

An IUGS Event



**RFG** 2018

RESOURCES FOR FUTURE GENERATIONS

# **THEMES, SUB-THEMES AND SESSIONS**

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PREMIER INTERNATIONAL CONFERENCE ON  
**ENERGY • MINERALS • WATER • THE EARTH**

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**June 16-21, 2018**

Vancouver Convention Centre, BC, Canada

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**RFG2018.ORG**

### The Earth

Applied Earth Sciences	EA1: Convergent Margin Geohazards and Geodisasters: Present Understanding, Mitigation, and Long and Short Term Preparedness
	EA2: West Coast Geo-Hazards: Assessment Techniques, Predictions and Solutions
	EA3: Geo-engineering and Earth Sciences: Integration Opportunities
	EA4: Contaminants in the Natural Environment
	EA5: Applications of Geoscience for Environmental Assessment Techniques
Earth Systems	EA10: Global Plate Models: The State of the Art and Future Developments
	EA11: Supercontinent Cyclicity with a Focus on Contributions from Circum-Pacific regions
	EA12: Recent Advances in the Study of Ultramafic Rocks: Anticipating Future Challenges
	EA13: High and Ultra-High Temperature Metamorphism: New Approaches to Kinetics, Models, Geochronology, and Interpretations
	EA14: Geomicrobiology - Driving Force in Earth History
	EA6: Archean Evolution and Ore Deposit Models: Is Plate Tectonics the Key to the Past: A Session to Honour the Career of John Percival
	EA7: Proterozoic Crustal Evolution and Metallogeny
	EA8: Resources in Paleozoic Orogenic Belts and Associated Sedimentary Basins: Challenges and Opportunities for Multidisciplinary Tectonics
	EA9: From Continental Shelf to Slope - Mapping the Oceanic Realm
Geophysics	EA15: Geophysical Exploration Methods and Resources (Minerals, Oil and Gas, Groundwater)
	EA16: Applied Geophysics
	EA17: Integrated Geosciences for Regional Geology: Geophysics, Remote Sensing and Field Mapping
	EA18: Geophysical Constraints on Lithospheric Structures and Processes
	EA19: New Geophysical Methods and Contributions
EA20: Recent Geological Applications of Radar Interferometry (InSAR)	
Marine Geosciences	EA21: Marine Geosciences on Canada's West Coast
Planetary Geology	EA22: Innovations in Dating the Evolution of Earth, Resources and Planetary Crusts
	EA23: General Planetary Geology Session

Quaternary Systems	EA24: Quaternary Paleoenvironments
	EA25: Advances in Surficial, Environmental and Geomorphic Hazard Characterization in the Anthropocene: Changing Climates, Changing Threats
Sedimentary Geology	EA26: IGCP661 The Critical Zone in Karst Systems (2017-2021)
	EA27: Proterozoic Sedimentary Basins: The Bigger Picture of a Formative Eon
	EA28: Sedimentary Depositional Systems: Local to Basin Scale
	EA29: Paleo-Environmental Reconstruction
Structure/ Tectonics	EA30: Tectonics and Metallogeny of Cordilleran-Type Orogens: A Celebration of the Career of JoAnne Nelson
	EA31: Tectonics and Metallogeny
	EA32: From EarthScope to the Canadian Cordillera Array: Integrated Earth Systems Observatories
	EA33: Fault and Shear Zone Processes Across Space and Time
Volcanology & Petrology	EA34: New Perspectives on Archean Geology: Evolution from Vertical to Horizontal Tectonism?
	EA36: Igneous Processes and Climate Change Over All of Earth History
	EA37: Minerals as Archives of P-T-X and Time
	EA38: Current Concepts in Igneous and Metamorphic Petrology

Full description here: <http://rfg2018.gibsongroup.ca/index.php>

### Education & Knowledge

Public	EK1: Public Engagement in Earth Science
	EK2: Speaking With One Voice - Geoscience Messaging in a Fragmented Community
	EK3: Geoheritage as a Societal Resource for Education, Environment, Culture and Tourism
	EK4: Public Perception of Geoscience: Does the Public Understand the Role of Geoscience in Modern Society?
Future	EK5: Paleontological Collecting and Collections: Is There a Future for Fossils?
	EK6: The Changing World of Work
	EK7: Impacts on Society
Indigenous	EK8: Indigenous Knowledge and Perspectives in Education
Teaching	EK10: New Horizons in Earth Science Education Research
	EK11: Expanding the traditional classroom: innovative tools for transporting students into the field and through time
	EK12: Ideas for Enhanced Earth Science Learning in Schools
	EK13: STEM Education
	EK14: Attracting and Developing Earth Science Teachers
	EK9: Open Education
Career	EK15: Mentorship and Transferring Knowledge to the Next Generation of Geoscientists and Geoscience Educators
	EK16: Diversity in Earth Science and Resource Careers
	EK17: Bridging the Gap: Skills Training for Geoscience Graduates
	EK18: Transferring Geo-Knowledge to the Future and Beyond: Connecting Seasoned Experts with Early Career Generations
	EK19: Navigating Your Early Career Path - Promises and Pitfalls
	EK20: Contributions of Young Earth Scientists to Mathematical Geoscience for Resource Strategic Issues
	EK21: Learning from and Empowering Young Leaders: Early-Career Geoscientists Implementing Sustainable Development

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### Energy

Geological Setting	EN1: Reefs and Carbonate Platforms: Their Origin, Architecture, Biota and Evolution
Future & Frontiers	EN2: Energy Futures
	EN3: The Oil and Gas Industry in Canada: Where, What and How?
	EN4: Global Shale: Resources, Economics, and Environmental Challenges
	EN5: Marine Geosciences and Energy Resources for Future Generations
	EN6: Offshore Geoscience and Understanding Energy Resource Potential in Frontier Regions
	EN7: Canada's Emerging Unconventional Resources
Clean Energy - Geothermal	EN10: Geothermal Solutions for Northern Regions, Mines and Other Remote Areas
	EN11: Geothermal Energy in the 21st Century
	EN12: New Innovations in Geothermal Exploration
	EN8: The Role of Geoenergy Test Beds in Developing Future Energy Systems
	EN9: Geothermal Exploration of Foreland Basin Reservoirs
Nuclear Resources	EN13: Global Uranium Deposits: From Exploration to Remediation
	EN14: Southwest Athabasca Basin, Canada: The Largest Undeveloped Uranium Deposits in the World

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### Minerals

Major Minerals – Setting/Models	MIN1: Mineralization and Hydrocarbons in Black Shale Environments
	MIN10: The Middle and Lower Yangtze Valley Iron Oxide-Apatite-Porphry-Skarn Province, China: Characteristics and Global Comparisons
	MIN11: Multi-Commodity, Multi-Scale Exploration Targeting Using the Large Igneous Province Record
	MIN12: Mineral Deposits at Terrestrial Impact Structures
	MIN13: Metals in Magmatic and Hydrothermal Systems
	MIN14: Grass Roots Exploration Success Stories: Discussing the Discovery Process from Initial Area Selection Through to Drilling
	MIN15: Iron Oxide Copper-Gold ( $\pm$ P, REE, U) and Related Deposits: The Debate Continues
	MIN2: Exploring Controls on Ore Deposit Formation in Volcanic and Sedimentary Environments and Evaluating the VMS-SEDEX-MVT Continuum
	MIN3: Ore Deposit Models
	MIN4: Multiparameter Integrated Footprints of Mineral Systems
	MIN5: Fluid Evolution in Magmatic-Hydrothermal Deposits
	MIN6: New Developments in Canadian Diamond Exploration - Finding the Next Generation of Diamond Deposits
	MIN65: Industrial Minerals for a Prosperous Future for All
	MIN7: Magmatic Arc Fertility and the Genesis of Porphyry Cu-Mo-Au Deposits
	MIN8: Metal Earth
MIN9: 20 Years of Porphyry Progress: A Cordilleran Perspective	
Major Minerals - Gold	MIN17: Reassessing Gold Deposit Models for the 21st Century
	MIN18: North American Gold
	MIN19: Geology of Orogenic Gold Deposits
Major Minerals - Zn-Pb	MIN20: Zinc-Lead-Silver Forming Systems
Major Minerals - Supergene	MIN22: Secondary Processes on Ores: From Supergene Enrichment to Element Dispersion
	MIN23: Supergene Metal Enrichment of Mineral Deposits

Geochemistry / Exploration	MIN24: Stable and Radiogenic Isotope Systems: Applications in Exploration and the Environment
	MIN25: Exploration Case Studies - Out of the Box Concepts, Methodologies and Practises
	MIN26: Big-Data: Integration, Management and Regional Scale Surveys
	MIN27: Footprints of Giant Orebodies - Mineralogical, Spectral and Geochemical Vectors to Discovery
	MIN28: Micro to Micro-Biogeochemistry: Exploration, Processing, Remediation and the Environment
	MIN29: Exploration Undercover - Techniques, Technology and Strategy
	MIN30: Mineral Exploration in Extreme Environments
	MIN31: Drift Prospecting for Mineral Deposits
	MIN32: Minerals, Mining and Genomics
	MIN33: Mineral Exploration under Glaciated Cover: New Tools, Trends, and Discoveries
	MIN66: Isotope Geochemistry in a Mineral Systems Framework: Analytical and Application Advances
Critical Minerals	MIN34: Mining for Clean Energy - the Role of Minerals and Metals in the Clean Energy Transition
	MIN35: How Methodology Determines What is Critical
	MIN36: U, Th, and REE Deposits of Canada
	MIN37: Energy and Technology Metals: Rare Earth Elements, Lithium and Related Advanced Materials - from Deposit Formation to Mining and Processing
	MIN38: Platinum-Group Element (PGE) Deposits: Formation, Exploration, Characterization, Beneficiation, and Future Sources
	MIN39: Geoenvironmental Characteristics of Critical Metal Deposits
	MIN40: Resilient Supply Chains as a Measure for Criticality
New Sources	MIN41: Ensuring the Supply of Critical Materials to Meet the UN 2030 Sustainable Development Goals
	MIN42: Classification of Anthropogene Resources
	MIN43: Exploration under Deep Cover
	MIN44: Asteroids as Sources of Economic Resources
Exploration Technology	MIN45: Marine Mineral Resources - Prospects and Challenges
	MIN46: Exploring with Rich Data: Applied Geoinformatics for Resource Discovery
	MIN47: Quantitative Assessment and Prediction of Deeply Buried Mineral Resources in Covered Regions
	MIN48: Hydrocarbons in the Exploration for Metaliferous and Non-Metaliferous Deposits
	MIN50: Mineral Prospectivity Modeling and Assessment of Undiscovered Mineral Resources
Applied Mineralogy	MIN51: Ore Fertility Indicators: Fingerprinting Magmatic Processes to Evaluate Resource Formation
	MIN52: Mineralogy: Emerging and Current Technologies - How Small Can We Go
	MIN53: Quantitative Mineralogy: Application in Mineral Exploration
	MIN54: Applied Mineralogy in the Mining Industry - Integration, Applications and Future Development
	MIN55: Analytical Technology in the Search for Minerals: Space to the Lab to the Field

Geometallurgy	MIN56: Gangue Engineering
	MIN58: Geometallurgy
Environment - Performance	MIN61: Characterization and Description of Mine Site Waste
	MIN62: Innovations in Tailings Management and Utilization
	MIN63: Innovating to Zero
	MIN64: Mine Wastes and the Environment: Contamination, Management and Reclamation

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### Resources & Society

Social & Ethical Values	RS1: Resource Development Conflicts: Challenges and Solutions
	RS10: Geoethics in Geoscience Education, Communication and Citizen Science: Experiences, Approaches, and Concepts
	RS11: Knowledge Society, Educational and Ethical Challenges and Resources
	RS12: Forensic Geology; Ethics, Communication, Regulation and Opportunities
	RS13: Geoethics and Environmental and Social Responsibility: Doing the Right Thing to Develop Resources for Future Generations
	RS2: Global implications of Opposition to Resource Extraction
	RS3: Public Reporting on Natural Resources - A key Geoscience Contribution to Future Generations
	RS39: Exploration Activities Communication and Public Engagement In Populated Regions
	RS4: Regulating the Profession of Geoscience
	RS40: Sustainable Mineral Resource Management: Role of International Resource / Reserve Reporting codes
	RS5: Beyond the Science: Communicating with Key Decision Makers
	RS6: Social Geology Applied to Mineral Resources
	RS7: Sustainability in the Dimension Stone Industry - Exploration, Exploitation and Uses
RS8: Geoethics and Responsible Conduct of Scientists	
RS9: Geoethics in Georisks Management for a Safer and More Resilient Society	
Indigenous & Community Collaboration	RS14: Clean Energy - Resource Development Opportunities for Indigenous Peoples with Benefits to Larger Society
	RS15: Sustainable Resource Development in Alaska
	RS16: The Role of Indigenous Perspectives/Traditional Ecological Knowledge in Natural Resources Projects: Exploration to Reclamation
The Role of Geological Surveys	RS17: Geoscience Information Technology for the Next Generation
	RS18: Preserving Geoscience Data for Decision Making Tomorrow
	RS19: The Future Role of Geological Mapping in Resources and Research
	RS20: Marine Geoscience and Geospatial Data Crossing Borders
	RS21: Geoscience Syntheses of the Arctic
	RS22: The Changing Role of Geological Surveys
	RS23: The Roles of Geological Surveys in Artisanal and Small-Scale Mining (ASM)
	RS24: Global-Scale Geochemical Mapping: A Critical Component for Resourcing Future Generations
	RS26: Three-Dimensional Geological Modelling for Sustainable Resource Development

Global Change & Sustainability

RS27: International Cooperation (in the Context of Geosciences? Practice)
RS28: The Role of the African Professional in Optimizing the Continent's Natural Resources
RS29: The International Resource Panel and the Emergence of a Science-Policy Consensus on Mineral Governance
RS30: Classification, Management and Sustainable Development of the Global Resource Endowment - Unification and Standardization of Terminology and Practice
RS31: Resources and Sustainability: Dialogue, Design, and Developing Differently
RS32: Future Impacts of Minerals Production on Climate Change
RS33: Economic Redevelopment of Brownfields: New Uses for Old Mines
RS34: Exploration and Mining in the 21st Century: From Responsible to Sustainable
RS35: Carbon Capture and Storage - Critical Path for Reducing Industrial CO2 Emissions
RS36: The impact of Climate Change on Financing for Mining and Oil Companies
RS38: Balancing the Needs of Society with Natural Resources Development and Environmental Stewardship and Community Well Being.

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### Water

Sustainability	WA1: Understanding Clustered Water Risk Across Scales
	WA2: Extreme Events and Risk Clustering for the Mining Industry
	WA3: 21st Century Global Freshwater Security: Can it Exist and Can Scientists Communicate the Challenge?
	WA4: Groundwater and the Water-Energy-Food-Climate Nexus
	WA5: Groundwater and Surface Water Sustainability for People and the Environment: Science to Inform Water Management and Policy from Local to Global Scales
	WA6: Leadership in Water Sustainability
	WA7: Groundwater Management for Providing Safe Drinking Water and Food Security in Low-Income Countries
Water & Resources	WA10: Natural Gas and Groundwater
	WA11: Environmental Impacts to Water by Resource Extraction
	WA12: Groundwater and Mineral Resources
	WA13: Mining Water Policy and Stewardship in the Developing Context
	WA8: Groundwater and Unconventional Oil and Gas Resource Development
	WA9: Modelling Integrated Surface-Subsurface Hydrologic Systems for Energy Resource Development and Regulation
Management/ Treatment	WA14: Hydrogeochemistry: Environment and Exploration
	WA15: Innovations in Water Treatment and Water Quality
	WA16: Mine Waste Management and Waste Site Remediation: Case Studies from Around the World
	WA17: ARD in Mining and Civil Construction

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