



# SOCIETY OF ECONOMIC GEOLOGISTS, INC.

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## Student Chapter Annual Report Cover Page

Submission Deadline: September 30th

Submit to: studentprograms@segweb.org

Month/Year Reported: From 03/2022 (09/2021) (mm/yyyy) – To 10/2022 (mm/yyyy)

STUDENT CHAPTER:

Check if update  
needed at segweb.org

Name: UFG SEG Student Chapter

University Affiliation: Universidade Federal de Goiás

Mailing Address: Rua Mucuri S/N - Setor Conde dos Arcos - Campus Aparecida de Goiânia CEP:74.968-755 Aparecida de Goiânia - Goiás - Brasil

Dedicated E-mail: ufgsegstudentchapter@gmail.com

Website: \_\_\_\_\_

Logo: \_\_\_\_\_

Facebook: \_\_\_\_\_

Twitter: \_\_\_\_\_

Instagram: http://instagram.com/segufg/

LinkedIn: https://www.linkedin.com/in/ufg-seg-student-chapter-2812571b9/

YouTube: https://www.youtube.com/channel/UCxbWxih4R3IIUQ5yWzXJD0A

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). ExComm(begin 03/07/2022)

President: Daniel Carelli Batista Santos dcarelli@discente.ufg.br  
Name E-mail

VicePresident: Stefanny Hellen Sampaio dos Santos stefannyhss@discente.ufg.br  
Name E-mail

Secretary: Isabela Araujo Barbosa Euzebio isabelaaraujo@discente.ufg.br  
Name E-mail

Treasurer: Franklin Willians Silva de Carvalho franklincarvalho@discente.ufg.br  
Name E-mail

Ex Comm through 03/06/2022 P: J deSouza; VP N Coutinho; Sec V Rodrigues da Costa; T S Sampaio dos Santos

Chapter Academic Sponsor:  Check if SEG Fellowship in good standing

Rodrigo Prudente de Melo rodrigoprudente@gmail.com +55 (62) 3209.6550  
Name E-mail Phone

Address \_\_\_\_\_ Fax \_\_\_\_\_

Chapter Industry Sponsor (*not affiliated with the student chapter's institution*):  Check if SEG Fellowship in good standing

Eduardo Duarte Marques eduardo.marques@cprm.gov.br  
Name E-mail Phone

Address \_\_\_\_\_ Fax \_\_\_\_\_

Sponsoring Institution or Company(name): SGB/CPRM - Geological Survey of Brazil

# Annual Report

## UFG SEG Student Chapter

### 2021-2022



09/30/2022

#### Committee

Daniel Carelli Batista Santos, President  
Stefanny Hellen Sampaio dos Santos, Vice-President  
Isabela Araújo Barbosa Euzebio, Secretary  
Franklin Willians Silva de Carvalho, Treasure

#### Other Executive Members 2021/2022:

Débora Santos Maia  
Gabriel Veloso Martineli  
Geovanne Oliveira Santiago  
Gustavo de Souza Costa  
Hugo Figueiredo de Lima  
Isabella Maciel Feitosa  
João Pedro Rodrigues Silveira  
Jordanna Brenda Ferreira de Souza  
Júlia Tatsue Fogaça Saijo  
Michele Urbano da Silva  
Nathália Amaral Coutinho  
Naywanni Geovana Garcia de Oliveira  
Verônica da Costa Rodrigues

#### Academic Sponsor:

Rodrigo Prudente de Melo

#### Industry Sponsor:

Eduardo Duarte Marques (CPRM-MG)

September 2022



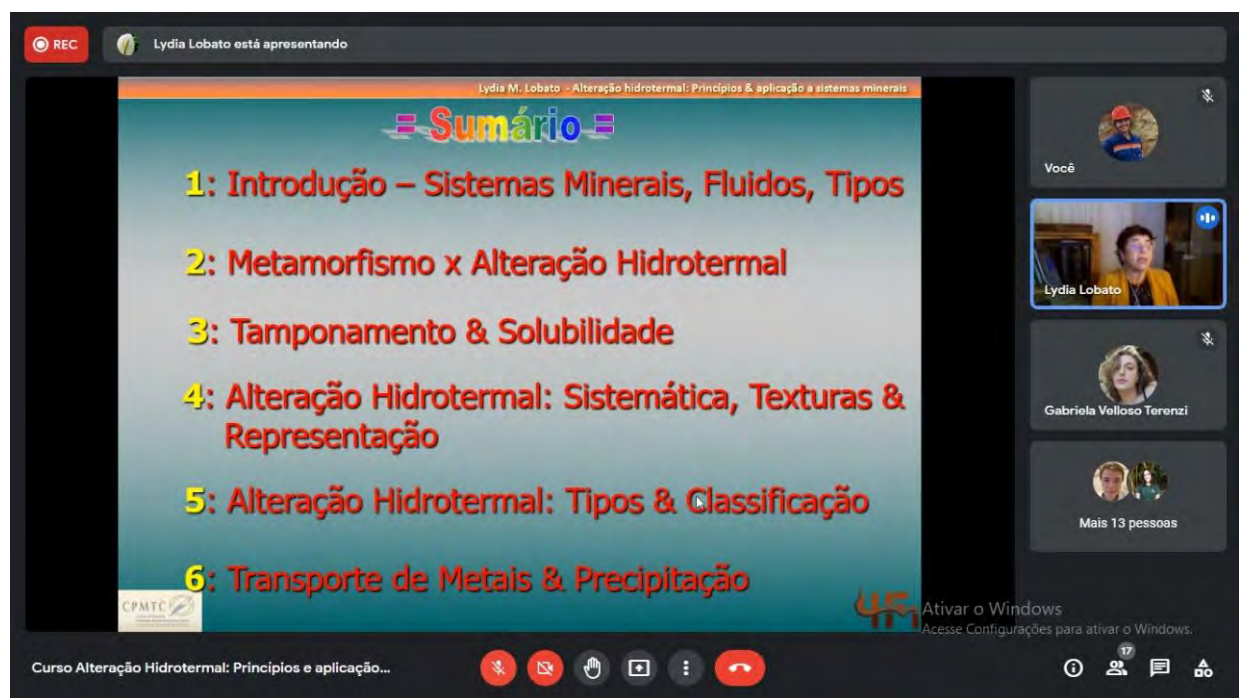
# Activities - UFG SEG Student Chapter 2021 – 2022

## Regular Meeting

The group meets regularly once a month or when it is necessary to discuss activities as talks, field trips, workshops, course or other events. During these meetings, The group discuss ideas and attributes tasks to each member.

All speakers and guests to present remotely are linked to the academic and industry community, due to the COVID-19 pandemic, where they will be able to contribute with economic geology content to the SEG Student Chapter of UFG.

## Course -Hydrothermal alteration: Principles & application to mineral systems UFMG/UFG SEG



The screenshot shows a virtual meeting interface. The main content is a presentation slide titled "Sumário" (Summary) with the following topics:

- 1: Introdução – Sistemas Minerais, Fluidos, Tipos
- 2: Metamorfismo x Alteração Hidrotermal
- 3: Tamponamento & Solubilidade
- 4: Alteração Hidrotermal: Sistemática, Texturas & Representação
- 5: Alteração Hidrotermal: Tipos & Classificação
- 6: Transporte de Metais & Precipitação

The slide also features logos for CPMTCC and UFMG. The meeting interface includes a top bar with "REC" and "Lydia Lobato está apresentando", a right sidebar with participant thumbnails (Você, Lydia Lobato, Gabriela Velloso Teronzi, and Mais 13 pessoas), and a bottom control bar with various icons and a Windows notification.

Figure 1: Virtual meeting of the hydrothermal alteration course. Ministered by professor Lydia Lobato.



## Course - Hydrothermal alteration: Principles & application to mineral systems UFMG/UFG SEG

The Hydrothermal alteration: Principles & application to mineral systems course was held from 03 to 05 August 2022 from 06:30 pm to 10:00 pm, and 06 August from 08:00 am to 12:00 pm on the Google meet. It was given by PhD Lydia Maria Lobato retired teacher at the Federal University of Minas Gerais.

This course was organized by the Student Chapters of the Society of Economic Geologists: UFMG SEG Student Chapter and UFG SEG Student Chapter. This was done online because of the mobility of the course teacher and had the participation of 15 students from Minas Gerais e Goiás.

The course was offered free of charge by PhD Lydia Maria Lobato, did not generate capitalization.

The Hydrothermal Alteration Module covered:

- 1 Introduction - Mineral Systems, Fluids, Types
- 2 Metamorphism x Hydrothermal Alteration
- 3 Buffering & Solubility
- 4 Hydrothermal Alteration: Systematic, Textures & Representation
- 5 Hydrothermal Alteration: Types & Classification
- 6 Transport of Metals & Precipitation



## Lectures on the main mining cities in the state of Goiás

Cities held/Brazil several lectures on the main topics of Goiás, located in the state.

Several SEG-UFG members gave as lectures, where in each city that has mining activity was addressed. For this, days occur, as mining companies occur, as well as the type of commodity, type of mineral deposit and prospective guides.

This matter is very important because the state of Goiás in Brazil is home to many mining companies, being the third with the largest mining activity in Brazil.

The meetings took place on different dates, and the following items were prepared for the meeting:

Date	Merber	Themes	Member	Themes
02/05/2022	Isabela	Mara Rosa - Gold	João Pedro	Minaçu - Rare Earth Elements
03/05/2022	Hugo	Crixás - Gold	Geovanne	Alto Horizonte - Gold and Copper
04/05/2022	Jordanna	Guarinos - Gold	Verônica	Nova Roma - Ornamental rock
05/05/2022	Débora e Gustavo	Catalão - Rare Earth Elements	Nathalia	Barro Alto - Nickel



## Newsletter

Meetings between members to discuss articles and texts on topics related to economic geology and mining in Brazil. The meetings were held by the associates and member in order to deepen this subject, review terms and learn more about the news of Mining in Goiás, understanding better the aspects about the Auction the ANM (National Agency of Mining).

The following items were then elaborated per meeting:

1st Newsletter - Auction of areas of the National Mining Agency

presentation by member Verônica Rodrigues da Costa

2nd Newsletter - Investments in Mining in the state of Goiás/Brazil and summary of the main types of deposits that occur in the state - presentation by Secretary Isabela Araujo Barbosa Euzébio and member Julia Saijo



# Study Group - Economic Geology of the State of Goiás and Minas Gerais

**FCT**  
FACULDADE DE  
CIÊNCIAS E TECNOLOGIA

**UFG x SEG**  
STUDENT CHAPTER

**UFG**  
UNIVERSIDADE  
FEDERAL DE GOIÁS

## Visitas Técnicas a Empreendimentos de Mineração e Pesquisa Mineral nos Estados de Goiás e Minas Gerais

**Transmissão:**  
Youtube do UFG SEG:  
[Clique aqui](#)

**Orientação:**  
Prof<sup>a</sup> Dra Estela Leal  
Prof Dr Lincoln Siepierski

**Data:** 10/09/2022  
**Horário:** 09h30 (GMT-003)  
**Aberto a comunidade interna e externa**

UFG  
UNIVERSIDADE  
FEDERAL DE GOIÁS

Visitas Técnicas a Empreendimentos de Mineração e Pesquisa Mineral

Amanda Alvares  
Ariela Lúcia  
Daniel Corvelli

streamYard

Modificado de Della Giustina et al. (2011)

UFG

AO VIVO 46:37

Desenvolvido por streamYard

### MINERALIZAÇÃO - Estrutura III

Fonte: AngloGold Ashanti, 2022.

Xisto Carbonoso = Estéril

VW do velo de Quartzo = Estéril

FW = Minério

Xisto Carbonoso = Estéril

UFG

Figure 2: A - Poster of presentation; B e C - Live presentation on YouTube by StreamYard.



# Study Group - Economic Geology of the State of Goiás and Minas Gerais

The geology of the state of Goiás and Minas Gerais is very rich, so the members of the Student Chapter SEG UFG in partnership with the students of the discipline of Field Work of Economic Geology and Mineral Exploration Techniques, organized a presentation on the field trip held by the students. The field trip was organized by professors Estela Leal and Lincoln Siepierski.

The field trip took place from 18 to 27 July, 2022 and went through the cities of Barro Alto, Mara Rosa, Crixás and Minaçu in the state of Goiás and Paracatu in state of Minas Gerais. Technical visits were carried out at the following companies, Terra Goyana Mining, Hochschild, Anglo Gold Ashanti, Serra Verde Mining e Kinross Gold.

The presentation was held by students of the discipline on September 10, 2022 from 09:30 am to 12:00 pm. In which it had as subjects a brief history of each project, local geology, the mineralization processes of each mine, the types of mineral occurrence, processing methods, resources and reserves, prospective guides and the health and safety aspects adopted by each company.



Figure 3: Scope of views of the presentation.





## Study Group - Lecture by Geostatistics

The first in-person event of the Student Chapter SEG UFG took place on August 22 at 02:00 pm to 04:00 pm. It was a lecture on geostatistics given by the expert in resource evaluation and geostatistics Leonardo de Souza. It was attended by approximately 20 students of the geology course of which 8 were members of SEG UFG.

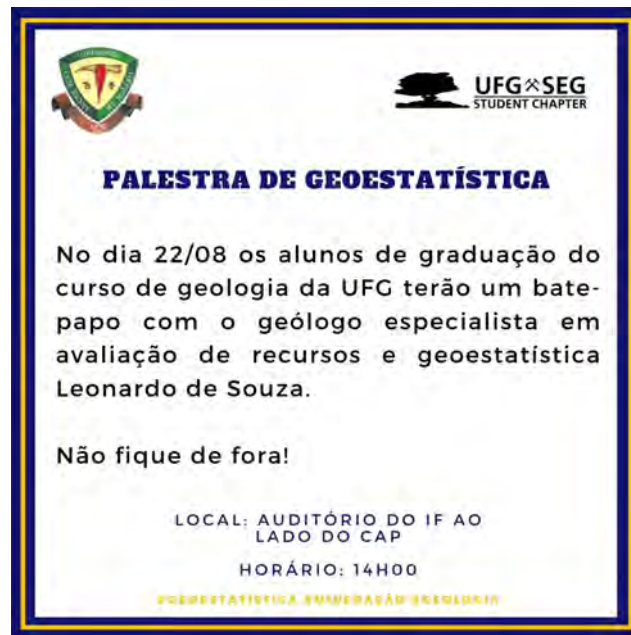


Figure 4: A - Poster of the event; B e C - Pictures of the event.



## Workshop - Seminar on Brazilian Mineral Resources

The workshop was organized together with Student Chapter SEG UNICAMP, UFMG SEG, SEG UnB, SEG USP, UFPR SEG, UFG SEG and SGA Black Forest-Alpine from Germany. With the purpose of disseminating the geology and mineral resources of Brazil to foreign students and researchers. The event was held on 28 and 29 April.

Brazil, as a continental country, has a rich and diverse geology with a multitude of mineralization processes in its geological past. This seminar aims to present Brazil's geology to students and professionals from all around the world focusing on its extensive mineral resources. The seminar consisted of a 45' (minutes) introductory lecture about The Main Brazilian Mineral Provinces, both on cratons and orogenic belts, and 20' (minutes) talks covering a multitude of mineral deposits throughout the country.



**Seminar on Brazilian Mineral Resources**

Brazil, as a continental country, has a rich and diverse geology with a multitude of mineralization. This seminar aims to present Brazil's broad geology to students and professionals from all around the world, focusing on its extensive mineral resources. The seminar consists of a 45 min introductory lecture regarding The Main Brazilian Mineral Provinces, both on cratons and orogenic belts, and other 20 min talks, covering another multitude of mineral resources situated in the country. The event is organized by SGA Black Forest-Alpine Student Chapter and a collaboration of multiple Brazilian SEG Student Chapters.

Online 27-28 April at 2:00-5:30 pm (UTM+2)



27th April		
02:00-03:00 pm	Mineral Provinces in Precambrian cratons and orogenic belts of Brazil	Dr. Roberto Perez Xavier
03:00-03:15 pm	Pause	
03:15-03:45 pm	Tectonic and metallogenic evolution of the Curaçá Valley Copper Province, São Francisco Craton, Brazil	Dr. Pedro Maciel de Paula Garcia
03:45-04:15 pm	Orogenic Gold - Brazil: Selected Examples	Dra. Lydia Maria Lobato
28th April		
02:00-02:30 pm	Overview of the Ni-Cu-PGE resources associated with mafic-ultramafic magmas in Brazil.	Dr. César Ferreira Filho
02:30-03:00 pm	Oil reserves and the astonishing rocks of the Brazilian pre-salt	MSc. Taynah B. Rebelo
03:00-03:15 pm	Pause	
03:15-03:45 pm	A perspective of the Copper Mineral System at the Carajás Mineral Province, NW Brazil	Dra. Carolina Moreto
03:45-04:15 pm	The Vazante-Paracatu Pb-Zn Mineral Systems: Source to Trap	Dra. Gema Olivo
04:15-04:30 pm	Pause	
04:30-05:00 pm	Serra Norte iron ore deposits, Carajás Mineral Province, Brazil	Dra. Rosaline C. Figueiredo e Silva

Figure 3: A - poster to the seminar; B - Virtual meeting of the Workshop; C - Programme of the workshop.



## Social and Representative Support

UFG SEG SC supports the struggle for human rights, for equality, equity, love and respect. We are against any type of discrimination and prejudice. Any way of love is worth loving.

On International Women's Day, March 8, 2022 (Figure 5) we had the freedom to be represented, because the executive committee of the UFG SEG Student Chapter is 50% women. Nothing fairer than remembering this date with respect to the struggle of women since the Industrial Revolution in search of better jobs, political rights, social and human rights.



Figure 5: A - Women need more listeners, more freedom and respect; B - Teacher honored by SEG UFG



## Social and Representative Support

The members of SEG UFG held on Sunday 06 April a charity action in the Recomeço Project, which operates in the metropolitan region of Goiânia, founded in 2019 with the purpose of integrating refugees into Brazilian society through Portuguese classes and preparation for the labor market, including, with legal lessons. This action was promoted with funds raised in the Mineral Exploration mini-course taught in January, offered at the II ENAGE and a collaboration with SEG UFG. The action counted on the donation of basic baskets purchased with the mini-course fund.



Figure 6: A -Members of the Chapter SEG UFG in action; B - Donations.

## Seequent Student Associates Program

The program was idealized by two students and SEG members in Brazil, one of them being Iuri do Valle da Costa (president of UERJ SEG) and Nathália Amaral Coutinho (vice-president of UFG SEG). As the two chapters in Brazil were the only ones that had a geological modeling study group, they both had the idea of spreading this knowledge in undergraduate geology courses, as there is a lack of this knowledge in undergraduate courses. With this, we outlined a project and presented it to Seequent in Brazil, and in the end it was accepted and approved, and we are now in the process of developing the program.

The Student Associates program is a partnership between Seequent and the Brazilian student chapters (14 SEG Student Chapters) associated with the Society of Economic Geologists - SEG Students Chapters. The project was developed to promote and make accessible the knowledge in implicit geological modeling with Leapfrog in the higher education institutions of the Geology courses in Brazil.

The objective of the program is to build a partnership between Seequent and the students associated with SEG CHAPTERS, offering them the opportunity to learn about Leapfrog Geo and Edge Extension tools so that they can promote their Leapfrog's geological modeling expertise within universities. Thus, the present initiative aims to bring Seequent closer to universities, meeting the demands of promoting Leapfrog knowledge and training among students.

The recurrent search by geology undergraduates for Leapfrog training and licenses, together with the growing demand for software skills by the job market for professionals in the geosciences, prompted the need to structure a program to meet this demand. geosciences, prompted the need to structure a program to supply this cyclical demand.



Each student chapter will nominate 2 students to become Seequent intermediaries at their universities, with the following criteria as prerequisites:

- Be a student regularly attached to an undergraduate Geology or a Geosciences graduate program\*.

- SEG Student Chapter membership.

- Undergraduates must be studying from the 5th semester of their undergraduate degree and with at least one semester remaining at the university.

- It is desirable to have already completed a course in Economic Geology (or subject).

- To present a declaration of enrollment officially issued by the university.

\*Graduate students have no restrictions as to the length of their course.

## **STUDENT BENEFITS**

Complete training of Leapfrog Geo and Edge Extension software by the team Seequent

- Leapfrog Geo Training Certificate

- Leapfrog Edge Training Certificate

- Seequent Student Associate Certificate

- Free access to Leapfrog Geo and Edge licenses for use for the duration of this partnership

- Access to software learning support materials

- Access to technical support from the Seequent team

- Training Guide

## **RESPONSIBILITIES OF THE STUDENT PARTNERS**

In the present partnership program, exclusive and free training will be reserved for the associated students. From this it is expected that the student partners will be able to disseminate the knowledge of geological modeling with the use of Leapfrog within the university where it is inserted, thus seeking to fill knowledge gaps among knowledge gaps among the students and professors that the course has available.



From this thus, the following ways of spreading Leapfrog knowledge will be expected:

1. Guide a Leapfrog Geo study group for students regularly students regularly enrolled at the same university where the student associate is during the second semester of 2021.
2. Deliver at least 1 Leapfrog Geo mini-course for the university where the SA is connected.
  - The minicourse can be given for up to 15 students.
  - Preferably invite at least 1 professor from the respective university and/or at least 1 student from a university that does not have SEG.
  - Make at least one official call during the semester to publicize the minicourses.
  - If it is not feasible to implement a study group in the respective student chapter student chapter, it is suggested that the Student Associate be available to answer questions to answer questions in class and for research using the Leapfrog software.

With this, the monitors chosen to be Seequent's representatives at the University were approved by vote, through the student chapter members was member Isabela Araújo and vice president Stefanny Sampaio.

## **PROGRAM SCHEDULE**

- Onboarding: 03/28/2022 from 02:00 pm to 03:00 pm
- Step 1 - LF Geo Training: 04/11/2022 from 14:00 pm to 18:00 pm
- Step 2 - Wolfpass Exercise: 04/15/2022
- Step 3 - Modeling Presentation and Question Session - WolfPass: 04/28/2021 from 03:00 pm to 04:00 pm
- Step 4 - Student Associate in Action: From 04/28/2022 until the end of the program - Monthly online meetings for support, help and questions about the software
- Stage 5 - Intermediate Training - 05/09/2022 from 08:00 am to 12:00 am
- Stage 6 - Follow-up - 05/02/2022 - 06/06/2022 - 07/04/2022
- Stage 7 - LF Edge Training - 07/19/2022 to 07/20/2022
- Stage 8 - Offboarding - 07/29/2022



**UFG x SEG STUDENT CHAPTER** **MINICURSO** **SOCIETY OF ECONOMIC GEOLOGISTS**

**Programa Sequent Student Associates**  
Parceria entre os SEG Student Chapters Brasil com a Sequent

**Fundamentos de Leapfrog GEO**

Apenas para alunos UFG - R\$ 30,00

Data: 13, 14 e 15 de julho (8h)  
qua 18:30 até 19:30  
qui -sex 18:30 até 22:00  
Inscrições: bio do @segufg  
Plataforma: Google Meet  
Instrutores: Isabela Araújo e Stefanny Sampaio (Student Associates UFG SEG)



15 vagas

Inscrições Qr code

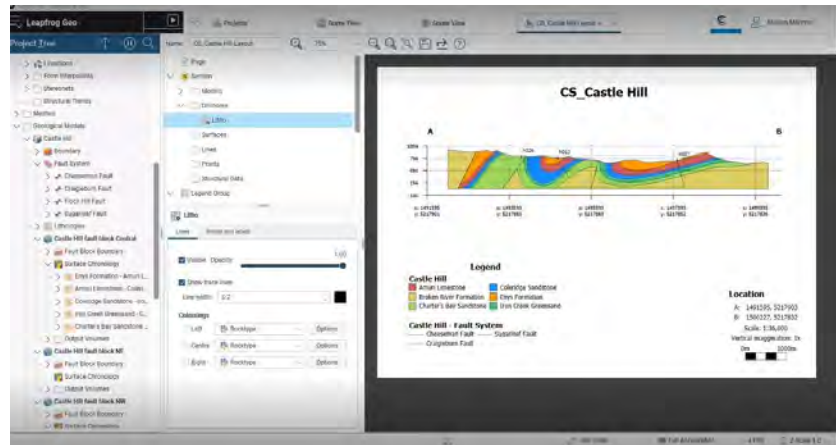


Figure 8: Geological section made from the 3D model taught in the Leapfrog Foundations course.

Figura 7: Layout of the Geological Modeling Minicourse for UFG students offered by the chapter members, who are Sequent monitors through the Student Associates Program Sequent.

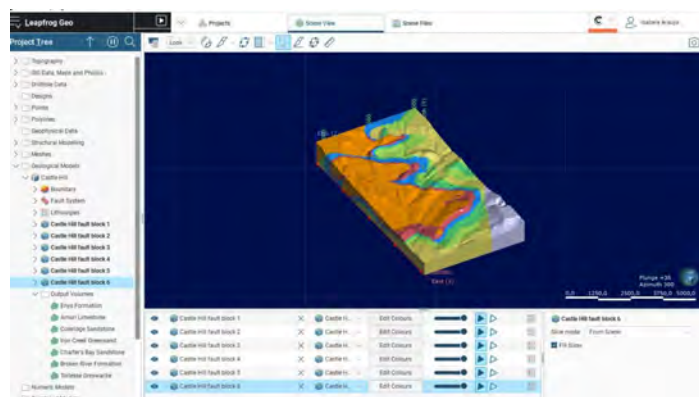
**APOIO**

**SEEQUENT** Haverá emissão de certificados pelo capítulo UFG SEG



Figura 9: Students participating in the Associates Program Sequent.

Figura 8.2 - Study of geological sections through the 3d geological model by Leapfrog Geo





## SEG Student Chapters Brazil Projects

The SEG Student Chapters Brazil project was created by the committee members of the III National Meeting of Economic Geology (III ENAGE - [III Encontro Nacional de Geologia Econômica enageseg.com.br](http://III_Encontro_Nacional_de_Geologia_Econômica_enageseg.com.br)) on 1 and 2 December 2022. With the pandemic of COVID-19 the interaction of activities between the student chapters of Brazil has increased exponentially, as the activities have been remote since the beginning of 2020.

The organization of the event took place remotely involving the following Student Chapters UFMG SEG, UFOP SEG, UNICAMP SEG, UERJ SEG, UFC SEG, USP SEG, UFRJ SEG, UFPR SEG, UNESP SEG, Unb SEG, UFRRJ SEG, UFG SEG, UFRGS SEG and UFRN SEG. Which meetings have been held since January for the distribution of tasks for each chapter.

## Events National and International

### • III National Meeting Economic Geologists (ENAGE)

The 3rd National Meeting of Economic Geology (II ENAGE) was conceived in partnership with the Brazilian SEG (Society of Economic Geologists) Student Chapters and ADIMB (Agency for Technological Development of the Brazilian Mineral Industry) due to the need of an integrative event under the theme of Economic Geology. With the expansion of geology courses throughout the national territory and the lack of specialized national communication vehicles, many works produced within universities and mineral exploration projects are restricted to local communities. In the sense, the 3rd ENAGE seeks to stimulate and expand the dissemination of Economic Geology. After a troubled period due to the COVID-19 pandemic, this edition returned to a presencial format, addressing a series of lectures and mini-courses, seeking to establish a favorable environment for interaction between future employees and partners with mining and mineral exploration companies.



## Events National and International

### • IX SIMEXMIN 2022

The mining sector had the best performance among all Brazilian economic activities in 2020 and, in view of the increased demand for mineral commodities driven by the global recovery from the second half of the year, it should be one of the main responsible for the resumption of growth in Brazil. The international financial market is working with the perspective that the current cycle of high mineral prices will remain for the next few years.

As a result, the Superior Council of the Agency for Development and Innovation of the Mineral Sector (ADIMB) decided that the 10th Brazilian Symposium on Mineral Exploration - SIMEXMIN 2022 will be held in person from November 27 to 30, 2022.

The SIMEXMIN 2022 Organizing Committee is preparing a program that will include lectures by nationally and internationally renowned professionals, researchers and analysts. In order to build a dynamic and innovative virtual environment that allows the optimized interaction of all registered and participating companies, ADIMB hired In Event, a world reference company in digital platforms. Through modern features, matchmaking tools and algorithms, the virtual SIMEXMIN 2022 will be an excellent opportunity to update the international trends of the mineral sector, networking and doing business (<https://adimb.org.br/simexmin2022/>).

SIMEXMIN is a national and international event that is very important both for students who are about to graduate in geology and for recent graduates, as it is an opportunity to present research and industry work, meet people and network. ADIMB has always been a partner of SEG and Student Chapters, so all ENAGE participants will have the opportunity to participate for free at the event, in which 19 places will be offered to Brazilian chapters. This promotes more student interaction and a voice for us at the event, as we are the future of science and interested in Economic Geology.



## Events National and International

At the event there will be a stand of SEG Student Chapters to exchange ideas, make contacts and discuss economic geology, market, research, etc. In this stand, we met industry people who participated in SEG when they were students, we talked about the importance of SEG for us, and finally, made a presentation on the SEG Brazil Project as discussed earlier in this report. We would like to thank Prof. Roberto for all his support in all SEG activities; without him in ADIMB, SEG Student Chapters Brazil would not have so many opportunities for interaction, knowledge, learning and networking. Some SEG SC students will have the opportunity to work at SIMEXMIN as volunteer monitors.

The Student Chapter of UFG SEG thanks the teacher for all his dedication in providing us with these unique opportunities, since often the reach of students in international events is very limited.



## Future Activities

- Fieldtrip to Quadrilatero Ferrífero of Ouro Preto, MG – Brazil. Partnership with the ENAGE event.
- Continuation of the geological modeling study group by Leapfrog GEO
- Podcast Miningcast Goiás – UFG Student Chapter organization (in planning)
- Training courses for member SEG Student Chapter: Datamine Studio RM, OP; QGis applied to mining. (in planning).
- I Economic Geology Workshop of Goiás, GO - Brazil (presential). Organization UFG SEG Student Chapter

## New Committee 2022/2023- UFG SEG Student Chapter

, **President (to be defined)**

, **Vice-president (to be defined)**

, **Secretary (to be defined)**

, **Treasure (to be defined)**

