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**Sponsoring Institution or Company(name):** Independent Consulting
Annual Report
UFMG SEG Student Chapter
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Committee
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Giulia Marina Cerqueira Dias, Vice-President
Bernardo Filizzola, Secretary
Matheus Luís de Salles Oliveira, Treasure

Other Executive Members 2019/2018:
André Guimarães Pinto
Bruno Alcantara Azevedo Cavalcanti de Arruda
Camila Miranda Brighenti
Fernando Brant
Guilherme Silveira
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Lydia Maria Lobato

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September 2019
Activities - UFMG SEG Student Chapter 2018 – 2019

Regular meetings

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

Lectures

All our lectures are opened to the geology community and everyone who is interest in Economic Geology. In the event called “UFMG SEG invites” we have organized, until now, three lectures:

- On November 22\textsuperscript{nd}, 2018, The UFMG SEG Student Chapter organized a lecture in partnership with Ciclo de Palestras Odete da Silveira and the First Graduate Week of the Institute of Geosciences – UFMG. The lecture “\textit{Copper deposits in Brazil: geological environments, processes and mineral systems}” was given by Lena Monteiro, SEG Lecture of 2018.

- On June 27\textsuperscript{th}, 2019, The UFMG SEG Student Chapter organized a lecture in partnership with Ciclo de Palestras Odete da Silveira "\textit{Evaluation of crustal contamination in magmatic systems using multiple sulfur isotopes: a case study of the Bushveld Complex, South Africa}" given by Dr. Nivea Magalhães, from University of Toronto, Canada. The audience included members of the our chapter, as well as undergraduate and graduate students from the Department of Geology at UFMG, CDTN (Centro de Desenvolvimento da Tecnologia Nuclear), and UFOP.

- On June 17\textsuperscript{th}, 2019, the UFMG SEG Student Chapter invited Dr. Maria Emília S. dellaGiustina from University of Brasilia to talk about “\textit{The challenges of geochronology applied to metallogensis: an example of Cu-Au mineralizations from Carajás Mineral Province}”. 
Field Trips

- On November 18th, 2018, Prof. Dr. Alexandre Cabral (UFMG) guided a fieldwork in Quadrilátero Ferrífero, for members of the UFMG SEG Student Chapter. The field focused on iron and gold mineralizations in the Province, and included points in Serra da Moeda and Serra do Gandarela.

- In order to prepare and organize the I National Field Trip at Quadrilátero Ferrífero, members of UFMG SEG Student Chapter and UFOP SEG Student Chapter performed fieldwork together on the eastern edge of the Quadrilátero Ferrífero, on December 03, 2018. Professor Issamu Endo (UFOP), structural geologist, guided the fieldwork. On the picture, a view of Serra do Caraça range, near to Catas Altas.

- For three days (April 12-14, 2019), the geologist Orivaldo Baltazar and the professor Lydia Lobato, guided the students of the UFMG SEG Student Chapter around Quadrilátero Ferrífero Province. The field trip aimed to recognize the stratigraphy of the greenstone belt Rio das Velhas, which hosts important gold mineralization. We started visiting the base of the stratigraphy, that includes komatiitic rocks with spinifex texture and volcanoclastic association, around the Gandarela Syncline. On the second day, we followed to the mafic sequence and the volcano-chemical association, nearby the Caeté Block. On the third day, we visited the resedimented association with
turbidities and cross sets in quartzites around the city Rio Acima. There was discussed topics about the structural geology and geological evolution of this important metallogenic province.

- I National Field Trip at Quadrilátero Ferrífero, a metallogenic province in Minas Gerais (Brazil) was organized by the UFMG SEG Chapter and UFOP SEG Chapter, on July 18-20, 2019. The first edition of the National Field Trip was based in the city of Ouro Preto, Minas Gerais, with twenty students from UFMG, UFOP, UNB, UNESP and UERJ Chapters. The group has visited key outcrops of Quadrilátero Ferrífero province, iron and gold mines, and Imperial Topaz panning. The Field Trip was guided by professor Issamu Endo, from UFOP, who focused on the structural control of mineralizations.
Technical visit

- On June 29th, 2019, the members of our chapter along with the Mineral Prospection and Exploration course visited the operation of GAR Diamonds in Coromandel (MG). Besides the great receptivity, prospector Francisco has given us great information about the panorama of diamond exploration in Brazil.

Events

- **II Workshop of Economic Geology UFMG SEG Student Chapter:**

  From March 26 to 28th, the UFMG SEG Student Chapter promoted the II Workshop of Economic Geology, entitled “Mineralizing Processes and Techniques Applied to Mineral Exploration”

  The Workshop was organized in partnership with Minas Jr. Mineral Consulting. This workshop is a non-profit academic event that seeks to foster interest in Economic Geology, through discussions, lectures, short courses and fieldwork. Professionals from academia and private companies attend the event, as well as students from Geology, Mining Engineering and related areas.

  About 100 participants attended the workshop, mostly undergraduate and graduate students, as well as institutions lecturers from all over Brazil (UFMG, UFOP, USP, Unicamp, CDTN, CPRM, ADIMB). Brazilian professors of economic geology, including Lena Monteiro (Univ. São Paulo), Roberto Perez Xavier (Unicamp and ADIMB), Francisco Javier Rios (CDTN), Gustavo de Melo (UFOP), Alexandre Cabral, Lydia Lobato, and Rosaline Silva (Univ. Federal de Minas Gerais), have participated in the event. The event included 10 lectures, 5 short courses and 1 fieldwork, listed below.

- **Lectures**

  1) PhD Francisco Javier Rios (CDTN): The geohistory of gold in the early days of Brazil from the 16th to the 18th centuries, until the Andes;

  2) Leonardo Rocha: The context of mineral exploration and economic geology in the declaration and certification of mineral resources;

  3) PhD Lydia Lobato (UFMG): Gold in Brazil;

  4) PhD Gustavo Melo (UFOP): Temporal evolution and source of fluids from the IOCG deposits in the northern portion of the Carajás Domain, Carajás Province (Amazonian Craton);

  5) PhD Lena Monteiro (USP): Vazante Zn-Pb deposits;

  6) PhD Roberto Perez Xavier (Unicamp, ADIMB): Cuprifers systems in Carajás;
7) PhD Antônio Carlos Pedrosa Soares (UFMG): High technology mineral resources of Araçuaí Orogen;

8) PhD student Frederico Sousa Guimarães (CDTN):


10) Orivaldo Baltazar (CPRM): Association lithofacies of the Rio das Velhas Greenstone Belt within the Quadrilátero Ferrífero: Stratigraphic Review and tectonic implications.

- **Short courses**

The Workshop had five short courses throughout its programming:

I) Mineralizing processes and their footprints in hydrothermal mineral systems, taught by Prof. Roberto Perez Xavier;

II) Fluid Inclusions and Metallogenesis, taught by PhD. Lucilia Oliveira;

III) Microscopy of ore minerals in reflected light, taught by PhD. Rosaline Silva;

IV) Potential methods applied to mining, taught by PhD. Aline Tavares Melo;

V) Modeling Geological (Micromine), taught by Pedro Nader.

- **Fieldwork**

  The fieldwork "Stratigraphy and mineralizations at the base of the Minas Supergroup", was carried out in the Serra do Gandarela State Park region, near the city of Rio Acima (MG). An auriferous prospecting adite was visited, and a deactivated iron ore-mining front of the Vigário de Vara deposit. The UFMG’s professor, Alexandre Raphael Cabral, guided the excursion.
The UFMG student chapter’s members participated as the organization committee:

**General coordinator:** Anna Luiza R. de Oliveira  
**Marketing section:** Jefferson Silva (Coordinator)  
**Partnership and sponsorship section:** Matheus Marlley (Coordinator)  
**Infrastructure and financial section:** Bernardo Filizzola (Coordinator), Robert Correa  
**Lectures section:** Guilherme Silveira (Coordinator), Fernando Brant

- **II Workshop of Economic Geology (UFOP):**  
  On June 5-6th, 2019, some members participated in the II Workshop of Economic Geology (UFOP): The mineral deposits from the FaixaVazante-Paracatu. In addition to lectures, the members took a short course of geological modeling using Leapfrog (Seequent) software.
I Workshop SGA Brazilian Student Chapter
On September 9-12th, 2019, members participated in the I Workshop SGA Brazilian Student Chapter. The Workshop had as its theme "Gold Mineralizations of the Ouro Preto region - MG". The members have taken an 8-hour course of Underground Mine Geological Mapping, taught by the geologist Diogenes Vial. Also, we participated in a field activity conducted by the professor Alexandre Raphael Cabral in the mining districts of the Quadrilátero Ferrífero and Serra do Espinhaço, two of the most traditional and diverse mining regions in Brazil.

XIII Geology Week of UFMG
13th UFMG Geology Week was organized by CPEGEL and Minas Jr. Mineral Consulting, with support and participation from members of the UFMG SEG Student Chapter, on September 16-22nd, 2019. This year's theme was "Quadrilátero Ferrífero: Contributions, Impacts and Challenges (USGS/DNPM Mapping Fiftieth Anniversary - 1969) ". The event brought key figures from the mapping of this mineral province, such as Chuck Thorman and Orivaldo Baltazar.

Members of the UFMG SEG Student Chapter participated in the fieldwork promoted by the 13th UFMG Geology Week. Key points of the Rio das Velhas and Minas Supergroups were visited, as well as points in the TTG gneiss. Geologists with extensive knowledge of the Quadrilátero Ferrífero were present, among them the UFMG Professor and our Sponsor, PhD Lydia Lobato, the geologist Orivaldo Baltazar (Rio das Velhas Supergroup Project, CPRM) and also the Professor from UFMG, PhD Alexandre Cabral.
Study Meetings about the Quadrilátero Ferrífero metallogenic province

This year we have given continuity to our study meetings about the Quadrilátero Ferrífero Mineral Province. This is one of the most important iron and gold provinces in Brazil. Once it is located only a few kilometers from our University, the Chapter’s members desired to have deeper knowledge about its geology evolution and mineralization processes. The topics were guided by one of the Chapter's members, who would present a paper and encourage a discussion about it. We have met on October 15th and 26th, November 6th and December 7th, 2018. Chapter members, along with other undergraduate and graduate students, participated in the meetings.
Complementary courses

- Basic QAQC in the Mineral Industry

  On July 1st and 2nd, 2019, some members of UFMG SEG Student Chapter participated in the Basic QAQC in the Mineral Industry course, conducted by Armando Simón, PhD, PGeo in Belo Horizonte promoted by MP Consultoria - Patrícia Procópio and GeoAnsata.

- Studio RM

  The UFMG SEG Student Chapter student team and Mining Engineering students took the basic geological modeling course using Datamine's Studio RM software from July 15-19. Giulia Cerqueira and Fernando Brant, members of our chapter, have taught the course.

- Python Programming Introduction Course

  The members of the UFMG SEG Student Chapter participated throughout September in the 20-hour Python Programming Introduction Course taught by Felipe Muniz, a student of Computational Mathematics (UFMG). The course aimed to introduce the main modules and functions of the language, and enhance the knowledge and programming practice of SEG members.
Future activities:

The following activities listed below are planned for the end of 2019 and 2020. The activities proposed are not confirmed yet, but they represent a schedule for the following year.

- Organization and participation in II ENAGE (II National Meeting on Economic Geology)
- Study Group about Greenstone Belt – Goiás.
- Study Group about Copper Porphyritic Deposits in Chile.
- Field Trip to Copper Porphyritic Deposits in Chile (December, 2020).

New committee

The new committee for administration during the period of October 2018 – October 2019 has already been chosen, and the members are the following:

President: Camila Miranda Brighenti
Vice-president: Anna Luíza Rocha de Oliveira
Secretary: Guilherme de Ascenção Silveira
Treasure: Marília Ferraz da Costa