt Ni, >5 Mt Cu equiv
Major >1 Moz Au, >100 Kt Ni, >1 Mt Cu equiv

Note: Excludes bulk mineral deposits

Source: MinEx Consulting Aug 2011
### Exploration Spend & performance by Region: 2003-2012

#### How does Africa compare to the Rest of the World?

- Analysis excludes Bulk Minerals, and excludes satellite deposits found within existing camps
- Discoveries refer to Moderate-, Major- and Giant-sized deposits.
- Estimated Value is approximate only, and ignores the value of unreported discoveries
- Source: MinEx Consulting © November 2013

<table>
<thead>
<tr>
<th>Region</th>
<th>Exploration Spend (2012 $b)</th>
<th>No of Discoveries</th>
<th>Tier 1+2 Discoveries</th>
<th>Estimated Value (2012 $b)</th>
<th>Value / Spend</th>
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</thead>
<tbody>
<tr>
<td>Australia</td>
<td>$12</td>
<td>84</td>
<td>15%</td>
<td>14</td>
<td>17%</td>
</tr>
<tr>
<td>Canada</td>
<td>$21</td>
<td>74</td>
<td>13%</td>
<td>15</td>
<td>18%</td>
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<tr>
<td>USA</td>
<td>$9</td>
<td>19</td>
<td>3%</td>
<td>6</td>
<td>7%</td>
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<tr>
<td>Latin America</td>
<td>$27</td>
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<td>24%</td>
<td>15</td>
<td>18%</td>
</tr>
<tr>
<td>Pacific/SE Asia</td>
<td>$6</td>
<td>23</td>
<td>4%</td>
<td>2</td>
<td>2%</td>
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<tr>
<td>Africa</td>
<td>$16</td>
<td>124</td>
<td>22%</td>
<td>20</td>
<td>24%</td>
</tr>
<tr>
<td>W Europe</td>
<td>$3</td>
<td>24</td>
<td>4%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Rest of World</td>
<td>$22</td>
<td>78</td>
<td>14%</td>
<td>11</td>
<td>13%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$116</td>
<td>559</td>
<td>100%</td>
<td>86</td>
<td>100%</td>
</tr>
</tbody>
</table>

i.e. “Bang-per-Buck”

R. Schodde
Map of sandstone quarry, gold mine and settlement at Bir Umm Fawakhir
Scribe-of-the-Tomb Amennakhte, son of Ipuy, 1160 BC
30 centuries later, a similar map of the Kényéba region...
Exploration (and Research) Challenges

- Logistical
- Fragmentation of existing datasets and studies:
  - One craton the size of WA, but 13 countries
- Governance

Professional Training (and Higher Education) Challenges

- Logistical
- Lack of teaching resources (relevant texts and people)
- Lack of field training
- Student population explosion
1. Public-Private Partnership co-funded by industry and governments coordinated by AMIRA International

2. Integrated programs of
   • Research
   • Data Integration and Management
   • Capacity Building via courses and scholarships

3. Provides a powerful networking forum that includes major stakeholders in West Africa:
   • Industry
   • Geological Surveys and Ministries of Mines
   • Universities
   • Aid agencies (AusAid)
Mapping of WAXI program to African Mining Vision Action Plan

<table>
<thead>
<tr>
<th>AMV Programme Cluster</th>
<th>WAXI activities</th>
</tr>
</thead>
</table>
| **Programme cluster 2 – Geological and mineral information systems** | At sub regional and regional levels  
  - Regional Economic Communities to adopt and implement sub-regional *mapping* and mineral inventory Programmes including the use of *modern remote sensing techniques*;  
  - *Promote collaboration between the different national geological and mining related institutions* (Ministries, Universities, Research Centres, etc) |

| Programme cluster 3 – Building human and institutional capacities | At national level  
  - Diversify education, academic and professional *training funding sources to include private sector*  
  - Strengthen continuing professional development through *short courses*  
  - Align *human resources development to AMV policy direction and needs of industry* |
## Programme Cluster 5 – Mineral sector governance

At national level
- Strengthen transparency and **access to information** at all levels
- **Develop and improve datasets** necessary for informed decision making
- Develop Programmes to **strengthen the capacity of local governments, communities, community organisations and mining companies to make informed decisions** on mining projects

## Programme Cluster 6 – Research and development

At sub regional and regional levels
- Develop strategies to **enhance collaboration between R & D centers** with a view to knowledge-sharing and technology transfer
- Develop **exchange of information networks** to enhance exchange of data and good practices

## Programme Cluster 8 – Linkages and diversification

At sub regional and regional levels
- Develop best practice on **new institutional arrangements combining the minerals, industry, trade and science, technology and innovation complexes** for Regional Economic Communities & member states
WAXI 1- 2006-2007

Exploration Geoscience Audit and Gaps Analysis

• 50 responses from questionnaire circulated to sponsors and sponsors-in-kind & researchers

• Knowledge gained from assembling GIS & reference database

• Input from Sponsors
WAXI 2: Multiscale Analysis of West African Mineral Systems

- Craton Scale
- Belt Scale
- Deposit Scale
- Grain Scale

Key Localities
- Tectonics and Architecture
- Surface Processes
- Capacity Building

Mineralising Systems

Capacity Building
WAXI
Geochronology Database:

~2300 Georeferenced ages
~1200 Georeferenced Zircon Ages
100 new Zircon Ages
22 TerraneChron
65 Lu/Hf, 22 Oxygen Isotope
Data Delivery: WAXI GIS

Scope:
- Country
- West Africa
- Africa
- Global
- Marine

Themes:
- Geography
- Geology
- Geophysics
- Mineralisation
- (Tectonics)

Format:
- On-disk and on-line
- 260 layers
- 85 layers unique to WAXI
- 325 Gb
- ArcMap, MapInfo & Online
WAXI 3 2014-2018

WAXI - West African Exploration Initiative
IXOA - L’Initiative d’Exploration Ouest Africaine

Project Broker & Coordinator

Industry Sponsors

RioTinto
NEWMONT.
NEWCREST
FIRST QUANTUM MINERALS LTD
IAMGOLD
ACACIA
GRYPHON
TORO GOLD
SARAMA

Sponsors in kind (Geological Surveys)

Liberia
Mali
Guinea
Niger
Burkina Faso
Ghana
Senegal
Togo
Sierra Leone
Mauritania

Research and Capacity Building Partners
Upcoming WAXI special issues (2015)

Open Workshops
• Perth- May 25th
• Dakar- Sep 17 & 18th
West African Research and Training Cluster

**IM4DC** International Mining for Development Centre [im4dc.org](http://im4dc.org)

**T2GEM** Technologies Géophysiques et Géochimiques pour l’Exploration Minière Equipe coordinatrice en Côte d’Ivoire

**GEOLOOC** West African online geoscience training [geolooc.net](http://geolooc.net)

**ASDM** Le Soleil dans la Main NGO [asdm.lu](http://asdm.lu)

**TTGEO** Teng Tuuma Geoservices Professional Training [ttgeo.com](http://ttgeo.com)
The WAXI Value Proposition: **Research**

WAXI: $10M worth of research  
($4.5M AMIRA, $2M ARC/AusAID, $2M One-on-ones)

- Building multi-scale geoscientific understanding to underpin exploration decisions.  
- Consortium defines problems common to the whole sponsor group.  
- True integration of multiple geoscience disciplines  
- Integrated delivery of outcomes in directly applicable formats  
- Industry advisory team to keep the research in focus
The WAXI Value Proposition: **Training**

- Face to face training to industry and government staff by staff at the forefront of West African Research
- Course delivery at cost, with possibility of in-house training
- Courses use WAXI and company datasets from across the West African Craton, so lessons learned are directly applicable to exploration
35 Sponsors

11 Sponsors in kind (Geological Surveys)

22 Research and Capacity Building Partners

WAXI 1
WAXI 2
WAXI 3