

ESfs 2022 Exhibitor Profiles

Alberta Palaeontological Society..... C2

- This booth will exhibit the science of palaeontology and hobby of fossil collecting in Alberta, to better understand the ancient history of Alberta and how that history has shaped our present-day province.

The Association of Professional Engineers and Geoscientists of Alberta (APEGA)..... A2

- This exhibit will focus on the positive impact geoscientists have on society and includes two interactive activities featuring responsible resource exploration and extraction. Cookies and a demonstration of geophysical equipment are included.

Biogeoscience Institute, University of Calgary D4

- This exhibit showcases the Biogeoscience Institute as a location for Earth science research and education in the Rockies.
- We will highlight current relevant research projects and education program offerings. Will bring biofacts and small activities such as fossil ID.

Calgary Rock and Lapidary Club C5

- Calgary Rock and Lapidary Club will have a display of interesting rocks, fossils, minerals, and crystals. Will have charts and display of club activities and studio.
- Volunteers will discuss collecting, studying, and identifying rocks through lapidary techniques. Benefits for hobbyists, geological jobs, mining industry, fossil studies, general interest and artists.

Canada from Space Canadian Geographic Giant Floor Map D5

- The *Canada from Space* Giant Floor Map is composed of images taken by Canada’s RADARSAT-2 and is the first of its kind. Explore how Earth observation satellites monitor Canada and can be used to protect and prepare Canadians.
- Learn how natural disasters impact our country, the importance of Canada’s arctic and more. Visitors will also be able to see Canada from the perspective of the International Space Station, through the eyes of Canadian astronaut Chris Hadfield.

Canadian Association of Geophysical Contractors A5

- This booth will have seismic recording technology, equipment and displays with an interactive seismic sensor and monitor showing seismic waves.
- We will have pictures about operations and ask visitors questions about things such as wildlife that we encounter, different resources that we explore, various equipment that we use.

Canadian Natural..... A1

- Canadian Natural’s exhibit will showcase some of the principles of the type of reservoirs oil and gas where found.
- We will show how we explore and responsibly extract natural resources and include hands-on exhibits of geology & geophysics used in the search for hydrocarbons.

Canadian Nuclear Society B6

- The Canadian Nuclear Society will have a collection of common household radioactive materials with a geiger counter as well as an overview of nuclear technology in Canada.

Canadian Rockies Earth Science Resource Centre B5

- This booth will showcase the “Petroleum Exploration Cycle” that will discuss activities one does in the exploration for oil and gas, including studying regional geology, using seismic, drilling wells, producing the products, etc.
- We will have hands-on material such as fossils, pictures, and maps.

Canadian Society of Exploration Geophysicists..... C6

- This booth will demonstrate how remote sensing and indirect measurements are used to understand the Earth.
- Hands on activities will include a seismograph, slinky and cutaway geophones.

Canadian Society of Petroleum Geologists B1

- We will have cores and sedimentary rocks to handle, observe, and discuss. Sedimentary rocks contain many features and minerals that give geoscientists insight as to how those rocks were deposited and where they came from.

Department of Geoscience, University of Calgary..... C1

- This interactive exhibit will feature a Digital Sandbox with a real time representation of 3D topography.
- The booth will include a match up game illustrating mineral source of common products, a groundwater flow model illustrating porosity and permeability of rocks and potential contaminants in the subsurface, and attendees will get to make fossil casts they can take home!

Drumheller Rocks GeoTours C3

- We will have a collection of meteorites and local rocks, minerals and fossils from the Drumheller area. We will also have a display on the geology of the Drumheller Valley and where it fits in the story of the Earth and its biosphere. Demonstrations will include:
 - Detecting radioactivity in common rocks with a geiger counter
 - Rock folding with our playdough geology model
 - Real time crystal growth with a microscope and crystal solution
 - UV fluorescence

E3 Lithium B2

- E3’s exhibit focuses on lithium batteries, showing the full cycle from resource development to laboratory techniques for lithium extraction. Activities will include making batteries with household materials, showing the direct lithium extraction (DLE) process through demonstrating how basic chemical properties of fluids are different and mixing them, and then resource development using straws and balloons.
- The exhibit shows how E3 is 'repurposing' a reservoir (the Leduc formation) that is becoming depleted as a resource for hydrocarbon extraction, and is a newcomer for lithium brine extraction.

E3 Project - Earthquake Early Warning Systems Education C4

- E3’s booth will include a short quiz - 10 questions on earthquake science to find out the public’s understanding of the nature of earthquakes, video on earthquakes, and hands-on activities illustrating earthquakes/ elastic rebound theory.
- The exhibit shows that Earthquake Early Warning Systems Education saves lives, livelihoods, critical infrastructure. Canada has three very seismically active locations.

ESfS Trilobite Fossil Station..... B3

- This booth focuses on the study of palaeontology, focusing specifically on trilobites! We have many hand samples as well as posters to show the various parts of the fossil and how to identify them as well as their significance.

The Evict Radon National Study and Radon West..... D3

- This exhibit will introduce the topic of radon and will have interactive and static displays.
- We'll start with an introduction of radon (what it is, where does it come from, its chemical properties, its radioactivity), an introduction about radiation and its effects on out body, (mutations, cancer), finally to the introduction that radon is in our homes but we can fix it to prevent cancers.
- We will have a periodic table to identify radon, a cloud chamber to visualize the same type of radiation emitted by radon, an interactive game setup up to demonstrate the penetrance (ability to travel through different materials) of different radiation types, a demonstration of a residential mitigation system and a few posters and diagram.

Geoscience Activity Tables.....E6

- Geoscience colouring and activity pages for youth.

Inside Education (Monday and Tuesday only) A6

- Inside Education is an environment and natural resource education society. Our booth will focus on stewardship and sustainable use of renewable and non-renewable energy resources.
- We will have hands on items including oil sands samples, rock samples, model wind turbines, solar panels, tools of the trade mining kits and more! A natural resource grab bag activity features energy efficiency and conservation as well as seek-and-find climate change & stewardship poster activity.
- A Mining in Alberta Poster Series will be available as well as a mining tools of the trade kit to feature careers in the mining sector.

Journey 2050..... D2

- The Journey 2050 booth will feature ‘The Price is Right’ interactive game exploring sustainable agriculture. We will explore land use, water use, and food waste in our game show style booth which will challenge students with trivia style questions. Looking at every day items and foods to understand what went into making the item and how Earth science has helped create a more sustainable agriculture system. We will also bring a variety of hands on explorative displays for participants who do not want to play in the game.

Mining Matters A4

- Mining Matters is a national Earth science and mineral resources educational non-profit and charity. Our exhibit will have minerals and rocks, including critical minerals, hands-on learning activities such as product matching, regional maps, Earth science and the United Nations Sustainable Development Goals, and Mining Matters materials.

Natural Resources Canada – Geological Survey of Canada (Calgary) B4

- We will have a variety of hands on rock and mineral samples for participants to look at and handle. Geoscience experts who will be available to discuss their provenance and explain their significance.
- There will also be demonstrations at the macroscopic level.

Ocean Networks Canada..... D1

- Youth will be inspired by the ocean and exposed to the importance of this precious resource by examining the data that comes from Ocean Networks Canada's (ONC) cabled deep sea observatories and land-based ocean observing technologies.
- We will use hands-on activities and the recently launched #OceanDecade Challenge (<https://www.oceandecadechallenge.ca/>). Past activities at our ESfS exhibit have included "Design a Plankton" and listening to recordings of marine mammals.
- For older participants, ONC will have a set of diverse career profiles featuring ONC's staff, sharing potential career paths for youth to explore.

Royal Astronomical Society of Canada (Calgary)..... D6

- Our display will highlight light pollution and energy efficiency.
- We will have a telescope for display and meteorite materials to examine.

Ten Peaks..... D7

- We will bring interactive activities such as:
 - microalgae science project and kit that demonstrates the energy created by microalgae organisms in dirt
 - energy windmill display where visitors will be able to turn dials and make it spin while learning about wind energy
 - VR headsets developed by Safety Energy Canada that showcase sustainable energy jobs and sustainable resource extraction.

Women in Science and Engineering (WISE) A3

- This booth will feature non-Newtonian fluids!
- Attendees can explore the properties of the fluid and learn about how it affects our lives.