



SOCIETY OF ECONOMIC GEOLOGISTS, INC.

7811 Shaffer Parkway • Littleton, CO 80127-3732 USA • Tel: +1.720.981.7882 • Fax: +1.720.981.7874 • E-mail: seg@segweb.org

Student Chapter Annual Report Cover Page

Submission Deadline: September 30th

Submit to: studentprograms@segweb.org

Month/Year Reported: From 10/2021 (mm/yyyy) – To 09/2022 (mm/yyyy)

STUDENT CHAPTER:

Check if update needed at segweb.org

Name: Aristotle University of Thessaloniki (AUTH) SEG Student Chapter

University Affiliation: Department of Mineralogy- Petrology- Economic Geology, Faculty of Geology, School of Sciences, Aristotle University of Thessaloniki GR-541 24, Thessaloniki, Greece

Mailing Address: Department of Mineralogy- Petrology- Economic Geology, Faculty of Geology, School of Sciences, Aristotle University of Thessaloniki GR-541 24, Thessaloniki, Greece

Dedicated E-mail: segweb@geo.auth.gr

Website: https://authseg.wordpress.com/

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Chapter Executive Committee (*in office during the time frame captured on this report*) (type "Vacant" if position not filled):
The new committee is reported on the Student Chapter Membership Information form (SCMIF).

President: Dimitra Perperi

dperperi@geo.auth.gr

Name

E-mail

VicePresident: Eftychia Peristeridou

peristee@geo.auth.gr

Name

E-mail

Secretary: Margarita Melfou

melfoumv@geo.auth.gr

Name

E-mail

Treasurer: Ioanna Alpi

alpioanna@geo.auth.gr,

Name

E-mail

Chapter Academic Sponsor:

Check if SEG Fellowship in good standing

Vasilios Melfos

melfosv@geo.auth.gr

+30 2310 998539

Name

E-mail

Phone

Department of Mineralogy- Petrology- Economic Geology, Faculty of Geology, School of Sciences, Aristotle University of Thessaloniki GR-541 24, Thessaloniki, Greece

Address

Fax

Chapter Industry Sponsor (*not affiliated with the student chapter's institution*):

Check if SEG Fellowship in good standing

Thomas Sant

tsant06@gmail.com

+44 798 135 9811

Name

E-mail

Phone

14 Park Road, Timberley, Altrincham, Cheshire, UK

Address

Fax

Sponsoring Institution or Company(name): Medgold Resources

ANNUAL REPORT 2021-2022
A.U.Th SEG STUDENT CHAPTER



Submitted by:

Dimitra Perperi, *President*

and

Margarita Melfou, *Secretary*

September 2022



ARISTOTLE UNIVERSITY OF THESSALONIKI

AUTH SEG STUDENT CHAPTER

ANNUAL REPORT FORM 202-202

GENERAL INFORMATION

YEAR REPORTED: 2021-2022

CHAPTER NAME: AUTH SEG Student Chapter

STUDENT CHAPTER WEBSITE: <https://authseg.wordpress.com>

STUDENT CHAPTER E-MAIL ADDRESS: segweb@geo.auth.gr

STUDENT CHAPTER FACEBOOK PAGE:

<https://www.facebook.com/AUTH.SEGStudentChapter>

STUDENT CHAPTER INSTAGRAM: https://www.instagram.com/auth_seg/

STUDENT CHAPTER YOUTUBE:

https://www.youtube.com/channel/UCUug7pNrc_VWHwUO2KBmkqA/featured

STUDENT CHAPTER ACADEMIC SPONSOR: Dr. Vasilios Melfos,
Professor,

Department of Mineralogy, Petrology and Economic Geology, School of
Geology, Aristotle University of Thessaloniki, Greece

STUDENT CHAPTER SPONSOR: Dr. Thomas Sant, Exploration Manager,
Conico Ltd

Outgoing Executive Committee 2021-2022

	Name	Title	E-mail address
1	Dimitra Perperi	President	dperperi@geo.auth.gr
2	Eftychia Peristeridou	Vice President	peristee@geo.auth.gr
3	Margarita Melfou	Secretary	melfoumv@geo.auth.gr
4	Ioanna Alpi	Treasurer	alpioanna@geo.auth.gr
5	Eirini Margiola	Other Exec. Member	margiola@geo.auth.gr

Newly Elected Executive Committee 2022-2023

	Name	Title	E-mail address
1	Ioanna Alpi	President	alpioanna@geo.auth.gr
2	Margarita Melfou	Vice President	melfoumv@geo.auth.gr
3	Elisavet Varvari	Secretary	varvarie@geo.auth.gr,
4	Anastasios Kyriakos	Treasurer	axkyriako@geo.auth.gr,
5	Eftychia Peristeridou	Other Exec. Member	peristee@geo.auth.gr

The Student Chapter of the Society of Economic Geologists (SEG) of the Aristotle University of Thessaloniki (AUTH) had 37 members at the end of the academic year 2021-2022. Nine of them are student members of the SEG.



Members of ATh SEG Student Chapter

	First name	Academic Status
1	Dimitra Perperi*	Master's Student
2	Eftychia Peristeridou*	Master's Student
3	Margarita Melfou*	PhD Candidate
4	Ioanna Alpi*	Undergraduate Student
5	Eirini Margiola*	Undergraduate Student
6	Christos Stergiou*	PhD Candidate
7	Alexandros Mpampatzianis*	Undergraduate Student
8	Anastasios Kyriakos*	Undergraduate Student
9	Eleni Pegioudi*	Undergraduate Student
10	Aikaterini Panora	Master's Student
11	Aikaterini Tsiri	Undergraduate Student
12	Alexia Theocharaki	Undergraduate Student
13	Anastasia-Maria Dragogia	Undergraduate Student
14	Anastasis Ladas	Undergraduate Student
15	Apostolia Chatzivretta	Master's Student
16	Christina Mytigliaki	PhD Candidate
17	Chrysa Chrysakopoulou	Master's Student
18	Constantinos Christoforidis	Undergraduate Student
19	Despoina Diamanti	Undergraduate Student
20	Dimitrios Papadopoulos	Undergraduate Student
21	Dimitris Stogios	Undergraduate Student
22	Eirini Karampa	Undergraduate Student
23	Elisavet Varvari	Undergraduate Student
24	Ismini Ermeidi	Undergraduate Student
25	Katerina Selimollari	Undergraduate Student
26	Lazaros Charitopoulos	Undergraduate Student
27	Niki Mandraveli	Undergraduate



		Student
28	Nikolaos Asteriadis	Master's Student
29	Nikolaos Manthopoulos	Master's Student
30	Nikoleta Passali	Undergraduate Student
31	Pantelis Dardas	Master's Student
32	Soultana-Kyriaki Kovaïou	PhD Candidate
33	Spyridon Strongylis	Master's Student
34	Thelxiopi-Antonia Kimpizi	Undergraduate Student
35	Theodora Chatzakou	Undergraduate Student
36	Theodoros Tsigkas	Undergraduate Student
37	Vasilias Chatzi	Master's Student

*Full SEG member (2021/2022)

The AUTH SEG organized and took part in several events throughout the academic year 2021-2022. The following sections provide more details for each event.

Activities and Field Trips for the academic year 2021-2022

1. Field trip to Milos Island, SW Cyclades, Greece

The AUTH SEG student chapter organized a field trip on the island of Milos at the SW Cyclades Island complex, Aegean Sea, Greece, between 7th and 10th of October 2021. The field trip was financially supported by the SEG through the Round I 2021 of the Stewart R. Wallace Funding. The participants consisted of 3 Ph.D. Candidates, 2 Master's, and 5 Undergraduate students, accompanied by the Chapter's Academic Advisor, Professor Vasilios Melfos, joined by Dr. Christos Emmanouilidis, and Dr. Stavros Oikonomidis.

The field trip started on Thursday, October 7, 2021, with a visit to Imerys S.A.'s corporate headquarters at Voudia, NE Milos. We were provided with the required safety gear and after a brief orientation on the precautions to be taken during our visit, we made our way to the Aggeria bentonite mine observatory (Fig. 1). There, Mr. Stefanos Zaimis, IMERY'S' Exploration and Resources Geologist, described the regional geology, the morphology of the Aggeria bentonite deposit, the mining activities, and the processing techniques. Next, we visited the IMERY'S' property of the Trachilas perlite deposit, where Mr. Zaimis gave us information about the deposit with a focus on its mineralogy and petrology, the genesis of the ore,

processing, and applications. Also, there, Mr. Giorgos Petrakis, Rehabilitation Manager of IMERYYS Performance Additives, described the environmental rehabilitation process after the closure of a mine.



Figure 1. The field-trip participants at the Aggeria bentonite mine observatory in Milos.

Later that day, the group visited the island's abandoned sulfur mines (Figure 2), in Paliorema, which had been in operation from 1862 to 1958 AD. Afterward, we observed the Aghioi Theodoroi craters from a panoramic point of view. These, are the products of phreatic eruptions. The visit to the Filli kaolin mine marked the end of the first day. Although kaolin extraction on the island of Milos started in 1899, it is not now being actively exploited. Reforestation techniques have been used for the reclamation processes.

The iron-manganese-barite deposit and the abandoned exploitation facilities at Vani were our first stop on the second day. Hyaloclastites and volcanoclastic sandstones make up the host rocks of the epithermal Fe-Mn-Ba system. The two main periods of manganese exploitation were 1886-1909 and 1918-1928. Later, the students had the opportunity to observe active sulfur fumaroles at Aghia Kyriaki. Euhedral native sulfur crystals are forming all around them, while steam and gases full of hydrogen sulfide are emitted by them. After that, we traveled to Paleochori Bay and discussed about the active geothermal field, which is located near shore. Our final stop for the day was at Sarakiniko, where rhyolitic submarine tuffs have created

a white lunar landscape. Normal faults, discontinuities, late veins, and fossils can all be observed in the white formations as well.

On the last day of the field trip in Milos, we visited Nychia site, an ancient obsidian quarry. Obsidian appears either as layers or as veins within a rhyolitic dome and was created during volcanic eruptions in the Quaternary (1.4 Ma). The natural glass obsidian was produced by the felsic lava's quick cooling. Due to obsidian's workability and keen edge, Milos served as the epicenter of significant obsidian trade in the Aegean during the Mesolithic and Neolithic periods (10,000-3,500 BCE) for the production of cutting tools, weaponry, knives, and other items. The name of the quarry, "Nychia" is derived from the Greek word for nail.

In conclusion, the members of the AUPh SEG Student Chapter had the excellent opportunity to see active geothermal areas, outcrops of epithermal mineralization, and locations where industrial minerals are exploited. Also, in order to further their understanding of the geology, mineralogy, and history of the island, they presented information regarding the sites they had visited during the field trip.



Figure 2. The members of the AUPh SEG S.C. with Professor V. Melfos and Dr. S. Oikonomidis at the abandoned sulfur mines of Paliorema in Milos.



2. 1st members' meeting for the academic year 2021-22

The first meeting of the AUPh SEG Student Chapter for the academic year 2021-22 was held on October 20, 2021, at the Department of Mineralogy, Petrology, and Economic Geology. Two student members presented their scientific experience during their summer internships, which were completed in companies as part of their undergraduate studies.

The first lecture focused on the involvement of Spyridon Fragkou as an undergraduate intern in "Grecian Magnesite S.A" (Fig. 3a). This main activities of this company is magnesite mining and processing in Gerakini, Northern Greece. The geology of the magnesite deposit, the mining process, the recovery of magnesite from the host rocks, and the quality control of the final products were presented in details, after a brief introduction for the company. He also presented his involvement in the mineralogical and geochemical analysis of particular rocks like listvenite with X-ray Powder Diffraction (XRD), Thermogravimetry/Differential Thermal Analysis (TG/DTA), and Loss on Ignition (LOI).

The following talk entitled "Cement and Man" was given by the graduate student Aikaterini Panora (Fig. 3b) and was about her internship experience in the company "TITAN Cement Co. S.A.", which is one of the man cement producers of Greece and in the Balkans. She explained the steps involved in the extraction of raw materials for cement such as limestone and clay rocks, the production of the intermediate material (clinker), and the manufacture of final product. She also talked about the opportunities she had, during her internship at TITAN, and her involvement in the examination of the potential use of ash from DEI steam electric stations in Northern Greece during the manufacture of the cement concrete.

In the third session of the meeting, Dimitra Perperi, President of the student chapter in the academic year 2021-22, presented to the students the activities of the field trip to Milos Island and outlined the chapter's long-term goals (Fig. 3c).

3. Field trip to Maronia, NE Greece.

The AUPh SEG Student Chapter organized a field trip to Maronia, NE Greece, on October 27, 2021 (Fig. 4). The field trip to the Maronia porphyry Cu-Mo-Re-Au deposit was the subject of a brief broadcast by Eftychia Konstantinidou, a journalist for the public Greek television network, which aired on the TV program "O3 (Omikron tria)". In this field trip ... students of the chapter participated.



Figure 3. (a) Spyridon Fragkou talking about his experience in the company “Grecian Magnesite S.A.”, (b) Aikaterini Panora during her talk entitled “Cement and man”, (c) Dimitra Perperi presenting the activities during the activities of the student chapter in Milos.

The Maronia Cu-Mo-Re-Au porphyry mineralization is associated with a porphyry microgranite. The students explored the hydrothermal alterations (sodic-calcic, potassic, propylitic, sericitic, and argillic), associated with the M-, A-, B-, D-, and E-type veins of the porphyry system and the epithermal overprinting, with the assistant of Professor V. Melfos, who have done numerous publications on this deposit. The students also visited the Marmaritsa supra-detachment fault, which is responsible for the shoreline's E-W trend.

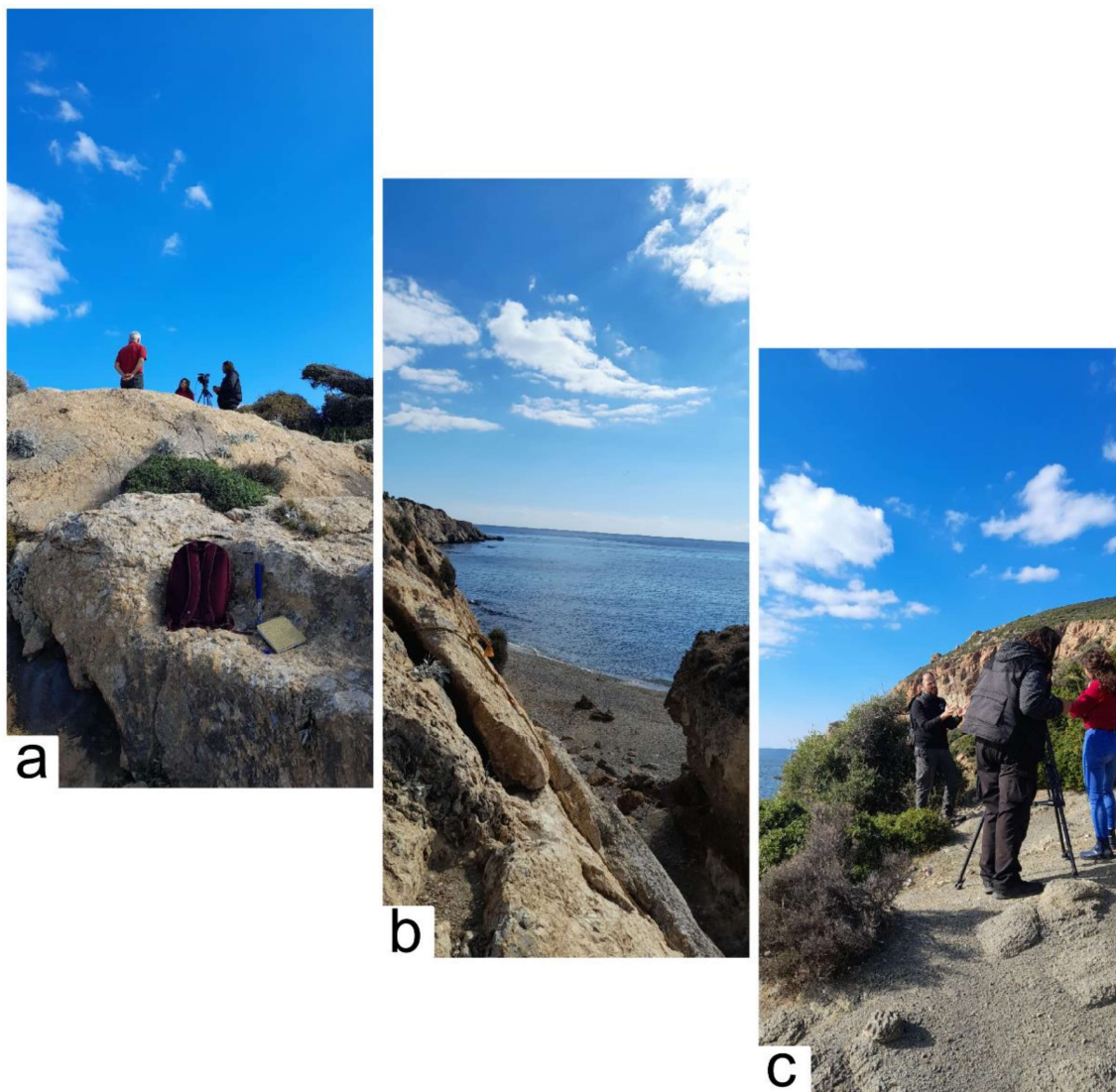


Figure 4. (a) Professor V. Melfos and (c) Dr. Stergiou with the journalist of the TV broadcast “O3”; (b) The active fault of Marmaritsa.

4. 2nd Flea Market AUPh-Christmas Edition

The AUPh SEG Student Chapter participated in 2nd Flea Market - Christmas Edition which was held on December 8-10, 2021 at the Aristotle University of Thessaloniki. Numerous student chapters had the chance to participate and present their organization and raise money for their future goals by selling a variety of items.

Our chapter sold spectacular rock and mineral samples from the collections of the students (Fig. 5). Some of these specimens were relatively uncommon and had exquisite forms and colors. Numerous university students stopped by the AUPh SEG student chapter’s booth as they were captivated by the beautiful and intriguing

mineral and rock samples. Moreover, the group's activity was once more promoted on the public Greek television network by the program “O3 (Omikron tria)”.



Figure 5. The stand of the AUPh SEG student chapter at the 2nd Flea Market - Christmas Edition in the campus.

5. 1st Scientific Meeting for the academic year 2021-22

The first scientific meeting of the AUPh SEG Student Chapter was held on December 17, 2021. Assistant Professor Grigorios-Aarne Sakellaris gave a lecture about the "Mineral Exploration and Evaluation of a Mineral Deposit" (Fig. 6). Professor Sakellaris holds a doctorate in Economic Geology from the RWTH Aachen University, and has 10 years of experience in the exploration industry (Fennoscandian Shield, Finland). During his presentation, Mr. Sakellaris gave us a brief introduction to the Maptek Vulcan software. This software can be used by an exploration geologist for production planning solutions, mine design and 3D geological modelling.

6. 2nd Scientific Meeting for the academic year 2021-22: Structural Geology and Metallogeny

The topic of the second scientific meeting held on Friday, March 11, 2022, was "Structural Geology and Metallogeny" and featured two invited lecturers, Associate Professor Alexandros Chatzipetros and Assistant Professor Vasilios

Melfos. They presented the role of structural geology in ore exploration from macro- to micro-scale and the Cenozoic geotectonic evolution and metallogeny of Greece (Fig. 7).



Figure 6. Assistant Professor G-A. Sakellaris presenting the topic "Mineral Exploration and Evaluation of a Mineral Deposit" to the students of the chapter.

Both lecturers pointed out the role of the geodynamic conditions triggered by the subduction of the oceanic plate below the Eurasian continental crust and the formation of extensive detachment faults in an extensional regime at a post-collisional stage. These faults promoted the ascent of magmas at shallow depths and the circulation of metalliferous fluids that formed the ore deposits in Greece during Cenozoic. More than 70 students, including also members of the chapter attended the event.

7. 3rd Scientific Meeting for the academic year 2021-22

On June 24, 2022, at the AUPh Department of Mineralogy, Petrology, and Economic Geology, the third meeting of the Student Chapter for the academic year 2021-22 was held. Dr. Christos Stergiou, ex-President of the chapter, presented the "Critical and rare metals in Tertiary magmatic-hydrothermal deposits at the Serbo-Macedonian metallogenic province in Greece (Vathi, Aspra Chomata, Laodikino, Kolchiko, Gerakario)" (Fig. 8).

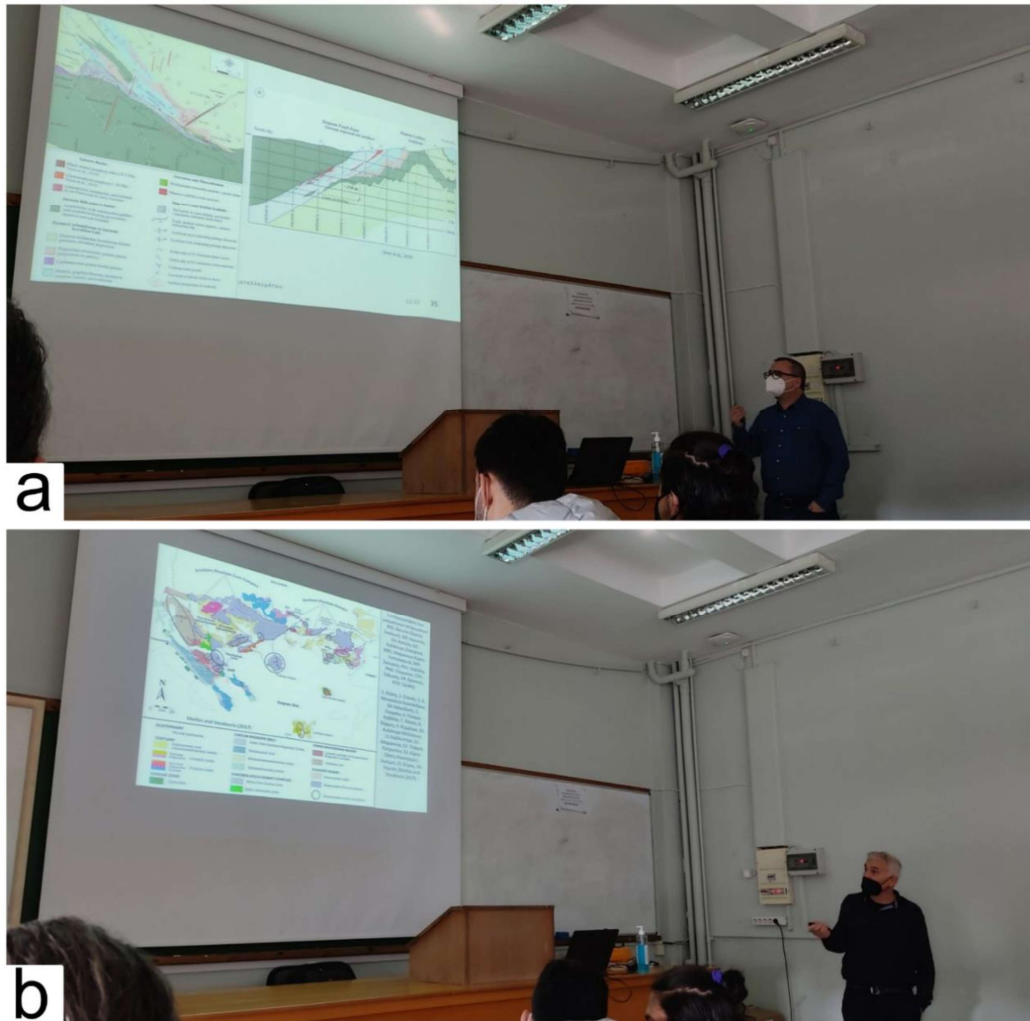


Figure 7. (a) Professor A. Chatzipetros during his talk titled “The role of Structural Geology in Ore Exploration”; **(b)** Professor V. Melfos speaking about the “Cenozoic geotectonic evolution and metallogeny of Greece”.



Figure 8. Dr.Ch. Stergiou during his presentation about the “Critical and rare metals in Tertiary magmatic-hydrothermal deposits at the Serbo-Macedonian metallogenic province in Greece (Vathi, Aspra Chomata, Laodikino, Kolchiko, Gerakario)”.



Christos Stergiou presented the results of his doctorate thesis in the Aristotle University of Thessaloniki, about the research he did at the Kilkis ore district in Northern Greece including Economic Geology, Geochemistry, Mineralogy, Petrography, and Structural Control applied in the study of magmatic-hydrothermal mineralizations of base (Cu, Pb, Zn, Fe), rare (Au, Ag), and critical metals (Co, W, Te, Bi). In his thesis studied the geochemistry of the critical metals in five deposits, Vathi, Gerakario, Kolchiko, Laodikino, and Aspra Chomata.

The Au-Bi-Te metallogeny in northern Greece, is associated with two groups of deposits with an Oligocene-Miocene in respect also to local structural settings. The first group includes porphyry-epithermal and satellite mineralization set in an extensional tectonic regime and enriched in Au-Bi-Co-Sb-Se-Te-W-REE. The second group comprises veins hosted in metamorphic rocks ascribed to a stage of transpressional to transtensional tectonic activity and strike-slip faulting. These vein sets are enriched in Ag-Au-Bi-Cd-Hg-In-Sb-Se-Te-W.

Future Plans for the Academic Year 2022-2023

- Open day of the Faculty of Sciences (AUPh), in which our chapter will expose spectacular mineral and rock samples
- SRW-funded field trip to Cyprus scheduled for October 26-30, 2022.
- Visit the Skouries mine, Eldorado Gold, scheduled for winter 2022-23.
- Co-organized one-day field trip to the Parnassos bauxite mining district with the UPatras and NKUA SEG student chapters in the context of the 16th International Congress of the Geological Society of Greece, on the 20th October 2022.
- The SEG International Exchange Lecturer for 2022, Professor Keiko Hattori from the University of Ottawa, will visit our University, scheduled for 20th February, 2023.
- Dr. K Papapavlou from the University of Québec at Montréal, Canada has been invited to present his research in petrochronology and mineral chemistry applied to tectonics and mineral exploration (Sudbury, ON, CA).
- Several lectures are planned from academic and professional speakers.
- Invitation of the 2023 SEG Lecturer.
- Application for the 2023 Stewart R. Wallace Fund, Round I.