

**ESfs 2024 Exhibitor Profiles**

**Alberta Geological Survey of the Alberta Energy Regulator ..... A5**

- We will highlight Alberta’s geology and geography.
- Hidden beneath our feet, groundwater is often overlooked as part of the hydrologic cycle and as a resource. We will have a plexiglass aquifer/sand tank model that we will use to discuss what groundwater is and demonstrate how it moves, the effects of pumping, its connection to surface water, and what happens if the resource is contaminated.

**Alberta Palaeontological Society (Sunday only)..... C3**

- 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.

**Calgary Rock and Lapidary Club (CRLC)..... C6**

- We will display interesting rocks, fossils, minerals, crystals. Charts & Display of our club activities, studio.
- Activities: volunteers will discuss collecting, studying, and identifying rocks through lapidary techniques, explain our display, and educate attendees about interests in rocks and our club.

**Canadian Association of Geophysical Contractors (CAGC)..... D4**

- This booth will have seismic recording technology, equipment and displays with an interactive seismic sensor and monitor showing seismic related activity.
- 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 focus on responsible exploration and extraction of natural resources.
- Hands-on exhibits of geology & geophysics used in the search for hydrocarbons.

**Canadian Nuclear Society ..... B3**

- The Canadian Nuclear Society will have a collection of common household radioactive materials and a geiger counter to help demystify radiation.
- This exhibit will emphasize the many ways nuclear technology can help reduce carbon emissions and do everything from running hospitals to helping Albertas oil industry decarbonize refining and recovery operations.

**Canadian Rockies Earth Science Resource Centre ..... C2**

- This booth will showcase the “Petroleum Exploration Cycle” that will demonstrate activities one does in the exploration for oil and gas, including studying regional geology to understand the area of interest, using seismic data to define drilling locations, drilling wells to find reserves and producing product to the market.
- We will have hands-on material such as fossils, pictures, and maps.

**Canadian Society of Exploration Geophysicists (CSEG)..... D1**

- This booth will highlight the use of geophysical techniques to investigate parts of the earth's crust that are beyond our abilities to see with our own eyes. Geophysical techniques utilize the physical properties of rocks and fluids buried underground. These physical rock properties can be used to distinguish between good and bad rocks - useful and useless, valuable and not valuable.
- We'll discuss earthquakes and how those same, but much smaller, acoustic energy waves can be used to image deep below our feet. CSEG is focused on the use of geophysical techniques and measurements for the evaluation of the earth's subsurface resources; from oil and natural gas, to geothermal energy, to water, to diamonds, to precious metals to the components in your rechargeable car and phone batteries, and to the iron that makes the steel that builds the tallest man made structures on the planet.
- Hands on activities will include a seismograph, slinky and cutaway geophones.

**CREWES, Department of Earth, Energy and Environment, Faculty of Science, University of Calgary ..... B5**

- Exhibit will have a live geophone display, seismometer display and Ground Penetrating Radar (GPR) data system with GPR cart.

**CSPG Foundation ..... B2**

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

**Earth@UCalgary..... C4**

- This interactive exhibit will display the use of minerals in everyday life with a mineral matchup game, an augmented reality sandbox, and attendees will make fossil casts!

**ESfS Trilobite Fossil Station..... C1**

- 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.

**Geoscience Activity Tables (Sunday afternoon and Monday evening)..... FOYER**

- Geoscience colouring and activity pages for youth.

**Inside Education (Monday and Tuesday daytime only)..... C3**

- 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, solar panels, and more!
- A natural resource matching activity will use riddles to sort the natural resource samples (oil, solar, wind, natural gas, etc.) into either a renewable or non-renewable box.
- A stewardship activity encourages students to vote on energy efficiency / conservation actions.

**Journey 2050..... D3**

- This exhibit will explore the topic of sustainably feeding our world in the year 2050. We will have hands-on interactives including a "land use apple" that breaks down how the areas of our earth and how they are used, some examples of crops grown around the world, and a world map that highlights how food travels across the world. We will have our virtual farming simulation game available to play, and we will feature a jeopardy-style game that participants will play to learn about sustainability in a fun and engaging way!

**Let's Talk Science..... C5**

- This booth will have a Jenga-style activity that focuses on energy in food systems. Add or remove a Jenga block based on the scenario picked until the tower falls.
- Focus on how food chains can occur over different geological regions and zones, and how all different parts of the earth are important.

**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..... D5**

- 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 draw upon specially created games, activities and resources that explore the many facets of marine science including food webs, recordings of marine mammals, deep sea environments, earthquake monitoring and plate tectonics.
- 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)..... B6**

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

**Rothney Astrophysical Observatory (RAO) ..... D2**

- We will have members of Team Astro, who are undergrad astrophysics students discussing gravity and motion with visitors. They will have several physics demonstrations that will provide an hands on experience for visitors.
- The three big ideas we will be discussing is gravity as a comparison of earth compared to other planets with dropping different mass objects, angular motion with bicycle wheel gyro demo and refracting light and wave generator demo. We encourage visitors to try demos and ask questions.

**SAIT: The Connector Lab and Geomatics Engineering Technology..... D6**

- This exhibit will feature terrestrial and aerial geospatial technology, such as UAV, LiDAR, and traditional land surveying instruments - and will explore how Geomatics assists us in understanding the intersection between the natural and built world and our role within it.
- Attendees will have the opportunity to operate a microdrone, or to use a total station to observe angles and distances.

**Ten Peaks..... B1**

- This exhibit will have interactive and hands-on energy conversion kits emulating the energy sources Alberta has: wind, solar and natural gas turbines. Students can make the solar panel activate and when they engage with the kits, we discuss all forms of energy used to produce electricity: natural gas and carbon capture, geothermal, wind & solar.
- Displays on carbon capture and the technological advancements in geothermal to generate low carbon, low emission energy.
- We will showcase our mud watt kits - Microbial Fuel Cell Kits that are used in the Ten Peaks case competition and describe how microbes in the mud are creating electricity.

**Yukon Dan Gold Panning ..... A2**

- Visitors will be panning for gold!

**Women in Science and Engineering (WISE) UCalgary..... A3**

- WISE will host the cornstarch pool to showcase non-Newtonian fluids through an interactive and hands-on experience. WISE team members will explain what the concept of non-Newtonian fluids, how they work, and how they are relevant to our daily lives (e.g., food, medical, and environmental applications). Attendees will be able to touch the cornstarch pool, interact with knowledgeable and exciting university student volunteers, and learn more about science in an engaging way.