

2022

ANNUAL REPORT



UNIVERSITY OF WATERLOO
FACULTY OF SCIENCE
Department of Earth &
Environmental Sciences



EARTH SCIENCES
museum
UNIVERSITY OF WATERLOO

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TERRITORIAL ACKNOWLEDGEMENT

As a part of the University of Waterloo, the Earth Sciences Museum acknowledges that much of our work takes place on the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples.

Our museum is situated on the Haldimand Tract, the land granted to the Six Nations that includes six miles on each side of the Grand River. Work toward reconciliation takes place within our spaces and through learning, teaching, and community building with help from the Office of Indigenous Relations.

ABOUT THE HALDIMAND TRACT

On 25 October 1784, Sir Frederick Haldimand, the governor of Québec, signed a decree that granted a tract of land to the Haudenosaunee (Iroquois), also known as the Six Nations, for their alliance with British forces during the American Revolution (1775-83). The Haldimand Tract extends by 10 kilometers on both sides of the Grand River, from its source in Dundalk Township to its mouth at Lake Erie. Originally, 950,000 acres was designated for the Haldimand Tract, today approximately 48,000 acres remain. Read Six Nations Lands and Resources (reference under map) to learn more about the history and ongoing negotiations.



The Haldimand Tract and Six Nations Reserve Resource reference and map from <https://www.sixnations.ca/LandsResources/HaldProc.htm>

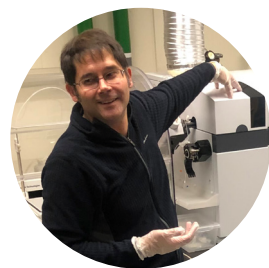


MISSION

The Earth Sciences Museum aspires to foster in visitors an appreciation and understanding of the Earth's environments, materials, and processes, while facilitating awareness of the intricate human connections to them.

UNDERSTANDING

The first step in sharing knowledge is learning. Staff aim to keep current by learning from our surrounding academic resources.



FACILITATING

Our talented staff, volunteers and faculty facilitators engage thousands of visitors each year.

CONNECTING

Observing our impact on visitors lets us know that we are making valued connections to our community groups.



ROLE IN SCIENCE

The Earth Sciences Museum is the longest standing science outreach initiative at the University of Waterloo. Over the last 55 years the museum has grown in relevance, educational importance, reputation, and its capacity to engage and educate our local and greater community.

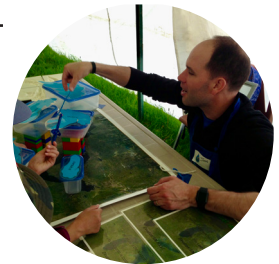
The operation of the Earth Sciences Museum is aligned with the University of Waterloo's mission and 2020 - 2025 signature commitments. The museum also upholds the University of Waterloo's core values.

WE ARE CURIOUS



WE ARE COURAGEOUS

WE ARE ENGAGED



WE ALL BELONG



AUTHORITY

UNIVERSITY

The Earth Sciences Museum is a part of the University of Waterloo's Faculty of Science as a component of the Department of Earth and Environmental Sciences. It operates as a unit reporting directly to the Department of Earth and Environmental Sciences.



CHAIR & CURATOR

The Chair of the Department of Earth and Environmental Sciences attends the museum's advisory board and employs a curator to manage the operation and day-to-day maintenance of the museum. Both the department chair and the museum curator are responsible for communications between the museum's advisory board and the Department of Earth and Environmental Sciences. The curator organizes and maintains relations with subcommittees, volunteers, and paid staff of the Earth Sciences Museum.

BOARD

The primary role of the museum's advisory board is to oversee the museum's functions and provide expertise and insight towards the museum's development.



BOARD MEMBERS

The Earth Sciences Museum advisory board is composed of persons who have expertise in various disciplines of Earth and Environmental sciences or museology.



MARIO CONIGLIO

Department Chair
Earth & Environmental
Sciences Department



CORINA MCDONALD

Science Museum Curator
Earth Sciences Museum and
Science Museum & Galleries



DAVID CHIN-CHEONG

Geoscientist
Canadian Standards
Association



HEATHER NEUFELD

Outreach Manager
Faculty of Science



LAURA SCAIFE

Geologic Consultant and
Educator
Scientists in Schools



PETER RUSSELL

Curator Emeritus
Earth Sciences Museum



JEAN RICHARDSON

Director of Volunteers
Earth Sciences Museum



LEAH GARDINER

Senior Development Officer
Science Faculty



PETER GRAY

Senior Hydrogeologist and
Vice President
MTE Consultants



QUINN WORTHINGTON

MSc. Graduate Student
Earth & Environmental
Sciences



JOHN MOTZ

Content Editor
Earth Sciences Museum



CYNTHIA DAVIS

Environmental Scientist
Stantec



TIFFANY SVENSSON

Senior Hydrogeologist
BluMetric Environmental Inc.



JOHN JOHNSTON

Assistant Professor
Sedimentology/Stratigraphy
Earth & Environmental
Sciences



JEFF SAGE

Program Educator
Earth Sciences Museum



COVID TRANSITIONS

The Museum uses its programming, outreach, events and exhibits to inspire our visitors to understand and connect with our Earth. From mid-March 2020 to late-June 2022 the physical museum was closed to the public. Despite the challenges and the temporary absence of the museum curator in 2021, staff developed new visitor experiences that reached audiences online.

VIRTUAL TOUR & PROGRAMS

As with most programs, the museum's public programming moved from in-person to online. October 2021 our virtual tour became available to the public followed by virtual programs in March 2022. Virtual programs included Dinosaurs, The Water Cycle, Rocks Rock, Minerals Rock and Natural Disasters. The virtual tour and programs were largely well received and continue to be available.



MUSEUM OUTREACH

Pre-pandemic, outreach events such as annual gem and mineral shows, community events and conferences were in the order of thirteen to eighteen per year. All outreach ceased in March 2020 and were slow to return. This year, museum staff attended only a handful of outreach events.

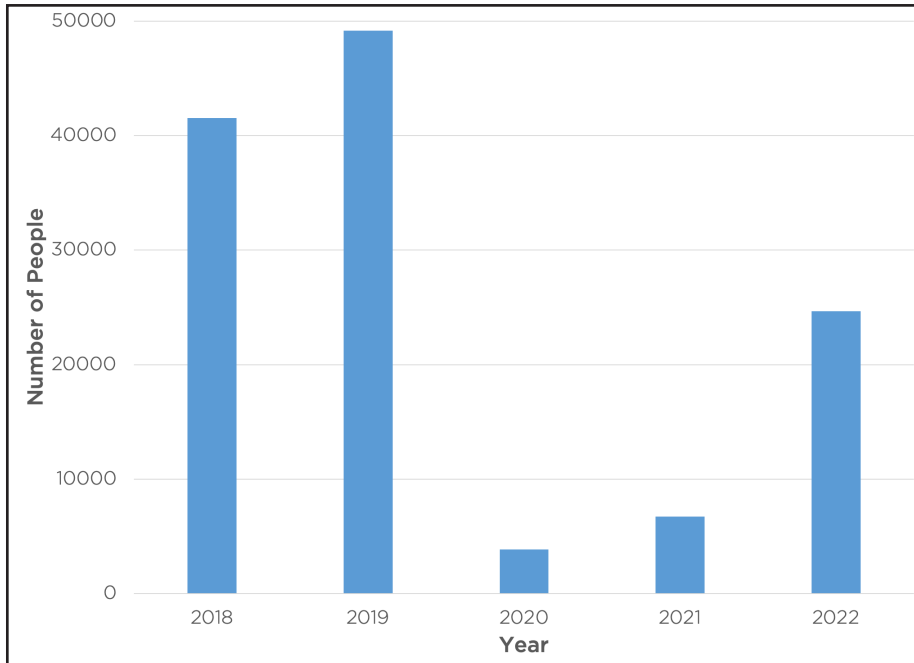
IN HOUSE EVENTS

In June 2022, the UWaterloo safety office gave museum staff the green light to hold events in the museum. Since then museum spaces have started to come back to life. Campus and Science faculty tours, Science alumni and department events and community socials are again being booked in the museum.



PROGRAMS, OUTREACH & EVENT DATA

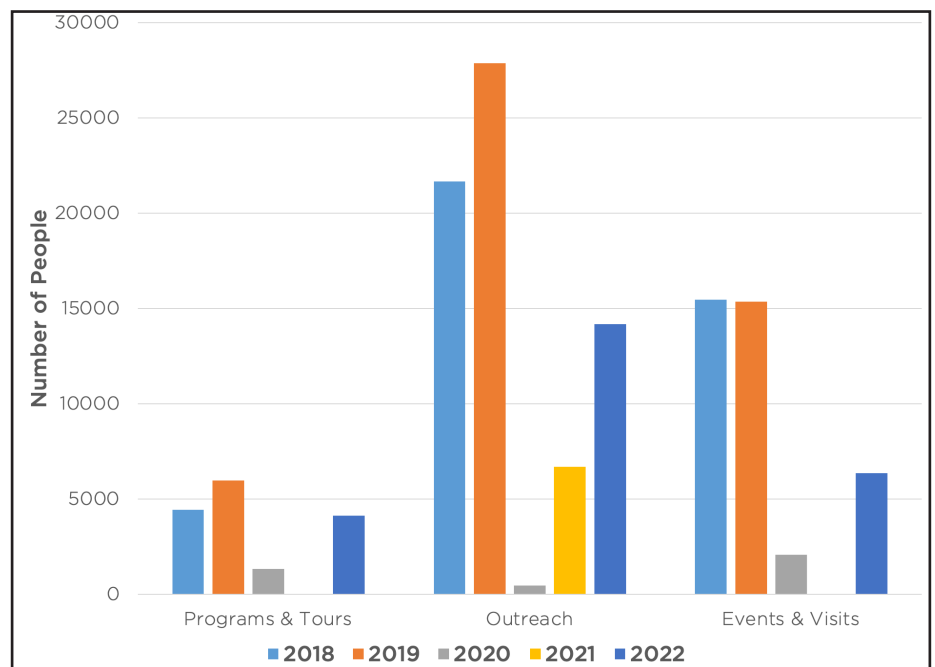
TOTAL ANNUAL ENGAGEMENT



Since the development of online programming and by re-opening our doors to in-person visits, overall engagement has started to recover and is on a trend towards pre-pandemic levels. This year total annual engagement is 24,662. This number represents all of the individuals staff could account for through programs, outreach, events and visits. This number does not account for groups, families or individuals that visit beyond museum run activities.

ENGAGEMENT TYPE

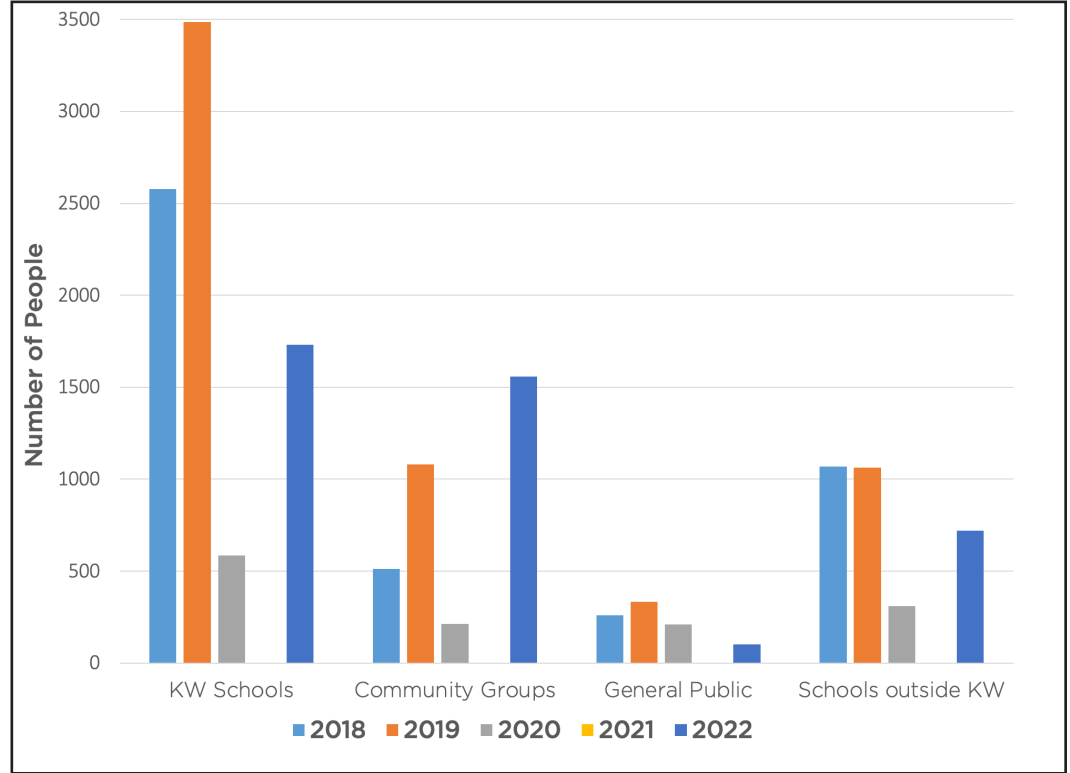
Total engagement is categorized as three types; Programs & Tours, Outreach, and Events & Visits. Outreach, Events & Visits have been slow to recover this year due to the fact that museum staff have not been given the green-light to attend all external gems shows or host our own UWaterloo gem and mineral show yet. Programs & Tours are rebounding quickly and having been increasing in frequency since opening our doors to in-person visits.



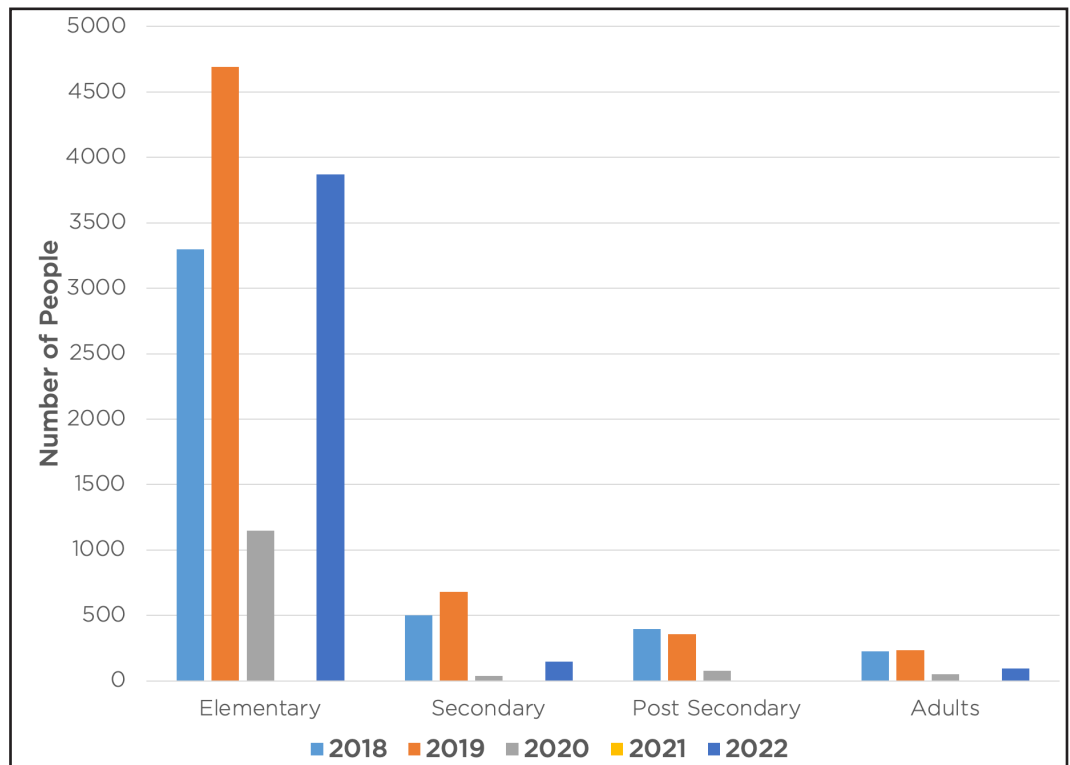


Visitor origin trends are typical with the exception of more engagement from schools outside the Kitchener-Waterloo region. This is due to our online programming being available to visitors at a greater geographical distance.

VISITOR ORIGIN



VISITOR DEMOGRAPHIC







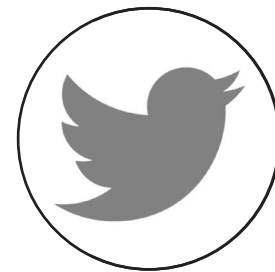
DIGITAL OUTREACH

SOCIAL MEDIA

TWITTER

@UWEarthMuseum

The museum currently has 623 followers and focuses its content primarily towards an academic audience.



INSTAGRAM

@uwearthmuseum

The museum has 734 followers to date and focuses instagram content towards high school and university students.

YOU TUBE

@uwscience

Earth Sciences Museum Playlist

The museum has a playlist on the Waterloo Science You Tube page. The playlist content is focused towards families and includes activities, story books and exhibit builds.

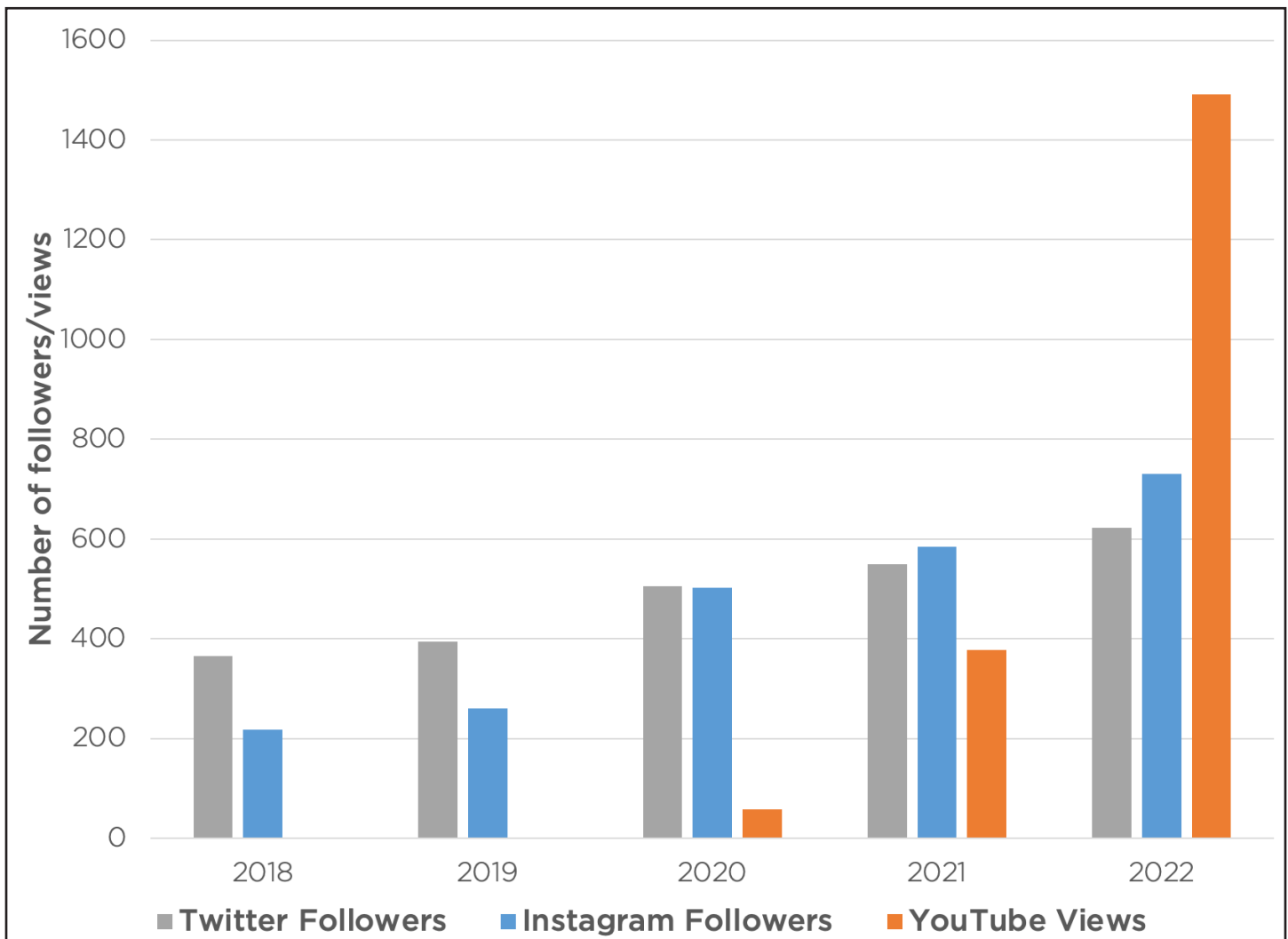


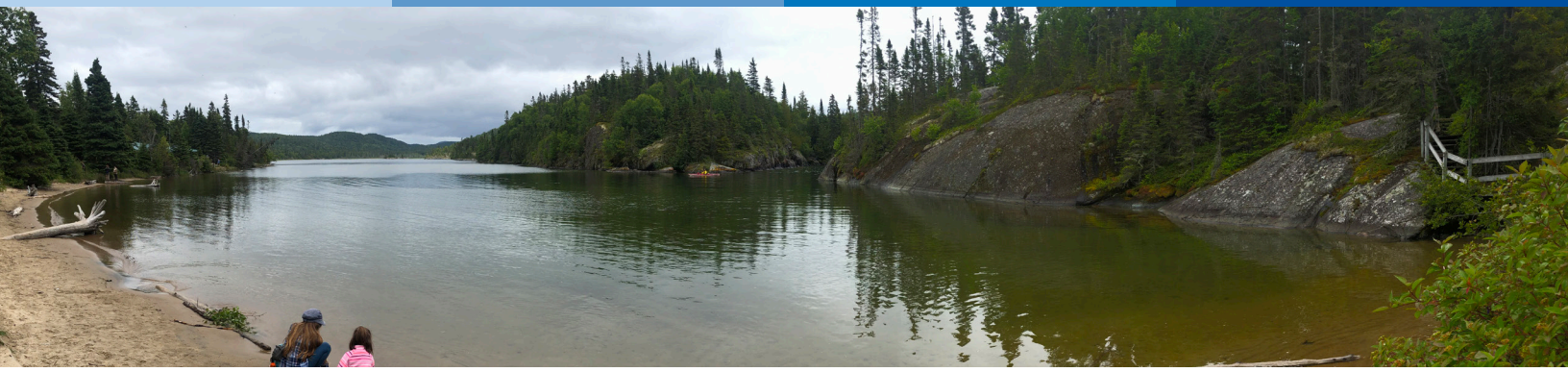
The museums social media presence runs through three main platforms. Social media content shares information about museum events, programs, objects, news and Earth Science related stories. Content is created by part-time employees hired through the UWaterloo Work Study program which supports students on OSAP. The student and content is guided by an experienced volunteer or curator.



SOCIAL MEDIA FOLLOWERS

Social media trends indicate that platforms heavy in photo and video content are gaining popularity. Twitter has been consistently popular but has not had the same spike in followers or views as the other two platforms.



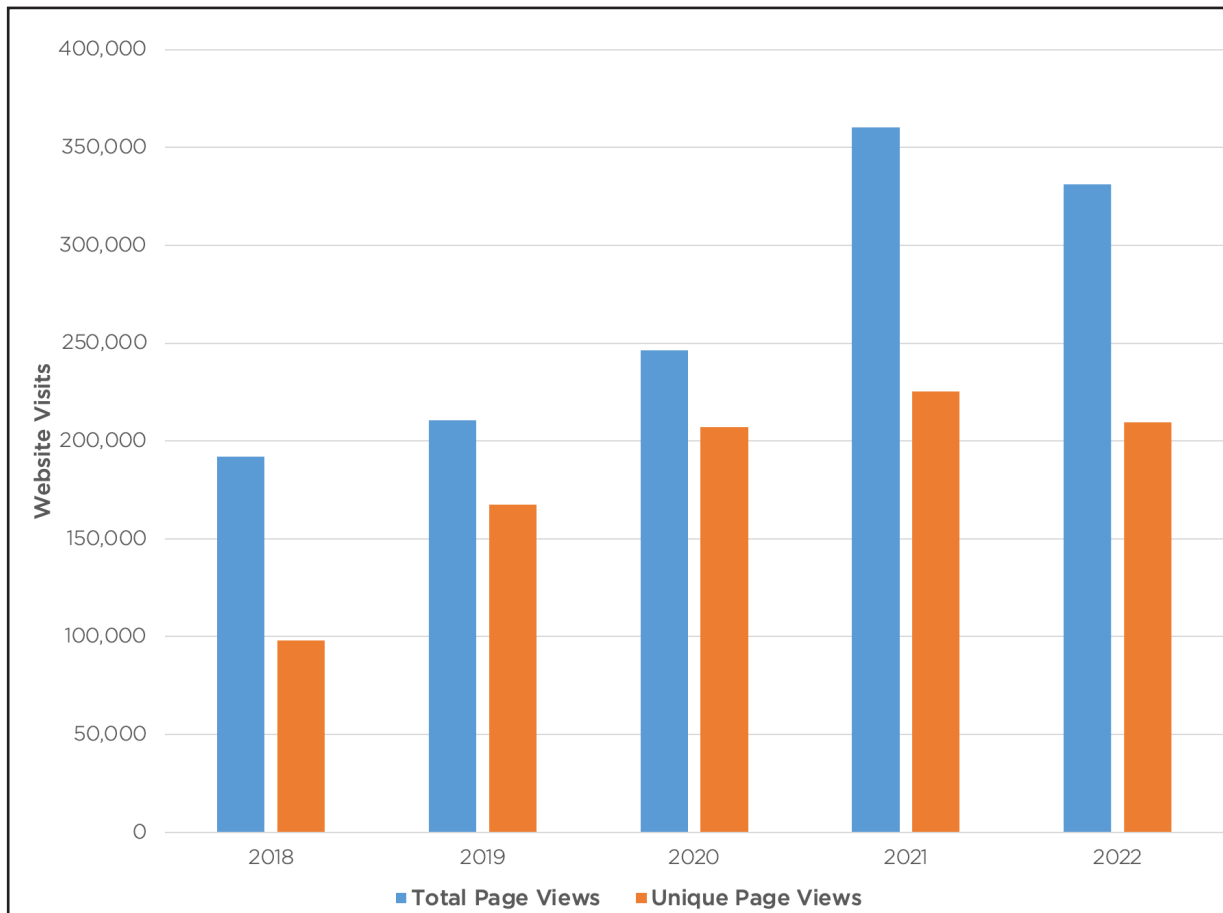


WEBSITE DATA

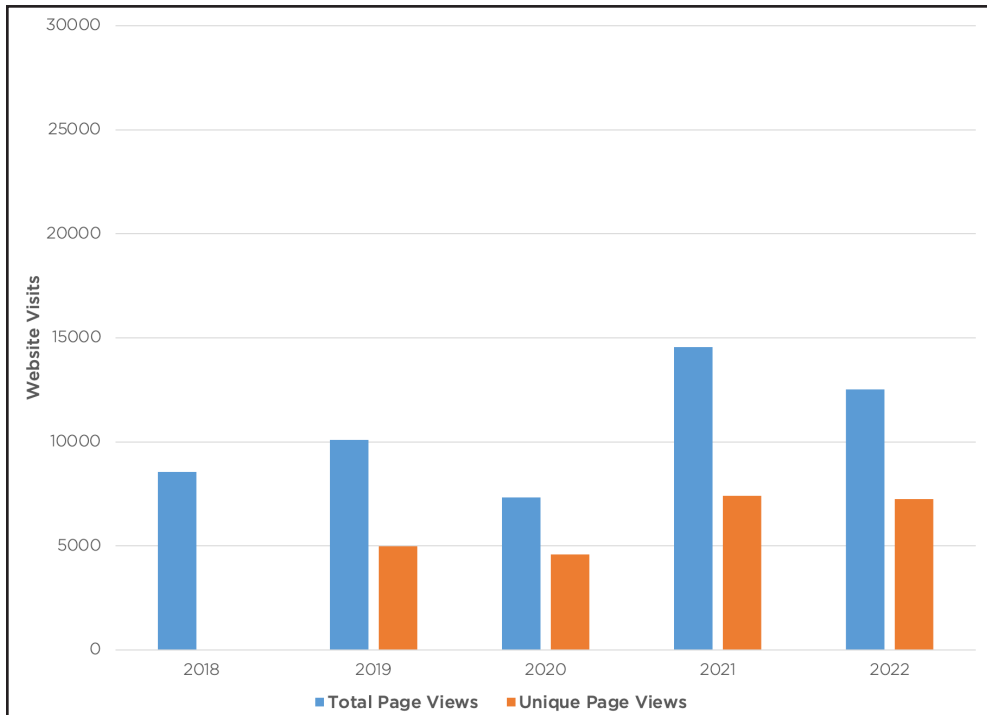
The museum has two main websites, the Earth Sciences Museum and Peter Russell Rock Garden. Following 2021's spike in website traffic due to the pandemic, this year's website traffic is slightly less but remains higher than pre-pandemic use.

Last year a virtual tour website was added to the mix. Traffic on the virtual site is increasing.

EARTH SCIENCES MUSEUM WEBSITE



PETER RUSSELL ROCK GARDEN WEBSITE



VIRTUAL TOUR WEBSITE

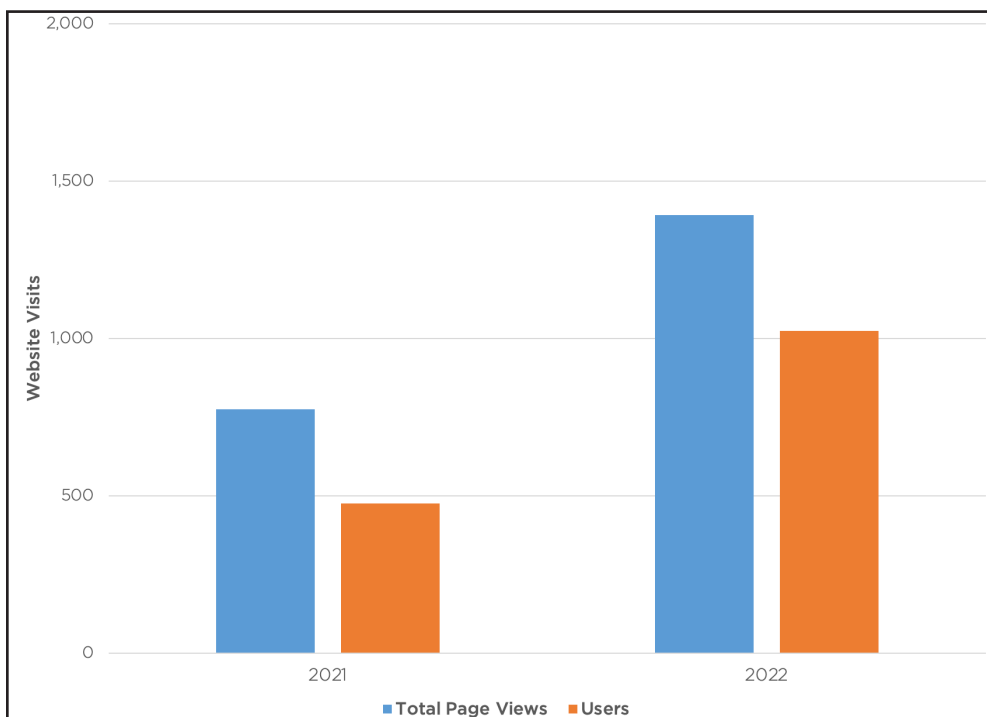




Photo by Karen Fox

ACQUISITIONS

The Earth Sciences Museum holds over 15,000 objects in its collection. The objects are used to further the museums mission statement by highlighting Earth's environments, materials and/or processes through exhibits, displays, programs, events and public lectures. This years donations and purchases are listed below.

DONATIONS

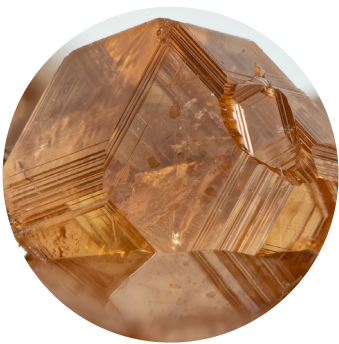
OPHIOLITE - A. TIMMERMAN

KIMBERLITE AND DIAMONDS - R. YEOMAN

CALAMITES - D. REID, JOGGINS FOSSIL CENTRE

GEMSTONES - N. HENNICK AND COMPANY

MANITOULIN FOSSILS - J. AND V. MCDONALD



KENNEDY DONATION

Seventy-nine of one-thousand, two-hundred and seventy-seven mineral specimens have arrived at the museum. They are a representation of Mr. Kennedy's life-long career as a professional geologist and mineral enthusiast.

REIMER FAMILY COLLECTION

Six new specimens were added to the Reimer Family collection this year. The Reimer family collection is one of the founding collections already housed and on display in the museum.





PRYOR DONATION

Over three-hundred minerals and meteorites have been moved into the care of the museum. Mr. Pryor is a UWaterloo alumni and life-long mineral collector

PETERSON DONATION

Thirty-six specimens from Earth & Environmental Sciences alumni Aivar Peterson were donated by his wife and family.



SCORIA AND REFERENCES - C. FULLER

FOSSILS AND SEDIMENTARY ROCKS - M. CONIGLIO

MT. ST. HELENS ASH AND ARTIFACTS - N. MATTHEWS

MINE EQUIPMENT AND MINERALS - T. HILLIARD

FOSSIL TEACHING KITS - BOB O'DONNELL

PURCHASES

Occasionally the museum may purchase specimens to enhance an exhibit or fill a gap that exists in its overall collection. This year a purchase of Ontario fossils was made.



ONTARIO FOSSILS

Thirty-seven fossils from Arkona and Craigeith Ontario were purchased from Bob O'Donnell. This addition will significantly increase the museums collection of Ontario fossils and help spotlight life's diversity in the Devonian and Ordovician time period's.

STRATEGIC GOALS

DIGITIZE THE COLLECTION

A digital collection database has become a foundational component needed to provide management, accessibility, visibility and public engagement for ~15,000 objects in the museum collections. Staff and volunteers are working diligently to photograph, update and reference object data, create software and standard operating procedures for cataloguing objects. Software used by museum staff to manage the collection is now ready to use. Next steps involve linking the software to a designed public facing website and continuing the long-term plan to photograph and input objects into the database.

DEVELOP EXHIBITS

The Reimber Family Gallery installation and resulting renovations were stalled due to the pandemic and the absence of staff in 2021. This year progress resumed resulting in the completion of a revised Tyrannosaurus Rex and Gold Scale exhibit. Work continues to progress this year on content for the remaining Gallery spaces.

QUALITY PROGRAMS

The museum's primary goal is to share appreciation and understanding of Earth processes and human connections with visitors. In light of this, public programs and quality engagement are critical to our success. With the closure of the museum, constant transition between in-person and online, and regular tri-annual staff turnover, programming has been, put-mildly, difficult. Permanent staff are looking ahead into 2023 to assess current programs and implement changes where necessary.

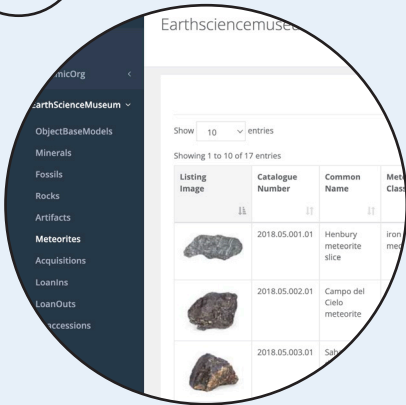
A photograph of a museum display case. A hand is visible near the top edge. A sign is attached to the front of the case, with text that reads: "We are currently updating our displays. Please with us while renovate".

We are currently updating our displays. Please with us while renovate

ACTIONS AND TASKS

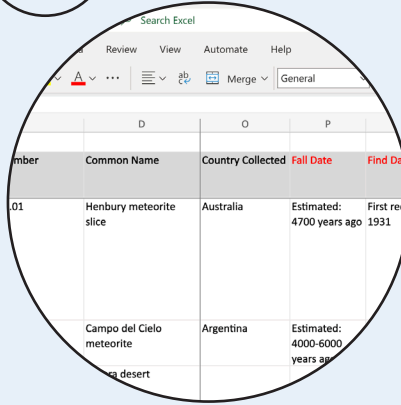
1

COMPLETE SCIBASE SOFTWARE



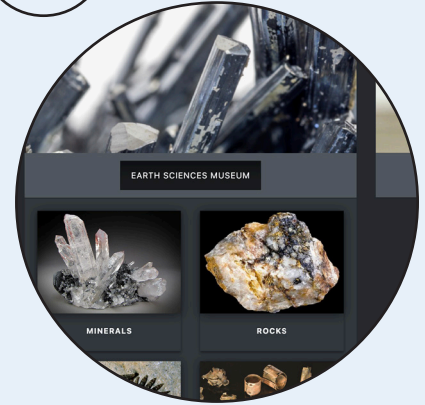
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IMPORT PREVIOUS DATA



3

COMPLETE PUBLIC WEBSITE



✓

TYRANOSAURUS REX RENOVATION



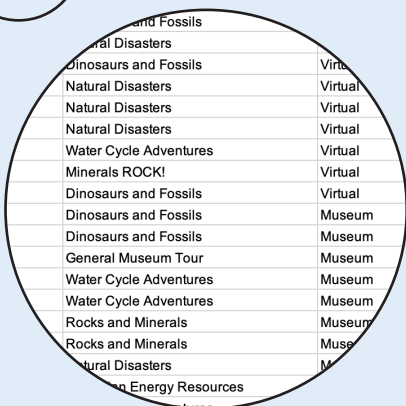
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GOLD SCALE RENOVATION



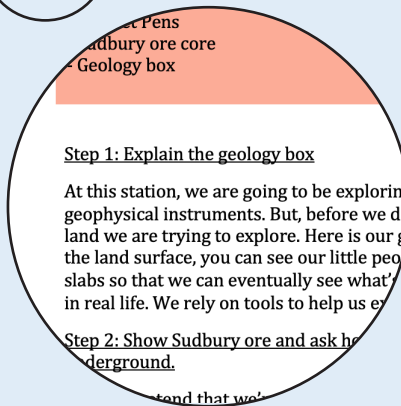
1

ASSESS PROGRAM ATTENDANCE



2

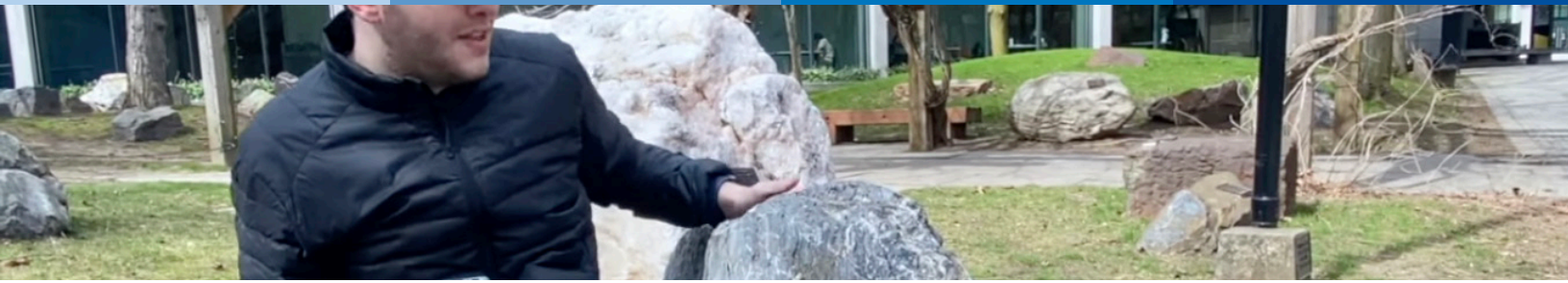
REVISE PROGRAMMING



3

APPLY REVISED PROGRAMS





SUPPORT PERSONS

Our staff and volunteers are the ones who provide energy and maintain the scaffolding of this Museum. Thank-you to those who have supported and stuck with us this year!

COOPERATIVE STUDENTS

Every four months one or two students are hired to teach museum programs and assist with the collection database. Funding for students is partly supported by the museums Conestoga Rover’s Endowment as well as the Faculty of Science.



JACQUELINE VOISIN

2B Earth & Environmental Sciences
Geology

“Hello! I find Earth History and rock processes fascinating and think everyone would enjoy knowing more about them. The Earth Science Museum has such exciting content, and I am so pleased to help make it accessible to others, both virtually and in person.”



PLUTO JIANG

2B Physics & Astronomy

“I love when things fall onto this planet.”



OLIVER BAKER

2B Earth & Environmental Sciences
Geology

“I originally came to Waterloo pursuing a degree in Physics and Astronomy, until I took an Earth Sciences class and loved it. Since then my passion for geology has only grown and I am excited to see where it takes me. Even before I realized my passion for geology the Earth Science Museum was a place I loved on campus. It is an amazing opportunity to be able to work with different rocks and fossils that are way older than me. I hope to be able to come back and work here in the future!”



SANA AHMAD

Earth & Environmental Sciences
Geoscience Graduate

“I have always loved learning about our planet and its stunningly complex geology, so I cannot wait to share that passion with our visitors.”



EMILY ZELENYT

2B Earth & Environmental Sciences
Geoscience, Biology Minor

“I am very passionate about the Earth, rocks and going outside to see the environment and wildlife. I love learning new things and sharing my knowledge with others! I look forward to working at the museum and teaching others about Earth Science!”

WORK STUDY STUDENTS

Work study students are part-time employees that create and post the museum's social media communications. All work study students have OSAP and 75% of their salary are funded by the universities Student Awards & Financial Aid Office.



BRIAN CHEN-YU LEE

**4B Earth & Environmental Sciences
Geoscience**

“Brian worked well with museum staff and produced quality social media posts throughout the Winter term.”



LUCA GALLER

**2B, Physics and Astronomy
Biology Minor**

“Why wouldn't I want to work at the coolest place on campus? As an avid rock collector with a peculiar interest in fossils I wanted to be a part of the ESM team. During the semester I had a chance to assist with social media outreach!”



KRISTOF NAGY

Science & Aviation

“I've more recently discovered my interest in geology, rocks, minerals, and GIS thanks to the diverse range of Earth Science courses offered at the University of Waterloo.”

AWESOME VOLUNTEERS

Student volunteers get things done around the museum! The students below came to the museum with a variety of backgrounds and talents to help with seemingly endless tasks. They help organize and run programs, build exhibits and update information, just to name a few.

JULIA NICOLAISEN

REMY SREMCEVIC

SANA AHMAD

NIKKI BELL

LEWIS ALCOTT

CARALINE GIROUARD

REBECCA ZHAO

JENNA MILLER

SABINA BERGELT

YIZHEN MI

BRAD YIU

MEG PAULSON

KENDRA ESTRELA

LASEEN ALHAFI

KIKI KIMBER

RILEY MILLS

LAURA SCAIFE

ARIEL LISOGORSKY

AL MAZZAFERRO

MELISSA GIBBON



EXCEPTIONAL VOLUNTEERS

The museum would not function without volunteers, especially the volunteers below. Their expertise, knowledge, time and dedication to critical areas such as collection management, public content, programs and volunteer management, enable the museum to maintain high standards and succeed in attaining its mission.



PETER RUSSELL - CURATOR EMERITUS

Peter can and does indeed help with everything. Recently he has been giving public lectures, helping add information to the collection database and reviewing posters and signage.

KAREN FOX - COLLECTION MANAGER

Karen has been instrumental in moving the online collection database forward. She is currently working on the organization and structure of the online collection database, which is no small feat.



JOHN MOTZ - CONTENT EDITOR

John creates content and conducts background research, edits and accuracy checks on display content. Currently he is working with a team of volunteers to review exhibit, display, poster and artwork content after a two year pause due to the pandemic.

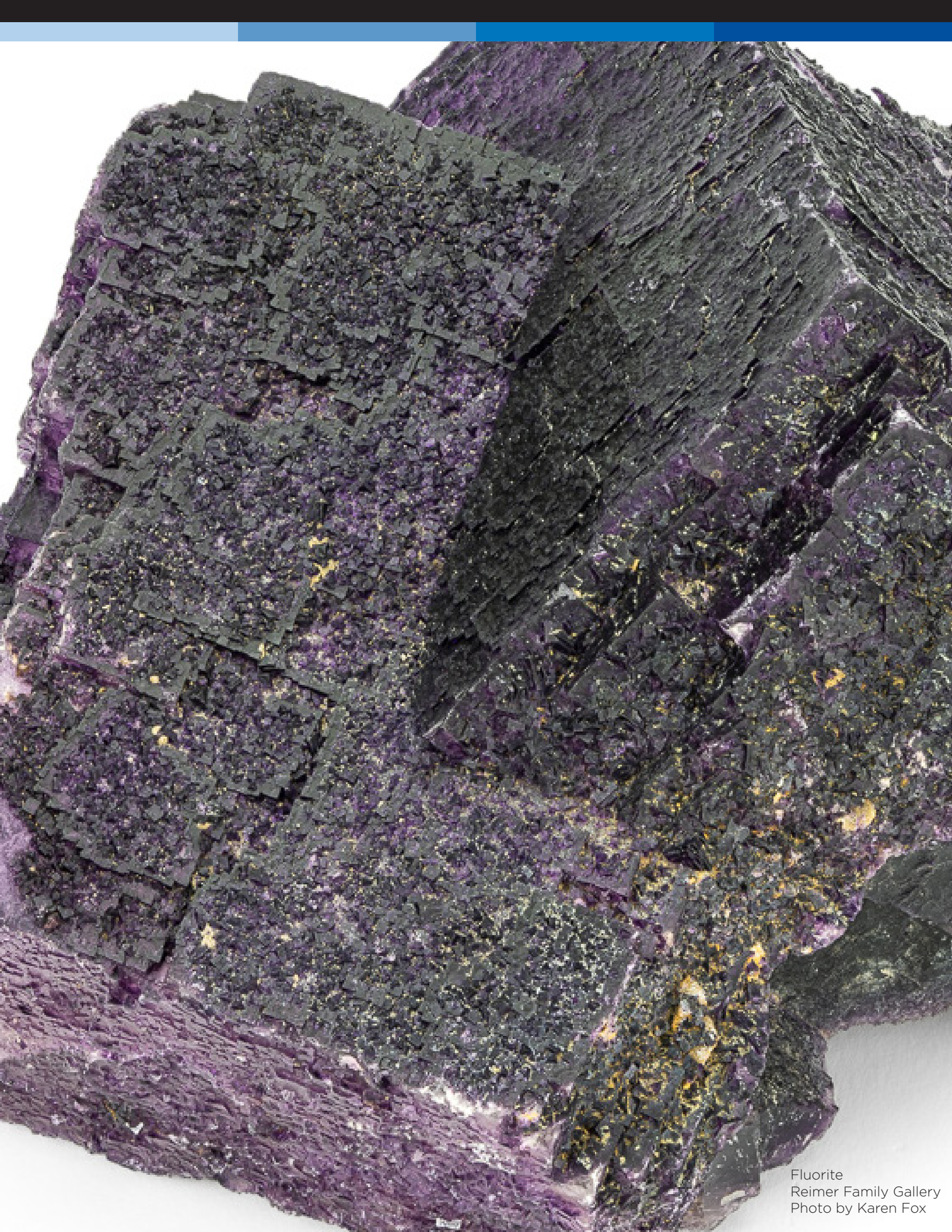
JEAN RICHARDSON - VOLUNTEER DIRECTOR

Jean is taking on a new role for the museum this year. As volunteer director Jean is overseeing all volunteer operations including the creation of onboarding, boarding and off boarding processes for future and current volunteers.



JEFF SAGE - PROGRAM EDUCATOR

When there isn't a pandemic, Jeff helps with outreach at the museum assisting when needed to develop programs as well as run school programs. He is also a museum ambassador while attending most, if not all, off-campus events.



Fluorite
Reimer Family Gallery
Photo by Karen Fox