



# ANNUAL REPORT

## 2018-2019



THE UNIVERSITY OF BRITISH COLUMBIA

**Faculty of Science**





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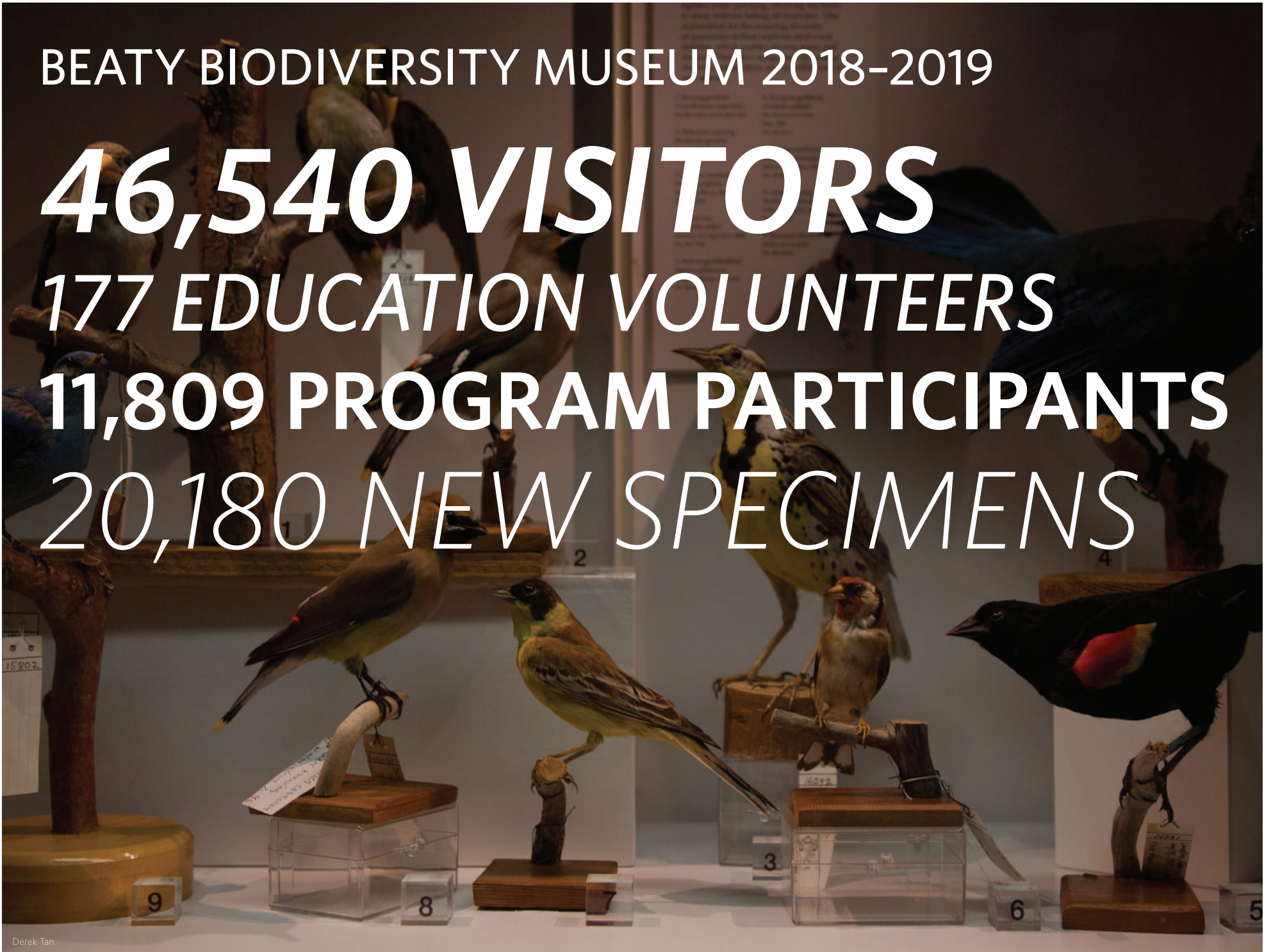
BEATY BIODIVERSITY MUSEUM 2018-2019

**46,540 VISITORS**

**177 EDUCATION VOLUNTEERS**

**11,809 PROGRAM PARTICIPANTS**

**20,180 NEW SPECIMENS**



### Our curators: at the heart of the BBM's mission

The first page of this report cites some impressive statistics: numbers of visitors, school groups, exhibitions, and new specimens! It is that last number, the specimens, and those who care for them, that makes all the rest tick. A “curator”, I have come to learn, can be a tricky thing to define, but I will offer a general definition: a person who safeguards a specimen and/or a collection of specimens, and its legacy so that its value to knowledge, in all its myriad forms, is maximized. Hence, our curators, speaking generally, range from the volunteers and undergraduates who do collections work to faculty members who oversee the collections. In this sense, curation also applies to our exhibits and education staff, who safeguard specimens and who articulate much of their value when they are being displayed or used in programs like our increasingly popular Beaty Boxes. At the core of all this curation, however, rest our collections curators and curatorial assistants. These are the folks who oversee the work of volunteers and students, who liaise with the faculty members, consult on educational and exhibit's use of the various specimens, facilitate research, send and receive specimen loans, give tours to students and the general public, and help to answer their many questions (I am sure I have forgotten a few things!). They also do more than their share of pinning insects, preparing and sorting herbarium sheets, “pickling” fishes and invertebrates, and preparing skins and fossils (and teaching others how to do it all!). Simply put, without curation staff there would be no specimens and hence no BBM and all the good it does. To balance time and effort to accomplish all these tasks can be a significant

challenge and the BBM is lucky to have such a dedicated, committed, and engaged curation staff.

In fact, this past year was a special one for curation because the fish and marine invertebrate collections joined the ranks of the others by having curatorial assistants appointed to both (see their respective reports for more info). Already, these new curators have made great strides in bringing both collections back ‘up to speed’ with support characteristic of the other collections. Further, funding for existing positions in the Herbarium and the Spencer Entomological Collection was stabilized. In addition, the BBM was awarded a Museums Assistance Program Grant (a proposal led by Linda Jennings of the Herbarium) to harmonize, as much as possible, the various collections’ digital databases and develop a single search engine for the collections. Also, Dr. Jeannette Whitton was the recipient of a Faculty of Science Excellence in Service Award, much of it owing to her work as BBM's Herbarium Director. Finally, substantive discussions continue about faculty appointments tied directly to the BBM (all faculty currently associated with the BBM have appointments that rest within Botany or Zoology) – hope springs eternal! All-in-all, a great year for curation at the BBM and the tremendous work that the curators do is key to fulfilling our ‘prime directive’.

The BBM is a partnership between the departments of Botany and Zoology and is the flagship public outreach vehicle for those departments and the Faculty of Science. In July 2019, Drs. Meigan Aronson and Vanessa Auld took up new appointments as Dean of Science and Head of the Department of Zoology,



Dr. Eric Taylor

Director, Beaty Biodiversity Museum  
Professor, Department of Zoology  
Director, Fish Collection

respectively. We look forward to working with them in their new roles, and with Dr. Sean Graham (Head, Department of Botany). The critical and ongoing support of the BBM from the faculty and departments is gratefully acknowledged. Finally, I wanted to thank Dr. Loren Rieseberg, Director of the Biodiversity Research Centre, for providing support to reinvigorate our *Researchers Revealed* initiative through the inspired video collaborations between researchers and our Exhibits and Design team (see “Online Exhibitions” on the BBM website). I hope all enjoy learning of the BBM's work and accomplishments over the past year in the following pages.



# EDUCATION AND OUTREACH

NUMBER OF PROGRAM PARTICIPANTS: 11,809 | TOTAL NUMBER OF PROGRAMS BOOKED: 461

NUMBER OF WAY COOL TALKS: 11 | WAY COOL TALK VISITORS: 477

Jackie Chambers  
Education and Outreach Manager

Nicole Balsdon  
Education and Outreach Coordinator

Nancy Lee  
Kashifa Hafeez  
Sheila Byers  
Vincent Sayson  
Angela Liu  
Museum Interpreters



The Education & Outreach team share the stories of the research collections through school programs, public tours, activities, special events, and partnerships. Direct connections are made between biodiversity researchers and the public at our Way Cool and Nocturnal events—allowing visitors to meet the people behind the important research at the Biodiversity Research Centre and similar institutions.

In fall of 2018, we launched our Museum Collection Tours, six brand-new tours that delve into each of our six specimen collections. These tours match up with requests for more focused tours on the collections. Education & Outreach offered 22 different bookable experiences, 16 of which relate directly to the BC curriculum for K–12 students. This includes the successful Earth Experience, a full-day school program run in collaboration with the Pacific Museum of Earth. A new, free audio tour, launched in summer 2018, allows all visitors in the museum to listen to a guided tour at their own pace with their own devices.

This was the third year of our successful Beaty Box specimen loan program and we launched two ‘Seashore’ themed boxes available to teachers, educators, and community groups. Additional Beaty Boxes are being developed thanks to a generous private donation.

This has been a record-breaking year for school bookings and Beaty Box rentals, surpassing the participant numbers and revenue figures of previous years. Our programming and outreach kits continue to be key revenue generators for the museum and allow us to continue to provide support for several low-income and inner-city schools to ensure students from across Vancouver have access to the museum.



# VOLUNTEER

## GREG SHAPIRO & MARGO MACDONALD Beaty Biodiversity Museum

Nicole Balsdon

Bringing natural history collections to life requires the enthusiasm and care of talented volunteers, and at the Beaty Biodiversity Museum in Vancouver, we are fortunate to have Greg Shapiro and Margo MacDonald on our education team. With over 1500 and 1200 volunteer hours, respectively, they have contributed the most volunteer hours to the Beaty. Each shift, they engage visitors in one-on-one conversations on a wide range of biodiversity topics, while supporting up-close exploration of real museum specimens. Time and time again, our visitors mention these special conversations and explorations; volunteers like Greg and Margo truly make a visit memorable.

We've had the pleasure of watching them both grow over the years. Greg has been with the museum since 2010, coming in every Friday morning. He is always happy to chat with every group of visitors that approaches the whale station, eager to learn about them as he shares his experiences and travels. Margo started on Thursday mornings in 2012, using some of her time to learn more about birds, becoming well-versed in the birds of Vancouver and B.C. Both are passionate about educating museum visitors, regardless of the topic.

Margo and Greg are both incredible, welcoming role models for our new volunteers. They both have a passion for lifelong learning, and are eager to



share their knowledge with others every week. Our student volunteers can rely on them for support and encouragement, as well as comradery and friendship behind the scenes.

Their love of nature and science is contagious, and their dedication to educating visitors is admirable. We look forward to them coming in every week, and miss them when they take well-deserved time away.

It takes a team of diverse, intelligent, skilled, and positive people to share the excitement of biodiversity with visitors. Greg and Margo are our two most dedicated volunteers, and we truly would not be the same without them.

BCMA Spring 2019 Roundup Issue 274:  
Reconciliation and Repatriation

38



Alirod Ameri

## VOLUNTEERS

VOLUNTEER HOURS: 9,684

ACTIVE VOLUNTEERS: 177



Alirod Ameri

Over 175 active education volunteers support us in sharing the stories of the research collections. Two of our volunteers, Greg and Margo, were featured in an issue of the BC Museums Association magazine, for their incredible dedication and reaching over 1,000 hours each. Along with other members of the museum team, volunteers are identifiable in their red vests and are ready to answer questions and share stories with visitors. Volunteers also assist with events and special programming such as twice daily hands-on programming and Spring Break drop-in activities, public lectures, exhibit openings, and membership events. Volunteers are supported with learning opportunities on a weekly basis, and given in-depth workshops once monthly.

Beaty Biodiversity Museum volunteers come from all walks of life, many different countries, and range from high school and post-secondary students to working and retired professionals. Our dedicated volunteers have an understanding and an enthusiasm for the museum, which they readily share with visitors; this team of knowledgeable and friendly people adds a personal touch to the visitor experience and strengthens the connections among the museum, the collections, and the community.



# PARTNERSHIPS



*Culture at the Centre*  
opening at MOA



Over 3,500 undergraduate and graduate students from UBC and other post-secondary institutions visited the museum as part of a course. We hosted three pre-service teachers on Community Field Experience practicum from UBC and SFU, and in collaboration with the Faculty of Education we are providing opportunities for future professionals to gain hands-on experience. We delivered sessions on successful field trip planning for pre-service teachers, and a class for Master of Museum Education students on curriculum and teaching in museums.

We also saw an increase in collaborations with organizations and events both within UBC (courses, professors & TAs, Faculty of Science ‘Science Rendezvous’) and off campus (participating in Science Literacy Week, VSB Scientist in Residence Program, Nature Vancouver centennial celebrations, International Ornithological Congress, Science World’s Symbiosis project, Auckland War Memorial Museum, and the Educators’ Symposium at the BC Museums Association Conference). An important collaboration was with MOA and six communities represented through five cultural centres: Musqueam (Musqueam Cultural Education Centre), Squamish (Squamish-Lil’wat Cultural Centre), Lil’wat (Squamish-Lil’wat Cultural Centre), Heiltsuk (Heiltsuk Cultural Education Centre), Nisga’a (Nisga’a Museum) and Haida (Haida Gwaii Museum and Haida Heritage Centre at Kay Llnagaay) in co-creating the *Culture at the Centre* exhibits.

These opportunities help to move the museum beyond its four walls and allow us to make new connections and promote a broader recognition of our skills and expertise. Through support and funding from UBC Campus + Community Planning and work with the PME, and the MEED graduate student group we continued to offer our monthly Nature Club to families on campus. Funding from a Virtual Museum of Canada grant and a Wheaton Precious Metals donation allowed us to begin planning to enhance our virtual and onsite learning opportunities at the museum.

# THIS YEAR THE BEATY BIODIVERSITY MUSEUM PARTNERED WITH...

**Freshwater Fisheries Society of British Columbia** Peter Wall Institute for Advanced Studies UBC Masters of Museum Education  
UBC Welcome Centre UBC EOSC 425 - Palaeontology **Capture Photography Festival** **Ontario Arts Council**  
**Fisheries and Oceans Canada** UBC Project Services David Suzuki Foundation **Aquatic Ecosystems Research Laboratories**  
**Science Slam Vancouver** Lorraine Roy **Vancouver Paleontology Society** **Muséum National d'Histoire Naturelle**  
Peter Wall Grants **Young Canada Works** **UBC Museum of Anthropology** Vancouver Island University St. Margaret's School  
**Genome Canada** Textile Society of America Djavad Mowafaghian Foundation **Virtual Museum of Canada**  
**University of Adelaide** David Ellingsen **Association of Natural History Museums of Canada** **UBC Forestry**  
Emily Carr University of Art and Design Genome BC **UBC Department of Earth, Ocean and Atmospheric Sciences**  
**British Columbia Institute of Technology** Crafted Vancouver **Museum of Vancouver** Royal Saskatchewan Museum  
**Musqueam Cultural Education Centre** Asher Jay **Canadensys** E-Flora BC  
University of Porto BC Science Outreach Workshop **Canadian Museum of Nature** Kidsworld  
**Science Borealis** Missouri Botanical Garden **Royal British Columbia Museum**  
NGX Interactive **Vancouver Aquarium** Campus Culture Challenge **Preview Magazine**  
Mount Makers Forum **University of Groningen** Conservation Data Centre of British Columbia  
Pacific Environmental Science Centre **ABC Photo** **Wheaton Precious Metals**  
**Musqueam** **Museum of New Zealand** UBC Geography **Quest University**  
North Shore Neighbourhood House UBC Energy **Haida Heritage Centre at Kay Llnagaay**  
University of Lethbridge Flora of North America Consortium of Pacific Northwest Herbaria  
**Peace Region Palaeontological Research Centre** **Canadian Institute of Ecology and Evolution**  
Squamish-Lil'wat Cultural Centre **British Columbia Museums Association**  
Duke University Herbarium **UBC Grant for Catalyzing Research Clusters** Global Biodiversity Information Facility  
**Royal Ontario Museum** UBC Chapman and Innovation UBC Botanical Garden **New York Botanical Garden**  
Heiltsuk Cultural Education Centre **US Fish and Wildlife Service** **Pacific Museum of Earth**  
**Lower Mainland Curatorial Group** Development Team, Faculty of Science **Canadian Museum of History**  
MOA Native Youth Program ArtStarts in Schools Gallery **Haida Gwaii Museum** **Science World British Columbia**  
**Nisga'a Museum** Catherine M. Stewart **Nature Vancouver** **UBC Biodiversity Research Centre**  
Edith Cavell Elementary The Edible Garden Project PWL Landscape Architects UBC SCIE 300 - Science Communication  
Society for Preservation of Natural History Collections **Senckenberg Museum - Dresden**  
Plant Collections & Plant Nomenclature and Taxonomy Communities Symposium





# MARKETING, COMMUNICATIONS, AND EVENTS

SOCIAL MEDIA REACH: 1,159,905

TWITTER FOLLOWERS: 3,707 | FACEBOOK FOLLOWERS: 4,404

INSTAGRAM FOLLOWERS: 2,691

Mary Halton

Marketing, Communications,  
and Events Coordinator

Amy Gibson

Marketing, Communications,  
and Events Coordinator  
(on leave)



Derek Tan



Derek Tan

Through Marketing, Communications, and Events, we are able to connect a larger audience to our museum collection, whether they are visiting the museum in person or learning from us online.

This year we have focused on building our audience's ongoing relationship with the museum; sharing the stories of the people who work here, the artists we collaborate with, and the research done in our collections.

Our digital audience is larger and more engaged than ever; particularly with current issues in biodiversity research, which frequently generate conversations on our social media channels. For Women's History Month, an Instagram and Facebook series focusing on the women working in our collections attracted a wide audience keen to hear more about women in science.

In events, a new collaboration with students from Emily Carr University of Art + Design yielded our best-attended evening event to date, with 190 visitors for our August 2018 Nocturnal: *Making Wave[form]s*.

January 2019 saw the launch of our collections-focused Nocturnals, with a well-received behind the scenes tour of the Herbarium. Our Nocturnal event strand continues to grow, as we have committed to programming a unique event each month, including partnerships with the Pacific Museum of Earth and Science Slam Canada.

The production and launch of an audio tour has made the museum collections more accessible to visually impaired visitors and our online audience, including those unable to visit the museum in person.

Going forward, continuing upgrades to the museum website are focused on making our exhibits, events, collections, and education programs more accessible, and better showcasing our connection to research.

# EVALUATIONS

INCREASE IN VISITORSHIP OVER PREVIOUS YEAR: 9.85%

NUMBER OF MEMBERS: 320

The Museum Evaluation & Assessment Working Group, led by Education & Outreach, brings together all departments to discuss visitor studies.

In 2018–2019, we focused on streamlining the data we collect and how we use these data:

- Collecting feedback on our new Audio Tour
- Visitor surveys and feedback forms
- Improving educator resource webpage and tracking downloads of resources
- Comment cards
- Data to support strategic planning process
- Presenting and sharing our results with other institutions at conferences

**“LOTS TO LOOK AT,  
TOUCH, AND IMAGINE.”**

-Rick Marzlof

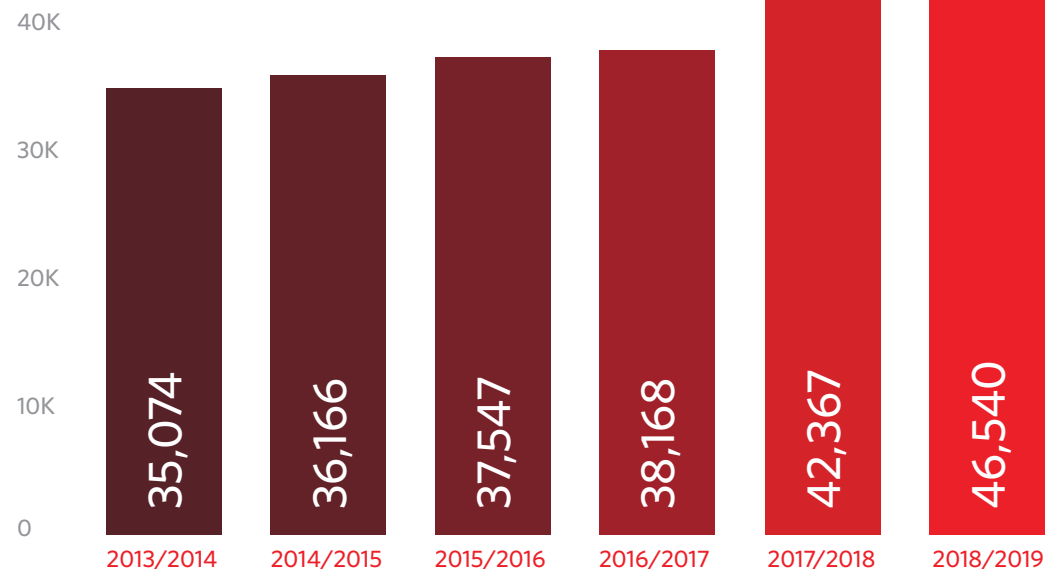
The extensive data collected by the working group and museum over the past eight years have played a key role in informing the strategic planning process taking place this year. This information has been vital in informing our decision making in the museum, and to continue to strengthen and enhance our exhibition design, marketing efforts, school programs, participatory stations, activities, and tours.

This fiscal year, our program feedback was particularly strong, showing that groups found their educational value, interest, and engagement to be good or excellent.

*“It was great! The students really enjoyed their time at the museum and learned a ton! They still were talking about it a week later!  
THANK YOU!”*

-program feedback

## TOTAL VISITORS





# EXHIBITS AND DESIGN

SPECIAL EXHIBITIONS: 6

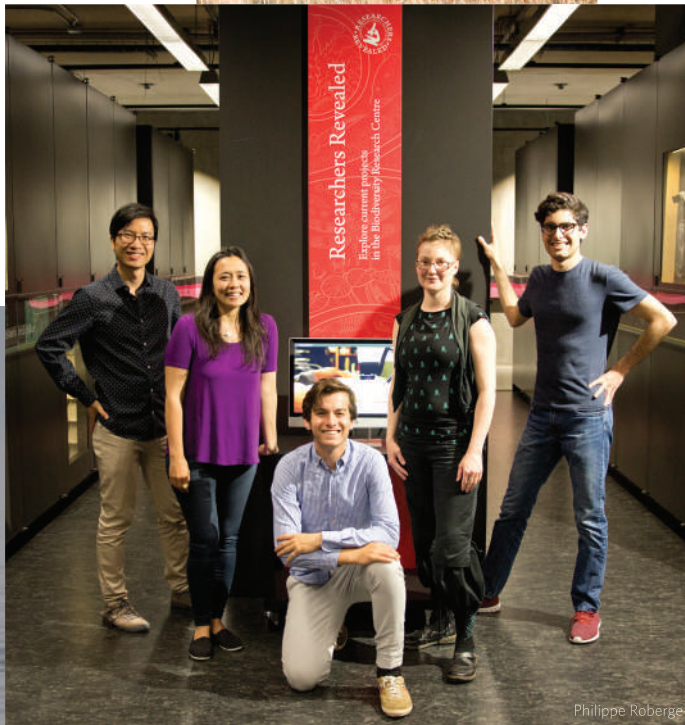
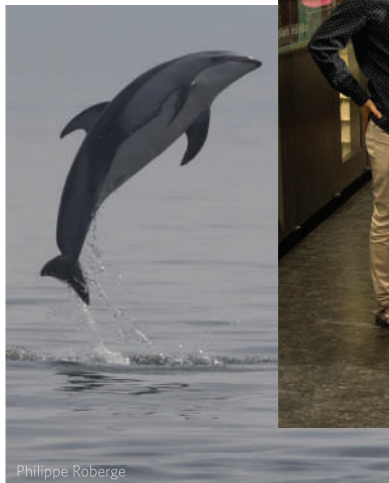
NEW PERMANENT EXHIBITS: 15

Yukiko Stranger-Galey  
Exhibits and Design Manager

Derek Tan  
Digital Media Specialist

Lesha Koop  
Museum Artifact Technician

Philippe Roberge  
Curatorial Research &  
Interpretation Intern



**"ONE OF THE BEST-DETAILED  
NARRATIVES ON THE DISPLAYED  
ITEMS I'VE SEEN IN A MUSEUM"**

-Kuthan Celebi

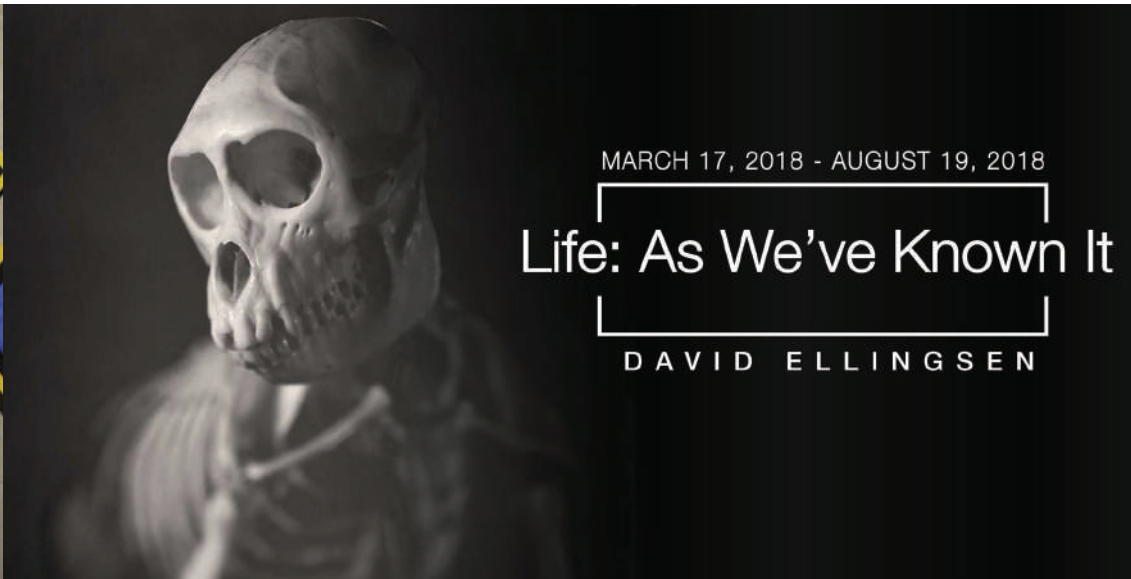
Our commitment to communicating the excitement and value of the biodiversity research at UBC has been strengthened with the reimagining of our *Researchers Revealed* exhibition series. Short, documentary-style videos now showcase the Biodiversity Research Centre, telling the story of our strange and wonderful natural world, and those who study it. The first video released in this series garnered over 31,000 views in its first day!

Six special exhibitions engaged our thousands of visitors in our vision of a world where biodiversity is better understood, valued, and protected. These exhibitions include the Capture Photography Festival-featured *Life: As We've Known It* and the Textile Society of America-featured *Skin & Bones* and *Woven Woods*. *Skin & Bones* opened with the sold-out Beastly Habits fashion show, which explored the exploitation of animals for fashion.

A new *Perspectives on Biodiversity* exhibition series has been launched, with the first exhibit, a collaboration with Musqueam centering around the modern creation of a sturgeon harpoon, to open later this year. This series weaves together graphic, tactile, video, and immersive digital approaches to engage visitors with diverse perspectives on the natural world, giving context and continued richness to our core scientific perspective.

Two new seashore-themed Beaty Boxes have joined the ranks of our rentable outreach kits.





MARCH 17, 2018 - AUGUST 19, 2018

## Life: As We've Known It

DAVID ELLINGSEN

SEPTEMBER 15, 2018 - AUGUST 13, 2019

## SKIN & BONES

CATHERINE M STEWART

WITH ACCESSORIES FROM THE CLOTHING COLLECTIONS OF  
CLAUS JAHNKE AND IVAN SAYERS

ORGANIZED BY  
abc  
photo

WOMEN WOODS  
LORRAINE ROY



THE EXPLOITATION OF ANIMALS  
FOR FASHION IN THE 20TH CENTURY

## BEASTLY HABITS

FASHION SHOW  
SEPTEMBER 21, 2018

THE OPENING  
EVENT FOR THE  
SKIN & BONES  
EXHIBITION



## ASHER JAY THE WILD CREATIVE

NOVEMBER 24, 2018 - APRIL 28, 2019

EXAMINE BIODIVERSITY LOSS DURING THE ANTHROPOCENE -THE AGE OF MAN-  
THROUGH COMPELLING ARTWORKS AND THOUGHT-PROVOKING NARRATIVES.

SATELLITE EXHIBITION

MUSQUEAM  
SQUAMISH  
LIL'WAT  
HEILTSUK  
HAIDA  
NISGA'A

## CULTURE AT THE CENTRE



# THE DIGITAL MUSEUM

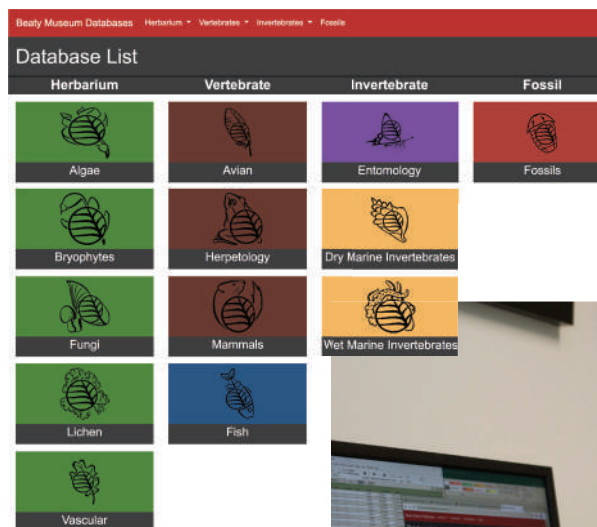
NUMBER OF DATABASED RECORDS: 726,203

NUMBER OF GEOREFERENCED RECORDS: 569,936

NUMBER OF IMAGED SPECIMENS: 133,532

David Rowswell

Database and System Developer



This year a search interface was created where everyone can view the BBM collection online. This search engine pulls information from any or all thirteen collections databases simultaneously. Fossils, plants, insects, marine invertebrates, tetrapods, or fish specimen records can now be queried in combination with a date, a locality, or a collector. In June 2019, the BBM Digital Museum goes live on the BBM website. The general public, including UBC students, will have access to three quarters of a million BBM specimens. Although this is a mere 35 per cent of the BBM estimated holdings of 2.2 million, it is a huge leap forward.

In order to make this unified search interface possible, many backend technical improvements occurred. The sheer number of specimen records and their high-resolution associated images required a rethinking on how to manage, compress, and store information on the designated computer servers. A huge plus of this database makeover was the implementation of a geolocation standardizer. Many of the specimen records were georeferenced for the first time. Having a red marker appear on a zoomable map helps users better understand this locality information. This project has brought the Fossil and the Marine Invertebrate Collections from complete data obscurity into the spotlight.



A one-time Museum Assistance Program Grant, Department of Canadian Heritage, and a grant from Canadensys, Canada Foundation for Innovation funded Phase One. The search is on for Phase Two funding: 'Standardizing and Georeferencing the Remaining Two-Thirds of the BBM Specimen Records.' Project completion would enable thorough online exploration of databased specimens via the BBM Digital Museum.

**THESE SPECIMENS WERE ALL  
COLLECTED 50 YEARS AGO IN BC.  
FOR THE FIRST TIME, OUR DIGITAL MUSEUM ALLOWS YOU  
TO SEARCH ALL COLLECTIONS THROUGH OUR WEBSITE.**

YEAR

1969

PROVINCE

BC

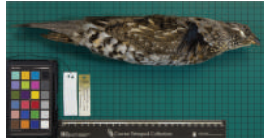
SUBMIT



B013732



B014313



B013552



B013493



B013574



B013453



B009666



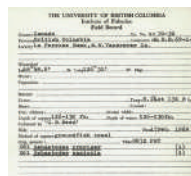
M010850



M009617



BC 70-34



BC 70-32



BC 72-27



SEM-UBC GRY-0118



SEM-UBC DRE-0277



SEM-UBC COL-14457



SEM-UBC COL-14066



SEM-UBC COL-10140



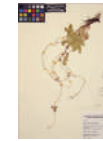
SEM-UBC CAL-0029



B17653



B36421



V224189



V184655



V126040



A48009



V184662



V190689



V148808



# COWAN TETRAPOD COLLECTION

NUMBER OF SPECIMENS: 44,419 | ACCESSIONED THIS YEAR: 352

SPECIMENS IMAGED: 3,685 | IMAGED THIS YEAR: 2,398

NUMBER OF UBC STUDENTS SUPPORTED: 41

VOLUNTEER HOURS: 1,055

Dr. Darren Irwin  
Director and Curator

Ildiko Szabo  
Collections Curator of Birds

Chris Stinson  
Curatorial Assistant of Mammals,  
Reptiles, and Amphibians

The Cowan Tetrapod Collection (CTC) is the second-largest scientific collection of birds, mammals, reptiles, and amphibians in British Columbia.

## A Big Year

The CTC had a 'Big Year' in two stellar ways. We were visited by tetrapod curators from every continent except Antarctica plus we prepared an extraordinary number of 'Big' specimens.

Our dermestid beetle colonies munched their way through two small whales, a sea lion, five cougars, a black bear, four alligators, two pelicans, and a sandhill crane producing many new skeletons for the collection. In addition to morphometrics and tissue samples, all of the skins were painstakingly prepared. For the two yacare caimans this was a labour of love. Their hides are so well-ossified that each needle hole has to be pre-drilled. Some of our volunteers commented that being in the preparatory lab was like being in a dentist office due to the whine of the high-speed drill. Though dominating the drying racks and lab space in general, this list represents only 4 per cent of the specimens prepared this year.

Vancouver hosted the International Ornithological Congress (IOC) in August. The CTC convened two sessions specifically for curators, one of which was held at the BBM. The CTC hosted researchers from: South Africa, Australia, New Zealand, Singapore, Japan, Colombia, Russia, France, Israel, England, Switzerland, and five different museums and research centres in Germany. From North America, the CTC hosted researchers from the Smithsonian, the Museum of Comparative Zoology and a myriad of other Canadian and American universities and museums.

Pine marten  
*Martes americana*



Derek Tan

## UBC courses and organizations supported:

- BIOL 342 - Integrative Biology: Collections experience for 40 students
- BIOL 427 - Ornithology and Herpetology: Guest lecturer and taught one week of labs in addition to regular lab teaching assistance
- VISA 321 - Intermediate Drawing II
- FRST 395 - Forest Wildlife Ecology and Management
- BIOL 372 (UBCO) - Field Ornithology: Taught one lab and specimen loans for lab identification

## Graduate students assisted:

- Kenny Askelson, PhD candidate, Irwin Lab: Imaging of the global screech owl collection for R colordistance analysis; provided tissue samples
- Leo Wood, MSc candidate, Altshuler Lab: Wing ligaments and muscles: material properties of the deltoideus pars prototagialis
- Jasmin Wong, PhD candidate, Altshuler Lab: Aeroelastic flutter of flight feathers
- Vikram Baliga, Post-doctoral Fellow, Altshuler Lab: Capabilities and limitations of musculoskeletal morphing in the avian wing
- Andrew Trites, Stephanie Renwick, Melanie Talkington, Trites Lab: Corset eyelet material identification
- Alexandra Fahey, Undergraduate Research Project, Burton Lab: Fisher skull morphometrics
- Veen Lab (Quest University), Melon Davis: Test decoys for camera detection of radiant heat emitted by birds

### Non-UBC courses and organizations supported:

- Muséum National d'Histoire Naturelle (France), Jérôme Fuchs: Specimen exchange of common birds. The purpose of these exchanges is for both collections to acquire tissues and the associated skin voucher for use as outlier in genetic research
- University of Porto (Portugal), Philippe Gaubert: Pangolin destructive sampling for speciation study
- University of Adelaide (Australia), Peri Stenhouse, PhD candidate: Two-day bird-prep workshop/job shadowing training
- University of Lethbridge (Alberta), Theresa Burg, Brendan Graham in collaboration with Museum of Vertebrate Zoology (California), Carla Cicero; UBCO, John Woods
- Algonquin Provincial Park (Ontario), Dan Strickland: Canada jay three-day intensive morphology research project using specimens belong to the UBC BBM, Royal Ontario Museum, Royal BC Museum: morphometric measurements, toe-pad tissue collected for analysis
- University of Lausanne (Switzerland), Alexandre Roulin: Barn owl plumage analysis
- Senckenberg Museum-Dresden (Germany), Martin Päckert and Frederik Albrecht: Red crossbill morphology research
- Museum of New Zealand, Rodrigo Salvador: Morphometric analysis of New Zealand bird beaks
- Royal Ontario Museum, Oliver Haddrath: Blue whale bone sample for genome sequencing project
- Royal Saskatchewan Museum, Danae Frier: Five-day guest preparatorship with an emphasis on bird prep and fat removal for all types of tetrapod specimens
- Simon Fraser University (BC) & University of Groningen (Netherlands), D. Lank & van der Velde: Fabrication of ruff sandpiper decoys for sperm collection for genetic analysis
- Simon Fraser University (BC), Michael Rodway: Haida Gwaii oystercatcher egg study
- Vancouver Island University (BC), Eric Lofroth, Jamie Gorrell, & student: Sampled Vancouver Island wolverines
- Quest University (BC), LIF 3012-Island Biogeography, Thor Veen: Half-day workshop held at BBM
- BCIT (BC), Fish, Wildlife and Recreation, Doug Ransome: Taught a one-day bird prep lab at BCIT
- Pacific Environmental Science Centre (Environment Canada), Joy Bruno, Rachel Miliano, Liza Young: 10 random bird breast muscle samples for forensic methods development using micro-satellite Universal 16S extraction
- Pacific Environmental Science Centre (Environment Canada), Rachel Miliano: Feline tissue samples for developing sexing method

## COWAN TETRAPOD COLLECTION



Philippe Roberge

Ildiko Szabo

### In the community:

- International Ornithological Congress (IOC) held in Vancouver: Ildiko Szabo convened two sessions, one at the conference and the other at the BBM.
- Bioblitz: Tombstone Territorial Park, Yukon and Whistler, BC, both in collaboration with the Spencer Entomological Collection.
- Participated in the following collecting trips: Mitlenach Island, BC (insects), Coalmont, BC (Canada jays and spruce grouse).
- Member of SNOWStorm Project on snowy owls.
- Nature Vancouver: table-top displays of avian specimens to complement the evening lecture.
- Stanley Park Ecology Society: led two 'You Otter see Beavers' and two 'Frog-a-Palooza' night walks.

**Artist visits:** Catherine Stewart, Eszter Burghardt, Karen Yurkovich, Colleen McLaughlin Barlow, Luke Fedorchuk, Richard Marcus, Margit Boronkay, Joyce Majiski



# MARINE INVERTEBRATE COLLECTION

SPECIMENS: OVER 500,000

NUMBER OF DATABASED RECORDS: 7,063

Dr. Chris Harley  
Director

Dr. Colin MacLeod  
Curatorial Assistant

Sunflower sea star  
*Pycnopodia helianthoides*



Our Marine Invertebrate Collection (MIC) houses many thousands of “spine-free” marine organisms that represent major animal lineages from around the globe, such as corals, snails, worms, crabs, sea stars, and sponges. Marine invertebrates possess a startling variety of forms, textures, and colors, and our collection contains some truly fantastic examples of this diversity.

This year, the collection received funding from the Department of Zoology to hire a dedicated, part-time curatorial assistant, Dr. Colin MacLeod. Dr. MacLeod will work closely with the collection Director to document recent donations, establish research and education collaborations, and improve the visibility of the Marine Invertebrate Collection.

In order to expand our collection of Canadian marine invertebrates, we have begun collaborations with the Harley and O’Connor Labs at the University of British Columbia, and the Bamfield Marine Sciences Centre on the outer coast of Vancouver Island. We look forward to displaying many fantastic Canadian invertebrate samples in the near future!

We are also pleased to announce a new relationship with the Northwest Indian Fisheries Commission, who have been working with the MIC staff to identify potential causes of a die-off in the olive snail (*Olivella biplicata*) populations of Neah Bay, Washington. Hopefully, we will soon be able to display some of the olive snails from this area.



Dr. Colin MacLeod

# MARINE INVERTEBRATE COLLECTION

*Ectinosoma melaniceps* Boeck, 1865A harpacticoid copepod found near eelgrass beds; tiny diatoms form a food source. The copepod forms a food source for young fish.



Al Lewis

Professor Emeritus Al Lewis



Philippe Roberge

We thank Professor Emeritus Al Lewis for agreeing to donate his expertise and samples of marine copepods, an abundant, fascinating, but underappreciated invertebrate component of many coastal ecosystems. Professor Lewis has worked with copepods for many years, and is providing samples of numerous species for both display (see image above) and genetic analysis.

We also thank the Museum of Vancouver, the Museum of Surrey, and private donors for some fantastic specimens, including a giant clam! Special thanks are also due to Kelly Norton for her continuing relationship with the Marine Invertebrate Collection.



# HERBARIUM

SPECIMENS: OVER 713,000 | IMAGED SPECIMENS: 33,000

DATABASED RECORDS: 562,000 | NEW RECORDS THIS YEAR: 10,300

LOANS: 40 | SPECIMENS LOANED: 1,985

Dr. Jeannette Whitton  
Director

Linda Jennings  
Collections Curator and Manager

Olivia Lee  
Collections Manager

Erin Fenneman  
Collections Assistant

Dr. Sandra Lindstrom  
Curator of Algae

Dr. Patrick Martone  
Curator of Coralline Algae

Dr. Judith Harpel  
Curator of Bryophytes

Dr. Quentin Cronk  
Curator of Eudicots

Dr. Sean Graham  
Curator of Monocots and  
Basal Angiosperms

Dr. Mary Berbee  
Curator of Fungi

Trevor Goward  
Co-Curator of Lichens

Curtis Björk  
Co-Curator of Lichens



The Herbarium comprises several collections including the algae, bryophytes (mosses and relatives), vascular plants, fungi, and lichens.



*Takakia lepidozioides*, an inconspicuous moss known for the smallest chromosome number of for any living plant: four.

## Inventoring British Columbia's Biodiversity

The ninth annual Wilf Schofield Bryophyte and Lichen Foray was held in Haida Gwaii and led by expert Bryologist Karen Golinski. Karen scouted with participants to a few of Schofield's old collecting sites and were able to collect the rare moss *Takakia lepidozioides*. After the foray, Karen and Olivia joined up with the group Botany BC and collected 400 new specimens from Calvert Island, Graham Island, and Moresby Island. We were also invited to Hakai Conservation Institute to document species distributions over time to further our knowledge of changing climates on biodiversity.

You can find out more at our museum blog.

We also collected 105 specimens of mosses at the Pemberton/Whistler Bioblitz from June 8–10, 2018.

**Over 550 undergraduate students participate in Herbarium Collection BioBlitz!**  
Incorporating research collections and novel teaching techniques in first year UBC undergraduate learning.

Last year we initiated our pilot Herbarium Collection BioBlitz inviting 260 UBC undergraduate students from two first-year courses (SCIE 001 and BIOL 121) to learn about using collections in research. In return, the students helped us with a collection inventory, where we know our records to be inaccurate, with many specimens un-digitized. This year we doubled our undergraduate student impact with 550 UBC undergraduate students contributing to the Collection BioBlitz virtually and face-to-face spanning first- to fourth-year courses (BIOL 121, BIOL 209, BIOL 343, BIOL 412 and GEOB 407).



Alirod Ameri



You too can become a citizen scientist.  
Transcribe collections label data and  
view specimens from global herbaria at:  
Notes from Nature Expeditions.

TASK

TUTORIAL

What is the family of the specimen?

unclear

NEED SOME HELP WITH THIS TASK?

Back

Next →

⚙️



# SPENCER ENTOMOLOGICAL COLLECTION

SPECIMENS: 650,000 | ACCESSIONED THIS YEAR: 2,500

DATABASED RECORDS: 125,000 | NEW THIS YEAR: 5,000

IMAGES OF SPECIMENS: 42,000 | NEW THIS YEAR: 2,000

IDENTIFICATIONS FOR THE PUBLIC: 250 | VOLUNTEER HOURS: 500

Dr. Wayne Maddison  
Director

Karen Needham  
Collections Curator

Tiia Haapalainen  
Curatorial Assistant  
(January to March)

Don Griffiths  
Imaging Volunteer

The Spencer Entomological Collection (SEC) is the second-largest collection of insects and other arthropods in western Canada.

Our regional insect surveys continued, including our third year attending a Yukon Bioblitz (Tombstone Territorial Park), our sixth year attending a Whistler/Pemberton Bioblitz, and a second year visiting Mitlenatch Island.

The Vancouver Convention Centre hosted a conference in November for over 3,500 entomologists from around the world, and several hundred of them made their way to the Beaty Biodiversity Museum for a

tour of the museum and the entomology collection. We thank researchers from the Canadian Museum of Nature, Hokkaido University, Rutgers University, and Washington State University for staying on after the conference to curate sections of our collection. We are still working on incorporating their annotations.

Thanks to funding from the Yukon Government and Environment Canada, over 4,000 records of Yukon, Northwest Territories, Nunavut, and Alaska specimens were added to our database. Work on our webpages continued with photos added for our largest moth family (Noctuidae) and for many of the species new to our collection (mainly from bioblitz efforts and visiting researchers).

Field work on salticid spiders in Russia and New Zealand added many species new to our collection, and some new to science. A paper was published presenting an entirely undescribed salticid radiation from New Guinea, using specimens in the Spencer Entomological Collection from Wayne Maddison's 2008 expedition. Dr. Maddison made considerable progress on several other taxonomic papers using specimens from the Spencer, including a review of the common group Sitticini, a monograph of the *Pellenattus* jumping spiders, a new lapsiine from Mexico, and new nanneniines of Malaysia and Singapore. Phylogenetic papers are in progress on pellenines, plexippines, baviines, and *Mexigonus*.

## Donations:

Curatorial work continued, incorporating mosquito donations from Dr. Peter Belton (BC material; ca. 2,000 specimens) and Dr. Dan Peach (Yukon material; ca. 500 specimens).



# FISH COLLECTION

SPECIMENS: 349,273 | NEW THIS YEAR: 803  
NUMBER OF RECORDS WITH GEOCOORDINATES: 48,807

The Fish Collection is the third-largest ichthyological collection in Canada and a major provincial, national, and international resource.

Dr. Nicolas Bailly was hired as the curatorial assistant for the fish collection. He has focussed on reorganization and correction of the considerable holdings in the fish collection. This has resulted in what we feel is a more accurate account of 51,928 records involving 3,770 unique taxonomic names at the species level and 459 names of higher taxonomic orders. We are now focussing on obtaining a more accurate estimate of the actual number of specimens and records of species from various watershed surveys.

Dr. Eric B. Taylor  
Director

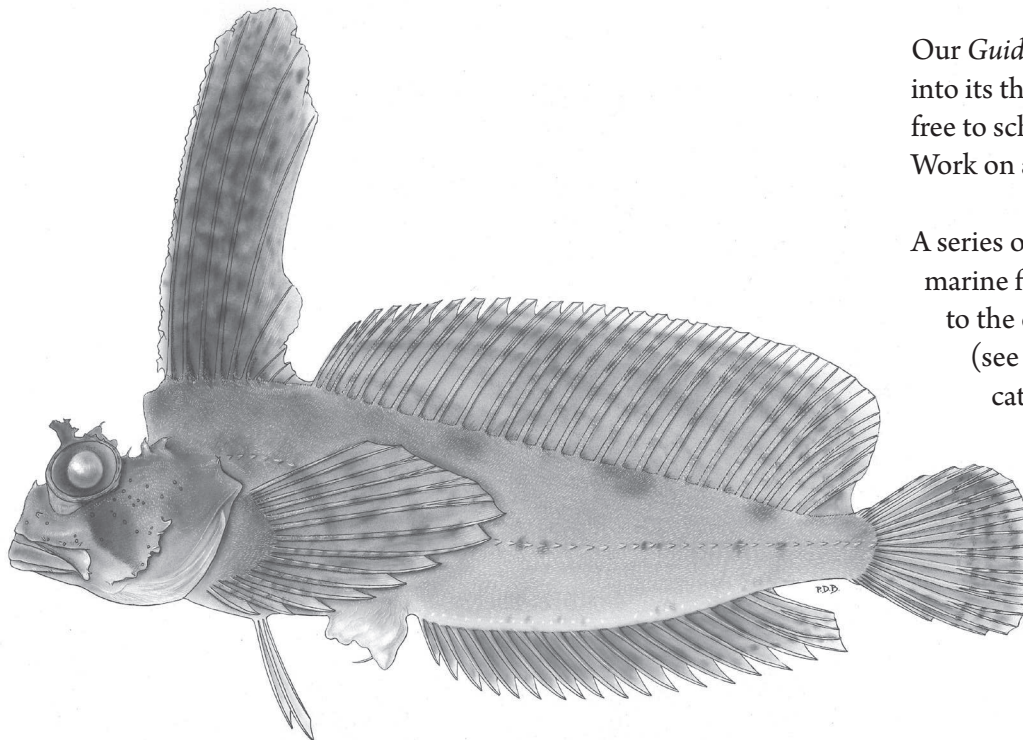
Dr. Nicolas Bailly  
Curatorial Assistant



Redside shiner  
*Richardsonius balteatus*

Our *Guide to the Freshwater Fishes of British Columbia* has gone into its third printing with over 700 copies sold or distributed free to schools, community groups, and angling organizations. Work on a mobile phone adaptation of this guide is continuing.

A series of beautiful illustrations of inshore eastern Pacific marine fishes by Patricia Drukker-Brammal were repatriated to the collection after a very long loan to colleagues in Alaska (see example at left). These drawings are currently being catalogued and will eventually be digitized.



Sailfin sculpin  
*Nautichthys oculofasciatus*  
UBC 1965-0044  
14.6 cm. Kodiak Island, Alaska, 6 Sep. 1964.  
Drawing by Patricia Drukker-Brammal, 25 Nov. 1965.  
© University of British Columbia



# FOSSIL COLLECTION

SPECIMENS: 30,000

VOLUNTEER HOURS: 350

Dr. Kirsten Hodge  
Curator

Dr. Alexa Class Freeman  
Assistant Curator



The Fossil Collection has 30,000 specimens that range from recent shells to early traces of cyanobacteria, called stromatolites that represent some of the oldest evidence of life on Earth. The collection includes several of British Columbia's earliest natural history records and represents a comprehensive survey of BC's paleontological heritage.

An oral presentation was given at the Resources for Future Generations conference (Vancouver, June 2018). Session: Paleontological Collecting and Collections: Is There a Future for Fossils? Abstract title: *Bringing the old out for the new: The revival of UBC's Fossil Collection.*

# ADMINISTRATION

TOTAL VISITORS: 46,540

REVENUES FROM PAID ADMISSION: \$248,185

REVENUES FROM MUSEUM SHOP SALES: \$27,245

## Strategic & Operational Planning

Working with UBC Strategy and Decision Support (SDS), the BBM worked towards developing a new strategic plan. The process includes interviews with stakeholders and a series of meetings of the Strategic Planning Committee that were facilitated by SDS.

### Strategic Planning Committee:

- Dr. Eric Taylor, Museum Director
- Dr. Quentin Cronk, Curator of Eudicots
- Catherine Ouellet-Martin, Senior Operations Manager
- Jackie Chambers, Education & Outreach Manager
- Yukiko Stranger-Galey, Education & Design Manager
- Linda Jennings, Herbarium Collections Curator & Manager
- Mary Halton, Marketing, Communication & Events Coordinator
- Christopher Stinson, Curatorial Assistant

## Human Resources

Best-employer practices are a priority to manage the growing team of more than 25 full- and part-time staff, and as many part-time student staff. Thanks to support from the Departments of Zoology and Botany, the museum has sustained new part-time Collection Assistants in the Entomology and Herbarium collections and added part-time positions for the Fish and Marine Invertebrate Collections. In addition, to better respond to the sharp increase in general and school program attendance, the museum created a Visitor Services Supervisor position.



Catherine Ouellet-Martin  
Senior Operations Manager

Maggie Decarie  
Charles Leung  
Danushka Galappathy  
Sena Youn  
Dru Chan  
Deepti Arya  
Front Counter Clerks

## Visitor Services: Admission and Museum Shop

Museum attendance continues to grow and showed a 10 per cent increase over last year. The corresponding revenue contributed to a 20 per cent increase in earned income from sales and services.

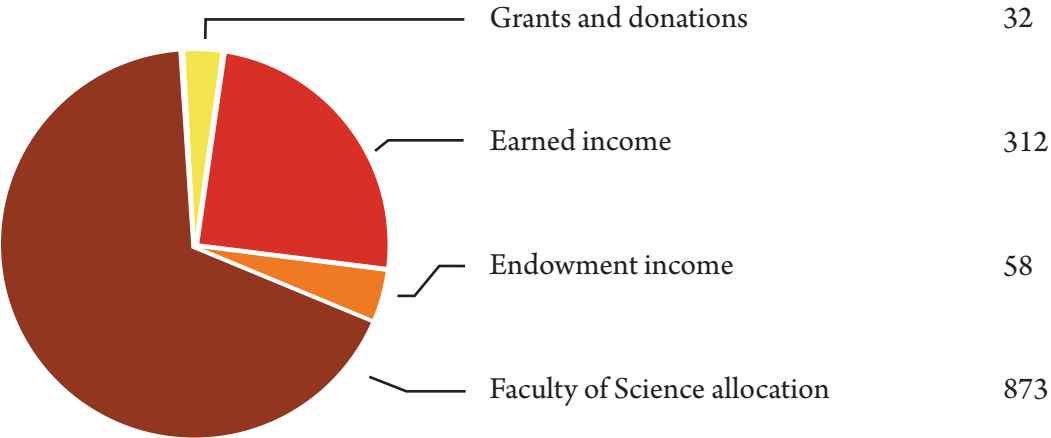
## Wheaton Precious Metals Donation

The Beaty Biodiversity Museum and the Pacific Museum of Earth received a generous shared gift of \$2 million from Wheaton Precious Metals. The financial contribution will fund a series of exhibit improvements in both museums over the next several years and supports a feature project, *The Walk through Time*. This outdoor exhibit across Main Mall between the Pacific Museum of Earth and the Beaty Biodiversity Museum will take visitors on an interactive journey through Earth's 4.5-billion-year history.



OPERATIONS

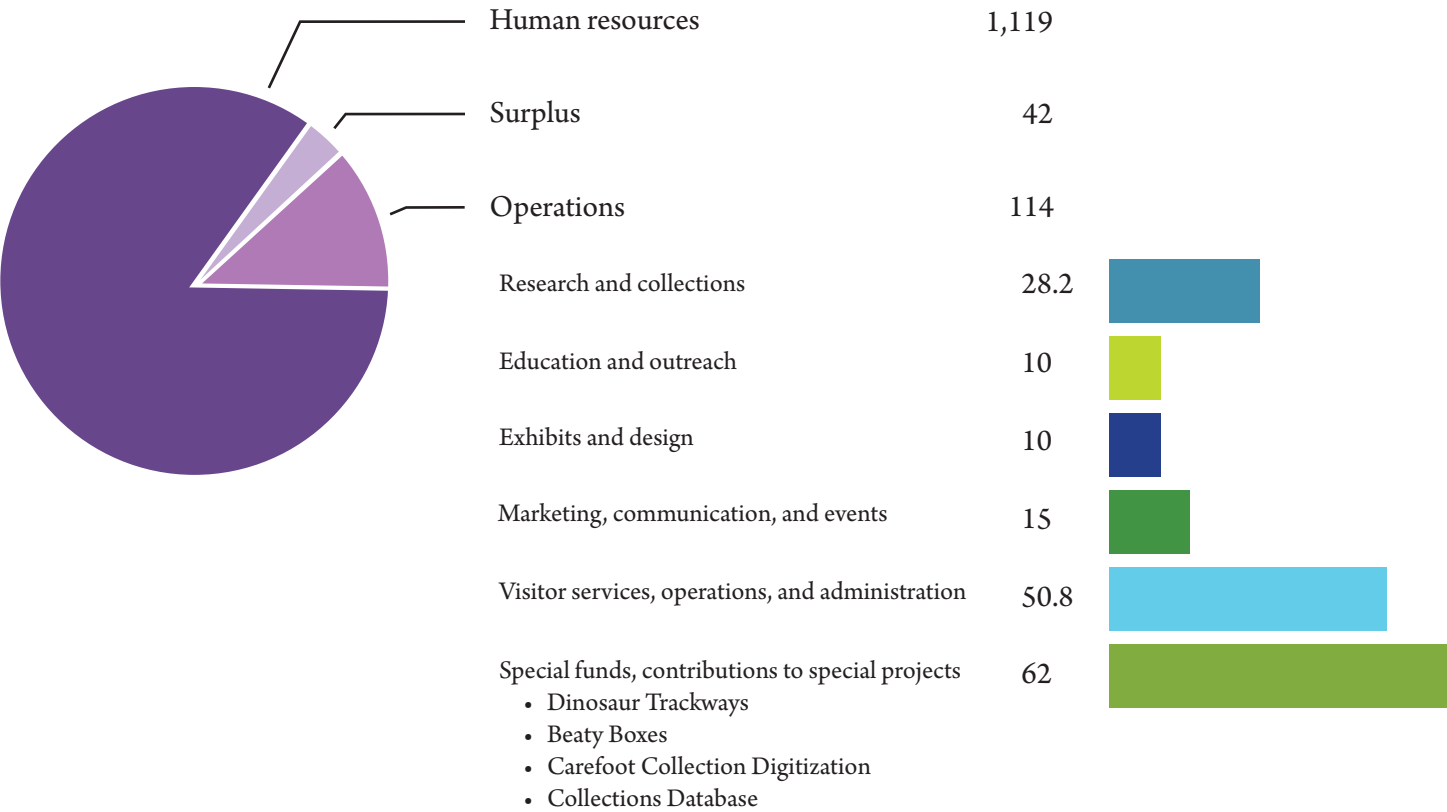
Budget

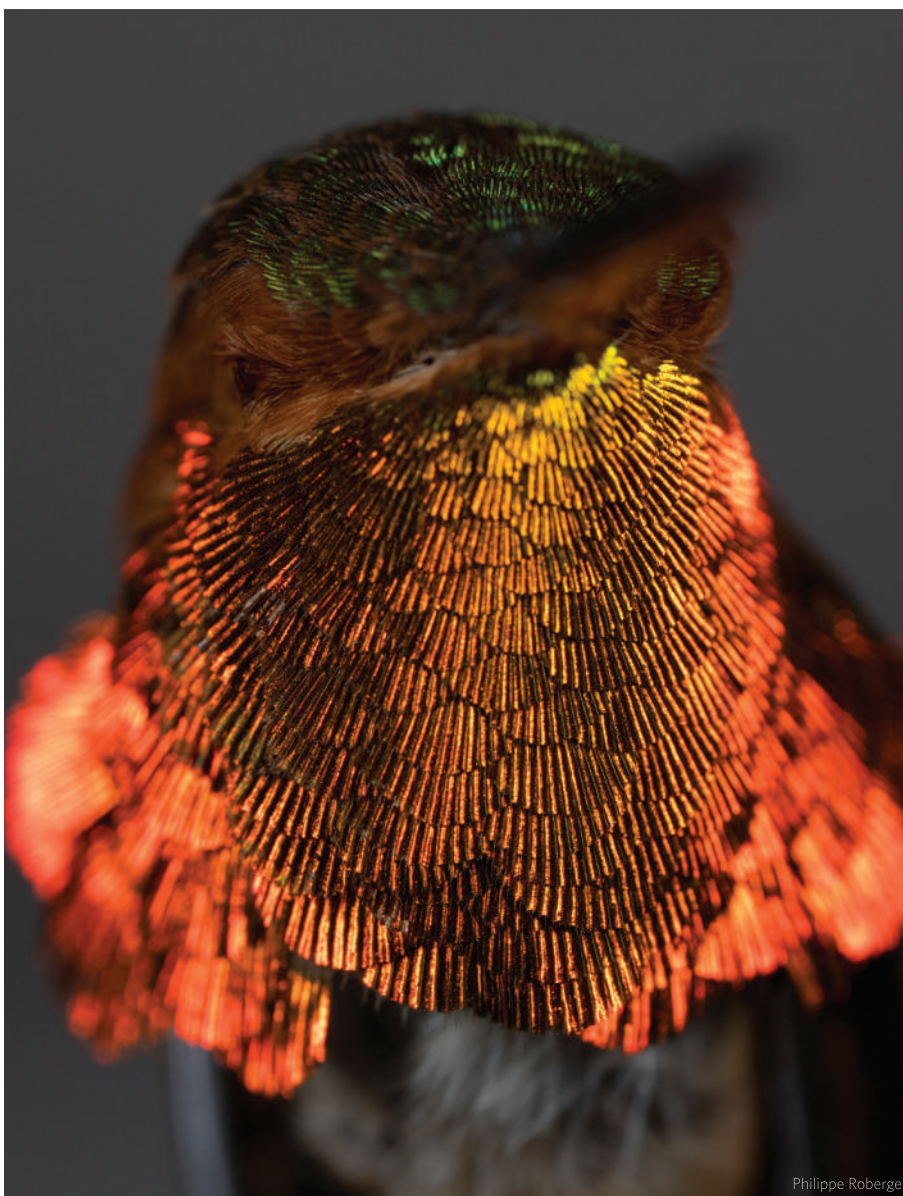


Through the support of the Faculty of Science, grants, donations, membership, and earned income, the museum’s financial health stayed strong throughout the fiscal year. Careful management of resources along with an increase in earned income has resulted in a surplus at fiscal year-end.

Figures in thousands of dollars.

Expenses





Philippe Roberge

We are grateful to our founding donors who made essential contributions to the creation of this world-class facility for biodiversity research and community learning:

Ross and Trisha Beaty  
The Djavad Mowafaghian Foundation  
Dr. Allan Yap

And a heartfelt thank you to everyone who has supported us since.

## Donations

*Anonymous*  
Lenore Baker  
Kent M. Brothers  
Ian S. Burgess  
Shelia Catambing  
Canisius Chan  
Kai Chan  
Gangamma Chowrira  
Trish Coffey  
Linda E. Graham  
Andrew Grey  
Kelsey Hymander  
Kirsten Johnson  
Paul Kroeger  
Sandra Lindstrom

MacDonald's Home Health Care  
James Markham  
Terry T. McIntosh  
John Mendoza  
Ernani Guingona Menez  
Anita Miettunen  
Barry Narod  
North Arm Transportation Ltd.  
Luis Oliveira  
Gary Richmond  
Arlene Schimmelpfennig  
Robert Sheath  
Michael Taylor  
Neville West  
Wheaton Precious Metals



# PUBLICATIONS AND PRESENTATIONS

Our Beaty Box Project received an Honourable Mention for Sustainability award from the British Columbia Museums Association. We are honoured to receive recognition for our outreach work from this professional association of more than 400 individuals and institutions in the museum, gallery and heritage sector in the province.

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Long, Eric S., Karissa L. Courtney, Julia C. Lippert, and Cara M. Wall-Scheffler. Reduced body size of insular black-tailed deer is caused by slowed development. *Oecologia* 189. <https://doi.org/10.1007/s00442-019-04367-3> (2019)(used specimens from the Cowan Tetrapod Collection).

**Stinson, C.M.** Building the Beaty: creating, maintaining, and growing a publicly accessible biodiversity museum collection in the Pacific Ring of Fire. Society for the Protection of Natural History Collections Conference, New Zealand, 2018.

**Szabo, I.** Who made this? Sleuthing the cultural identity of ethnographic objects using avian forensic morphology techniques. *Society of Wildlife Forensic Science, SWFS News* 3 (2): 14–17 (2018).

**Szabo, I.** and **C.M. Stinson.** Lots more to discover. *Nature Vancouver Discovery Magazine* 46: 100–101 (2018).

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Bay, R.A., **E.B. Taylor**, and **D. Schluter**. Selection and introgression on introduced alleles in a native species. *Molecular Ecology*, in press, March, 2019 (used archival DNA samples from the UBC Fish Collection).

Pietsch, T.W. and J.W. Orr. *Fishes of the Salish Sea*. University of Washington Press. To be published in May 2019 (for illustrations in the book).

Stevenson, D.E. and B.A. Sheiko. Clarification of the *Lycodes diapterus* species complex (Perciformes: Zoarcidae), with comments on the subgenus *Furcimanus*. *Copeia*, 2009(1), 125–137 (2009).

Chua, Mung-Seng et al. Lectotypification of *Acroporium hyalinum* (Reinw. ex Schwägr.) Mitt. (Hypnales: Sematophyllaceae) *Telopea, Journal of Plant Systematics*, 21: 1275–185 (2018).

**Clarkston, Bridgette E.** and **Linda Jennings.** Partnering with the Beaty Biodiversity Museum to enhance learning experiences for first-year biology students. iDigBio, Berkeley, California. 4–6 June, 2018.

**Goward, Trevor** and André Arsenault. Calicioid diversity in humid inland British Columbia may increase into the 5th century after stand initiation. *The Lichenologist* 50 (5): 555–569 (2018).

**Kopp, Christopher W., Barbara Neto-Bradley, Linda Jennings, Jas Sandhar,** and Siena Smith. Flowering phenology response to climate warming in the Pacific Northwest., iDigBio, Berkeley, California. 4–6 June, 2018.

Magain, Nicolas, Camille Truong, **Trevor Goward**, Dongling Niu, Bernard Goffinet, Emmanuel Sérusiaux, Orvo Vitikainen, François Lutzoni and Jolanta Miadlikowska. Species delimitation in *Peltigera* sect. *Peltigera* (Peltigeraceae). *Taxon* 67 (5): 836–870 (2018).

**Neto-Bradley, Barbara, Jeannette Whitton, Linda Jennings, and Matthew W. Pennell.** What can phylogenies tell us about grass phenology? Ecology Meeting, Ohio, 20–23 June, 2018.

Pardo-De la Hoz, C.J., N. Magain, F. Lutzoni, **T. Goward**, S. Restrepo, and J. Miadlikowska. Contrasting symbiotic patterns in two closely related lineages of trimembered lichens of the genus *Peltigera*. *Frontiers in Microbiology* 9:2770 (2018).

Simon, A., **T. Goward**, J. Di Meglio, K. Dillman, T. Spribille, and B. Goffinet. *Sticta torii* sp. nov., a remarkable lichen of high conservation priority from northwestern North America. *Graphis Scripta* 30 (6): 105–114 (2018).

Talbot, S.S., **W.B. Schofield**, J. Vana, and S.L. Talbot. Liverworts from Attu Island, Near Islands, Aleutian Islands, Alaska (USA) with comparison to the Commander Islands (Russia). *Botanica Pacifica: a journal of plant science and conservation*, 7 (2): (2018).

Names or organizations in **bold** are associated with the Beaty Biodiversity Museum or the Biodiversity Research Centre.

## PUBLICATIONS AND PRESENTATIONS

Ali, P.A.A., **W.P. Maddison**, M. Zahid, and A. Butt. New chrysilline and aelurilline jumping spiders from Pakistan (Araneae: Salticidae). *ZooKeys* 783: 1–15 (2018).

Footitt, R.G., H.E.L. Maw, J.H. Kits, and **G.G.E. Scudder**. Hemiptera of Canada (in) D.M. Langor and C.S. Sheffield (Eds). The Biota of Canada – A Biodiversity Assessment. Part. 1. The Terrestrial Arthropods. *ZooKeys* 819: 277–290 (2019).

Larson, D.J. and **G.G.E. Scudder**. Seed bugs and their allies (Hemiptera: Heteroptera: Lygaeoidea) of the Canadian Prairie Provinces. *Canadian Journal of Arthropod Identification* 34: 174pp (2018).

**Maddison, W.P.** and T. Szűts. Myrmarachnine jumping spiders of the new subtribe Leveina from Papua New Guinea (Araneae, Salticidae, Myrmarachnini). *ZooKeys* 842: 85–112 (2019).

Malipatl, M.B. and **G.G.E. Scudder**. Paraindopamphantus bruniensis gen. nov. et sp. nov., as the first representation of the subfamily from South East Asia (Hemiptera: Heteroptera: Geocoridae: Pamphantinae: Indopamphantini). *Zootaxa* 4415: 46–90 (2018).

**Ratzlaff, C.G.** and **G.G.E. Scudder**. First records of the juniper shield bug, Cyphostethus tristriatus (Fabricius, 1787) (Hemiptera: Acanthosomatidae), in North America. *The Pan-Pacific Entomologist* 94(2): 67–74 (2018).

Ruiz, G.R.S., **W.P. Maddison**, and M.E. Galiano. A revision of the concept of Mago O. Pickard-Cambridge, 1882, and proposal of a new genus (Araneae: Salticidae: Amycini). *Zootaxa*, in press (2019).

**Scudder, G.G.E.** Corrections for the Hemiptera: Heteroptera of Canada and Alaska. *The Journal of the Entomological Society of BC* 115: 19 pp. (2018).

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**Brink, Kristin**, and **Yukiko Stranger-Galey**. Bringing the old out for the new: The revival of UBC's Fossil Collection in Paleontological collecting and collections: is there a future for fossils? Resources for Future Generations Conference, Vancouver, 16–21 June, 2018.

**Beaty Biodiversity Museum**. Visitor Experience Improvement Project: Creating Learning and Social Spaces at the Beaty Biodiversity Museum. *British Columbia Museums Association Roundup Magazine*, Issue 273, British Columbia | Canada 150, Fall 2018.

**Culture At The Centre Exhibition Team**. Collaboration: What Does Doing it Right Look Like? *British Columbia Museums Association Roundup Magazine*, Issue 272, Getting Out There! Community Collaborations, Summer 2018.

Mosquin, Daniel, and **Yukiko Stranger-Galey**. Improving Your Curator Tour: Interpreting Plants and Collections in an Inclusive and Sensitive Manner. Collections & Plant Nomenclature and Taxonomy Communities Symposium, 16–18 October, 2018.

Stewart, Catherine M. and **Yukiko Stranger-Galey**. Vignette: Skin & Bones. *Preview Magazine*, September–October, 2018.

**Stranger-Galey, Yukiko**, Angela Gooliaff, **Derek Tan**, **Lesha Koop**, and **Haseenah Molumo**. Life in Colour: Exploring the Natural World Through Exhibition. *British Columbia Museums Association Roundup Magazine*, Issue 271, Change Makers: Making a Difference, Winter 2018.

**Stranger-Galey, Yukiko** and **Linda Jennings**. Transform Your Space With Art: Enhance Your Visitor Experience, Strengthen Community Involvement, and Inspire New Works. Canadian Museums Association Conference, 9–12 April, 2018.

**Stranger-Galey, Yukiko**, **Derek Tan**, and **Lesha Koop**. Activate Your Exhibition: From Small Budgets to Big Engagement. *Exhibition Journal* by the American Alliance of Museums, Fall 2018.

**Stranger-Galey, Yukiko**, Jason Woolman, and **Derek Tan**. Constellation of Knowledge: Exploring Different Ways of Knowing Through an Innovative Story-Telling Experience. British Columbia Museums Association Conference, 21–23 October, 2018.

**Stranger-Galey, Yukiko**, Jason Woolman, **Derek Tan**, and Morgan Guerin. Perspectives on Biodiversity: Sturgeon Harpoon Constellation of Knowledge. British Columbia Science Outreach Workshop, 4 March, 2019.





Thanu Eagalle



Alirod Ameri



Philippe Roberge



Thanu Eagalle



Alirod Ameri



Chris DeGroot



SOME OF THE STAFF, CURATORS,  
FACULTY, STUDENTS, AND VOLUNTEERS  
OF THE BEATY BIODIVERSITY MUSEUM



Philippe Roberge



Alirod Ameri



"YOU WILL DEFINITELY LOVE AND  
BE INSPIRED BY THIS MUSEUM"

- Kuthan Celebi



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Cover photography by  
Philippe Roberge and Derek Tan

Beaty Biodiversity Museum  
2212 Main Mall  
University of British Columbia  
Vancouver, BC V6T 1Z4  
phone: 604.827.4955  
fax: 604.822.0686  
email: [info@beatymuseum.ubc.ca](mailto:info@beatymuseum.ubc.ca)  
**[beatymuseum.ubc.ca](http://beatymuseum.ubc.ca)**