



International Union of Geological Sciences (IUGS)
Initiative on Forensic Geology (IFG)
Annual Report For 2020
Dr Laurance John Donnelly, Chair IUGS-IFG





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**International Union of Geological Sciences (IUGS), Initiative on Forensic Geology (IFG)
Annual Report 2020**

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Prof Grant Wach	Officer, Canada
Dr Guo Hongling	Officer, China
Dr Biplob Chatterjee	Officer, India
Pending (formerly Dr Rodger Dixon, deceased)	Officer, Africa
Lieutenant Colonel Ahmed Saeed Al Kaabi, Captain Khudooma Said Al Naimi, Captain Saleh Ali Al Katheeri	Officers, Middle East

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- **IFG Student Chapter:** Marcel Tortolero (President of the UFPel IFG Student Chapter), Matheus Perira (President of the UFPR IFG Student Chapter), Larissa Bergamini (Vice-President of the UFPel IFG Student Chapter), Heloisa Ligeski (Vice President of the UFPR IFG Student Chapter, Marco Camargo (President, National Association of Federal Criminal Experts), Fabio Salvador (IFG Officer for South America), Daniel Gaby (Web Master IFG Student Chapter), Lenorado Larroza (Vice Secretary of the UFPR IFG Student Chapter), Fabio Batista (Head of IT, National Association of Federal Criminal Experts).



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1 INTRODUCTION

The International Union of Geological Sciences (IUGS), Initiative on Forensic Geology (IFG) was launched at the 62nd Executive Committee meeting of the IUGS, at UNESCO headquarters, in Paris, France, on 22 February 2011.

1.1 Report Objective

The IUGS-IFG Annual Report for 2020 has been written by the IUGS-IFG Chair, following a request from the IUGS Executive Committee. It has been contributed to, reviewed and approved by the IUGS-IFG Committee. This report provides a summary of the IUGS-IFG events, activities and progress throughout 2020. A financial summary of the IUGS-IFG accounts for 2020 and a budget for 2021 are also included and selected photographs and figures are provided in Appendix II.

2 AIM

2.1 Mission Statement

The aim of IUGS-IFG is, *'to develop forensic geology internationally and promote its applications'*.

2.2 IUGS-IFG Objectives

The objectives of the IUGS-IFG are to:

1. Collate and disseminate data and information on forensic geology applied to policing and law enforcement, criminal, environmental and civil investigations.
2. Promote international meetings, seminars, conferences and training.
3. Develop a Committee to act as principal advisers, collaborators and active participants;
4. Develop an international network whereby each 'member' will act as a principal contact in their respective country for the collation and dissemination of information on forensic geology.
5. Collate, make available and where appropriate review any existing documentation and publications in forensic geology.
6. Produce a document endorsed by the IUGS Executive Committee called; *'A Guide to Forensic Geology'*.

3 ROLE WITHIN IUGS SCIENCE POLICY

3.1 Background

The documented history of forensic geology can be traced to the latter half of the 19th Century. However, in recent years there has been renewed interests and developments in the multidisciplinary fields of forensic geology throughout the world.

Since about 2000 numerous international meetings, conferences, seminars and training on different aspects of forensic geology has taken place. Furthermore, several text books have been published and there are technical papers in peer reviewed scientific and geological journals, conference proceedings, police and law enforcement magazines.

Since 2011, IFG has formally represented the global interests of IUGS in forensic geology. As such, IUGS-IFG provides training, knowledge transfer, capacity building and outreach events. These advocate the IUGS-IFG aim, *'to develop forensic geology internationally and promote its applications'*. The members of the IUGS-IFG committee are senior representatives of their respected organisations and include geologists, geoscientists, police officers, forensic scientists and law enforcement agencies.

3.2 Main Approach

IUGS-IFG aims to raise the global awareness of forensic geology by holding meetings and conferences, promoting research, teaching, training and the operational deployment of forensic geologists. This is consistent with the broad objectives of IUGS Executive Committee, and includes the following:

- **Technology transfer and training:** This improves skill sets both for the IUGS-IFG members to enable their operational capability worldwide, and the training of non-geologists and non-forensic geologists in the methods of geoforensic search, crime scene examination and geological trace evidence collection, handling, analysis and reporting.
- **Knowledge transfer and capacity building:** This raises the levels of awareness and knowledge, and provides information about forensic geology.
- **Outreach:** This provides education and information to a range of stake holders that includes; geologists, geoscientists, forensic scientists, police officers, law enforcement agencies, engineers, minerals traders, lawyers, politicians, schools, universities, learned societies, public, journalists and the media.

4 ORGANIZATION

The IUGS-IFG Committee comprises representatives from major geographical regions of the world and includes specialists from; academia, industry, consultancy, operationally based forensic geologists, the police, law enforcement agencies and forensic organisations, as shown in Figure 1 and Table 1.

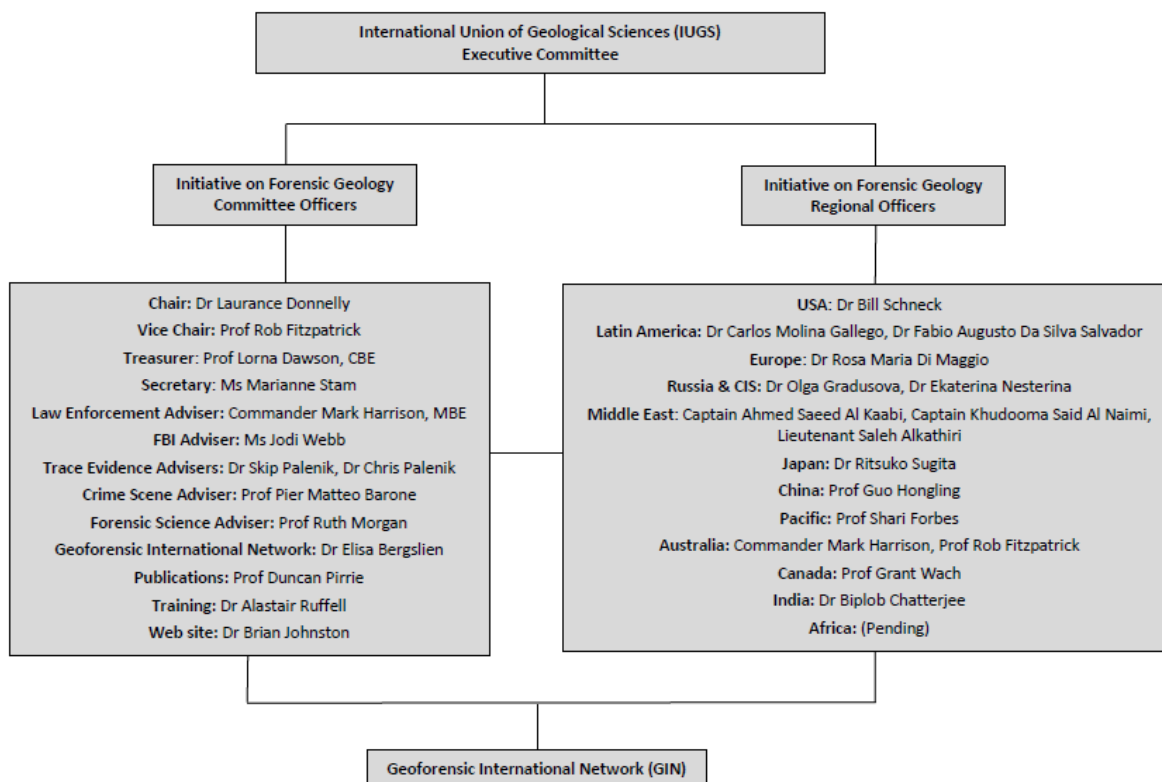


Fig. 1. Structure of the IUGS-IFG Committee in 2020.



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POSITION	NAME	CITY	COUNTRY	AFFILIATION
Chair	Dr Laurance Donnelly	Manchester	England	IUGS-IFG, Lancashire, England, UK
Vice Chair	Prof Rob Fitzpatrick	Adelaide	Australia	CSIRO and University of Adelaide, Australia
Treasurer	Prof Lorna Dawson CBE	Aberdeen	Scotland	The James Hutton Institute, Aberdeen, Scotland, UK
Secretary	Ms Marianne Stam	San Francisco	USA	California Department of Justice, Riverside, USA
Geoforensic Law Enforcement Adviser	Commander Mark Harrison MBE	Canberra	Australia	Australian Intelligence Agency (formerly Australia Federal Police and UK Police National Search Adviser)
FBI Adviser	Ms Jodi Webb	Washington DC	USA	Federal Bureau of Investigation (FBI), Quantico, Washington DC, USA
Special Publications Adviser	Dr Duncan Pirrie	Falmouth	England	Helford Geoscience LLP and University of South Wales, Cornwall, UK
Forensic Science Adviser	Prof Ruth Morgan	Oxford	England	University College London, JDI Centre for the Forensic Sciences, London, UK
(Trace) Evidence Advisers	Dr Skip Palenik Dr Chris Palenik	Chicago	USA	Microtrace LLC, Illinois, USA
Crime Scene Adviser	Prof Pier Matteo Barone	Rome	Italy	The American University of Rome, Italy
Website	Dr Brian Johnston	Belfast	Northern Ireland	Queens University Belfast, Northern Ireland
Training	Dr Alastair Ruffell	Belfast	Northern Ireland	Queens University Belfast, Northern Ireland
Geoforensic International Network Officer, USA	Dr Elisa Bergslien Dr Bill Schneck	Buffalo Spokane	USA USA	SUNY, Buffalo, USA Microvision Northwest Forensic Consulting Inc (formerly Washington State Patrol Crime Lab)
Officer, Latin America	Dr Fábio Augusto Da Silva Salvador	Curitiba	Brazil	Perito Criminal Federal, Chefe do Setor Técnico-Científico, Superintendência da Polícia Federal no Paraná, Brazilian Federal Police, Curitiba, Brazil
Officer, Latin America	Prof Carlos Molina Gallego	Bogota	Colombia	The Universidad Antonio Nariño, Instituto Nacional de Medicina Legal y Ciencias Forense, Bogota, Colombia
Officer, Europe	Dr Rosa Maria Di Maggio	Rome	Italy	Geoscienze Forensi Italia (Formerly Servizio Polizia Scientifica), Rome, Italy
Officer, Russia and CIS	Dr Olga Gradusva Dr Ekaterina Nesterina	Moscow	Russia	Russian Federal Centre of Forensic Science and Soil Trace Evidence Experts, Moscow, Russia
Officer, Middle East	Lieutenant Colonel Ahmed Saeed Al Kaabi, Captain Khudooma Said Al Naimi, Captain Saleh Ali Al Katheeri	Abu Dhabi	UAE	Abu Dhabi Police, Forensic Evidence, United Arab Emirates
Officer, Japan	Dr Ritsuko Sugita	Chiba	Japan	National Research Institute of Police Science, Japan
Officer, Pacific	Prof Shari Forbes	Quebec	Canada	Université du Québec à Trois Rivières, Canada and University of Technology Sydney, Australia.
Officer, Australia	Commander Mark Harrison MBE, Prof Rob Fitzpatrick	Canberra/Adelaide	Australia	CSIRO and University of Adelaide and Australian Intelligence Agency
Officer, Canada	Prof Grant Wach	Halifax	Canada	Basin and Reservoir Lab, Dalhousie University, Halifax, Nova Scotia, Canada
Officer, China	Dr Guo Hongling	Beijing	China	Institute of Forensic Science, Ministry of Public Security, Division of Trace Evidence Analysis, China
Officer, India	Dr Biplob Chatterjee	Biplob	India	Geovale Consulting
Officer, Africa	Pending	-	Pending	(formerly, Dr Roger Dixon (deceased), University of Pretoria and South African Police Service, SAPS)

Table 1. The IUGS-IFG Committee in 2020



4.1 IFG Committee Changes and Position Changes

In 2020, the following changes were made to the IUGS-IFG Committee:

1. Dr Brian Johnston, was assigned to the IFG Committee to develop the new web site.
2. Dr Elisa Bergslien was appointed as the Officer for the Geoforensic International Network (GIN).
3. Dr Roger Dixon (IUGS-IFG Officer for Africa) died in 2020. An officer for Africa is pending.
4. Prof Jennifer McKinley stepped down from the Communications Officer for the duration of her term as Councillor on the IUGS Executive Committee.

5 MAIN ACCOMPLISHMENTS

5.1 JANUARY

5.1.1 University of South Wales, Forensic Geology

A lecture was provided at the University of South Wales, UK, for students attending the MSc course on Advanced Applied Field Geoscience. The scope included crimes scene examination, geological trace analysis, ground searches for burial and crimes that take place in the minerals, mining and metals industries.

5.1.2 74th IUGS Executive Committee Meeting, Busan, South Korea

IUGS-IFG attended the 74th IUGS Executive Committee Meeting, held at the Ibis Ambassador Busan Haeundae Hotel, Busan, South Korea, on Wednesday 15 January 2020. This included the delivery of presentation providing a summary of IFG throughout 2019.

5.1.3 FBI Forensic Geology Training Video, Kentucky, USA

IUGS-IFG endorsed and supported the production of a professionally produced training video on the forensic collection of soil samples, initiated by the IUGS-IFG FBI Adviser. This is aimed at raising skills levels and the standardisation of soil collection at crime scenes. The video was filmed at the University of Kentucky College of Agriculture Food and Environment and is available on the YouTube link <https://youtu.be/o9dWZOj1U5A>

5.2 FEBRUARY

5.2.1 IUGS Special Project

IUGS was awarded a 'Special Project' called, '*Forensic Geological Analysis of Crimes in International Mining, Minerals and Metals.*' The aim of the project is to evaluate the current global scale of crimes that take place in the mining, minerals and metals industry, and assess geological methodologies and strategies, which may aid in the detection, prevention, management and mitigation of these crimes. The project was originally planned to take place from 2020-2022. However, following the onset of COVID-19 and inevitable delays in starting the project a change in strategy was agreed with IUGS and the project will now run from 2021-2023 (Appendix II).

5.2.2 The launch of Forensic Geology in India

Forensic geology became initiated in Delhi, India. Although, the formalisation of this new group was delayed following the cancellation of the 36th International Geological Congress.

5.2.3 University of Warsaw and Central Forensic Laboratory of the Police, Poland

Two members of IUGS-IFG visited Warsaw, in Poland, to initiate forensic geology, support a new course for undergraduates and MSc students at the University of Warsaw and provide operational advice. This included a series of presentations on; the history of forensic geology, geological trace evidence, crime scene examination, operational cases and ground searches for burials. Demonstrations were also provided on the use of geophysical instruments for ground searches. IUGS-IFG collaborated with the Centralne Laboratorium Kryminalistyczne Policji (Central Forensic



Laboratory of the Police). Advice was provided on forensic geology search strategies to locate Nazi death camps associated with the holocaust during the Second World War.

5.2.4 Search for Missing Persons in Colombia

IUGS-IFG agreed to support a two year project aimed at searching for the suspected graves of missing persons in Colombia. This includes the adoption of the Geoforensic Search Strategy (GSS), which developed in the UK using a blend of geological and law enforcement search techniques and strategies.

5.3 MARCH

5.3.1 British-Finnish Natural Resources Initiative, Helsinki, Finland

IUGS-IFG submitted an abstract for inclusion at the British-Finnish Natural Resources Initiative, hosted by the Geological Survey of Finland (GTK) and the British Embassy, in Helsinki. IUGS-IFG's interest included the profiling and traceability of minerals and metal through the commercial supply chain.

5.3.2 International Commission for Missing Persons (ICMP), Colombia

IUGS-IFG held a series of meeting in Bogota, Colombia, with ICMP and the IUGS-IFG Officer for Latin America. As a result, IUGS-IFG were invited to participate in future events to provide training to assist with locating missing persons and suspected homicide graves.

5.4 APRIL

5.4.1 Translation of Forensic Geology Soil Collection Training Video

The translation commenced of the FBI led training video on forensic soil collection. Plans were developed for the transcript to be translated by IUGS-IFG into Arabic, Chinese (Mandarin), Indian (Hindi), Italian, Japanese and Russian. The first translation into Mandarin was completed by Prof Guo Hongling (IFG Officer for China) and Prof Wang Ping, Institute of Forensic Science, Ministry of Public Security, China. The second translation into Spanish was conducted by Prof Carlos Molina (IFG Officer for Latin America), at the Universidad Antonio Nariño, Bogota, Colombia.

5.4.2 Forensic Geology in India

The Geological Survey of India agreed to support the development of forensic geology in India. The scope includes conventional forensic geology applied to policing and law enforcement and environmental geoforensics.

5.5 MAY

5.5.1 Proceedings for Forensic Geology in Mexico

IUGS-IFG published proceedings, comprising abstracts following the 4th Iberoamerican Seminar on Forensic Geology, which was held in Puerto Vallarta, Mexico, in October 2019. This took place in association with; Reunion Annual de la Unión Geofísica Mexicana (RAUGM), Universidad Antonio Nariño (Colombia), the Brazilian Federal Police and Forensic Geoscience (Italy).

5.5.2 United Kingdom National Crime Agency (NCA)

Several UK based members of IUGS-IFG continue to be registered with the NCA as Expert Advisers (Forensic Geologists) and provide operational support to the British police.

5.6 JUNE

5.6.1 Forensic Geology and Training in Search, Bogota, Colombia

IUGS-IFG agreed participated in a webinar to provide training in forensic geology. This included a review of the historical development of forensic geology, the global advancement of IUGS-IFG and searches for burials related to missing persons. This was undertaken using video conferencing and in collaboration with the Universidad Antonio Nariño, Instituto Nacional de Medicina Legal y Ciencias Forense and International Commission for Missing Persons (ICMP).

5.6.2 Forensic Geology in Iran and Slovenia

IUGS-IFG collaborated with geologists to initiate and develop forensic geology in Iran and Slovenia, with regards to ground searches for burials and geological trace evidence.

5.7 JULY

5.7.1 Dr Roger Dixon, IUGS-IFG Officer for Africa

IUGS-IFG were sad to report that Dr Roger Dixon died on Saturday 6 June 2020 following a brief struggle with cancer. Roger was born in 1959 and grew up in Cape Town. In the 1980s, he moved to Pretoria to work for the Geological Survey of South Africa. In 1995, he joined the South African Police Service (SAPS) Forensic Laboratories as a forensic geologist. He took part in several investigations including working with South African mines on gold, diamond and platinum theft. He also advised police forces in Russia, South America and Europe on methods to trace stolen gold. In 2013, Roger joined the Stoneman Laboratory at University of Pretoria and continued to support public roles as a forensic geologist. In 2015, he obtained his PhD for work related to gold theft. He co-authored the book, 'Minerals of South Africa' for the Geological Society of South Africa and had approximately 30 publications. Roger was a friend, a valued member of the IUGS-IFG and he contributed significantly to IUGS-IFG for over ten years. He will be missed and will remain in our thoughts and memories.

5.8 AUGUST

5.8.1 International Commission on Missing Persons (ICMP), Bogota, Colombia

IUGS-IFG provided further training in forensic geology with the ICMP in Bogota, Colombia. This included an introduction to forensic geology, the collection and analysis of geological trace evidence (soils, minerals, rocks and fossils) and anthropogenic materials. Training in search was provided based on the development of a conceptual geological model (CGM). Field training in Colombia included the use remote sensing, aerial photography, geomorphology and geophysics. Care was taken to avoid areas where there were suspected antipersonnel mines. A simulated grave using a pig, within the campus of the Antonio Nariño University, gave the opportunity for the search strategy and geophysical instruments to be demonstrated. Operational cases were referenced of searches for missing persons people in Colombia including the positive results obtained at a cemetery in Granada, Meta, in Colombia.

5.8.2 Establishment of a Forensic Geology Sub-Group in Brazil

A sub-group on forensic geology, known as the 'Student Chapter', was established in Brazil by students to create an academic network for the development of forensic geology. Their establishment and initiation was supported and endorsed by IUGS-IFG. The group comprises undergraduate and graduate students in geological, geophysics, geodetic and oceanographic sciences and who have an interest in deepening their knowledge and skills in the applications of geology to policing and law enforcement. Representing forensic geology and IFG within universities remains one of the groups' main objectives. The Student Chapter will also encourage discussions, develop learning and promote scientific research on various aspects of forensic geology. These are supported by the organization of lectures and short courses, presentations of operational cases and training. There are currently 10 universities with Student Chapters in Brazil at; UFPR, UFPel, UFRRJ, UFRJ, UnB, UniBH, Unesp, UFAM and UFG. There are 155 student members, 14 experts and 11 teachers. Further information can be found on the web site link: Geoforenses.com

5.8.3 Forensic Engineering Geology

General guidance was provided to the police on geomorphology, engineering geology, geotechnical engineering and geophysics for an investigation into the cause of a landslide that resulted in structural damage to infrastructure and loss of lives.



5.9 SEPTEMBER

5.9.1 Abu Dhabi Police, Forensic Geology Branch

The Abu Dhabi Police (ADP) approved the establishment a forensic geology branch and laboratory. This aims to assist with the analyses of geological trace evidence, searches for graves, hidden weapons and smuggled containers and the analysis of gold and minerals. IUGS-IFG has been collaborating with ADP forensic geologists and has visited Abu Dhabi on two previous occasions, in 2013 and 2015, to discuss the development of forensic geology.

5.9.2 Forensic Geology in Rwanda, Uganda and Central Africa

IUGS-IFG held preliminary discussions to develop forensic geology in Rwanda, Uganda and other Central Africa countries. This included a focus on the use of geology to investigate and mitigate crimes that take place in the minerals and mining industries.

5.10 OCTOBER

5.10.1 1st Undergraduate Geoforensic Research Workshop, September 2020

On 21-22 September 2020, the 1st Undergraduate Geoforensic Research Workshop took place in Brazil. This was organized by the Student Chapter of the IUGS Initiative on Forensic Geology (IFG). This focused on forensic geology research applied to policing and law enforcement and was developed by undergraduate students in Brazil. There were 117 delegates, from Brazil, Peru and Portugal. Themes included; (a) forensic applications of sedimentological and palynological analysis of freshwater beaches in the coastal plain of Rio Grande do Sul, (b) Brazil as the main route of international narcotics trafficking: exploring soil evidence from seized cargo, (c) potential use of palynology in car air conditioning filters as a forensic tool in Brazil and (d) analysis and characterization of soils recovered from offenders of three vehicles with forensic purposes.

5.10.2 Missing Persons Search

Forensic geology advice was provided for the police who were searching for the grave of a murder victim in a large, remote, open area. This also included suggestions for the analysis of soil on exhibits to determine their geological and geographical provenance, to assist with the identification of a search area.

5.10.3 Academic and Forensic Geology Investigators, Rio de Janeiro, Brazil, October 2020

On 5-7 October 2020, the IUGS-IFG Student Chapter organised an event to explore collaboration between academic and forensic geology investigators. This included the Brazilian Federal Police, and IUGS-IFG Officer for Latin America, other forensic geology practitioners and a forensic biologist.

5.11 NOVEMBER

5.11.1 IUGS-IFG Committee Member of IUGS Council

Prof Jennifer McKinley, IUGS-IFG Office for Communications and Queen's University Belfast, Northern Ireland, was elected onto the IUGS Council as a councillor for 2020-2024.

5.12 DECEMBER

5.12.1 1st Brazilian Geoforensic Virtual Workshop, November-December 2020

The 1st Brazilian Geoforensic Virtual Workshop, held on 30 November 2020 to 4 December 2020, attracted about 120-150 delegates per day, over the five days. This was supported by IUGS-IFG and in collaboration with the Brazilian Federal Police. Simultaneous English-Portuguese and Portuguese-English translations facilitated international collaboration. Of particular interest was a focus on crimes that take place in the minerals, mining and metals industries, which aligns with a 'Special Project' being implemented by IUGS-IFG.

<https://geoforensense.com/1st-brazil-geofor-virt-workshop/>



5.12.2 Forensic Geophysics and Forensic Geoscience, London

The Geological Society of London, Forensic Geoscience Group, held a one day meeting on Forensic Geophysics and Forensic Geoscience, which took place on Wednesday 2 December 2020. There were approximately 60 participants that included forensic geologists, geophysicists, geoscientist and law enforcement officers. The presentations included crime scene examination, geological trace evidence analysis and ground searches for burials. A presentation was also delivered on the publication of a new book, 'A Guide to Forensic Geology', written by IUGS Initiative on Forensic Geology, which is expected to be available at the start of 2021.

<http://www.nsgg.org.uk/2018/2020/01/01/archaeological-geophysics-environmental-criminal-forensics-2020/>

6 OTHER EVENTS AND ACTIVITIES

6.1 Training for Students

Throughout 2020, several webinars were provided by the Brazilian based 'Student Chapter' on different aspects of forensic geology. These were delivered by the IFG Officer for Latin America in association with forensic geosciences, forensic scientists, law enforcement and related subject matter experts. Examples of these training courses and webinars are presented in Appendix I.

6.2 Operational Support

Whilst IUGS-IFG was not specifically established to provide operation support for police and law enforcement members of the IUGS-IFG committee were invited to provide operational support for casework, including crime scene examination, geological trace evidence and searches for missing persons and suspected homicide graves. The details of these investigations are confidential due to their sensitive, often high profile nature and some are ongoing cases.

6.3 Confidential Documents

IUGS-IFG produced technical and scientific reports, guidance and standard operational procedures (SOP), however, due to their status being either secret, confidential or restricted these also remain confidential.

6.4 Website

Queen's University Belfast (QUB), in Northern Ireland, accept a commission to design and host a new IFG web site. Throughout 2020 the web site was constructed and is expected to become operational during the first quarter of 2021, replacing the original web site hosted by the State University of New York (SUNY), Buffalo, USA.

6.5 Flyer

A flyer remained available on the IUGS-IFG web site giving an overview of the aim, objectives and achievements of IUGS-IFG.

6.6 IUGS E-Bulletin

IUGS-IFG provided a monthly contribution for the IUGS E-Bulletin, from January to December 2020.

6.7 Media

IUGS-IFG provided a selected number of interviews to journalists working in the media to help promote and draw attention to forensic geology. Preliminary ideas have been explored for the possible production of a TV documentary on forensic geology.

7 AWARDS, RECOGNITION, PROMOTION & NEW POSITIONS

7.1.1 IFG Raymond Murray Award

Maureen Bottrell, forensic geologist and forensic examiner, was named as the first recipient of the, 'IFG Raymond Murray Award for Recognised and Distinguished International Contributions to Forensic



Geology'. This was presented to Maureen upon her retirement from the United States, Federal Bureau of Investigation (FBI) laboratory, located at a Marine Corps Base, in Quantico, Virginia, USA. The award was presented on 26 August 2020, by Laurance Donnelly (IUGS-IFG, Chair), Jodi Webb (IUGS-IFG, FBI Adviser) and Alastair Ruffell (IUGS-IFG Training).

7.1.2 National Police Chief's Council

Prof Lorna Dawson CBE, IUGS-IFG Treasurer and Head of Forensic Soil Science at the James Hutton Institute was part of a team presented with the 'Team of the Year Award 2019', by the National Police Chief's Council, in recognition of the professionalism in the investigation into the murder of Margaret Fleming, a complex 'no body' spanning 17 years.

7.1.3 Pioneer Award

Prof Rob Fitzpatrick, IUGS-IFG Vice Chair, was honoured by the South Australia Branch of Soil Science Australia, with the 'Pioneer Award'. Each year an individual is honoured who has made a significant and lasting contribution to the field of soil science. Rob has made significant contributions to soil science and forensic geology. On 10 December 2020, he presented the, '*Rob Fitzpatrick Pioneer Lecture*'.

8 GEOFORENSIC INTERNATIONAL NETWORK (GIN)

GIN brings together forensic geologists, geoscientists, police and law enforcement officers from around the world to develop and promote forensic geology. Dr Elisa Bergslien was appointed as the 'IUGS-IFG GIN Manager'. Prospective new members can contact Elisa on BERGSLET@buffalostate.edu

Those countries represented in GIN include; Australia, Argentina, Bangladesh, Belize, Belgium, Belarus, Bolivia, Brasil, Canada, China, Chile, Colombia, Democratic Republic of Congo (DRC), Denmark, Ecuador, Egypt, England, France, Finland, Georgia, Germany, Greece, Hungary, India, Iran, Iraq, Ireland, Israel, Italy, Japan, Kazakhstan, Kyrgyzstan, Malaysia, Malta, Mexico, Mongolia, Mozambique, Namibia, Nepal, Netherlands, New Zealand, Nigeria, Northern Ireland, Pakistan, Poland, Portugal, Republic of Ireland, Russia, South Africa, Spain, Switzerland, United States of America, United Arab Emirates, Wales and the West Indies (Caribbean), Zambia, Zimbabwe.

9 PUBLICATIONS

9.1 A Guide to Forensic Geology

Throughout 2020, IFG worked closely with the Geological Society of London, Publishing House, for the production of, '*A Guide to Forensic Geology*'. The proof of the book is completed expected to go to print in early 2021. The editors of the publication are Laurance Donnelly, Duncan Pirrie, Mark Harrison, Alastair Ruffell and Lorna Dawson. '*A Guide to Forensic Geology*' was written by members of the International Union of Geological Sciences (IUGS), Initiative on Forensic Geology (IFG), which was established to promote and develop forensic geology around the world. This publication was dedicated to a pioneer of Forensic Geology, Dr Raymond Murray. This book presents the first practical guide for forensic geologists in search and geological trace evidence analysis. Guidance is provided on using geological methods during search operations. This developed following international case work experiences and research over the last 25 years for homicide graves, burials associated with serious and organised crime and counter terrorism. With expertise gained in over 300 serious crime investigations the guidance also considers geological trace evidence, including the examination of crime scenes, geological evidence recovery and analysis from exhibits and the reporting of results. The book also considers the judicial system, reporting and requirements for presenting evidence in court. Included are emerging applications of geology to police and law enforcement such as illegal and illicit mining, conflict minerals, substitution, adulteration, fraud and fakery.

9.2 Special Publication on Forensic Soil Science and Geology

'Forensic Soil Science and Geology' is also expected to be published by the Geological Society of London during 2021. The majority of the papers were presented at the, 'Symposium of Forensic Soil



Science and Geology' and International Conference on, 'Criminal and Environmental Soil Forensics,' held at the 35th IGC, in Cape Town, South Africa, in 2016. This special publication provides information and support to police and law enforcement with criminal investigations. These include; collection and analysis of earth-materials and other items from crime scenes, searches associated with homicide graves, counter-terrorism and organized crime. This volume includes new field and laboratory methods and operational casework from around the world. Some of the papers are available online at the following link: <https://sp.lyellcollection.org/online-first/492>

9.3 Forensic Geology and the Geological Society of Japan

The Journal of the Geological Society of Japan, 126(8), 405-470, was dedicated to Forensic Geology. This comprises seven papers, most of which are in Japanese language. IUGS-IFG Officer for Japan, Ritsuko Sugita, was the guest editor for this special issue. The papers include; (a) Preface and Developments in forensic geology, (b) An introduction to Forensic Geology (R. Sugita, N. Kawamura, K. Kumisaka), (c) Investigation on forensic soil analysis using quartz shapes and surface microtextures (H. Itamiya, R. Sugita, T. Sugai), (d) Short history of forensic geology in Japan (K. Kumisaka, R. Sugita), (e) The Geoforensic Search Strategy: A high assurance search method to assist law enforcement locate graves and contraband associated with homicide, counter terrorism and serious and organised crime (L. Donnelly, M. Harrison), and (f) Magnetic measurements as a forensic geology tool: a review (N. Kawamura). The issue is available on the following link: <https://www.jstage.jst.go.jp/browse/geosoc/-char/en>

9.4 4Iberoamerican Congress on Forensic Geology, Mexico

Proceedings were published for the '4th Iberoamerican Congress on Forensic Geology', held in Puerto Vallarta, Mexico, in 2019.

10 CHALLENGES

10.1 COVID-19

The global impact of the COVID-19 resulted in the postponement of field training and overseas events during March to December 2020. However, IUGS-IFG was able to adapt to new method of working by holding webinars and video conferences. The IUGS-IFG Special Project was also delayed.

10.2 36th International Geological Congress

The cancellation of the 36th International Geological Congress, which was proposed to take place in Delhi, India, created particular challenges for IUGS-IFG. However, planning for the future development of forensic geology in India continued during 2020.

10.3 Accreditation and Regulation in Forensic Geology

IFG continues to consider the global accreditation and regulation of forensic geologists. There remains a challenge concerning the authoritative body that should be responsible for accreditation and regulation.

10.4 Forensic Awareness and Operational Case Work

A significant amount of work conducted each year by IUGS-IFG remains confidential. Whilst IUGS-IFG seeks to publish and promote forensic geology, this has to be balanced with the need to protect some of the forensic geology capabilities and ongoing operational casework.

10.5 Security

Due to the nature and culture of some police forces around the world, it is unlikely forensic geology can become initiated in those countries.

11 WORK PLAN AND ANTICIPATED OUTPUT FOR 2021

The IUGS-IFG work plan for 2021 includes the following:



11.1 Publications

In collaboration with the Geological Society of London, two publications expected during 2021 are 'A Guide to Forensic Geology' and 'Forensic Soil Science and Geology'.

Also expected to be published is, 'Geoethics in Forensic Geology', in association with the International Association for Promoting Geoethics.

11.2 Proposed and Provisional Events

The following events are provisionally in planning for 2021:

- Support to BSc, MSc courses and PhD at Nottingham Trent University, Queen's University Belfast, Keele University, Staffordshire University, Northumbria University, University of Warsaw and the Universidad Antonio Narino, Bogota, Colombia.
- Collaboration with police laboratories including; the Central Forensic Laboratory of the Police in Poland, Abu Dhabi Police Laboratory, Brazilian Federal Police Laboratory and the FBI Laboratory.
- The provision of training on ground searches to locate genocide graves in Europe and Nazi death camps from the Second World War.
- Development of the IFG Working Group in India.
- Expansion and development of the IFG Student Chapter.
- Session on Forensic Geology, at the 36th International Geological Congress, in Delhi, India (possibly now taking place as a webinar).
- Support to colleagues in the USA, on ground searches for burials associated with homicide, counter terrorism and organised crime in USA.
- Initiation of an IUGS-IFG supported training video on ground searches for burials.
- IUGS Special Project Meetings in Brazil, with the Brazilian to discuss the results of the IUGS Special Project.
- Planning for meetings in Uganda or Rwanda in 2022, to consider crimes in the minerals, mining and metals industries.
- Development of forensic geology with The International Committee of the Red Cross (ICRC) in Cross, in central Africa.
- Support for missing persons searches with the International Commission on Missing Persons (ICMP), in Bogota, Colombia.
- 10th anniversary of IUGS-IFG, hosted by the American University of Rome and National Institute of Geophysics and Volcanology (INGV), in Rome, Italy.
- Planning for the 5th Iberoamerican Congress on Forensic Geology, to be held at the Universidad Antonio of Nariño, Bogota, Colombia, in 2022.
- Translation of the Geoforensic Search Strategy (GSS) into non-English languages.
- Translation of the FBI soil collection training video into non-English languages.
- 'Interforensics 2021', congress in Curitiba, Brazil, 8 June 2021.
- '50th Brazilian Congress on Geology,' Session on Forensic Geology, 28 June 2021.
- Develop the applications of forensic geology in mining, minerals and metals industry. In particular theft, fakery, smuggling, conflict minerals, adulteration and substitution.

- Planning for the session on forensic geology by the Geological Association of Canada (GAC MAC), in Halifax, Canada, May 2022.
- Planning for the World Congress of Soil Science, with the IUSS (International Union of Soil Science), to be held in Glasgow, Scotland, in 2022.
- Planning for a forensic geology training camp, in association with the IFG Student Chapter, in Brazil in 2022.
- Launch a new IUGS-IFG web site.
- Attract and develop interests in harder to reach communities and developing nations.
- Attract young people and the next generation into forensic geology.
- Engagement with forensic science regulators to align forensic geology with forensic science and following the publication of the UK House of Lords, Inquiry on Forensic Science, and their recommendations.
- Assist police and law enforcement to develop guidance and best practise in forensic geology, globally.
- Regular contributions to the IUGS E-Bulletin.

12 CRITICAL MILESTONES

Critical milestones for 2020 included the following:

- Submission of the final draft of, '*A Guide to Forensic Geology*' to be published by The Geological Society of London.
- Progress of, '*Forensic Soil Science and Geology*' to be published by The Geological Society of London.
- Publication of a themed issue on forensic geology for The Journal of the Geological Society of Japan.
- Production and translation into Mandarin and Spanish of a training video on the forensic collection of soil, with the FBI laboratory.
- The formation of the IFG Student Chapter in Brazil.
- The formation of a sub-group on of forensic geology in India.
- Award of the IUGS Special Project to IFG, which aims to focus on the forensic geology analysis of crimes that take place in the minerals, mining and metals industries.
- Ongoing collaboration with the FBI forensic geologists and the development of the FBI Geoforensic Working Group.
- Agreement for the 5th Iberoamerican Congress on Forensic Geology, to take place in Bogota, Colombia, in 2022.
- Ongoing collaboration following the submission of evidence to the UK Government, House of Lords, Science and Technology Committee, Inquiry on Forensic Science.
- Collaboration with international police, law enforcement agencies on crimes in minerals and mining (confidential).
- Collaboration with the International Commission on Missing Persons (ICMP) in Colombia.
- Development of opportunities for the initiation of forensic geology in Uganda, Rwanda and other parts of central Africa.
- Visit to Poland to support the establishment of undergraduate courses and MSc course that included forensic geology.
- Adaptation of IUGS-IFG in order to continue to progress and advance forensic geology around the world, given the unprecedented global challenges associated with the Coronavirus (COVID-19).

13 FINANCIAL

13.1 Bank Account and Financial Management

The IUGS-IFG bank account remained in Aberdeen, Scotland. This was managed by the IUGS-IFG Treasurer, Prof Lorna Dawson, CBE. The accounts were verified by the IUGS-IFG Chair, Dr Laurance Donnelly and the IUGS-IFG Committee.

13.2 IUGS Award Payment

IUGS-EC kindly agreed to support IFG during 2020 with a payment award of **USD \$10,000** including an advanced payment **USD \$7,000** for the 36th International Geological Congress in India.

13.3 Summary of Expenditure and Accounts

The income and expenditure on the account for 2020 is summarised in Table 2. As the IUGS-IFG bank account is held in the UK, the income and expenditure is shown in GBP (£) sterling and USD (\$) equivalent, where relevant.

Due to COVID-19, several events were postponed although some were held as webinars. IUGS-IFG requests to 'roll forward' the projected balance of **USD \$10,584.98** to support the forensic geology programme for 2021.

Table 2. Summary of IFG accounts for 2020

Date	Expenditure/Item 2020	Credit (£)	Debit (£)	Balance (£)	Balance (\$)
31.12.2021	Balance, end of 2020, carried into 2021				
31.12.2021				10,584.98	
2020	New IFG website costs			1,520	2,000
21.8.2020	Transfer of IUGS funding	2,669.58		12,104.98	
28.2.2020	¹ Visit to University of Warsaw and Police laboratory, Poland		387.27	9,435.40	
10.8.2020	36th IGC, India		445.57	9,822.67	
28.2.2020	Visit to University of Warsaw and Police laboratory, Poland		563.96	10,268.24	
28.2.2020	Training in Colombia with ICMF		770	10,832.20	
18.2.2020	International bank transfer charge		5	11,602.20	
17.2.2020	4 th Iberoamerican congress and training, Mexico		781	11,607.20	
14.2.2020	Copyright costs, 'A Guide to Forensic Geology'.		612	12,388.20	
31.1.2020	4 th Iberoamerican congress and training, Mexico		761	13,000.20	
13.1.2020	4 th Iberoamerican congress and training, Mexico		761	13,761.20	
31.12.2019	4 th Iberoamerican congress and training, Mexico		761	14,522.20	
18.12.2019	Visit to ARISTA, Amsterdam		80.00	15,283.20	
12.12.2019	4 th Iberoamerican congress and training, Mexico		803.23	15,363.20	
	Balance, carried over from 2019			16,166.43	

13.4 Estimated Budget for 2021

An estimated breakdown of the budgetary request for 2021 is provided in Table 3, which amount to **USD \$17,750**.

To deliver the 2021 programme and IUGS Executive Committee recommendations following the ARC review, IUGS-IFG kindly requests the rollover of the 2020 balance and therefore a budget of **USD \$7,165.02** (i.e. USD \$17,750 – USD \$10,584.98) from IUGS for 2021.

If the 36th IGC is cancelled, the USD \$7000 allocation could be used to offset the 2021 budget request.

IUGS-IFG propose to request and obtain contributory funding and funding services in-kind. For these additional financial resources and support, this relies on the core funding and ‘seed money’ that is gifted by IUGS. In addition, in-kind contributions by IUGS IFG staff time and the organisation they work in has allowed the many and varied contributions to have been achieved.

In 2021, IUGS-IFG proposes to generate a small surplus or to break even.

Table 3. Estimated and provisional budget request for 2021.

Proposed Events in 2021	Budget Cost (\$) (USD)
Summary and translation on Geoforensic Search Strategy (summary) into: Portuguese, Italian, Russia, Arabic and Japanese.	500
A copy of ‘A Guide to Forensic Geology’ and ‘Forensic Soil Science and Geology’ to developing nations and hard to reach communities	500
Commission the design and production of a medal for the Raymond Murray Forensic Geology Award	250
Brazilian Congress on Geology, Forensic Geology and Training with the Brazilian Federal Police	3,000
Training in Colombia with the International Commission on Missing persons (ICMP) (video conference)	500
*36th International geological Congress, India	7,000
IFG 10 th anniversary meeting in Rome, training for law enforcement and future strategic planning in forensic geology, 2021-2030 (video conference)	500
Support for the international student development of forensic geology in South America, Africa and India	1,000
Training video development on forensic geology for international audience	500
Implementation of advice following UK Government review of Forensic Science (House of Lords)	250
Training in open area search in USA	1,500
Preparation of summary guide notes for use by practitioners.	2,000
Web site costs	250
Budget request for 2020	17,750
Notes:	
<ol style="list-style-type: none"> 1. Request for USD \$15,000 including allocated spend on strategic initiatives. 2. Request for USD \$15,000 excludes carryover from 2019. 3. Funding may be diverted to events not foreseeable in January 2021 4. Actual expenditure is dependant on the status of COVID-19. 5. *IGC in India, in 2021, has not been confirmed and therefore this could be diverted to other events offsetting the 2021 request of USD \$7165.02. 6. Actual budget request for 2021: 17,750-10,584.98 = USD \$7,165.02 	

13.5 Special Project Financial Summary

To prevent the postponement of the ‘Special Project’, due to COVID-19, IFG developed a modified strategy. Under this revised strategy, contributing authors were provided with some financial support to initiate the desk study. This included mini grants used for the purchase some data, papers, reports and other disbursements. Each award (honorarium) was agreed with IUGS and scrutinised by the IFG Committee.

The income and expenditure on the account for the ‘Special Project’ during 2020 is summarised in Table 4.

IFG has planned for some of the funding in 2021 to be used for a meeting in Brazil when the global lock-down is over and travel is permitted. The results will be a review paper for publication in Episodes in 2022.

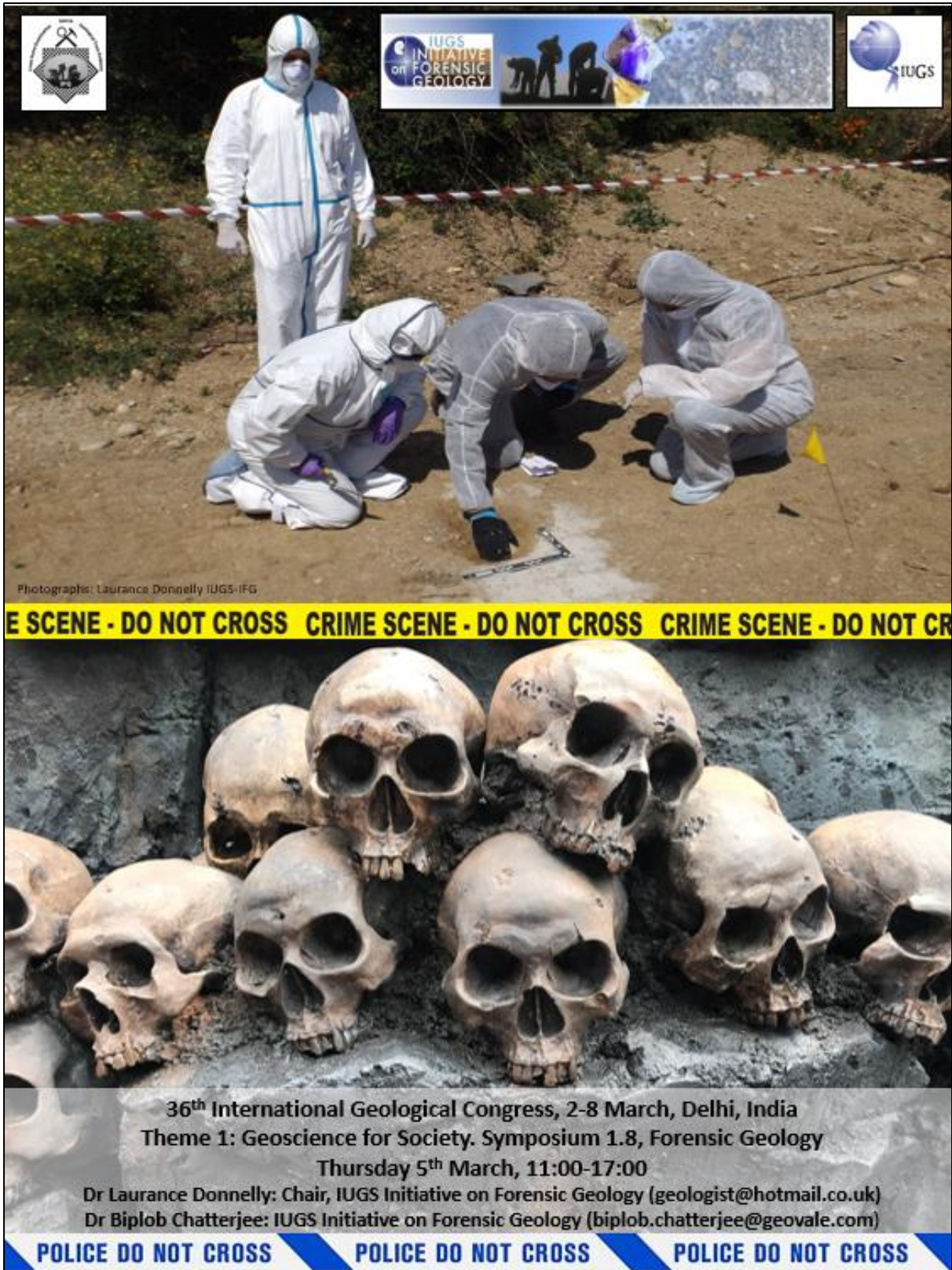
Table 4. Summary of ‘Special Project’ account for 2021

Date	Expenditure/Item 2020	Credit (\$)	Debit (\$)	Balance (\$)
*2021	Planning for year 2 meeting in Africa		2,000	0
*2021	Travel costs for meeting in Brazil		8,000-10,000	(2,000)
*2021	Report preparation and dissemination		1,000	(12,000)
*2021	Administration and secretarial costs		500	(13,000)
*2021	MH: Charles Stuart University		1000	(13,500)
31.12.2020				14,500
13.11.2020	Web site hosted by QUB		2,000	14,500
25.11.2021	RS: Mining and Minerals Consultant, South Africa		(1,000)*	16,500
24.11.2021	BC: Xterra Mining Services Limited, India		(1,000)*	17,500
23.11.2021	CM: Universidad Antonio Narino, Colombia		1,000	18,500
22.11.2021	FS: Brazilian Federal Police, Brazil		1,000	19,500
21.11.2021	RMDM: Geoscience Forenzi Italia, Italy		1,000	20,500
20.11.2021	DP: Helford Geoscience, UK		2,000	21,500
24.08.2020	Transfer of funding for SP from IUGS to IFG	23,500		

APPENDIX I: SELECTED IUGS-IFG PHOTOGRAPHS FOR 2020



IUGS-IFG supporting the IUGS-IFG FBI Adviser during the filming for a training video on soil selection from crimes scenes. The video was filmed at the University of Kentucky College of Agriculture Food and Environment, in association with Dr Brad Lee, Suzette Walling (Extension Associate, holding the sun filter) and Brian Volland (videographer, behind the camera), IUGS-IFG FBI Adviser (Jodi Webb, being filmed) (Photos: Jodi Webb and Brad Lee).



Photographs: Laurance Donnelly IUGS-IFG

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36th International Geological Congress, 2-8 March, Delhi, India
Theme 1: Geoscience for Society. Symposium 1.8, Forensic Geology
Thursday 5th March, 11:00-17:00
Dr Laurance Donnelly: Chair, IUGS Initiative on Forensic Geology (geologist@hotmail.co.uk)
Dr Biplob Chatterjee: IUGS Initiative on Forensic Geology (biplob.chatterjee@geovale.com)

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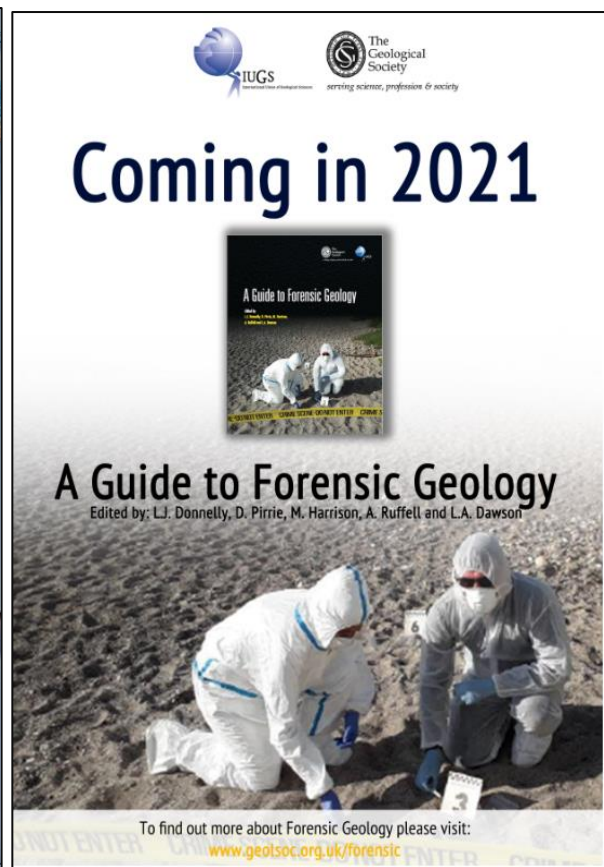
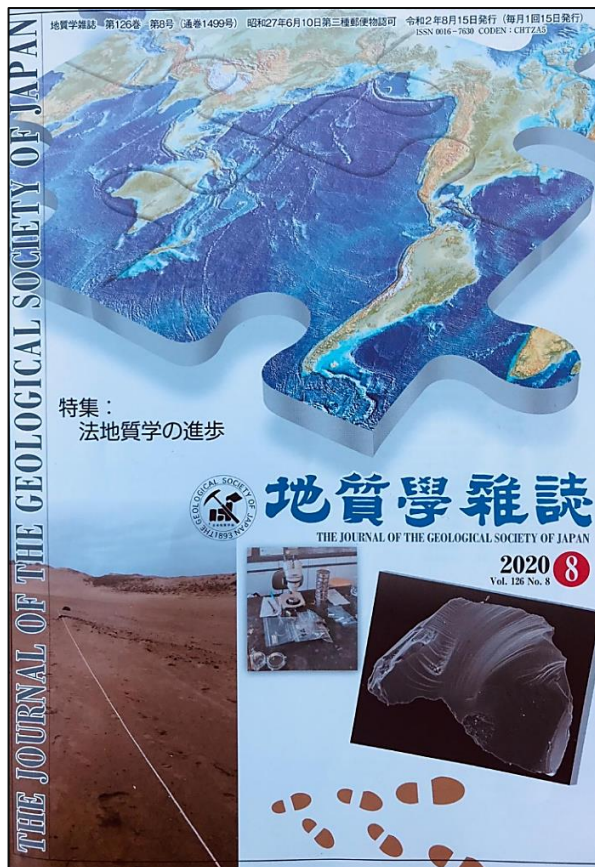
Flyer for the session on Forensic Geology, 36th International Geological Congress, in Delhi, India, which was postponed due to COVID-19.



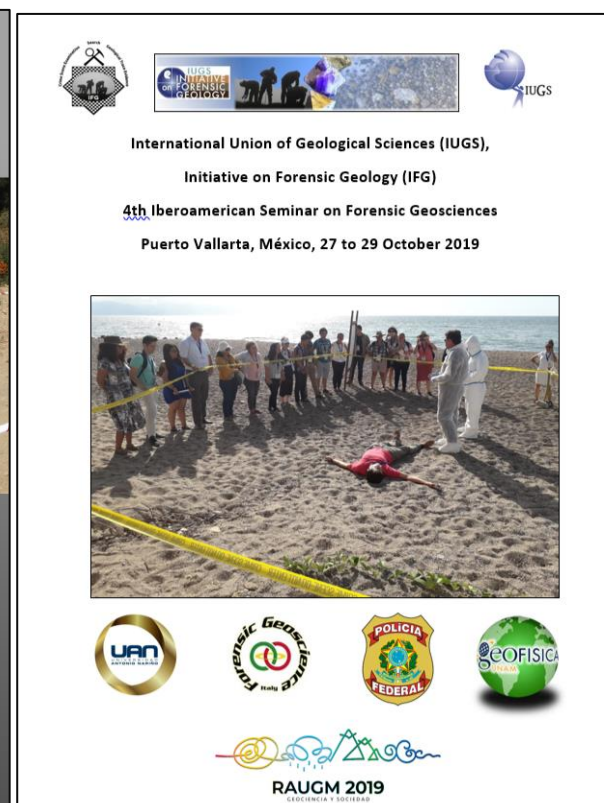
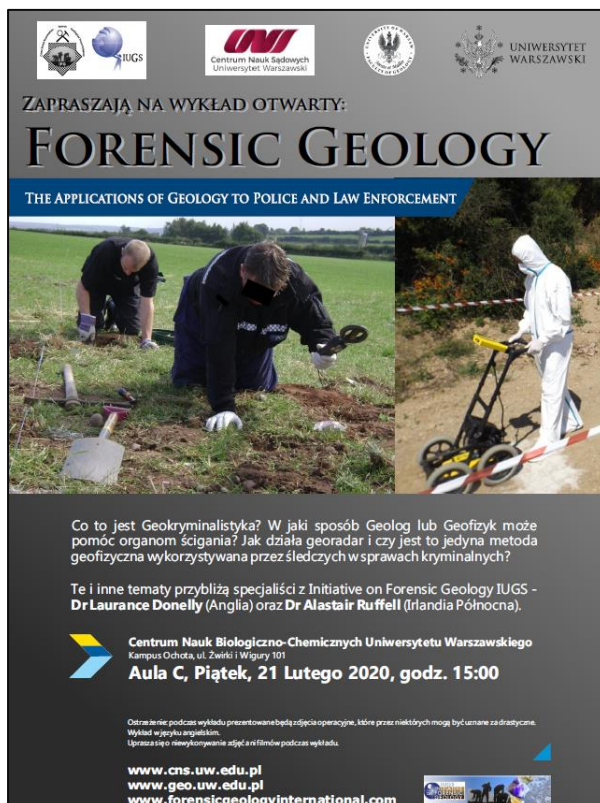
IUGS-IFG Chair (Dr Laurance Donnelly) and IUGS-IFG Training Officer (Dr Alastair Ruffell) at the Centralne Laboratorium Kryminalistyczne Policji (Central Forensic Laboratory of the Police), Warsaw, Poland.



IUGS-IFG initiation of forensic geology for undergraduates and MSc students, including a series of presentations and the demonstration of ground penetrating radar (GPR) for searches, University of Warsaw, Poland.



(Left) The Journal of the Geological Society of Japan, 126(8), 405-470, dedicated to Forensic Geology. <https://www.istage.jst.go.jp/browse/geosoc-char/en> (Right) Flyer for, 'A Guide to Forensic Geology.'



(Left) Selected forensic geology marketing material for forensic geology training in Poland. (Right) Front Cover, Proceedings for 4th Iberoamerican Seminar on Forensic Geology in Mexico.



IUGS Special Project, example of Illegal, artisanal mining in Colombia (Photos: Dr Laurance Donnelly).



Geophysical prospecting with electric tomography, as part of training delivered by IUGS-IFG in Colombia, with the International Commission for Missing Persons (ICMP). Showing a simulated grave using a pig and finding of victims of the armed conflict in a cemetery (Photo: Carlos Molina Gallego, (fiscalia.gov.co)).



 Marcelo Tortolero President of the UFPel IFG Student Chapter	 B.Sc. Matheus Pereira President of the UFPR IFG Student Chapter	 Larissa Bergamini Vice-President of the UFPel IFG Student Chapter	 Heloisa Ligeski Vice-President of the UFPel IFG Student Chapter	 Ph.D. Fábio Salvador Regional Officer of IFG in Latin America	 Sp. Marcos Camargo President of the National Association of Federal Criminal Experts (APCF)
 Daniel Gaby Web Master of the UFPel IFG Student Chapter	 Leonardo Larroza Vice Secretary of the UFPR IFG Student Chapter	 Fábio Batista Head of IT at the National Association of Federal Criminal Experts (APCF)	INITIATIVE on FORENSIC GEOLOGY STUDENT CHAPTERS		

Events

- 1st Brazilian Geoforensic Virtual Workshop**
30 NOV
2020-11-30 @ 08:00 AM - 2020-12-04 @ 08:00 PM
Online event
- InterForensics 2021**
08 JUN
2021-06-08 @ 08:00 AM - 2021-06-11 @ 08:00 PM
Curitiba
- 50th Brazilian Congress of Geology**
28 JUN
2021-06-28 @ 08:00 AM - 2021-06-30 @ 08:00 PM
Online event

INICIO IFG BRASIL PORTAL PESQUISA EVENTOS ARTIGOS ESPECIAIS

IFG BRASIL | GRUPO DE PESQUISA EM GEOCIÊNCIAS FORENSES

1st Brazilian Geoforensic Virtual Workshop
1º Workshop Geoforenses Virtual Brasileiro

Últimas Notícias: Confira a nova edição da revista Perícia Federal: Átomos no rastro Crime

GEOLOGIA FORENSE **SOBRE A IFG**

The Brazilian Sub-Group on Forensic Geology, IUGS-IFG Student Chapter.

<https://geoforenses.com/noticias/>

Novos Student Chapters da IFG!

Atualizado: Jul 27

A partir de agora, estudantes de Graduação e Pós-Graduação em áreas das Geociências podem se unir para criar os novos Student Chapters da Initiative on Forensic Geology (IFG)!



Curso de Geologia Forense e Microvestígios organizado pela IFG Brasil em parceria com a Academia Nacional de Polícia.

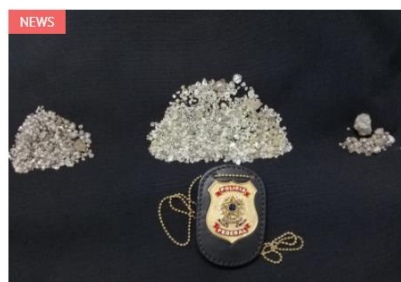
News



IFG Latin America in the 7th ENQFor

October 8, 2020

Between the 9th and 11th of November 2020 the Integrated Online Congress will take place with the 7th National Meeting of Forensic Chemistry (ENQFor) and the 4th Meeting of Continuar ...



PF sets off operation against illegal diamond exploration in the Roosevelt Reserve (RO)

September 25, 2020

This Thursday, the Federal Police (PF) launched Operation Crassa, targeting gangs that operate in clandestine diamond mining inside indigenous lands of the Roosevelt Reserve, in Rondônia (RO).



Publications of the 4th Iberoamerican Seminar on Forensic Geosciences

September 22, 2020

Publication of scientific summaries publications of the 4th Iberoamerican Seminar on Forensic Geosciences, which took place during the Annual Meeting of the Mexican Geophysical Union (RAUGM 2019) in Puerto Vallarta, onContinue ...

The Brazilian Sub-Group on Forensic Geology, IUGS-IFG Student Chapter.

<https://geoforenses.com/noticias/>

GEOLOGIA FORENSE
E A ELUCIDAÇÃO DE CRIMES

GEÓLOGO **FÁBIO SALVADOR**
DEPARTAMENTO DE POLÍCIA FEDERAL-PR

DATA: 06/12/2012
HORÁRIO: 17:30
SALA: PH 04

Visite-nos:
<http://petgeoufpr.blogspot.com>
petgeo.ufpr@gmail.com

Curso

Geologia Forense e Microvestígios

Ementa:

- Panorama da Geologia Forense no Brasil e no Mundo**
PCF Dr. Fábio Augusto da Silva Salvador (SETEC/SR/PF/PR)
- Análise forense de vestígios de solo em local de crime**
Dr. Vander de Freitas Melo (UFPR)
- Geofísica forense na investigação do subsolo**
PCF Dr. Marcelo Blum (INC/DITEC)
- Aplicação dos isótopos estáveis na identificação humana**
Dr. Anelize Bahniuk Rumbelsperger (UFPR)
- Palinologia forense**
Ma. Marina Milanello (SPTC/SP)

Data: 03/12 (Seg) - 07/12/18 (Sex)
Carga Horária: 32h
Local: SR/PF/PR, Curitiba
Avaliação: não há

LAMIR
Laboratório de análises de minerais e rochas

Minicurso de Geologia Forense

Geólogo Dr. Fábio Salvador
Departamento de Polícia Federal - PR

01/07/2013 - 05/07/2013

Horário: 17:30 - 19:30
Local: Sala CT-04

Inscrições: 26, 27 e 28 de Junho de 2013
11:45 - 13:15
Sala do PET - Geologia
Centro Politécnico - Sala PI-13A

Mediante a doação de 2Kg de alimentos não perecíveis (exceto sal) e um brinquedo novo
Pré-requisito: Mineralogia Geral

20 Vagas

Serão emitidos certificados para participantes com frequência mínima de 80% (Resolução - nº 72/11 CEPE)

Os alimentos e os brinquedos serão dados para as seguintes instituições:
Lar. Batista Esperança
Escola Rural Onofre Soares

Examples of lectures and short courses, IUGS-IFG Student Chapter.

<https://geoforenses.com/palestras-cursos/>

DETETIVES DE SEGUNDA
Experiência da Polícia Federal nos casos de Mariana e Brumadinho
às 17 horas com participação de: **07 DEZ**
Marcus Vinicius Andrade - Farmacêutico Perito Criminal Federal
Gustavo Ferraz - Geólogo Perito Criminal Federal

07/12 AS 19H
UFRRJ IFG STUDENT CHAPTER
Técnicas de investigação de Gemas
JURGEN SCHNELLRATH - Pesquisador do Centro de Tecnologia Mineral (CTEM) - Graduação em Geologia (UFRJ) - Doutorado em Mineralogia (Universidade de Mainz na Alemanha) (JGU)

CURSO ON-LINE GEOLOGIA FORENSE
DR. FÁBIO AUGUSTO DA SILVA SALVADOR - GEÓLOGO - PERITO CRIMINAL FEDERAL
DATA: 7 A 11 DE DEZEMBRO
HORÁRIO: 14H ÀS 18H
REALIZAÇÃO: IUGS-IFG
APOIO: APCF

Introdução à teoria e processamento de dados de GPR para fins forenses
Online e gratuito, 6h
28/10 das 9h às 11h30
29 e 30/10 das 10h às 12h
UFRRJ IFG Student Chapter

FOR.SCI
AULA AO VIVO
GEOCIÊNCIAS FORENSES: CONTEXTOS, POTENCIALIDADES E DESAFIOS NO BRASIL
ADRIEL FILIPE S. BRITO - Geólogo, Mestrando em Geociências (PPGEO-MN/UFRRJ) - Presidente UFRRJ IFG Student Chapter
22 DE OUTUBRO - 19H NO YOUTUBE INSTITUTO FOR.SCI

DETETIVES DE SEGUNDA
O incêndio do Museu Nacional: Perícia e Resgate de Acervos
às 17 horas com participação de: **26 OUT**
Marco Antônio Zatta - Engenheiro eletrônica, Perito Criminal Federal
João Luiz de Oliveira - Perito Criminal Federal
Luciana Carvalho - Vice-coordenadora do Museu do Resgate de Acervos da MN/UFRRJ

DETETIVES DE SEGUNDA
28 SET às 19 horas com participação de **José Carlos Seoane**
Dr. em Geociências pela UNICAMP, Prof. no Instituto de Geociências da UFRJ

DETETIVES DE SEGUNDA
14 SET às 19 horas com participação de **Ludmila Alem**
Biomédica (UFRJ), Mestre em Ciências (UERJ) com ênfase em Papiloscopia e Genética Forense, Diretora do Instituto For.Sci

UFRRJ IFG Student Chapter apresenta
A natural vocação do Geólogo como Prospector, servindo para ações de Investigação Criminalística
PALESTRA-MINISTRADA POR **Dr. Fábio Augusto da Silva Salvador** - PERITO CRIMINAL FEDERAL, GEÓLOGO
01/09 às 15h
Inscrições: <http://ced.im.ufrrj.br/index.php>

JUNT@SADISTÂNCIA
Palestras on-line, ao vivo e com certificado
63
A EVOLUÇÃO E AS PERSPECTIVAS DA GEOLOGIA FORENSE NO BRASIL
Perito Criminal Federal Dr. Fábio Augusto da Silva Salvador (DPF)
01/09 - Terça-Feira, 17 horas
Certificados disponíveis apenas para sócios quites
50º CONGRESSO BRASILEIRO DE GEOLOGIA
PATROCÍNIO: UFRRJ, SBGEOLOGIA

DETETIVES DE SEGUNDA
31 AGO às 19 horas com participação de **Kátia Mansur**
Profª da Geologia UFRJ e PPGeo do Museu Nacional

Examples of lectures and short courses, IUGS-IFG Student Chapter.

<https://geoforenses.com/palestras-cursos/>

GEOLOGIA FORENSE
A realidade brasileira

Dr. Fábio Augusto da Silva Salvador
Geólogo - Perito Criminal Federal

20/1 15h30
QUARTA-FEIRA

MAIS INFORMAÇÕES NA DESCRIÇÃO

LIGA ACADÊMICA DE CIÊNCIAS FORENSES

LACFORENSE TALKS

Geologia Forense e Justiça Ambiental

A verdade a sete palmas - contribuições da arqueologia para o meio forense

Adriel Filipe
Geólogo - UFRJ

Paulo Vitor Mendes
Aluno de Arqueologia Uerj

30 DE JUNHO 19H

LIVE
A Geologia Forense como ferramenta de Investigação criminal

Ministrada pelo Mathew Pereira Nogueira e Sílvia Especialidade/Área de atuação - Geociências Forenses
Data: 23 de junho de 2020 às 17:30
O link será disponibilizado na bio no dia do evento

Universidade Federal do Oeste do Pará
Geophysical Society

CICLO DE PALESTRAS
“Geofísica Forense”

Todas às quintas do mês de Agosto
A partir das 17 horas pelo nosso canal do Youtube

Emissão de certificado
Inscrições através do nosso Linktree

ufopasegchapter | segufopa@hotmail.com | linktr.ee/SEGufopa

PALESTRA COM HAPPY HOUR
Projeto Geologando

A Geologia Forense como integradora de áreas de conhecimento da perícia criminal

Palestrante:
Geól. Dr. Fábio Augusto da Silva Salvador
Diretor Técnico-Científico da Polícia Federal

Data: 02/10/2019 - Quarta-feira
Horário: 19:00
Local: Restaurante Cão Vêio*
Rua 9, 2316 - St. Marista, Goiânia - GO, 74150-130

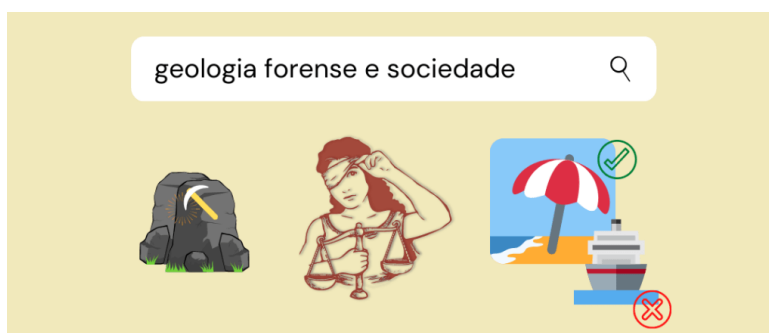
* LOCAL SUJEITO À LOTAÇÃO

REALIZAÇÃO:

Examples of lectures and short courses, IUGS-IFG Student Chapter.
<https://geoforense.com/palestras-cursos/>



Geoforenses & Society
Advances, paradigms and impacts of Forensic Geosciences on Society



Forensic Geology and Society, IUGS-IFG Student Chapter. <https://geoforenses.com/2020/10/tres-leituras-essenciais-para-iniciantes-em-geoforenses-e-sociedade/>



Map showing the location of the ten universities in Brazil that comprising the IUGS-IFG Student Chapters, with approximately 155 members, 14 experts and 11 teachers. <https://geoforenses.com/student-chapters/>



IUGS-IFG Special Project considers the forensic geology analysis of crimes in the mining, minerals and metals industries. IUGS-IFG works in collaboration with forensic geologists, police and law enforcement agencies. The Federal Police (PF) launched Operation Crassa, targeting gangs that operate in clandestine diamond mining inside indigenous lands of the Roosevelt Reserve, in Rondônia (RO). <https://geoforenses.com/2020/09/pf-deflagra-operacao-contra-exploracao-ilegal-de-diamantes-na-reserva-roosevelt-ro/>



Characteristics of Brazilian diamond deposits (Photo: Folha de S. Paulo). <https://geoforenses.com/2020/09/pf-deflagra-operacao-contra-exploracao-ilegal-de-diamantes-na-reserva-roosevelt-ro/>



Dr Roger Dixon, Forensic Geologist, IUGS-IFG Officer for Africa, 1959-2020
(Photo: Prof Robert Fitzpatrick)

APPENDIX II: IUGS-IFG SPECIAL PROJECT

Forensic Geological Analysis of Crimes in International Mining, Minerals and Metals

Civilisation could not exist as we know it without the minerals upon which it relies. However, there is a global growing crime problem. According to intelligence and information obtained by IUGS-IFG this includes, but is not restricted to: (i) illegal mining beyond regulatory control, (ii) fraud, (iii) theft, (iii) adulteration of mineral concentrates or processed metals, (iv) the substitution of samples ahead of assaying, (v) the mining and trading of conflict minerals, (vi) mineral smuggling and (vii) fakery.

The scale of such criminal activity is at present poorly documented, but is suspected to take place around the world and is linked to serious and organised crime cartels, terrorist organisations and political regimes. Mining crime, directly or indirectly can affects many parts of society.

The Special Project has the following objectives:

1. Year 1, to evaluate the current global scale of mining associated crimes
2. Year 2, to assess geological methodologies which may aid law enforcement agencies in the detection, prevention, management and mitigation of mining crime and the identification of research priorities needed to develop rigorous protocols to aid law enforcement and the global minerals supply chain.

The project team includes complimentary skills including: (a) academic geologists with expertise in forensic geology, mineral deposit geology, mineralogy and geochemistry, mineral exploration and mining geology (b) operationally experienced forensic geologist consultants and experts working alongside law enforcement, (c) geologists working within the mining, minerals and metals industry and (d) serving law enforcement officers with expertise in major international crime. This unique fusion of skills is a result of the success of the IUGS-IFG.

During Q1 in Year 1, the project aims and objectives will be defined and articulated with the preparation of a project website linked to the IUGS-IFG webpages (and the IUGS website, if appropriate). Promotional materials will be prepared and distributed widely within the mining, minerals and metals industry. A project initiation meeting will be convened and held in Colombia or Brazil. Key participants will be invited to attend, with in-kind partial funding support through the project. Meeting attendance will be open to geoscientists, IUGS-IFG committee members, law enforcement agencies, NGOs etc. The meeting will allow the key goals, timescales and objectives to be articulated. Task groups will be identified, based either on individual geological commodities, or geographic regions. The membership, objectives and time-scales for task groups will be agreed. The principal aims of the task groups in Year 1 will be to determine the types, scale and extent of current mining related crime. Task groups will submit their reports to the project secretariat who will then collate the information, which will be disseminated to; (1) the geoscience community through a paper to be submitted to Episodes; (2) to law enforcement through the preparation of a non-technical summary report and (3) to the wider community through the project website.

Following the successful completion of phase 1, in year 1, and submission of a progress report to IUGS, phase 2 of the project will involve an international meeting to be held in Southern Africa. Phase 2 of the project is to determine geological methods, techniques and strategies, which may be used to; (1) identify the type of mining related crime, such as remote sensing to locate illegal mining, (2) provide evidence of fraud, substitution and adulteration etc., for example using geochemistry or mineralogy, (3) determine the geological or geographical provenance of a mined commodity, (4) determine the key future research priorities to aid law enforcement, mining companies, minerals supply chain, governments and other NGOs to address the challenges of mining related crime and (5) provide



guidance on good practise to ensure minerals are responsibly sourced and to reduce the likelihood for conflict minerals entering the supply chain. Tasks groups will be established to address specific areas. Task groups will submit their reports to the project secretariat who will then collate the information, which will be disseminated to: (1) the geoscience community through a paper to be submitted to Episodes; (2) to law enforcement through the preparation of a non-technical summary report and (3) to the wider community through the project website. It should be noted that where potential operational strategies for law enforcement are identified, they may not be made fully publically available so as not to assist the criminal activity, reducing the likelihood of them becoming forensically aware of certain methods, techniques and strategies.

This work programme arises from, and is a natural extension to, the current highly successful work programme within the IUGS Initiative on Forensic Geology. IUGS-IFG has largely focussed on; (1) the search for missing homicide victims and other buried items associated with terrorism ad serious and organised crime (2) crime scene examination and (3) geological trace evidence analysis. That work continues around the world; the project will involve some existing officers from IUGS-IFG who have established excellent international working relationships, whilst also opening up to a new community within geoscience, law enforcement and governmental agencies. The project could not be initiated within the current funding of IUGS-IFG. The proposal is hugely timely. Crimes that take place in mining, minerals and metals are highly exploitative of local communities including, very poor safety in mines and a lack of environmental responsibility. However, with increasing demands for raw materials and mineral commodities these crimes are likely to continue around the world. Illegal mining for example is an unsustainable type of mining, commonly with poor recovery and the potential sterilisation of areas of potential future mineral resources. Increasing societal transparency in terms of the supply chain of raw materials for advanced commodities is significant. EU2021 regulations for conflict minerals (tin-tantalum-tungsten) and gold (and in the future, possibly cobalt) will require the minerals and metals supply chain to be able to provenance geological commodities spatially and temporally. Increasing demand for scarce raw materials, in for example the battery supply chain, could increase the incentive for mining crime and increasing the need for regulatory challenges. Geoscientists with an understanding of mining crime, detection and mitigation will be in increasing demand. Mining crime has an enormous society impact and the geoscience community needs to respond to positively respond to the challenges raised.

For further information

<http://www.forensicgeologyinternational.org> or <http://www.forensicgeologyinternational.org>

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