



UNIVERSITY OF ALASKA

MUSEUM OF THE NORTH

FY2013

annual report

74,385
total attendance

3,885
attendance at free events

55,677
new database entries

45,327
new specimens

293
new accessions

158
outgoing loans

MUSEUM PROFESSIONAL STAFF

Aldona Jonaitis, Museum Director

Administration

Barbara Ellanna, Fiscal Professional
Emilie Nelson, Executive Assistant
Linda Sheldon, Fiscal Technician

Alaska Center for Documentary Film

Leonard Kamerling, Curator*

Archaeology

Jeff Rasic-Acting Curator
James Whitney-Collection Manager
Scott Shirar-Research Archaeologist
Sam Coffman-Archaeology Technician

Earth Sciences

Patrick Druckenmiller, Curator*
Julie Rousseau, Collection Manager

Education

Jennifer Arseneau, Education & Public Programs Manager
Maïté Agopian, Museum Educator
Chris Cannon, Outreach Specialist
Peggy Hetman, School & Community Liaison

Entomology

Derek Sikes, Curator*

Ethnology and History

Molly Lee, Curator Emerita *
Angela Linn, Senior Collection Manager

Genomic Resources

Kyndall Hildebrandt, Collection Manager

Fine Arts

Mareca Guthrie, Curator*

Fish & Marine Invertebrates

Andres Lopez, Curator*

Herbarium

Steffi Ickert-Bond, Curator*
Jordan Metzgar, Collection Manager
David F. Murray, Curator Emeritus
Carolyn Parker, Research Professional

Mammalogy

Link Olson, Curator*
Aren Gunderson, Collection Manager
Dusty McDonald, Programmer

Operations

Kevin May, Manager

Ornithology

Kevin Winker, Curator*
Jack Withrow, Collection Manager

Production Unit

Roger Topp, Head of Production
Steve Bouta, Exhibitions & Design Coordinator
Tamara Martz, Exhibit & Graphic Designer
Theresa Bakker, Media Coordinator
Hannah Foss, Modeler/Animator
Kelsey Gobroski, Digital Media Producer

Visitor Services

Daniel David, Manager & Retail Buyer
Janet Thompson, Assistant Manager & Tour Coordinator
Marcus Avugiak, Supervisor
Jake Sirevaag, Supervisor

* UAF faculty holding joint appointment

Museum Advisory Council

Linda Anderson
Bill Bailey
Mike Cook
Jennifer Imus
Jim Lund
Drena McIntyre
Sherry Modrow
Jay Ramras
Grace Schaible
Renee Staley
Joseph Usibelli
Richard Wein
Nadine Winters
Kesler Woodward

Friends of the UA Museum

Board Members

Helen Atkinson
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MISSION

The University of Alaska Museum of the North, located on the Fairbanks campus, is the only museum in the state with a tripartite mission of research, teaching and collecting. The museum's botanical, geological, zoological, and cultural collections, primarily from Alaska and the Circumpolar North, form the basis for understanding the local as well as the global past, present and future. Through collection-based research, teaching and public programs, the museum shares its knowledge and collections with local, national and international audiences of all ages and backgrounds.

FRONT COVER: August, 2012 field camp along Isfjord on the island of Spitsbergen in Svalbard, Norway. For the seventh year, the UAMN Earth Sciences Department participated in a collaborative research project with the University of Oslo Natural History Museum in Norway to collect and document Jurassic marine reptiles from this area. Photo by Pat Druckenmiller.

University of Alaska Museum of the North
PO Box 756960
Fairbanks, Alaska 99775
Tel 907.474.7505
Fax 907.474.5469
museum@uaf.edu
www.uaf.edu
www.facebook.com/alaskamuseum
www.twitter.com/alaskamuseum

Museum Director: Aldona Jonaitis
Editor: Theresa Bakker
Designer: Tamara Martz
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The University of Alaska Museum of the North is accredited by the American Alliance of Museums.

Contents



FY13 Overview	Public Outreach	Research & Collections	Selected Publications	Development & Membership	Donors of Record	Gifts to the Collections	Financial Summary	Grants & Contracts
4	6	24	80	83	84	85	86	87

Director's Report from Aldona Jonaitis

This is an extraordinary museum. Every time I wander through the exhibits, visit the labs, and observe a docent program, I rediscover how very special UAMN is. Carol Diebel was director for the first half of the fiscal year covered in this report. She was lucky enough to get a great job at the Bishop Museum in Honolulu, and when she left I took over as Interim Director. It was such a pleasure to return, though there were several challenges I needed to address. The decline in tourism that resulted from the economic downturn had hurt the museum's revenue considerably. As you can see in the financial statements at the end of this report, we depend greatly upon admissions and store revenue to operate. The other challenge had to do with our community. We needed to do more for them.

The first step of our plan was to raise revenue. In April, adult admissions increased from \$10 to \$12 for everyone except Alaska residents. This had an immediate and positive effect. At the same time, we lowered the admissions for Alaskans to \$8, making it easier for our community to visit.

The other initiative designed to meet community needs was an increased attention to families. Over the past several years, we've been organizing more programs for families, as well as including in our special exhibits interactive components designed for younger children. Our Family Days have proved to be very popular. And we changed the name of the Living Room, our second floor place for relaxation, to the Family Room and introduced child-friendly activities.

We've continued to be active in the research and collections areas, as well. Just look at the photos of our adventurous curators and their students, the maps of where they've been, what they've collected and with whom they've worked to get a sense of how much these museum professionals are contributing to our knowledge of the circumpolar north.

Thank you so much for supporting the museum. We couldn't survive without you!

Aldona

Museum Director Aldona Jonaitis shows off our three-star rating (the highest available) in the prestigious *Michelin Must Sees Alaska*.

Photo by Theresa Bakker.



F Y 2 0 1 3 | Public Point of View Overview

Educators' Night

Artisan Expo & Sale

Baskets

Homeschool Day

Events

Special Exhibits

Visitors

ART IN THE MAKING

JULY	AUGUST	SEPTEMBER	OCTOBER
13,668	12,536	7,137	3,534

Halloween



Art in the Making



Open House



Military Appreciation



Spring



Raptors



Sparktacular



Reindeer



Hibernation



Hibernation

and the Science of Cold

DENALI 100 Years On The
LEGACY Mountain

NOVEMBER

1,718

DECEMBER

3,662

JANUARY

3,170

FEBRUARY

3,705

MARCH

6,871

APRIL

2,569

MAY

4,859

JUNE

10,956



Education and Public Programs

Education and Public Programs

INSPIRING STUDENTS

In the 2012-13 school year, about 3,500 K-12 students visited the museum on a field trip. Of those, 1,900 were granted free admission to a docent-guided program, thanks to support from Flint Hills Resources Alaska. An additional 150 people attended the museum's annual homeschool day. More than 1,900 volunteer hours went into delivering these school programs.

THANKING OUR TEACHERS

The first Educators' Night was held in January 2012 to thank teachers for their service. The event was held again in September 2012. So far, this annual reception has reached teachers from more than 30 area schools, showcasing both UAMN and UAF outreach efforts.



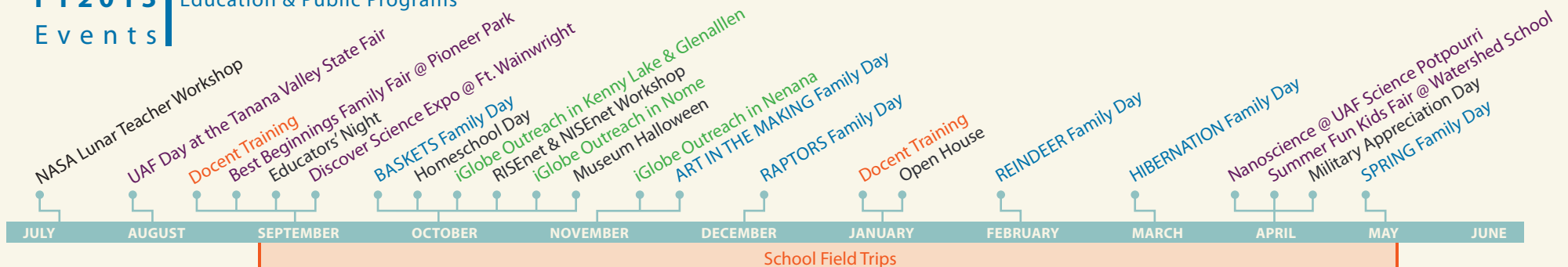
PREVIOUS PAGE: A student examines details of *The Great Alaska Outhouse Experience* while attending a Directed Discovery field trip. Photo by Peggy Hetman.

CLOCKWISE FROM TOP LEFT: A student sketches in the Family Room during independent exploration time on a Directed Discovery field trip. Students view works through "artsopes" during a Directed Discovery field trip. Teachers gather around Education & Public Programs Manager Jennifer Arseneau for door prize drawings during our annual Educators' Night. Photos by Peggy Hetman.

Directed Discoveries sponsored by



FY2013 Education & Public Programs Events



Education and Public Programs

FY13 DOCENTS

Nolin Ainsworth
 Bill Barnes
 Charley Basham
 Lynn Basham
 Maggie Billington
 Pat Cariati
 Matthew Carrick
 Renita Clark
 Leigh Anne Cox
 Barbara Gorman
 Stan Gunter
 Heidi Hatcher
 Marcella Hill
 Barbara Logan
 Ipshita Majhi
 Ryan Matthews
 Jan Moser
 Takae Nakajima
 Courtney Nichols
 Jill O'Brien
 Tish Perkins
 Genevieve Perreault
 Carol Simons
 Leslie Swenson

1,900
 Volunteer Hours

1,911
 students

Fall/Spring

DIRECTED DISCOVERY FIELD TRIPS

88 programs

Add-ons: 21 classes added extra time to visit a special exhibit or another gallery on their own.

1,581
 students

Fall/Spring

EXHIBIT EXPLORATION FIELD TRIPS

72 groups

Add-ons: 21 groups scheduled time to visit the Special Exhibits Gallery.

148
 attendees

HOMESCHOOL DAY

October 9, 2012



Photo by Theresa Bakker

MUSEUM KITS

Momentum from newly created kits in 2012 carried us into 2013 with an active loan program. Now, more than 20 kits containing specimens, artifacts, models, and activities for a wide variety of ages are available for checkout by educators. Kit materials reflect the diversity of UAMN's research collections and utilize materials from our rich teaching collection to help students explore culture, science, art, and natural history.

FY13 Teaching
 Collection Statistics

50
 kit loans

253
 items cataloged

888
 imaged

Education and Public Programs

PARTNERING FOR OUTREACH

Education & Public Programs partnered to offer a free workshop for UAF and other outreach professionals. Delivered through RISEnet by educators from the Oregon Museum of Science and Industry, the focus was on gender and equity issues in programs and exhibits with emphasis on engagement strategies for girls' participation in STEM fields of science, technology, engineering, and mathematics.

The museum also partnered with NASA and UAF Education to offer a Lunar Reconnaissance Orbiter teacher workshop and professional development credit opportunity for middle and high school teachers.

And, working with the Alaska Native Knowledge Network, the education department hosted and presented to Yukon-Koyukuk school district teachers during the Interior Academy for Culturally Responsive Schools.

WORKSHOPS

UAF course ED595: NASA Lunar Reconnaissance Orbiter Teacher Workshop
July 30-Aug 3, 2012

RISEnet & NISEnet Workshop
October 25-26, 2012

EYES ON THE STARS AND EARTH

Outreach Specialist **Chris Cannon** traveled to Glenallen, Kenny Lake, Nome, and Nenana to teach students about climate change and present information on the portable projection globe during science nights for the community. As the Eyes on the Arctic project concluded, Cannon moved on to full-time graduate studies at UAF. Following up on his work in planetarium outreach for the museum, his research focus is on documenting Alaska's indigenous astronomy.

THE SMALLEST SCIENCE

UAMN joined NISEnet, a national community of researchers and informal science educators dedicated to fostering public awareness, engagement, and understanding of nanoscale science, engineering, and technology. The education department hosted a workshop for outreach educators and were awarded a NANODays kit. Activities were presented at the Science Potpourri in collaboration with UAF nanoscientists from the Advanced Materials Lab.



648
people reached

ABOVE: Chris Cannon speaks to students during an outreach presentation with the iGlobe. Photo by Kyle Campbell.

BELOW, LEFT TO RIGHT: Examining magnified images in 3D to learn about nanoscale research tools. Education intern Mallory Jones shows how computer hard drives, one of the most common applications of nanotechnology, store information during UAF's Science Potpourri. Photos by Jennifer Arseneau.



Education and Public Programs

COMMUNITY PARTNERSHIPS

The annual tradition of offering community awards at the Interior Alaska Science Fair continued this year. Certificates and free museum passes were awarded to six students for outstanding presentation and interpretation of a museum collection theme. Alaska related themes are required and student collections of specimens and/or observations of natural and cultural history phenomena are important.

Museum passes available for free checkout from the Noel Wien, North Pole branch, and Fort Wainwright libraries continued to be popular. More than 200 people used the passes to access the museum.

Education & Public Programs participated in several community events, including the Tanana Valley State Fair, Best Beginnings Family Fair, UAF Science Potpourri, Discover Science Expo at Ft. Wainwright, and Summer Fun Kids Fair.



CLOCKWISE FROM TOP LEFT: Visitors make track rubbings with Museum Educator Maïté Agopian during the Discover Science Expo at Fort Wainwright. Photo by Jennifer Arseneau. Kids demonstrate their best "Otto" impersonation during the Best Beginnings Family Fair at Pioneer Park. Photo by Peggy Hetman. UAMN community science fair awards are chosen from a vast array of student projects. Photo by Jennifer Arseneau.





Education and Public Programs

FAMILY DAYS – PLAY AND LEARN TOGETHER

UAMN Family Days allow the whole family to connect with museum research and collections. Children and adults are invited to create crafts, try out science experiments and cultural activities, ask the experts, and explore galleries.

Family Days are proudly sponsored by



J. Arseneau

131
attendees

BASKETS family day

October 6, 2012

Kids and adults created baskets of all kinds, searched for baskets in the galleries, saw unique artifacts from the collections, and created birch bark rings.

In collaboration with UAMN Ethnology & History



J. Arseneau

168
attendees

ART IN THE MAKING family day

November 17, 2012

Families explored the special exhibit, created art for the lobby and tried printmaking. Featured exhibit artists Glen Simpson, Sara Tabbert, Adam Ottavi, and Teresa Shannon provided demonstrations.

In collaboration with UAMN Fine Arts

RAPTORS family day

December 8, 2012

Guests hunted in the gallery as a bird of prey, saw museum bird specimens being prepared, and dissected owl pellets.

In collaboration with UAMN Ornithology



J. Arseneau

95
attendees

REINDEER family day

February 16, 2013

Attendees learned to lasso and played reindeer games from Alaska and Kamchatka. They made their own antlers and saw artifacts from the collections made from caribou & reindeer.

In collaboration with UAF Anthropology and the Reindeer Research Program



J. Arseneau

199
attendees



J. Arseneau

360
attendees

HIBERNATION family day

March 9, 2013

Visitors investigated the science of cold, tried snowshoes, saw mammal specimens from the collections, and explored the special exhibit.

In collaboration with UAMN Mammalogy and the UAF Institute of Arctic Biology



M. Agopian

138
attendees

SPRING family day

May 4, 2013

Guests made sunprints, constructed field notebooks, created group sidewalk chalk art with artist Gail Friday, and saw plant specimens from the Herbarium.

In collaboration with UAMN Herbarium

Education and Public Programs

FAMILY ROOM

Education & Public Programs developed activities and worked to update the museum's Living Room into the new Family Room, a place to be curious. New hands-on elements for children and adults were added to encourage creative processes and to highlight the connection between curiosity and collection and research pursuits at UAMN.

Touchable materials, toys, puzzles, and books encourage quiet investigation and intergenerational discovery time. The Family Room offers a low stress environment for adults to relax and all ages to explore.

be curious



SPECIAL EXHIBITS

Art in the Making

May 12-December 1, 2012

Education & Public Programs created an in-gallery "studio" for children to explore and create art while visiting the exhibit.



Hibernation and the Science of Cold

December 15, 2012-May 12, 2013

The department consulted on and planned kinesthetic elements including a climb-in bear den. An activity guide for exploration of the exhibit was also developed.



Denali Legacy

Opened May 18, 2013

In addition to knot tying and other physical interactives, department staff researched and created a historically referenced base camp for imaginary play within the exhibition and created a family guide for exploration.



TOP TO BOTTOM: Children investigate color, line, and form in the interactive art studio designed by the education department for the *Art in the Making* exhibit. Kids explore the bear den within the *Hibernation* special exhibit. A young visitor uses snow goggles in the *Denali Legacy* special exhibit. Photos by Theresa Bakker.

Education and Public Programs

STAFF LISTING

Jennifer Arseneau

474 6948

Education & Public Programs Manager

j.arseneau@alaska.edu

Maité Agopian

474 5602

Museum Educator

msagopianplatttet@alaska.edu

Peggy Hetman

474 5360

School & Community Liaison

mahetman@alaska.edu

Chris Cannon

Outreach Specialist

cmcannon2@alaska.edu

STUDENTS

Mallory Jones

Terry P. Dickey Education Internship



ABOVE, CLOCKWISE: Volunteer Linda Witt tests a “blubber hands” experiment during Hibernation Family Day. Photo by Jennifer Arseneau. Reindeer games are led by Museum Educator Maité Agopian during Reindeer Family Day. Photo by Jennifer Arseneau. Docents celebrate the end of a school year during an appreciation lunch. Photo by Peggy Hetman. School & Community Liaison Peggy Hetman helps a child transform into a bear during UAF Day at the Tanana Valley State Fair. Photo by Theresa Bakker.



Production Unit

Exhibits – Design – Media

DIGITAL MEDIA EXPANSION

In April, the funding of several new projects allowed the Production Unit to hire two digital media specialists. **Hannah Foss** arrived at the museum in 2009 to illustrate dinosaurs and marine reptiles for the earth sciences department. In 2012, she collaborated on vole models and animations for the special exhibit *Hibernation and the Science of Cold* before being hired as a digital modeler and animator. **Kelsey Gobroski**, a former herbarium student assistant, consulted the museum's collections for her undergraduate thesis. She developed broadcast journalism and multimedia skills at KTOO News and 360 North in Juneau before returning to Fairbanks.

BELOW: Kelsey Gobroski, left, and Hannah Foss share an office and a passion for the ways digital media can enhance the museum experience. They joined the Production Unit in May 2013.

Photos by Theresa Bakker.



PREVIOUS PAGE: As part of the promotions for our special exhibit *Hibernation and the Science of Cold*, we crowdsourced more than 400 photos of Otto the Bear, the popular specimen that stands in front of the Gallery of Alaska. The Production Unit used the snapshots spanning almost 60 years to create a montage of Otto and produce a banner for the Hibernation exhibit.



TOP TO BOTTOM: Guest Curator Brian Barnes checks on the hibernating ground squirrel. Kids discover how a wood frog freezes for the winter in a tabletop interactive video.

Photos by Theresa Bakker.

Hibernation

and the Science of Cold

Developed with UAF Institute of Arctic Biology Director Brian Barnes and installed in the Special Exhibits Gallery from December 2012 through April 2013, this exhibit examined the strategies arctic animals use to survive when it gets very cold. Research into hibernation and other winter survival strategies helps us understand seasonal health effects on humans and improve medical technologies.

After the exhibit closed, components were installed in the museum's Family Room and the Education Center. Footage of frogs filmed for the exhibit will be used in a graduate research paper.



Live Mammals on display



FPS (first-person scavenger) video game

Developed in partnership with



DENALI LEGACY 100 Years On The Mountain

In 1913, a group of men used their strength, intelligence, and fortitude to climb to the peak of Denali without the aid of GPS, satellite phones, or high tech gear. This exhibit, which opened in May 2013, examines the journey through the original journals of the climbers who made the first ascent and explores how their accomplishment impacts those who climb the mountain today.

Guest Curator **Angela Linn** and digital media team members **Theresa Bakker** and **Roger Topp** recorded a series of interviews with climber descendants in Fairbanks and Anchorage and produced a film included in the exhibit. Exhibit & Graphic Designer **Tamara Martz** designed and installed five street pole banners featuring the climbers profiled in the exhibit. Topp and Exhibition & Design Coordinator **Steve Bouta** designed and built a five-foot relief model of Denali and surrounding peaks, onto which they projected an animated chronology of 100 years of climbing on the peak. Bakker also designed a social media campaign called Share the View to solicit visitors' best photographs of the mountain.



Digitally projecting onto a relief map



Novel use of blogs and social media for exhibit research and publicity

Developed in partnership with



TOP TO BOTTOM: Head of Production Roger Topp works on the technology used in the special exhibit. Exhibition & Design Coordinator Steve Bouta fitted hundreds of pieces of plywood together to make the model of Denali. Guest Curator Angela Linn talks to reporter Bronwyn Saito from KTUU Anchorage about the first ascent. Student Assistant Nathan Feemster and Exhibit & Graphic Designer Tamara Martz let the laser level guide their installation of the vinyl ascension line. Photos by Theresa Bakker.



SMALL PROJECTS AND INSTALLATIONS

Installed videos in the Rose Berry Alaska Art Gallery of five Fairbanks artists from the special exhibit *Art in the Making*.

Installed *Crossing* by Wendy Croskrey and an untitled steel piece by former UAF faculty member Glenn Dasher on the Art Bridge Sun Wall.

Installed the Subnivean Vole activity, the bear den, and the moose silhouette from the special exhibit *Hibernation and the Science of Cold* in the Education Center.

Replaced fiber optic and fluorescent lighting with LED lighting in the *Art, Magic, Religion* case in the Rose Berry Alaska Art Gallery and the Firearms case in the Gallery of Alaska.

Installed labels in the Gold Mining case in the Gallery of Alaska.

Prepared the museum's 2010 special exhibit *Then and Now: The Changing Arctic Landscape* for travel. The exhibit is traveling throughout the U.S. on a six-venue tour that runs through the end of 2015. The Burke Museum of Natural History and Culture is managing the tour.

Arranged for carving of the museum's annual ice sculpture *Winter Dream* by artists Ronald Daanen, Ina Timling, and Martha (Tako) Raynolds.

With Senior Collections Manager **Angela Linn**, advised Renee Blahuta of the Tanana Historical Society on the installation of stove pipe and furniture provisions for the Gould Cabin at the Morris Thompson Cultural and Visitors Center.

With Senior Collections Manager Angela Linn, advised the Cold Climate Housing Research Center on displaying and conserving a collection of hand-made tools from a homestead on the Kobuk River.

Steve Bouta served as a member of the UAF Campus Landscape and Outdoor Art Committees.

DIGITAL MEDIA PROJECTS

- Began *Polar Voices*
- Produced films for the *Hibernation* Exhibit
- Filmed in-depth interviews with seven family members and experts of the 1913 Stuck-Karstens Denali Expedition
- Continued production work on the animated film *Arctic Currents*, to be completed in Summer 2014
- Arctic Currents blog: arcticcurrents.wordpress.com

NEW ONLINE VIDEOS (You Tube)

- 2012 Artisan Expo – Lucy McCarthy (Oct 5, 2012)
- Sikuliaq: Explore (Oct 8, 2012)
- Frozen Wood Frogs (Dec 3, 2012)
- How Will You Survive (Dec 3, 2012)
- Hibernation in the Making (May 28, 2013)

PRESENTATIONS AND TRAVEL

Bakker T. October 2012. Social Media 101 presentation. Museums Alaska/Alaska Historical Society 2013 Joint Annual Conference. Sitka, AK.

Topp R. October 2012. Filming for *Arctic Odyssey*. Sikuliaq launch. Marinette, WI.

Topp R. November 2012. *Hibernation and the Science of Cold* presentation. Fairbanks Rotary. Fairbanks, AK.

Topp R. November 2012. *Arctic Currents* presentation. Coastal Marine Institute. Fairbanks, AK.

Bakker T, A Linn, and R Topp. January 2013. Filming for *Denali Legacy*. UAA and Anchorage Museum. Anchorage, AK.

Topp R and A Linn. March 2013. *Denali Legacy* presentation. Tanana Valley Historical Society. Fairbanks, AK.

Bouta S. March 2013. *Arctic Odyssey* exhibit object selection. Alaska SeaLife Center. Seward, AK.

Topp R. May 2013. Research for *Arctic Currents*. Spring Whaling. Barrow, AK.

Production Unit | Exhibits – Design – Media

PUBLICATIONS AND GRAPHIC DESIGN PRODUCTS

With Senior Collections Manager **Angela Linn**, designed four interpretive panels for the Kolmakofski Block House.

With Curator of Fine Arts **Mareca Guthrie**, designed the folio to accompany the *Art In The Making* installation.

With Education & Public Programs Manager **Jennifer Arseneau**, developed the tri-fold family guide for the *Denali Legacy* special exhibit, Family Day promotional materials, and redesigned the School Program handout as a tri-fold with inserts promoting Educators' Night and Museum Kits.

With Visitor Services, designed new summer admission signs and graphics for the Museum Store sale and Toy Drive.

Promotional graphics included ads for the Alaska, Alaska Airlines, Where, and Alaska Railroad magazines, Bearfoot Guides, and the Fairbanks Convention and Visitors Bureau, and ads for the museum's Military Appreciation Day, Open House, and UAF's Welcome back campaign.

Other graphics design projects included new UAMN business cards; a new, more flexible format for the museum's Annual Report; products for the museum's Otto Campaign and marketing survey; and replacement library cards for the Noel Wien Library and Ft. Wainwright Library.

GRANTS AWARDED:

Polar Voices is a series of 12 radio episodes with complementary internet media produced over four consecutive years. Using natural sound, recorded elements, interviews gathered on location, *Polar Voices* is an adventure radio series that explores climate change through expertise available through the PoLAR Climate Change Education Partnership. The project is funded by the NSF through Columbia University. (\$113,728)



COMMUNICATIONS

Telling the story of the museum expanded this fiscal year with the introduction of a tumblr account for features from the museum, along with several project blogs. We told the story of an exhibit-in-the-making with our *Denali Legacy* blog, featuring posts about the arrival of artifacts to the museum and the research efforts of Guest Curator Angela Linn.

2,500 



2,000  followers



Production Unit | Exhibits – Design – Media

F Y 2 0 1 3 | Production Unit Overview



STAFF LISTING

Roger Topp 474 6985 Head of Production
rmtopp@alaska.edu

Steve Bouta 474 6953 Coordinator of Exhibitions & Design
sfbouta@alaska.edu

Tamara Martz 474 6951 Exhibit & Graphic Designer
tfmartz@alaska.edu

Theresa Bakker 474 6941 Media Coordinator
tabakker@alaska.edu

Hannah Foss 474 1197 Modeler/Animator
hrfoss@alaska.edu

Kelsey Gobroski 474 1197 Digital Media Producer
kagobroski@alaska.edu

STUDENT ASSISTANTS

Nathan Feemster
Eric Henderson



CLOCKWISE FROM TOP LEFT: A frame from the animated film *Arctic Currents* (currently in production) about bowhead whales. Student Assistants Yasu Izaki and Eric Henderson help replace a piece in an art gallery display cabinet. Photo by Theresa Bakker. Media Coordinator Theresa Bakker records some of the voices featured in the original first person eater video game for the special exhibit *Hibernation and the Science of Cold*. Photo by Roger Topp. A frame from the aurora borealis planetarium film *Solar Storm*.



Visitor Services

Museum Store – Admission – Tours – Events

Visitor Services

THE YEAR-IN-REVIEW

Operating the Visitor Services & Retail Operations Department consists of running the Museum Store, museum admission and information counter, auditorium movies, event rentals, and gallery security. Just as we have done for the last few years, our department continued to focus on employee training and customer service.

Our total department consisted of 22 people:

- 4 full time staff
- 18 university students and temporary employees

We had some very exciting changes this year. On April 1, 2013, after 7 ½ years we changed our admission price structure for visiting the museum. Even though we had to increase the price of our general admission, we were able to decrease the price of admission to Alaska residents and active Alaska military families. After starting this exciting discount program for Alaskan families late in the fiscal year, we saw a significant increase in local involvement at the museum for the remainder of FY13.



PREVIOUS PAGE: Visitor Services Supervisor Jake Sirevaag takes photos during the 2012 Halloween at the Museum, our biggest ever with almost 1100 visitors. Photo by Theresa Bakker.

CLOCKWISE FROM TOP LEFT: The installation *My Grandfather's Totem* is one of many pieces visitors can examine on the museum grounds. The UAF grounds crew keeps the museum in flowers all summer long. Earth Sciences Curator Pat Druckenmiller demonstrates how dinosaur teeth work during the museum's 2013 Open House in January. Photos by Theresa Bakker.

Visitor Services

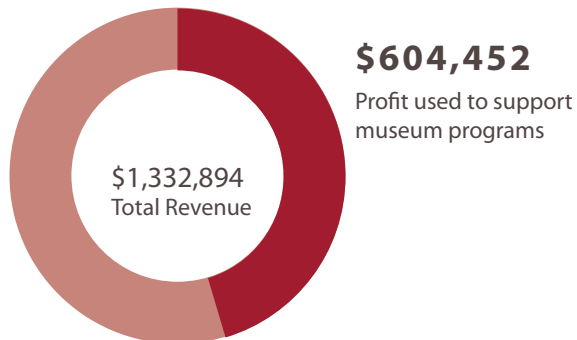
BY THE NUMBERS

Admission revenue, including our movies, audio tour, and event rentals for the year, was \$599,622. Our museum store revenue increased substantially to \$733,272. Total visitation in FY13 grew to 74,385. Other than our very busy summer season, we saw a dramatic increase in visitation during December, January, and March due to a strong winter tourism season.

The Visitor Services & Retail Operations total departmental income this year was \$1,332,894. After all expenses were accounted for, 45% of the department's total income, or \$604,452, was used to support museum programs for education, exhibits, collections, and research.



TOTAL MUSEUM REVENUE



VISITATION

Summer months:

May, June, July, August, and September: 49,156 total visitors
Decreased over previous year 1,154

Winter months:

October, November, December, January, February, March, April: 25,229 total visitors
Increase over previous year 2,627



Visitor Services

EVENTS

The museum hosted 24 events during the year, which included the opera *Auksalaq*, the Artisan Expo & Sale and our annual Halloween at the Museum.

There were five museum events with free admission in FY13.

During these events, 3,885 visitors enjoyed the museum at no cost.

Thank you so much for sharing your time with us.

VISITOR SERVICES STAFF

Daniel David Manager of Visitor Services & Retail Operations
474 5137 dsdavid@alaska.edu

Janet Thompson Tour Planning and Event Rentals
474 6640 jathompson@alaska.edu

Jake Sirevaag Supervisor
jmsirevaag@alaska.edu

Marcus Avugiak Supervisor

VISITOR SERVICES ATTENDANTS

Claire Ashmead
Codi Burk
Chelsey Curry
Lance Ellanna
Jed Ellis
Brittany Jackson
Chelsea Jackson
Ashley Jacobs
Mallory Jones

Reid Goneau
Ashley Paris
Tanya Shostik
Morgan Simpson
Jenna Steffes
Baily Stevenson
Mariah Ver Hoef
Jayce Williamson
Gage Wright



CLOCKWISE FROM TOP LEFT: Visitors explore specimens in the mammal collection during the 2013 Open House. Photo by Theresa Bakker. Costumed superheroes and monsters stop in the lobby for a quick photo before exploring Halloween at the Museum. Photo by Theresa Bakker. Earth Sciences Collection Manager Julie Rousseau digs for dinosaur bones in a plaster jacket during the 2013 Open House. Photo by Theresa Bakker. Checking out the fish collection during one of the museum's public events. Photo by Theresa Bakker. Longtime visitor services team members pose for a photo before the museum opens for business. From left: Jake Sirevaag, Lance Ellanna, Marcus Avugiak, Morgan Simpson, and Janet Thompson. Photo by Dan David.



Research and Collections

Alaska Center for Documentary Film



Alaska Center for Documentary Film

This year the focus of the Alaska Center for Documentary Film has been on implementing a new long-term collection preservation strategy. With a collections assessment grant from the National Endowment for the Humanities, the Film Center invited a group of preservation specialists to evaluate the film, audio, and video collections and propose a strategy for their long term preservation. This is particularly critical as the ACDF develops plans for greater digital access to collections. The new preservation strategy should be fully implemented by 2016.

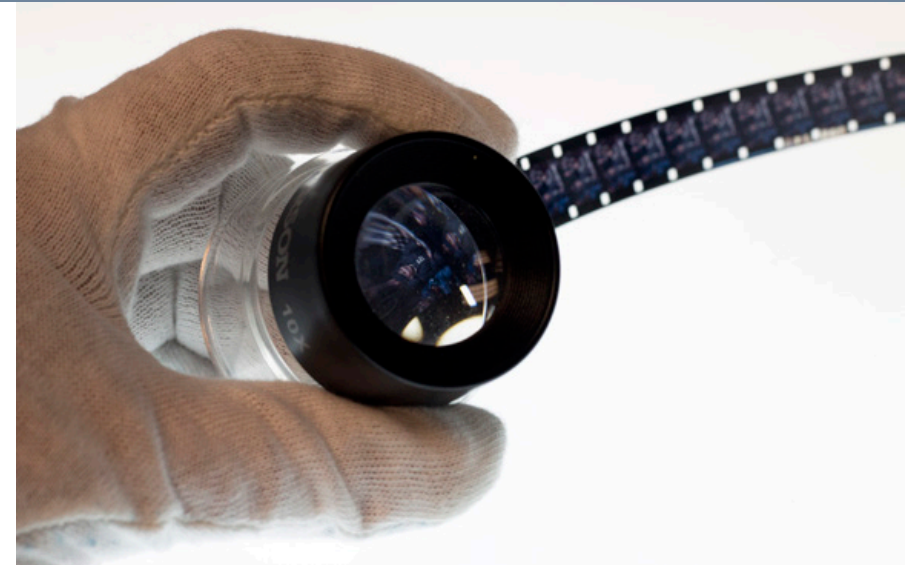
TANZANIA FIELD SCHOOL

For the third field season, the Film Center, in collaboration with San Francisco State University, offered students advanced training in ethnographic film and fieldwork. Located in the rural district of Kibaya, Central Tanzania, students of the Tanzania Field School in Applied Visual Anthropology worked with neighboring Maasai communities to make social and health intervention films in the local language. The student films include a case study of a family confronting domestic abuse issues and a study of the coming of age circumcision ceremonies for Maasai boys. Both films are designed to be used as educational tools in Maasai communities.

PREVIOUS PAGE: A Maasai adult education class at the Tanzania Field School in Applied Visual Anthropology. Photo by Len Kamerling.

CLOCKWISE FROM RIGHT: The work of film preservation is completed frame by frame.

Photo by Len Kamerling. Len Kamerling instructs Field School student Jessica Beltman in Central Tanzania. Photo by Peter Biella. A Maasai boy in Kibaya, Tanzania. Photo by Alexandra Kamerling. Original negatives for the film *Drums of Winter*. Photo by Len Kamerling.





Alaska Center for Documentary Film

INTERNATIONAL COLLABORATIONS

Now in its fourth year, the Maasai Migrants and the Global Indigenous Migration Project has produced a series of collaborative, culture specific health intervention videos in the Maasai language. Called “trigger films,” these videos provide critical information about HIV/AIDS and the disease’s link to urban migration. Typically, trigger films present an incomplete story arc about families dealing with HIV related issues, which is completed in discussion with a trained facilitator. This model for community health action has been very successful in regions with low literacy rates and inadequate infrastructure.

Plans to expand the program to other indigenous areas, including in the North, are currently underway. A new film *Kibaya Conversations*, which is currently in production, documents the trigger film and facilitation process. Work during the field season of 2014 will bring the East African segment of this project to completion.

CURRICULUM DEVELOPMENT

For the past year, the Alaska Center for Documentary Film has been developing a new curriculum for teaching visual anthropology and ethnographic film. This curriculum is about seeing the world from the cultural perspective of others and the approaches that anthropologists and filmmakers have taken in the making, interpretation, and use of film. It brings students into the core debate over the use and ethics of contemporary ethnographic film practices.

STAFF LISTING

Leonard Kamerling	Curator
474 7437	ljkamerling@alaska.edu
Sarah Betcher	Film Editor and Research Associate

RESEARCH ASSOCIATES AND AFFILIATES

John Luther Adams
Takashi Sakurai
Kathy Turco

BELOW, LEFT TO RIGHT: A frame from the film *Changa Revisited: A Maasai Family and the Coming of HIV* by Peter Biella and Leonard Kamerling. Photo by Peter Biella and Len Kamerling. Jessica Beltman and Massai collaborator Angela Mollell work on the translation of a scene. Photo by Alexandra Kamerling. Research Associate Sarah Betcher in the film center editing room. Photo by Len Kamerling.



University Instruction

UAF COURSES

The museum's curators serve joint appointments as faculty members at the University of Alaska Fairbanks. During FY12, museum curators and other staff taught the following courses:

ART 200XH – Honors Aesthetic Appreciation

ART 200X – Aesthetic Appreciation

BIOL 195 – Field Entomology

BIOL 195 – Introduction to Alaska Graminoids

BIOL 644 – Advanced Topics in Evolution:
The Genomics of Adaptation

BIOL 615 – Systematics and Comparative Biology

EBOT 100 – Introduction to Ethnobotany

ED 595 – NASA Lunar Workshop

ED F595P – Week in the Woods

ENG 488 – Dramatic Writing

ENG 688 – Writing for Film and Television

FISH 427 – Ichthyology

FISH 490 – Experiential Learning: Fisheries Internship

FISH 497 – Fisheries and Biology Independent Studies

GEOS/BIOL 486/686 – Vertebrate Paleontology

GEOS F488 – Undergraduate Research

MRAP 288/488 – Ornithology

MRAP 486 – Museum Research Apprenticeship

STUDENTS

Archaeology

Student Employees:

Fawn Carter

Stormy Fields

Allie Peltó

Cassidy Phillips

Student Researchers:

John Blong

Fawn Carter

Aimee Ely

Pat Hall

Gilbert Qu

Heather Smith

Gerad Smith

Natasha Slobodina

Mike Wendt

Angela Younie

Earth Sciences

Erica Blake

Alex Edgar

Hannah Foss

Hiro Mori

Rebecca Parish

Danielle Serratos

Meghan Shay

Education

Mallory Jones

Entomology

Undergraduate:

Samantha Burd

Elizabeth Lofton

Sarah Meierotto

Ian MacDougall

Trista Saunders

Graduate:

Casey Bickford

Brandi Fleshman

Jill Stockbridge

Ethnology & History

Mahriene Ellanna

Kirsten Olson

Morgan Simpson

Fine Arts

Karina Gomez

Fishes

Undergraduate:

Lauren Bailey

Ethan Buchinger

Rachel DeWilde

James Stribrny

Graduate:

Thaddaeus Buser

Matthew Campbell

Emily Lescak

Robert Marcotte

Veronica Padula

Joshua Ream

Herbarium

Adam Bentele

Monte Garrouette

Stephany Jeffers

Jordan Metzgar

Zachary Meyers

Margaret Oliver

Sydney Rosenbalm

Lisa Strecker

Mark Winterstein

Mammalogy

Krystal Fales

Mallory Jones

Kelly May

Takae Nakajima

Jon Nations

Rachel Noriega

Shelby Surdyk

Ornithology

Kyle Campbell

Jack Withrow

Production

Nathan Feemster

Eric Henderson





Research and Collections

Archaeology



Archaeology

OVERVIEW

During this fiscal year, the Archaeology Department continued several field research and collection rehousing projects while creating new partnerships and establishing new projects. Field work was carried out in three main regions: the Brooks Range in northwestern Alaska, the Central Alaska Peninsula in Southwest Alaska, and Interior Alaska. Field projects were carried out in cooperation with the National Science Foundation, the State of Alaska, the National Park Service, the US Fish and Wildlife Service, the Bureau of Land Management, US Army Alaska, and the Alaska Summer Research Academy at the University of Alaska Fairbanks. Collections projects in the Archaeology Department were funded by the Bureau of Land Management, the US Army Alaska, the US Forest Service, the State of Alaska, and the Design and Construction Department at the University of Alaska Fairbanks.

PREVIOUS PAGE: UAMN Staff Archaeologist Scott Shirar excavating a test pit at the lakeside site in Noatak National Preserve, Alaska. Photo by Eric Carlson.



OUT IN THE FIELD

FY13 marked the final year of fieldwork for two multi-year projects in the Brooks Range. Excavation was finished at the Raven Bluff site through a grant from the National Science Foundation and in cooperation with the Bureau of Land Management. Raven Bluff contains the oldest human-created faunal assemblage from Arctic Alaska which dates to 11,000 years ago. The final year of fieldwork was also carried out for the Lakeside Village Sites Project in Noatak National Preserve in the central-western Brooks Range. Test excavations were completed and additional rare petroglyphs were documented.

In cooperation with the National Park Service, the US Fish and Wildlife Service, and the State of Alaska, the third and final year of fieldwork took place for the Chignik-Meshik Rivers Region Archaeological

Reconnaissance Project on the Central Alaska Peninsula.

The last year of fieldwork was the most productive, including the discovery of the largest prehistoric village site on the entire Alaska Peninsula, which includes hundreds of house and storage features. During the final year, 37 new sites dating between 500 and 4000 years old were documented.

In July 2012, the department led an archaeology module for UAF's Alaska Summer Research Academy for the third time in the last four years. Six high school students joined an excavation co-sponsored by the US Army Alaska at Big Lake on Ft. Greely near Delta Junction. Staff also assisted with the excavation of the historic Mary Louise Fork Cabin near Central, Alaska in cooperation with the Bureau of Land Management.

ABOVE: Archaeology field crew and gear waiting to get picked up on the beach at Chignik Lake Village on the Central Alaska Peninsula. Pictured from left to right: James Jordan (Antioch University), Stormy Fields, Lori Hansen, and Fawn Carter (all UAMN).

LEFT: Loukas Barton (University of Pittsburgh) and Lori Hansen (UAMN) returning to camp at Wildman Lake on the Central Alaska Peninsula. Photos by Scott Shirar.

37
new sites



Archaeology

CARING FOR COLLECTIONS

Collections-based work during FY13 focused on a combination of rehousing existing collections and incorporating newly-accessioned material. A collections rehousing project funded by the Bureau of Land Management upgraded artifacts from St. Lawrence Island, the Tangle Lakes Archaeological District, and the Lisburne Site in the central Brooks Range.

The US Forest Service provided funding to pay curation fees for the transfer of the Ground Hog Bay 2 collection, which is from a site located in southeast Alaska excavated during the 1960s and 1970s. People lived at the Ground Hog Bay 2 site during various time periods and the oldest habitation took place over 10,000 years ago.

The US Army provided curation fees to incorporate numerous collections from archaeological sites located on Army-managed land in Alaska. Funding was also provided by UAF's Design and Construction Department to cover the labor and supply needed for rehousing and relocating 300 cubic feet of archaeological collections displaced by the construction of the Murie Building.

In the news

Several umiak pieces from the museum's archaeological collection have been dated at 1,000 years old, the oldest skin boat assembly in the Circumpolar North.

Jenya Anichenko identified the pieces during a trip to Fairbanks in early 2012 to work with the Birnirk collection as part of her research on circumpolar open skin boats. She is a researcher based at the Anchorage Museum.

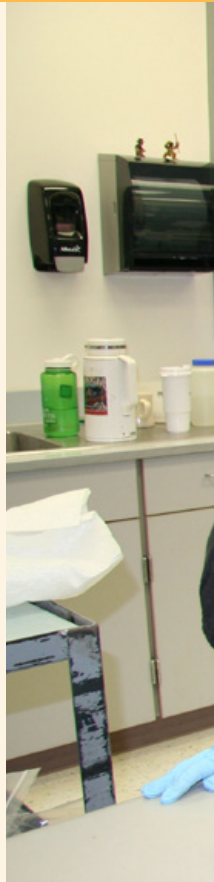
"Skin boats persevere in the archaeological record, but usually as unrelated fragments of the frame," Anichenko said. "Skin boat assemblages are extremely rare in the circumpolar archaeological record. These pieces are unique because they all belong to the same boat and are 400 years older than what we've seen so far."

The importance of the Birnirk archaeological site near Barrow was immediately recognized when it was discovered in the 1930s, but a full analysis was never published. The site was first excavated by James Ford of the United States National Museum and later by a Harvard University expedition directed by Wilbert Carter. Several boat finds were mentioned in Ford's publication, but Anichenko wanted to learn more.

"Skin boats, umiaks in particular, have always been important for the Inupiaq people," she said. "Boats were the most technologically advanced devices in all of the indigenous arctic societies. Umiaks contain a wealth of meanings, from arctic seafaring and subsistence to social organization and spirituality. These wooden fragments are a Da Vinci code of the arctic past."

Working with these fragments is similar to forensic research, she said. "You are attempting to understand thousands of years of technical evolution on the basis of one piece of the puzzle."

By Anichenko's count, the Birnirk's umiak collection includes 30 wooden fragments, ranging from keel timber and bottom cross pieces to small fragments of baleen lashing. A National Science Foundation grant allowed for radiocarbon dating of three samples,





Archaeology



one side rib and two of the umiak's bottom crosspieces. The shortest crosspiece likely represents the cross-bottom timber nearest to the stern or stem post. The artifact is embellished with three oval ivory inlays held in place with small ivory pins.

"These lack an immediate functional meaning, which implies they were used as decoration or had ritual significance," Anichenko said.

The Birnirk materials excavated by Carter are owned by the US Navy and were housed for decades at the Harvard Peabody Museum. In 2011, the Carter collections returned to Alaska and are presently curated at the University of Alaska Museum of the North.



Scott Shirar, the museum's research archaeologist, said the return of this collection to Alaska has tremendous potential. "The level of preservation at the Birnirk site was tremendous," he said. "Many of the organic artifacts usually not preserved in the archaeological record were preserved at this site."

Organic artifacts, such as wooden boat pieces or other tools made from fur, leather, ivory, or bone, tend to disappear over the course of a couple thousand years. The standard clues used to piece together the past usually come from more durable stone artifact types.

Shirar said the wide range of artifacts and material types in this collection will support a variety of interests. Anichenko's work on skin boats is just the beginning.

"Now that this collection is back in Alaska and at the UA Museum of the North, researchers have the opportunity to access many untold stories just waiting to be discovered."

ABOVE, LEFT TO RIGHT: Researcher Jenya Anichenko poses with the umiak pieces discovered in the Birnirk collection at the University of Alaska Museum of the North and dated at 1,000 years old, the oldest skin boat assembly known in the Circumpolar North. One of the umiak pieces is embellished with three oval ivory inlays held in place with small ivory pins. Jenya Anichenko says they were probably decorative or significant. Photos by Theresa Bakker.



Archaeology



ARCHAEOLOGY STAFF

Jeff Rasic

Acting Curator of Archaeology

James Whitney

474 6943

Collection Manager

jwwhitney@alaska.edu

Scott Shirar

Research Archaeologist

sjshirar@alaska.edu

Sam Coffman

Archaeology Technician

Fawn Carter

Curatorial Assistant

Lori Hansen

Curatorial Assistant

Roberta Eastwood

Curatorial Assistant

Tristan Walsh

Curatorial Assistant

RESEARCH ASSOCIATES AND AFFILIATES

Claire Alix

Jenya Anichenko

Julie Esdale

Erica Hill

Christopher Houlette

Howard Smith

ABOVE, LEFT TO RIGHT: Field camp on a clear day at Wildman Lake on the Central Alaska Peninsula. Veniaminof volcano in the background. Photo by Scott Shirar. Thick swarm of mosquitos at the UAMN archaeology field camp in Noatak National Preserve, Alaska. Photo by Eric Carlson.



Archaeology

REPORTS

Shirar S. 2013. Archaeological survey: Chignik-Meshik Rivers region, Alaska. A Report on a 2012 USNPS CESU Agreement.

Coffman S, S Shirar, and J Whitney. 2012. FY12 Report on curation of Archaeological Collections under the Cooperative Agreement with the Bureau of Land Management.

CONFERENCE PRESENTATIONS

Shirar S. 2013. 3000 Years of fishing technology from the Central Alaska Peninsula. Paper presented at the Annual Meeting of the Society for American Archaeology. Honolulu, HI.

Barton, L, **S Shirar, J Rasic,** and J Jordan. 2013. Human Settlement of the Central Alaska Peninsula: An Index of Landscape Ecology and Volcanism. Paper presented at the Alaska Anthropological Association. Anchorage, AK.

Jordan, J, L Barton, **S Shirar,** and **J Rasic.** 2013. The Wildman Lake-Ocean River Archaeological District: A New Record of Long-Term Human Adaptation to Endemic Volcanism and Environmental Change on the Central Alaska Peninsula. Paper presented at the Alaska Anthropological Association. Anchorage, AK.

Carter, F and C Houlette. 2013. Revisiting Kukulik: A Languishing Collection Meets Modern Methodology. Paper presented at the Society for American Archaeology. Honolulu, HI.

Coffman, S, J Esdale, C Houlette, **L Hansen,** and **J Whitney.** 2013. From the Field to the Museum-Mentoring High School Students in Archaeology and Museum Studies. Paper presented at the Alaska Anthropological Association. Anchorage, AK.

Coffman, S and **J Rasic.** 2013.

Rhyolite Sourcing in Central Alaska-Preliminary Results. Poster presented at the Alaska Anthropological Association. Anchorage, AK.

Hansen, L. 2013. Museum Mysteries: Two Unique Lamps. Poster presented at the Alaska Anthropological Association. Anchorage, AK.

Thakar, HB and **J Rasic.** 2013. Lessons Learned: Reflections on the Benefits, Challenges, and responsibilities of Collection-Based Research. Session organized at the Society for American Archaeology. Honolulu, HI.

BELOW, LEFT TO RIGHT: An overview of the stone-ringed communal house located at the lakeside site in Noatak National Preserve, Alaska. Greeting the float plane as it arrives to pick up the UAMN archaeology crew at their camp in Noatak National Preserve, Alaska. Photos by Eric Carlson.





Research and Collections

Earth Sciences



Earth Sciences

The Earth Sciences Department had a strong year in terms of curation activities, fieldwork, research, and student participation.

DIGITIZATION PROGRESS

At the end of January, the department's NSF-funded databasing project reached a milestone when student employee **Hiro Mori** entered the collection's 30,000th specimen in the Arctos database. All of the collection's 26,000 vertebrate fossils have now been databased, and 85% of them have been photographed. Specimen data, including more than 40,000 specimen photos, are freely available online through the Arctos system, an unrivaled level of accessibility among vertebrate paleontology collections nationally and internationally.

40,000

specimen photos online

PREVIOUS PAGE: The sun pierces through the fog for a brief moment while the Spitsbergen Jurassic Research Group team works on a plesiosaur excavation near Janusfjellet, central Spitsbergen, Norway. Photo by Erik Tunstad.

LEFT TO RIGHT: The skull of Bison Bob thaws slowly after being taken out of the museum's pest control freezer. Curator Pat Druckenmiller and Collection Manager Julie Rousseau carefully unwrap the skeleton after its arrival at the museum. Photos by Theresa Bakker.

STRENGTHEN COLLABORATIONS

Thanks to support from the US Forest Service and Tongass National Forest geologist Jim Baichtal, the Earth Sciences department hosted fossil preparator J.P. Cavigelli in February. Cavigelli, the preparation lab manager at the Tate Geological Museum in Casper, WY, visited UAMN to work on a rare thalattosaur (marine reptile) specimen collected in 2011 near Kake in Southeast Alaska. His work revealed that the specimen is nearly complete and articulated, and includes a beautifully preserved skull.

The department received another special guest this year, a steppe bison known as Bison Bob that's at least 43,500 years old. The skeleton, found by UAF researchers Pam Groves and Dan Mann in the summer of 2012, is one of the most complete Ice Age fossils ever found in Alaska. Thanks to a long-standing curation agreement between the Bureau of Land

Management, which owns the specimen, and UAMN, Bison Bob (UAMES 29458) will reside at the museum for study and exhibition.

The Earth Sciences Department has been very active in its outreach efforts to different parts of the community this past year, with many school visits, collection tours, and participation in university events including the CNSM Science Potpourri, UAF research and collection day, Kids2College day, Osher Lifelong Learning, PolarTREC, and Alaska Space Grant Science outreach. In April, Curator **Pat Druckenmiller** also visited schools and community organizations in the Interior communities of Galena and Nulato, supported by the US Fish and Wildlife Service and Koyukuk/Nowitna wildlife refuge biologist and educator Karin Bodony.





Thalattosaur

When the slabs containing a thalattosaur specimen were shipped to Fairbanks in 2011, Earth Sciences Curator Pat Druckenmiller hoped there would be a skull somewhere in those 500 pounds of rock.

Because the tail was well preserved in the fossil exposed out of a rocky outcrop in Southeast Alaska, Druckenmiller expected to uncover the rest of the skeleton. Now, thanks to the fossil preparation skills of **J.P. Cavigelli**, the prep lab manager at the Tate Geological Museum in Casper, Wyoming, that is closer to coming true.



When Druckenmiller invited Cavigelli to come north in February 2013 (his first visit to Alaska), he quickly exposed one of the hind paddle-like limbs of the thalattosaur. The next day, he revealed the skull.

The earth sciences team expects to have one of the best-preserved thalattosaur fossils in the world and maybe even a new species.

LEFT: Fossil preparator J.P. Cavigelli delicately exposes the bones of the thalattosaur using a miniature pneumatic hammer. Because the specimen is small and very delicate, a microscope is necessary for cleaning rock from the skeleton.



“It’s reasonably complete and once we reveal more of the skeleton, we will be able to compare it to other thalattosaurs to see if it is a new species,” said Druckenmiller. But even if it is a known species, it will be one of the best specimens ever found in North America and possibly anywhere else in the world. The thalattosaur is currently one of Alaska’s most complete fossil vertebrates.

The animal died in the ocean and then settled into mud on the sea floor. The mud eventually turned to rock, entombing the skeleton for nearly 220 million years. Because this preservation of a complete fossil is a rare event, the specimen is a major find.

ABOVE: The partially-prepared front half of the thalattosaur skull. Delicate, narrow teeth can be seen in the lower jaw. Photos by Roger Topp.



Earth Sciences

FIELD RESEARCH

Once again, the department had a busy summer of field work. Druckenmiller and UAMN Operations Manager **Kevin May** traveled to Southeast Alaska to join US Forest Service geologist Jim Baichtal and Ketchikan-based artist Ray Troll in field investigations. Their work resulted in new discoveries of Triassic-aged marine reptiles on Gravina Island.

Druckenmiller and Collection Manager **Julie Rousseau** later traveled to the Norwegian arctic archipelago of Svalbard to participate in the 8th and final season of fieldwork by the Spitsbergen Jurassic Research Group. In October, the group published the initial results of their investigations in a special volume of the Norwegian Journal of Geology. Years of laboratory work and research are still needed to further our understanding of this ancient arctic ecosystem.

Back in Alaska, Druckenmiller and May also explored dinosaur-bearing rocks along the Colville River with Florida State University paleontologist Gregory Erickson, National Museum of Natural History Director Kirk Johnson and artist Ray Troll. In August, Druckenmiller and co-PI Erickson were awarded a National Science Foundation Collaborative Research grant, Arctic dinosaur paleobiology: hypothesis testing through cross-latitudinal comparison. This grant will support dinosaur research and field work on the North Slope in the coming years.

CLOCKWISE FROM TOP: Ray Troll (center) points to bones of a large marine reptile found on Gravina Island in Southeast Alaska along with UAMN Curator Pat Druckenmiller (left) and USFS geologist Jim Baichtal. Photo by Kevin May. Druckenmiller (second from left) and Rousseau (right) work on a plesiosaur skeleton with a colleague while being filmed for a Norwegian television report. Photo by Erik Tunstad. Julie Rousseau drives a chisel under a plaster jacket containing plesiosaur bones during the 2012 excavations in Svalbard. Photo by Stig Larsen.





Earth Sciences

SUCCESSFUL STUDENTS

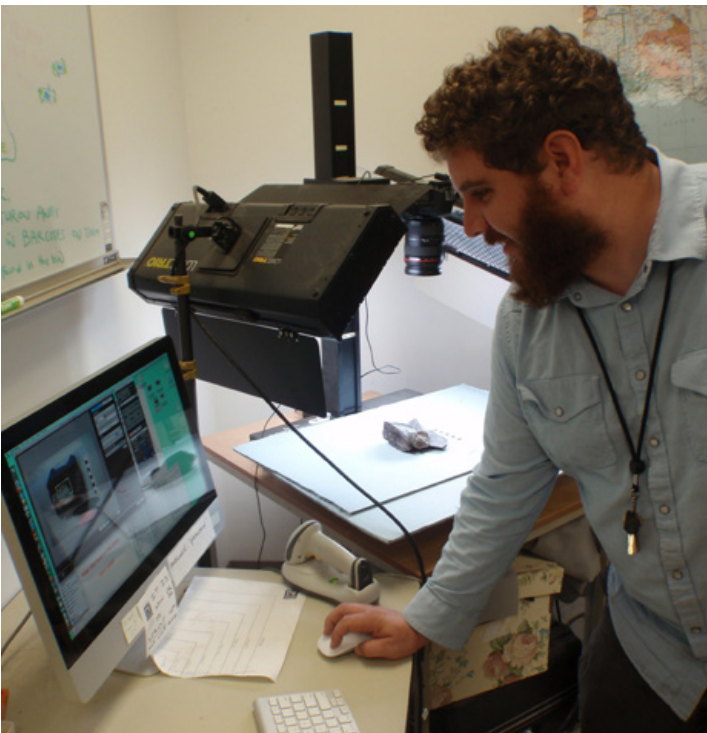
Many graduating earth sciences students were recognized this year. **Rebecca Parrish** received the Geology Outstanding Graduate Award; **Alex Edgar** was awarded the Brina Kessel Medal of Excellence in Science; and **Hannah Foss** obtained the Helen Walker Memorial Fund and Patricia A. Davis Memorial Scholarship. Graduate student **Danielle Serratos** was featured in the cover story of the Spring issue of the CNSM Newsletter. She is working on a unique specimen of long-neck plesiosaur from Montana.

Serratos also organized the Discover Science Expo for Kids held at Fort Wainwright in August, where more than 280 members of military families had a chance to learn about natural sciences.

Geosciences undergraduate **Meghan Shay** was the first UAF student to register for the new paleontology option offered by the Department of Geology and Geophysics. After volunteering in the lab during the summer of 2012, she was hired by the department as a student assistant. In August 2012, **Katherine Anderson** also joined

the earth sciences team. The University of Michigan graduate started a Ph.D. project on age structure and growth dynamics of ichthyosaurs. Ph.D. student **Hiro Mori** is making good progress on his thesis work, using the museum's extensive collection of hadrosaur (duck-billed dinosaur) material from the Prince Creek Formation of Northern Alaska.

At the end of the academic year, Curator Druckenmiller received tenure and was promoted to Associate Professor of Geology.

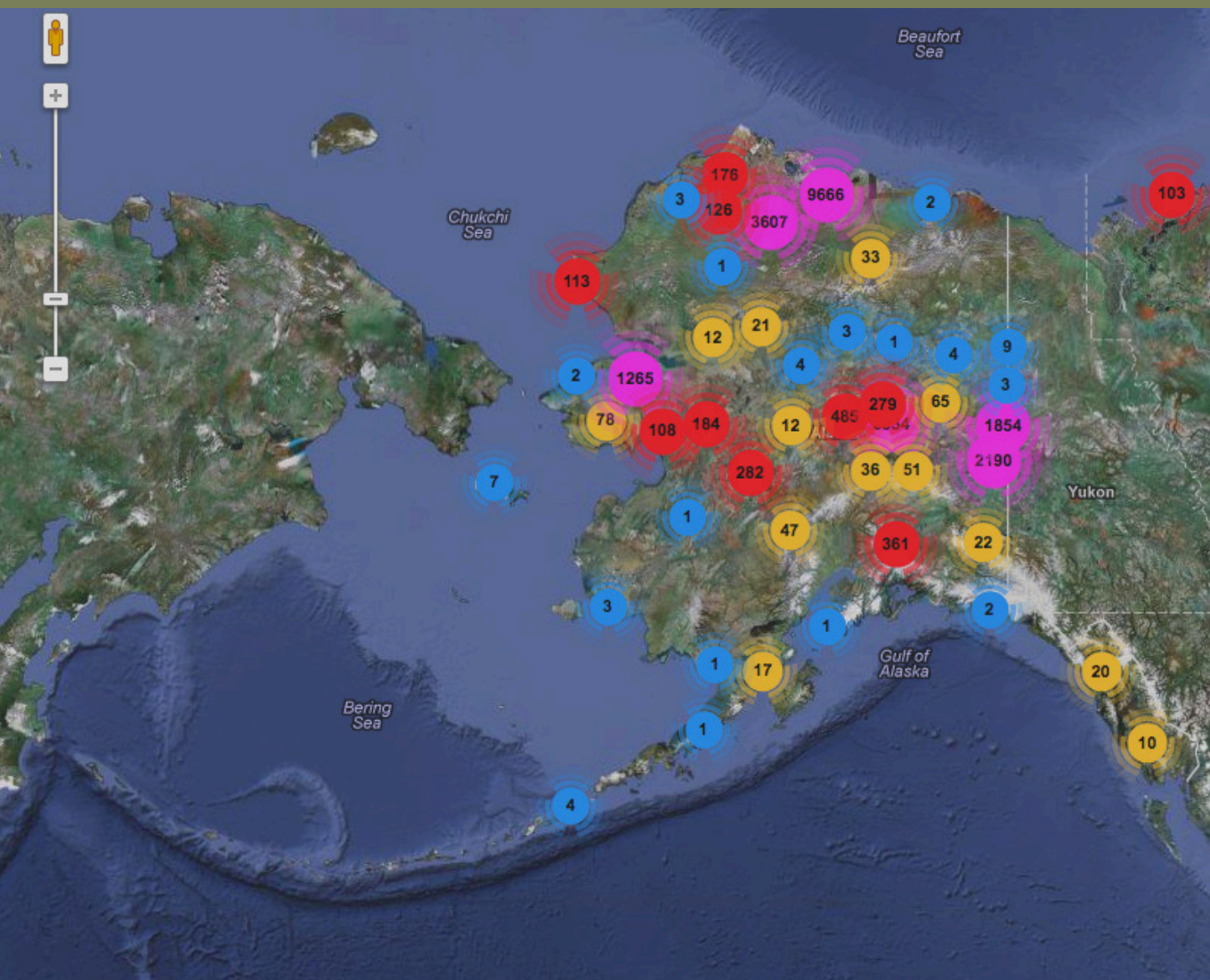


LEFT TO RIGHT: UAF undergrad Alex Edgar takes a high resolution photograph of one of the collection's vertebrate fossils. Photo by Julie Rousseau. Student assistants database and rehouse some of the earth science collection's bison skulls into new compactor shelves. Photo by Pat Druckenmiller. UAF student Danielle Serratos affixes a barcode to a drawer housing dinosaur bones so that their locations can be tracked on the Arctos database. Photo by Julie Rousseau.





Earth Sciences



ABOVE: Locality data for more than 30,000 databased specimens in the earth sciences collection. Numbers in each circle indicate how many specimens are from a given locality or cluster of localities within that area. Image by Google Maps and Berkeley Mapper.

STAFF LISTING

Patrick Druckenmiller Curator
474 6954 psdruckenmiller@alaska.edu

Julie Rousseau Collection Manager
474 6946 jirousseau@alaska.edu

CONFERENCE PRESENTATIONS

Druckenmiller P, G Erickson, D Brinkman, and C Brown. 2012. Dinosaur diversity in the arctic: new records of polar dinosaurs based on microvertebrate analysis from the Upper Cretaceous Prince Creek Formation, Northern Alaska. Oral presentation, Annual Meeting of the Society of Vertebrate Paleontology. Raleigh, NC.

May K and **P Druckenmiller**. 2012. Tracks in the arctic: A dinosaur ichnofossil assemblage from the Upper Cretaceous Prince Creek Formation, Northern Alaska. Poster presentation, Annual Meeting of the Society of Vertebrate Paleontology. Raleigh, NC.

Mori H, **P Druckenmiller**, A Prieto-Marquez, and S Joshi. 2012. Reconstruction and morphometric analysis of juvenile *Edmontosaurus* sp. from the Lower Maastrichtian (Cretaceous) Prince Creek Formation of Northern Alaska. Poster presentation, Annual Meeting of the Society of Vertebrate Paleontology. Raleigh, NC.



Research and Collections

Entomology



Entomology

GOING ONLINE

This was another exciting year for the Entomology Department. The crew began a project with funding from the United States Fish and Wildlife Service to DNA barcode 2-3 specimens of each authoritatively identified species in the collection. This will result in online photographs of over 2000 specimens and the population of the Canadian Centre for DNA Barcoding's database with sequence data for over 1000 Alaskan arthropod species. These sequences will allow future identifications of Alaskan species using genetic data.

REMOTE SAMPLING

Also, with support from the U.S. Fish & Wildlife Service an intense sampling of the most remote island in Alaska, St. Matthew, was completed. Field work included the third year of sampling on Prince of Wales Island in Southeast Alaska, a Bioblitz in Sitka, and the fourth post-eruption year on the Kasatochi volcano in the Aleutians. A checklist to the moths of Alaska, one of four enormously diverse groups of insects, was published. An update to the beetle checklist of Canada and Alaska is soon to appear.

PREVIOUS PAGE: An Alaskan endemic, *Boreus borealis* was known previously only from St. Paul Island. It is now known from St. George Island also. Photo by Derek Sikes.

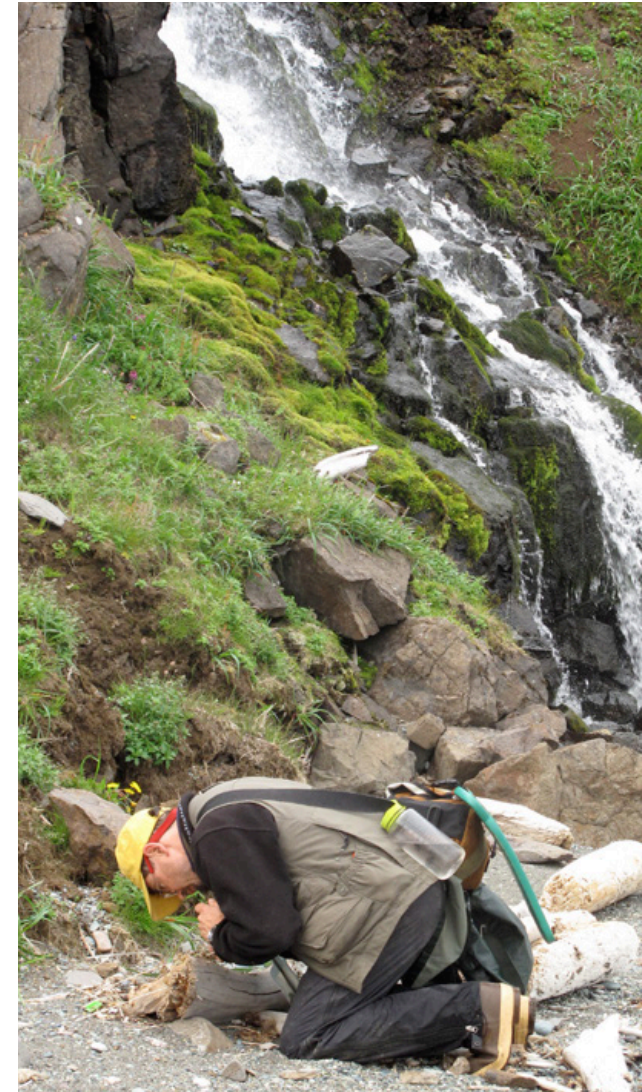
LEFT, CLOCKWISE: UAMN Entomology graduate student Casey Bickford on St. Matthew Island distracted by some sort of mammal skull. Photo by Derek Sikes. Curator Derek Sikes collecting insects on St. Matthew Island. Photo by Ned Rozell. The USFWS research team on St. Matthew Island. Photo by Derek Sikes. A coastal rove beetle (*Micralymma* sp.) and an intertidal mite (*Neomolgus*) on St. Matthew Island. Photo by Derek Sikes.

6,303
collected

11,074
databased

10,878
identified

1,330
imaged





Entomology

NEW SPECIES

As usual, a number of species newly reported for Alaska were collected, including *Oxidus gracilis*, a blind Asian millipede found in Fairbanks, and *Notonecta kirbyi*, a backswimmer and the first record of this family for Alaska found in Sitka. The first Interior Alaska records of the order Diplura was found at Quartz Lake, southeast of Fairbanks.

CONFERENCE PRESENTATIONS

Sikes DS. 2013. Arctos at the University of Alaska Museum Insect Collection. Field Museum. Chicago, IL.

Sikes DS. 2013. Sampling Alaska's fauna: Kasatochi Volcano ecosystem reassembly and arctic spider diversity. Field Museum. Chicago, IL.

Sikes DS. 2013. The University of Alaska Museum Insect Collection's switch to using Arctos: A review of the good, the bad, and the ugly. Alaska Entomological Society Annual Meeting. Fairbanks, AK.

STAFF LISTING

Derek Sikes Curator
474 6278 dssikes@alaska.edu

RESEARCH ASSOCIATES

James Kruse (moths)
Steve Peek (flies)
Ken Philip (butterflies)
Robert Progar (forest insects)
Jozef Slowik (spiders)
Susan Wise-Eagle (spiders)

BIRTH OF THE BIOBLITZ

The 2012 BioBlitz in Sitka was the first ever for the town. A diverse and highly talented assemblage of specialists in organisms from fungi to fish, birds and insects worked at a frenetic pace for 24 hours to document the region's biodiversity. It was organized by the Sitka Sound Science Center and included many participants of all ages helping out.

A total of 586 specimens (or lots) of terrestrial arthropods have been cataloged into the UAMN insect collection, which represents an estimated 96 species although many have yet to be identified. Curator of Insects Derek Sikes says it was an exciting event and that several

new state records were identified. Those are species that have never been scientifically documented as occurring in Alaska before. Sikes particularly enjoyed the blacklighting (a common method of catching insects). "Most entomologists in Alaska don't get to do much – or any – blacklighting due to the very short or totally absent nights during the Interior summer."

CLOCKWISE FROM TOP LEFT: New state record *Notonecta kirbyi* found during the BioBlitz in Sitka, Alaska. Photo by Bob Armstrong. Kitty LaBounty catching *Notonecta kirbyi*. Photo by Derek Sikes. *Necrophilus hydrophiloides*, a rarely collected beetle, was found during the Sitka BioBlitz. Photo by Derek Sikes. UAMN Entomology undergraduate Sayde Ridling use a blacklight to catch nocturnal insects during the Sitka BioBlitz. Photo by Derek Sikes.





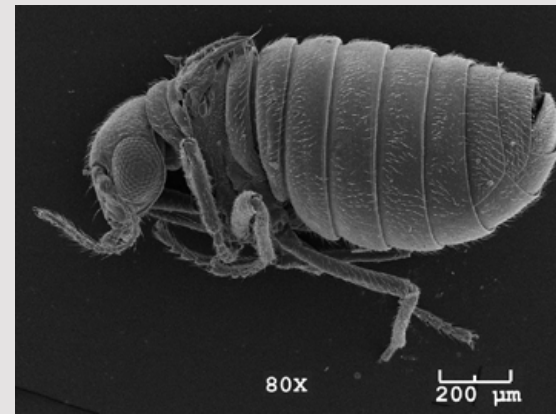
MUSEUM RESEARCHERS DISCOVER NEW SPECIES

A strange insect collected by UAF graduate student Jill Stockbridge during her thesis research on Prince of Wales Island is a new species of snow scorpionfly. UA Museum of the North Curator of Insects Derek Sikes says it belongs to an enigmatic group that might help scientists understand the evolutionary origin of fleas.

“In addition to being the second known species of an unusual group of insects, we were excited to learn from fossil evidence that these two species belong to a group that probably dates back over 145 million years, to the Jurassic,” Sikes says.

The specimens were collected on Prince of Wales Island, which is part of the Tongass National Forest, a coastal rainforest that’s home to huge Sitka spruce, cedar, and hemlock. Stockbridge is comparing different forestry practices by sampling beetles and spiders in the ecosystem.

“Along with old growth forests, you also see clear cut areas as well as secondary growth where the trees are returning,” she said. “Forest management has been coming into the secondary growth to thin out the trees to try to speed up the recovery process, because it can take more than 120 years to complete that cycle.”



ABOVE: Scanning electron micrograph of a male *Caurinus tlagu*, lateral view. Photo by Jill Stockbridge.

Stockbridge got stuck when she tried to identify the tiny flea-like insects she’d found. She turned to her thesis advisor Sikes, who was equally baffled. He posted a digital photo on Facebook to see if any of his entomologist friends could offer an opinion. Most of the suggestions were wrong, but one scientist, Michael Ivie, recognized that the specimen belonged

to the genus *Caurinus*, of which only one species was previously known.

The researchers named the species *Caurinus tlagu* for the Tlingit tribes who have lived on the northern half of Prince of Wales Island for thousands of years. “In their honor we chose a Tlingit name,” Stockbridge said. “The word *tlagu* means ancient, which we thought was appropriate since this creature has been around since the Jurassic.”

The tiny two-millimeter long animals are members of the insect order Mecoptera, which includes the scorpionflies, hangingflies, and snow scorpionflies. Although they have biting mouthparts they feed on a leafy liverwort found in coastal forests rather than sucking blood like fleas. However, they hop like fleas, are the size and color of fleas, and even have the same shape when viewed from the side.

Genetic data suggests that this group might be closely related to the fleas, making these non-parasitic insects potentially valuable in understanding the origin of their parasitic relatives.

Sikes and Stockbridge published the species description recently in the open access journal ZooKeys.

LEFT: UAF Department of Wildlife and Biology graduate student Jill Stockbridge (left) and UAMN Curator of Insects Derek Sikes collecting specimens on Prince of Wales Island. Photo by Joey Slowik.



Research and Collections

Ethnology & History



Ethnology & History

RESEARCH AND OUTREACH

For the majority of FY13, the Ethnology & History Department worked on the development of *Denali Legacy: 100 Years on the Mountain*, a special exhibit that opened May 18, 2013.

Angela Linn, Senior Collections Manager of Ethnology & History, acted as the guest curator for the exhibition that commemorated the centennial of the first ascent of Denali by the Stuck-Karstens expedition on June 7, 1913.

Student curatorial assistants **Kirsten Olson** and **Mahriena Ellanna** undertook small research projects that were published on the [AkEthnoGirl blog](#).

With **Morgan Simpson**, they also did regular work in the collections, processing new donations, learning how to use the new setup in the Imaging Lab, and providing support for the *Denali Legacy* exhibition. Volunteers **Ellen Carrlee** and **Euris Baez** worked on rehousing collections and undertaking condition assessments of the ethnology and history collections.

PREVIOUS PAGE: Nicholas Galanin copper eagle bracelet, UA2012-14-4. Purchase of this artwork has been made possible through the generous support of the Rasmuson Art Acquisitions Fund. Alaska Native Arts Foundation Gallery.

DENALI LEGACY

100 Years On The Mountain

CLOCKWISE FROM TOP RIGHT:
A view of the exhibit timeline chronicling the first ascent of Denali.

Denali Legacy Guest Curator Angela Linn unwraps a flag made during the first ascent by Robert Tatum. It was discovered decades later by his great grandnephew and loaned by the family to the museum for the special exhibit.

A closer look at the diary Robert Tatum kept during the journey to the top of North America's highest mountain. The book is opened to the day of the summit – June 7, 1913.

Photos by Theresa Bakker.





Ethnology & History

RESTORING AND PRESERVING

Work continued on the Save America's Treasures project to rehabilitate the Kolmakovsky Redoubt collections, and the blockhouse was the focus of a great deal of work in FY13. New interpretive panels were designed and produced, being installed in early summer 2013. The museum's Production Unit continued work on the documentary about the building, and Angela promoted and shared the work through both a poster and paper delivered at the Alaska Anthropological Association annual meeting in Anchorage. In September 2012, she also had the honor of visiting the actual site of the Redoubt on the banks of the middle Kuskokwim River and stood in the foundation depression of the blockhouse.

RIGHT: The museum crew installs new panels for the Kolmakovsky Blockhouse, part of the Save America's Treasures grant the museum received in 2010. Photo by Theresa Bakker.



The department received over \$12,000 in funding to purchase new works of Alaska Native and local art through the Rasmuson Art Acquisition Fund. Two beautiful pieces of functional forged iron by Jake Pogrebinsky were added to the collection in addition to five works by Alaska Native artist from around the state. These pieces were exhibited at the museum's Open House and will be used in our exhibition, research, and loan activities.

RIGHT: Forged iron door handle by Jake Pogrebinsky, Galena. UA2012-14-2AC. Forged iron "Gothic Candle Stand" by Jake Pogrebinsky, Galena. UA2012-14-1. Purchase of these artworks has been made possible through the generous support of the Rasmuson Art Acquisitions Fund. Photos by Angela Linn.





Ethnology & History



Theresa Bakker



A rare, century-old \$5 bill issued by the First National Bank of Fairbanks was sold for \$200,000 when it was put up for auction in October 2012. The museum has another bill from that series in its ethnology & history collection. UA2009-001-0001. Photo by Micolle VanWalbeek.

RARE MONEY MAKES HISTORY

A rare century-old \$5 bill made national headlines in the fall of 2012 when it fetched more than \$200,000 at auction. The banknote was issued in 1905 by the First National Bank of Fairbanks and presented to Vice President Charles W. Fairbanks. The Fairbanks bill was just one of four notes of its kind in the \$5 denomination issued by the now-defunct Alaska bank. One other bill sold 15 years ago for close to \$100,000.

The museum's ethnology & history collections manager quickly realized that a third bill from that printing was located in the museum's vault. **Angela Linn** says the bill was accessioned in 2009 and looks as if it just came off the printing press. "It is in pristine condition. A distinctive quirk is a curve in part of the edge."

Until recently, the history of the \$5 bank note was mostly blank. It was received by former UAF Rasmuson Library Alaska and Polar Regions archivist Anne Foster as a "found in collection" piece. The museum has a standing MOU with the library that all photographic, manuscript, and other similar items will be curated at the archives, while all 3D and object-type materials reside at the museum.

As a result of this agreement, Linn said she's in close contact with the archives staff. "When a unique \$5 bank note showed up in a box of items, I was not surprised to learn that they had no information associated with it. We started our own internal research to accompany our Preliminary Justification Form to the museum's acquisitions committee."

After completing web-based research on the bill, the museum found an auction sale of the same (P)7718 stamp and red seal, but different serial number and signatures. The number in the upper right corner was also different. That particular \$5 note sold for \$27,600 in 2006.

Linn promptly put the museum's bill into the vault.

Linn says the file on this piece now has twice the number of citations as before. "The catalog entry in our database will be much richer, and our insurance assessment will be much more accurate."

The museum can now note the bill's rarity. Only three banks in Alaska — out of more than 12,000 banks nationwide — issued the bills.



Ethnology & History

BATTLESHIP ARTIFACT NO LONGER 'LIVE'

The Ethnology & History lab had an exciting day in November 2012 when an artifact from the Leonhard Seppala collection, an anti-aircraft shell tip, was thought to contain explosives.

The discovery was made when a researcher investigated the piece for a book about the Alaskan dog musher. Collections Manager **Angela Linn** spent the day tracking down a local responder to determine what to do next. Sgt. Russell and his 65th Ordinance Company (Arctic EOD) crew from Fort Wainwright arrived on scene and conducted scans of the shell but found no live munitions.

The piece has been in the museum's collection since 1968. It was given to Seppala back in 1950, when he visited Tromso, Norway. It comes from the Battleship Tirpitz, which was used in WWII. Seppala's widow donated it to the museum, along with many other items, in 1968. A Norwegian researcher writing a biography of Seppala forwarded images of the artifact to an historian expert on the Tirpitz. He called the shell tip "a fuse" that would have originally contained between 0.5 -2.0 grams of WWII-type high explosives, and the researcher alerted the museum.



ABOVE: Collections Manager Angela Linn (left) and the Arctic EOD team from Fort Wainwright spent over an hour conducting scans of a 70-year-old anti-aircraft shell tip found in the Leonhard Seppala collection. Photos by Theresa Bakker.

BEHIND-THE-SCENES

The department was intimately involved in establishing and executing the inaugural year of the museum's Behind-the-Scenes Tours during the summer of 2013. Angela was part of the planning team to research tours and worked to develop the script, as well as recruiting and training the collections-based student tour leaders. These tours, which started in mid-June 2013 and ran through August, opened the downstairs and collections areas to museum visitors twice each weekday to observe a working research museum. Kirsten Olson and Mahriena Ellanna helped form the regular rotation of tour leaders and contributed greatly to the evaluation of the tours.

Behind-the-Scenes Tours will continue in FY14.

BELOW: Visitor Services Attendant Morgan Simpson holds a brown bear skull for a visitor during a Behind-the-Scenes Tour.

UAF Photo by JR Ancheta.





Ethnology & History

COLLABORATIONS

The department expertise was called upon by a number of individuals and organizations across the UAF campus, Fairbanks community, and statewide. From discussions about moving the UA Cornerstone to reviewing pest management techniques at the Interior-Aleutians campus in the Harper Building, staff provided museum best practices and professional standards of care for ethnological and historic items alike.

In the fall of 2012, Angela was elected President of the Museums Alaska Board of Directors and worked closely with the Executive Director and the other board members to move forward on a number of new initiatives that will continue the excellent services provided by the statewide museum professional organization. Along with **Theresa Bakker**, UAMN Media Coordinator, and **Cassandra Stalzer** of the Rasmuson Foundation, Angela presented at the annual meeting in Sitka a lively session on using social media in museums and non-profits for the Museums Alaska / Alaska Historical Society joint annual conference.

STAFF LISTING

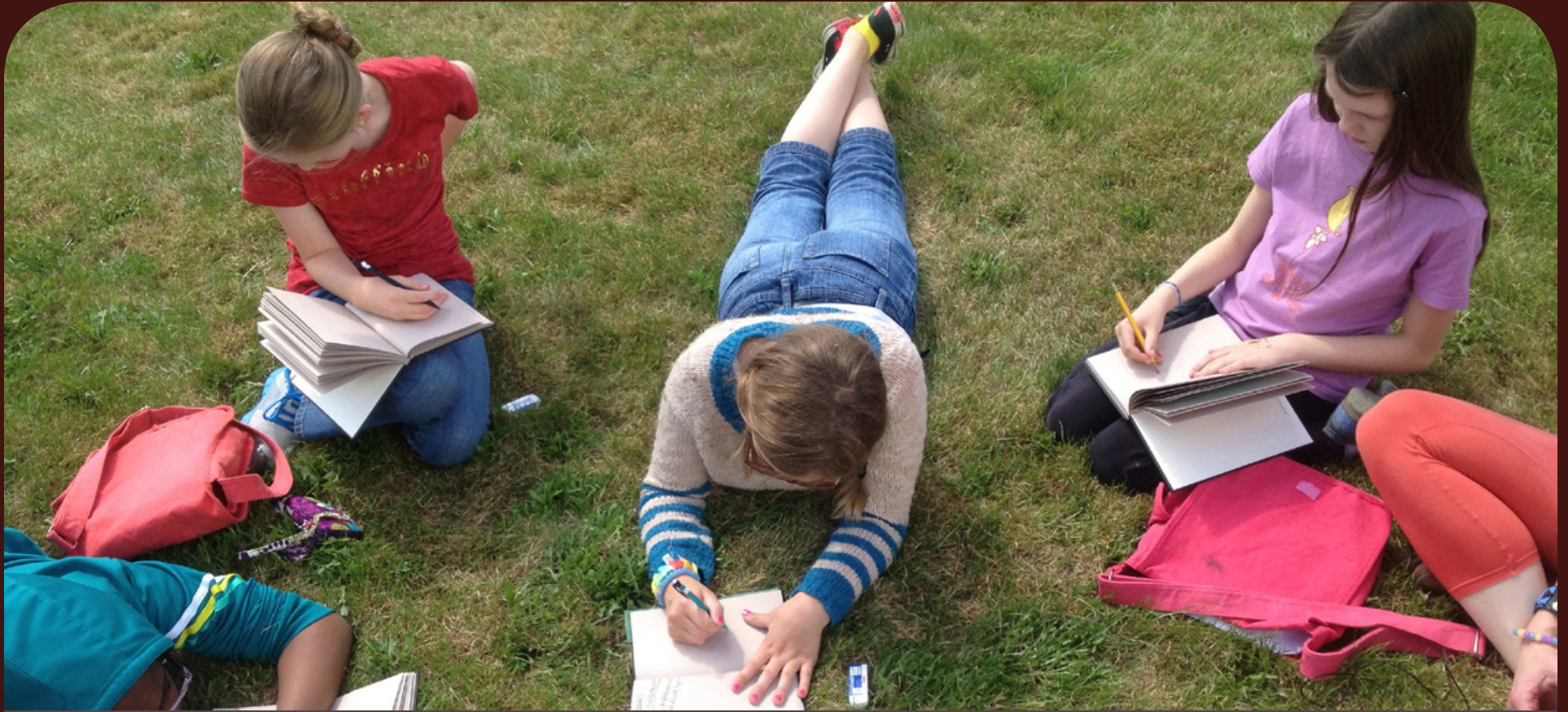
Angela Linn	Senior Collections Manager
474 1828	ajlinn@alaska.edu
Kirsten Olson	Graduate Student Assistant
Mahriena Ellanna	Undergraduate Student Assistant
Morgan Simpson	Undergraduate Student Assistant

RESEARCH ASSOCIATES

Jim Barker
Ellen Carrlee
Ross Coen
Dr. Holly Cusack-McVeigh
Dr. Diana DiStefano
Dr. Erica Hill
Dr. Lawrence Kaplan
Dr. Michael Koskey
Dr. Molly Lee (Curator Emerita)
Dr. Josh Reuther
Glen Simpson



RIGHT, TOP TO BOTTOM: Volunteer Euris Baez inventories and rehouses mountaineering gear donated by Bradford Washburn in the early 1990s. Photo by Angela Linn. Angela Linn and Crooked Creek Elder David John walk the Kolmakovsky Redoubt site along the Kuskokwim River. Photo by Chris Wooley



Research and Collections

Fine Arts



Fine Arts

STEM TO STEAM

Botany, Botanical Illustration, and Bookbinding

In July 2012, Curator of Fine Arts **Mareca Guthrie** worked with UAF Botany Professor Jan Dawe, book artist Margo Klass, Chris Pastro, a teacher at Randy Smith Jr. High School, and Karen Stomberg, an art teacher with the Fairbanks North Star Borough School District, to develop a workshop for teachers integrating science and art through botany, illustration, and bookbinding.

As one of the instructors, Guthrie taught the section on botanical illustration. The students were made up of 18 teachers who researched, illustrated, and wrote about plants native to Fairbanks. They produced hand-bound books and an exhibit of original illustrations that was shown as a First Friday exhibition in the Fairbanks North Star Borough School District Board Room in September of 2012.

PREVIOUS PAGE: Students from the 2013 Colors of Nature Summer Academy draw and make observations in their notebooks on the museum lawn. Photo by Mareca Guthrie.

CLOCKWISE FROM TOP RIGHT: The workshop's finished book showing illustrations and scientific information about different plant species. K-12 teachers sketching their ideas for page layout. Sketching from a botanical sample pressed between two layers of plexiglass. Photos by Mareca Guthrie.





Fine Arts



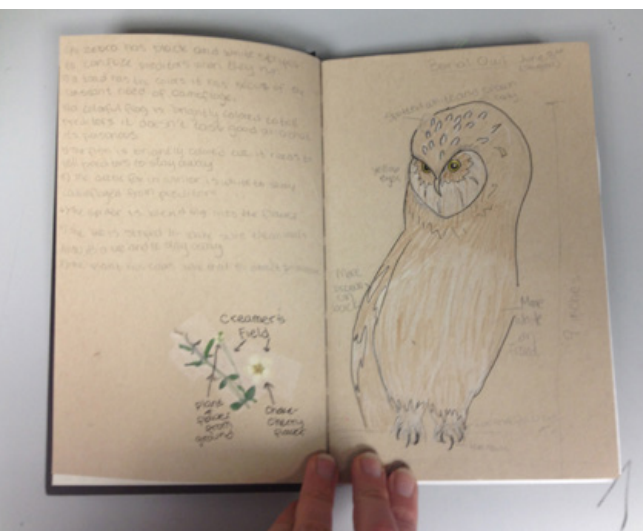
COLORS OF NATURE

This was the first year of the Colors of Nature Summer Academy. Over two weeks in June, 24 girls engaged in art-infused science activities such as investigating the physics of iridescence, growing bioluminescent bacteria, exploring UV coloration in birds and flowers, learning about variation in color vision, and discovering the chemistry behind pigments and dyes.

The Colors of Nature project is funded by the National Science Foundation and is part of a collaboration among the University of Alaska Fairbanks, the National Optical and Astronomy Observatory, and the University of Washington-Bothell. The four-year project aims to illustrate science as a creative endeavor that overlaps with art.

Principal Investigator **Laura Conner** (UAF College of Natural Sciences and Mathematics) worked with Curator **Mareca Guthrie** and UAF graduate students **Kyle Campbell**, Gabrielle Vance, and Perrin Teal-Sullivan to teach the two-week academy, culminating in a final project and presentation to UAF researchers.

TOP LEFT: Students hold up their silk scarves dyed with indigo plants using the Japanese shibori technique. **BELOW, LEFT TO RIGHT:** Drawings and observations from a student notebook. Institute of Arctic Biology NDA Core Lab Coordinator Ian Herriott leads students as they inject a fluorescence gene into a lab strain of bacteria to make it glow in UV light. Student notebook showing experiments with pigments and color mixing. Photos by Mareca Guthrie.





Fine Arts

Museum fine arts team creates new collections space

In December 2011, the fine arts collection was awarded a \$100,000 grant from the Rasmuson Foundation to fund the purchase and installation of art racks and museum-quality mobile storage furniture for the new fine art space in the UAF Elmer E. Rasmuson Library.

After much negotiation, the project was awarded to Space Saver Northwest of Seattle, which has built and installed similar projects for both the museum and the campus library. The first challenge came when a discrepancy in weight limits per square foot was discovered. It turned out that the acceptable amount was much less than expected.

That led to several design changes, according to Fine Arts Curator Mareca Guthrie. "I spent several months researching solutions at other museums and consulting with conservators. In the end, I invented an entirely new method of constructing storage for paintings using steel rods as a framework and sheets of archival corrugated plastic as dividers."

Guthrie says the solution created a significantly lighter structure but meant several months of labor on her part. This innovation is notable for an industry where things have been done the same way for many years.

The installation was further delayed when the company manufactured and sent the wrong components. The work was completed in November and December 2012 at minus 30-degree temperatures. The restricted security access at the facility meant Guthrie was required to be present during the entire three-week process. The successful completion of the installation was met with a sigh of relief.

Next, the shelving modification process occurred over a three-month period from January through March 2013. It involved a long list of details, including the cutting of 1,280 plastic sheets to use as dividers and 1,200 square feet of carpet for padding shelves. Guthrie and the fine arts team also hand-sewed 1,200 square feet of carpet at six-inch intervals to prevent objects sliding around on the shelves. Then, the team fastened 1,280 sheets

of corrugated plastic with archival tape to create smooth edges.

And that doesn't include the labeling! Finally, the crew named and labeled 1,280 individual shelves.

Guthrie says the team deserves a round of applause. "Museum Operations Manager Kevin May and Senior Collections Manager Angela Linn were instrumental in this project. I also want to send a hearty thank you to UAF graduate students Karinna Gomez, Gail Priday, Alice Bailey, and Kirsten Olsen for helping with this process. They saved the project and my sanity."

With the further help from the graduate students, Guthrie moved over 2,000 individual works of art between April and June of 2013. She says this phase was the most stressful and delicate part of the process and is, in fact, a work still in progress.

BELOW, LEFT TO RIGHT: New empty mobile carriages ready for dividers. Graduate student Karinna Gomez moves a cart of photographs and paintings. Graduate students Gail Priday and Alice Bailey smile for a photograph with an historic painting. Finished dividers safely house part of the painting collection. Photos by Mareca Guthrie.





Fine Arts

ARTISTS ON FILM

Over the Spring semester, Guthrie continued to film and interview Alaskan artists, focusing on local photographers Jim Barker and Charles Mason. Alice Bailey, MFA photography student, and Steven Hall, an undergraduate in the UAF journalism department, helped record sound and video. Hall also began a documentary about Inupiaq artist Ken Lisbourne, supported by funding from the URSA program.

TRAVELLING EXHIBIT

Then & Now: The Changing Arctic Landscape was originally developed by co-curators Ken Tape and Mareca Guthrie for display at the UA Museum of the North in 2011. After receiving positive reviews, it was accepted as a touring exhibit by the University of Washington's Burke Museum of Natural History and Culture. It was on display at the Sanford Museum and Planetarium (Cherokee, IA) March 25-June 9, 2013, and has future bookings at museums in Florida, Kansas, New York, Minnesota, and Massachusetts through 2015.

SHARED ARTWORK

In November 2012, Guthrie assembled an exhibition of Michio Hoshino's photographs from the museum's collection at the Fairbanks Arts Association's Bear Gallery. Additionally, Nicholas Galanin's mask made from a bible tilted *The Good Book* went on loan for an international indigenous art exhibit at the National Gallery of Canada. Sakahàn: International Indigenous Art is an exhibit of great importance and was held at one of the most prestigious art museums in Canada. It featured recent Indigenous art from over 16 countries. Artwork by UAF Professor Da-ka-xeen Mehner was also included.

BELOW, LEFT TO RIGHT: Photographer Jim Barker talks with photography graduate student Alice Bailey. Photo by Mareca Guthrie.

A view of the exhibit *Then & Now: The Changing Arctic Landscape*. Photo by Tamara Martz.

The Good Book by Nicholas Galanin. Photo by Barry McWayne.





Fine Arts

NEW ACQUISITIONS

The Last Road North, a series of ten photographs by Ben Huff. Purchase made possible by the Rasmuson Foundation Art Acquisition Fund.

Untitled drawing of Effie, the mummified baby mammoth by Mangus Colcord "Rusty" Heurlin. Heurlin dedicated the drawing to Otto Giest. The baby mammoth is part of the museum's earth sciences collection. The original is on display at the American Museum of Natural History in New York and a reproduction is on display at UAMN. Donation by Ed and Laurel McLaughlin.

Beets, a 8" x 10" blue ambrotype by Adam Ottavi. Donation by Louise Barnes.

Two paintings by David Mollett: *Camden Bay-Beaufort Sea* and *McHugh Creek*. Donation by Sherrie Henry, valued at \$7,500.

The Whale Hunt by Danny Peirce. A 2010 painting depicting the harvesting of a whale in Barrow. Danny Peirce is significant not only for the quality of his paintings and prints but also because he started the UAF Art Department in 1959. Purchase made possible by Ron Inouye (\$1200).

The Eskimo Whale Hunt by Danny Peirce, a 44 page woodcut portfolio book, unbound in a handmade box. This book tells the story of a whale hunt that Danny witnessed at Point Barrow in 1960. Purchase made possible by Ron Inouye (\$1000).

FINE ARTS STAFF

Mareca Guthrie Curator
474 5102 mrguthrie@alaska.edu

RESEARCH ASSOCIATES AND AFFILIATES

James Barker
Charles Mason
Glen Simpson
Kes Woodward

BELOW, LEFT TO RIGHT: Heurlin's sketch of Effie the baby mammoth. Photo by Mareca Guthrie. An image from Danny Peirce's *The Eskimo Whale Hunt*. Photo by Mareca Guthrie. Curator Mareca Guthrie giving a tour to a group of UAF students. Photo by Lander Ver Hoef.





Research and Collections

Fishes and Marine Invertebrates



Fishes and Marine Invertebrates

GROWING COLLECTION

During the year, the curator and students advanced their research projects and made significant progress in growing the size and value of the fish collection.

Curator of Fishes **Andres Lopez** joined the 2012 Russian-American Long-term Census of the Arctic (RUSALCA) cruise to the Chukchi Sea to add new fish and marine invertebrate specimens and associated samples for genetic studies from poorly known and infrequently visited waters. Graduate student **Thaddaeus Buser** visited a number of field sites from Washington state to the Aleutian Island chain in pursuit of tidepool fishes. In the process, he generated hundreds of new occurrence records for coastal sculpins and other species and a wealth of samples to support research on the diversity of these fishes.

Thanks to ongoing field survey efforts of the Alaska Department of Fish and Game, the collection also added new freshwater fish specimens from Southcentral Alaska. These surveys have become an important and consistent source of freshwater collections over the past several years.

A major milestone for the collection was the implementation of an agreement with the National Oceanic and Atmospheric Administration (NOAA) for UAMN to become the repository of the Auke Bay Laboratory Fish Collection. This collection is an important record of Alaskan fishes. Its merger with existing UAMN holdings will greatly increase the quality of the marine fauna represented in our collection.

PREVIOUS PAGE: An ice field in calm waters on the Chukchi Sea in September 2013. Photo by Andres Lopez.

LEFT TO RIGHT: Scientists on the deck of the RUSALCA ship sorting specimens. Some of the fish collected on the RUSALCA cruise to the Chukchi Sea during the summer of 2012. The research vessel Professor Khomorov is prepared for the RUSALCA 2012 expedition. Equipment for biological, chemical, geological, and physical oceanographic research is loaded along with supplies for the crew.

Photos by Andres Lopez.





Fishes and Marine Invertebrates

Crowdfunding helps send scientist to Southeast for study

A UAF doctoral student tried a unique approach to raising money for field work during the summer of 2013. **Joshua Ream** used a crowdfunding website to underwrite work that will enhance the herpetological collection at the University of Alaska Museum of the North and provide a better understanding of the amphibian population in the Stikine River watershed.

Ream is working on an Interdisciplinary Studies Doctorate degree using methods from biology and social science to better understand the place of amphibians and reptiles in Alaska's cultural and ecological heritage.

Ream's crowdfunding goal was to raise \$1,000 to cover the costs of field work.

"The work will be conducted regardless of the success of the crowdfunding," Ream says. "But a successful campaign will greatly enhance the scope of this and other project components."

The project includes an inventory of amphibian populations on the Stikine River in Southeast Alaska, which flows for approximately 40 miles from the Canadian border to its mouth near the communities of Wrangell and Petersburg. Ream says the Stikine is reportedly home to all six of the known native species of amphibians, making it a herpetological hotspot compared to other regions of Alaska. But it's been more than 20 years since the last comprehensive study of amphibians in the area.

"Tracking amphibians along the Stikine over time can help us to understand normal background fluctuations in their populations," Ream says. "This knowledge allows us to monitor for unusual population events and to record amphibian responses to global changes near the northern limits of their known range."



ABOVE: Joshua Ream holds a group of long-toed salamanders found along the Stikine River (left) and examines a Columbia spotted frog eggmass along the same river. Photos by Seth Perry.

LEFT: A boreal toad found along the Stikine River in May 2012, the site of an amphibian survey Joshua Ream hopes to conduct this summer with help from a crowdfunding campaign. Photo by Joshua Ream.

Amphibians act as the proverbial canary in the coalmine, giving advance warning of changes in the aquatic ecosystems. Changes in mean annual temperatures, numbers of frostless days, and levels of human activity are likely to cause changes in the distribution of amphibian species. Colonization of new amphibian species, the threat of invasive species, several of which have established populations in southeast Alaska, and the spread of amphibian diseases will also present new problems for natural resource managers.

Ream says the museum has been instrumental in supporting his research by providing access to historical records, various sampling supplies, and as an outlet for outreach and education.

His dissertation advisor, **Andres Lopez**, the curator of the museum's aquatics collection, says Josh's passion for herpetological research has already produced great additions to the museum's collections. "Thanks to his ongoing field research in the Stikine and his leadership role in the Alaska Herpetological Society, the museum collections are becoming increasingly valuable resources for the study and management of Alaska's amphibians."



Fishes and Marine Invertebrates

STUDENT SUCCESS

Emily Lescak became a Ph.D. candidate after successfully completing written and oral comprehensive exams. **Thaddaeus Buser** completed a one-year fellowship with the CASE K-12 program. **Joshua Ream** joined the Alaska Department of Fish and Game as a subsistence resource specialist. **Veronica Padula** received a fellowship from the Rasmuson Foundation to advance her graduate research on the genetic diversity of least cisco in Alaska.

UAF's Undergraduate Research & Scholarly Activity unit awarded three research grants to the department. These included two awards to the curator to support his mentorship activities of undergraduates students and one to undergraduate **Lauen Bailey**. Lauren worked with Thaddaeus Buser on a study of the distribution of genetic diversity in two tidepool sculpin species found in across vast stretches of the west coast of North America.

RIGHT: Curator of Fishes Andres Lopez joined the Russian-American Long-term Census of the Arctic (RUSALCA) cruise in the summer of 2012. He was there to get a better understanding of the distribution of fish in the Chukchi Sea and to bring specimens back to the museum. Photo by Bodil Bluhm and Katrin Iken.

BELOW, LEFT TO RIGHT: Thaddaeus Buser made several expeditions collecting nearshore and intertidal marine sculpins. From left to right, a kelp sculpin (*Sigmistes caulias*) collected on Adak Island in the Aleutian archipelago, an arched sculpin (*Sigmistes smithi*) also collected on Adak Island, and Buser with a buffalo sculpin (*Enophrys bison*) on Kodiak Island. Photos by Thaddaeus Buser.

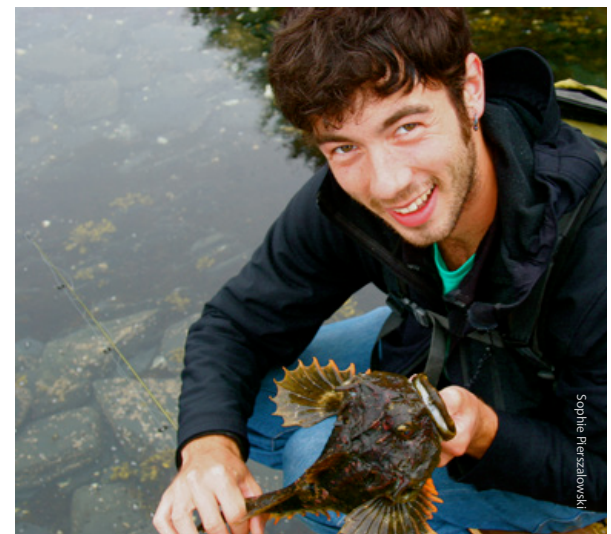
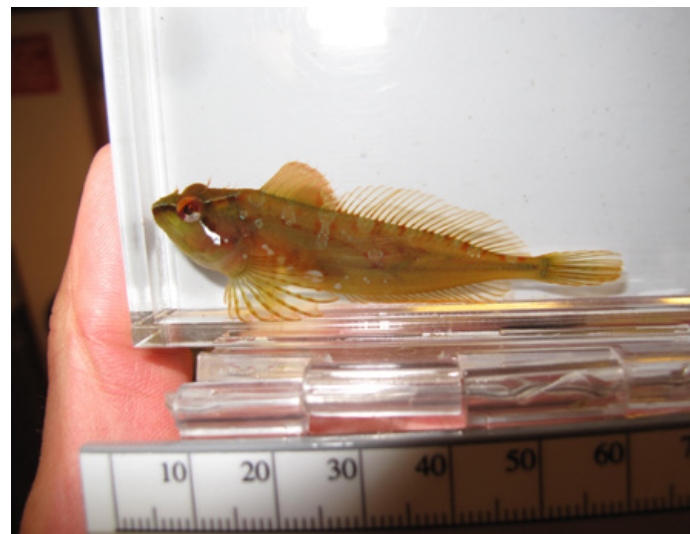
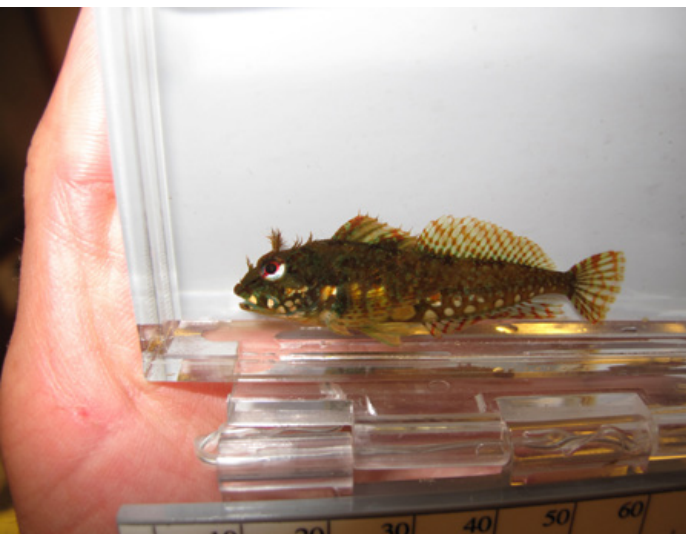
STAFF LISTING

J. Andres Lopez
474 7828

Curator
jalopez2@alaska.edu

RESEARCH ASSOCIATE

Nora Foster





Research and Collections

Genomic Resources



Genomic Resources

A GROWING RESOURCE

5,000
new samples

The museum's Genomic Resources Facility has undergone rapid growth since its inception in the early 1990s, and this year was no exception. Most growth is generated from individual biological collections as they sample tissue when preparing museum specimens. This effort resulted in approximately 5,000 new tissue samples entered into the collections and database this year. Other notable additions include tissue samples from 895 marine mammals harvested between 2010-2011; a remarkable series of blood samples drawn from 565 caribou near the Ambler River between 1999-2012; and 190 grizzly bear tissue samples from the Alaska Range and Brooks Range spanning 30 years. These tissue samples were donated by the Alaska Department of Fish and Game.

895
marine mammals

565
caribou

190
grizzly bear

Genomic Resources Collection Manager **Kyndall Hildebrandt** received a travel grant from the Society for the Preservation of Natural History Collections (SPNHC) that allowed her to attend the 2013 SPNHC Annual Meeting in South Dakota, where she presented on the museum's online database Arctos and its ability to manage and track museum partnerships with state and federal agencies.

The special exhibit, *Hibernation and the Science of Cold*, included an installment on Genomic Resources and how we apply the science of cold to preserve tissues indefinitely.

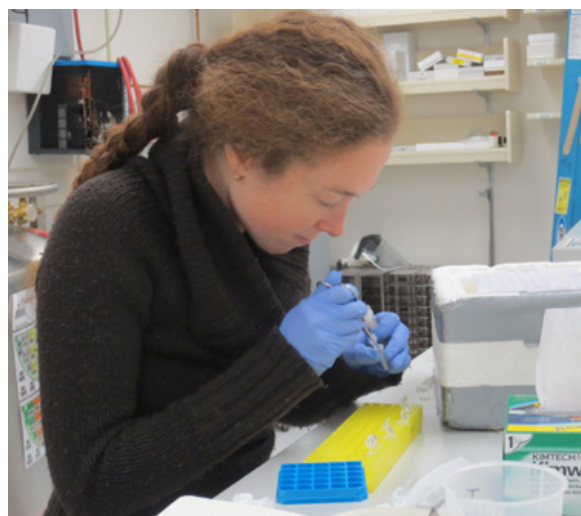
STAFF

Kyndall Hildebrandt
474 6947

Collection Manager
kbhildebrandt@alaska.edu

CONFERENCE PRESENTATION

Hildebrandt KBP, AM Gunderson, and LE Olson. 2013. Managing agency and museum partnerships using Arctos, an online database. Oral presentation, Annual Meeting of the Society for the Preservation of Natural History Collections. Rapid City, SD.



PREVIOUS PAGE: Freezer box full of 100 barcoded frozen tissues.
Photo by Kyndall Hildebrandt.

LEFT TO RIGHT: Frozen tissue rack that holds 1,300 frozen tissue samples in front of liquid nitrogen cryovial 3. Photo by Kyndall Hildebrandt. Kyndall Hildebrandt removing a freezer rack from a liquid nitrogen cryovial. Photo by Michelle Cason. Graduate student Michelle Cason sampling tissues for her research on the Alaska Hare (*Lepus othus*). Photo by Kyndall Hildebrandt.



Research and Collections

Herbarium



Herbarium

OVERVIEW

The herbarium had another fantastic year, with accessions of new holdings at an all-time high (up 440% from an average of 3,330 new specimens over the last six years), as well as database entries of 24,068 new records. Also, 30,000 new high-resolution images of specimens were added to our digital collection. These outstanding numbers are only possible because of continued funding from the National Science Foundation (three current awards in support of digitization of ALA collections), the National Park Service (two current awards), and the Yukon Conservation Data Centre, Canada and our amazing digitizing team under the leadership of collection managers **Jordan Metzgar** and **Monte Garrouette** (while Jordan was on paternity leave) and undergraduate curatorial assistants **Margaret Oliver**, **Sydney Rosenbalm**, and **Adam Bentele**.

We also celebrated two significant homecomings this year. First, we finalized the transfer of specimens from the Palmer Center for Sustainable Living, Agricultural and Forestry Experiment Station (Herbarium AES) on permanent loan to the UAMN Herbarium. The AES collection contains over 8,000 specimens broadly representing Alaska's flora, with a geographic emphasis on the railbelt and the Dalton Highway corridor, and a taxonomic

14,730
specimens

34,068
new records

30,000
images

emphasis on grasses because of the research interests of the long-time curator of the AES Herbarium, William Mitchell. Secondly, the herbarium welcomed the return of specimens collected during the 2010 Chukotka expedition which had been held at the Komarov Botanical Institute in St. Petersburg.



ABOVE, LEFT TO RIGHT: A lush stand of Western Arctic shootingstar, *Dodecatheon frigidum*. Photo by Nadja Sekretareva.
An astor plant, *Erigeron humilis*. Photo by Steffi Ickert-Bond.



PREVIOUS PAGE: Catching a whale boat ride on the open Bering Sea from Ostrov Yttgran Bay in Provideniya to Lorino Village on the Chukotka Peninsula. Photograph by Richard Bond.



Herbarium

SPECIMENS RECOVERED

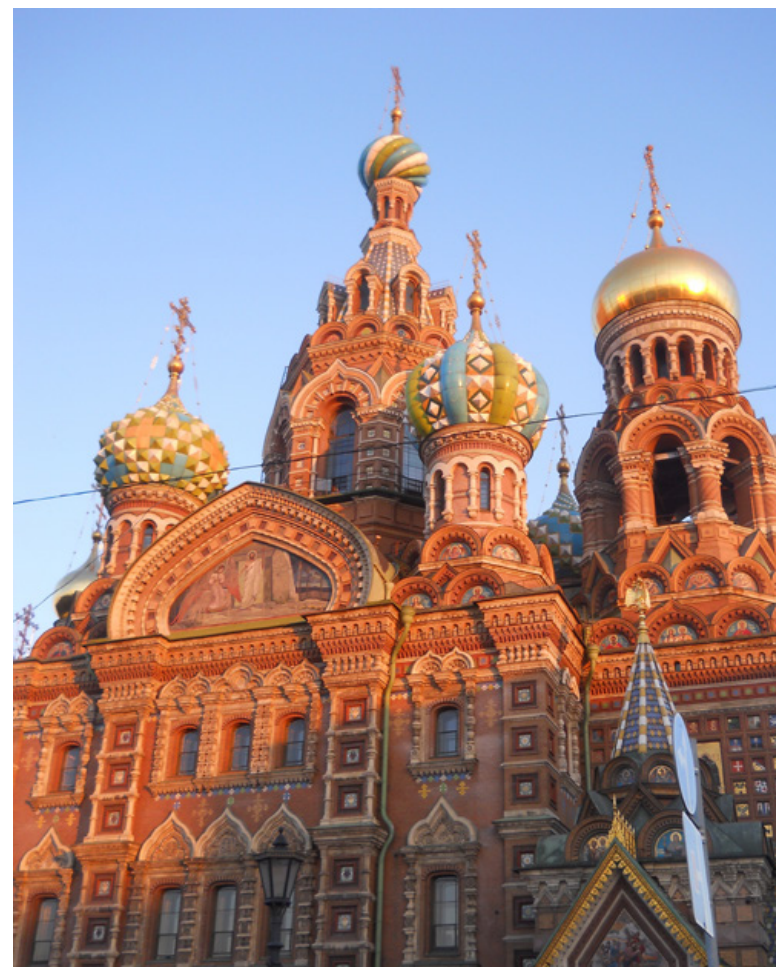
In 2010, a group of researchers from the museum's herbarium (ALA) traveled to the Chukotka peninsula in the Russian Far East, where they were joined by two scientists from the St. Petersburg Komarov Botanical Institute. The team was able to collect hundreds of plants, but the rules wouldn't let them leave with the specimens. Instead, they were sent to Komarov Botanical Institute, where they were stored until they could be returned to Alaska for further research.

While on sabbatical in Germany, Herbarium Curator **Steffi Ickert-Bond** flew to St. Petersburg to review historical specimens of *Ephedra* housed at Komarov for her revisionary work. She was accompanied by Anthropology and RAP program Ph.D. student Lisa Strecker, who was on her way to an internship and was instrumental in helping get access to the collections and translating label data.

In St. Petersburg, Ickert-Bond also connected with Chukotka expedition members Dr. Nadja Sekretareva and graduate student Yulia Mikhailova. Both helped Ickert-Bond get the specimens to the airport, where they were flown to Stockholm at

the Swedish Natural History Museum (Naturhistoriska riksmuseet). From there, the specimens were sent to Fairbanks.

Ickert-Bond's studies will further the understanding of the floristic diversity in Beringia. Inasmuch as certain localities are threatened by habitat destruction and the entire region by climate change, there is some urgency.



CLOCKWISE FROM UPPER RIGHT: Curator Steffi Ickert-Bond examines *Ephedra* specimens at the Herbarium of the Komarov Botanical Institute (LE). Photo by Lisa Strecker. Church of the Savior on Spilled Blood, built on the site where Tsar Alexander II was assassinated in St. Petersburg. Photo by Steffi Ickert-Bond. Team Chukotka on the plane in 2010. Photo by Gennady Zelensky. Botanists in the field. Photo by Richard Bond.



Herbarium

FIELD WORK

Field site highlights include a trip to the Bering Sea Islands of St. Matthew and St. Hall by graduate student **Monte Garrouette**, who joined Curator of Insects **Derek Sikes**, UAF grad student **Casey Bickford**, and other UAF scientists on a trip sponsored by the Alaska Maritime National Wildlife Refuge and their 120-foot boat, the Tiglax. Garrouette returned with over 200 plant species, some of them important samples for ongoing phylogeographic studies in the herbarium. Hunting for wild relatives of the grape vine (Vitaceae family) led Curator **Steffi Ickert-Bond** on a trip from Columbus, Ohio to Pennsylvania, and then into Canada at Ontario, traversing Quebec and the New England States of Vermont, New Hampshire, Massachusetts and Connecticut, continuing into New York and Pennsylvania until finally arriving back in Washington, DC.

During her Smithsonian Senior Fellowship at the National Museum of Natural History, Smithsonian Institution, Ickert-Bond worked with research botanist and curator Jun Wen on gynoecium evolution in Vitaceae using the freshly collected flowering and fruiting materials. In addition, Ickert-Bond also went on a second grape escape in Arizona to collect unique specimens of Virginia creeper (*Parthenocissus*) that are disjunctly distributed in Texas and Arizona. The dramatic scenery of Canyon de Chelly provided a beautiful backdrop for these creeping vines.

OUTREACH AND EDUCATION

Outreach highlights include the delivery of two mini workshops by Curator Steffi Ickert-Bond in collaboration with Curator of Birds **Kevin Winker** and Curator of Fishes **Andres Lopéz** at the National Conference of the American Indian Society of Engineering and Science (AISES). The workshops, under the themes of using natural history collections in biodiversity research and education and improving STEM teaching through integrating and building natural history collections, brought together a diverse number of educators and students.

Our lab also continues to host students during the Rural Alaska Honor Institute (RAHI) during a six-week summer course in molecular biology and genetics. We thrive on interacting and training students on all levels, and recently two

peer-reviewed papers of former lab members were published. One paper included Sinian Chen of West Valley High School as a co-author. "Diversification and reticulation in the circumboreal fern genus *Cryptogramma*" was published in *Molecular Phylogenetics and Evolution*. Another paper featured undergraduate student Rose LaMesjerant. "A survey of seed coat micromorphology in *Oxytropis* DC. sections *Arctobia*, *Baicalia*, *Glaeocephala*, *Mesogaea*, and *Orobia* (Fabaceae) from Alaska" was published in the *Journal of the Botanical Research Institute of Texas*. Chen is currently studying Biomedical Engineering at John Hopkins University and LaMesjerant completed the Doctor of Pharmacy program at Widwestern University and is now doing a residency at Providence Alaska Medical Center in Anchorage.



LEFT TO RIGHT: False Virginia creeper against the colorful sheer cliff walls of sandstone in the Canyon de Chelly National Monument on the Navajo Indian Reservation in Arizona.

Photo by Richard Bond.

Fruiting specimen of the false Virginia creeper (*Parthenocissus vitacea*) trailing on a cast-iron gate around the homestead at the Hubbell Trading Post National Historic Site in Ganado, Arizona. Photo by Steffi Ickert-Bond.



Herbarium

HERBARIUM TRANSFER EXPANDS COLLECTION

A specimen transfer from the Palmer Center for Sustainable Living, Agricultural and Forestry Experiment Station will give researchers a better understanding of the plants that grow along Interior Alaska's transportation corridors.

More than 8,000 mounted specimens were transferred to the UAMN Herbarium (ALA) from the Palmer Center for Sustainable Living, Agricultural and Forestry Experiment Station (Herbarium AES) as part of a permanent loan.

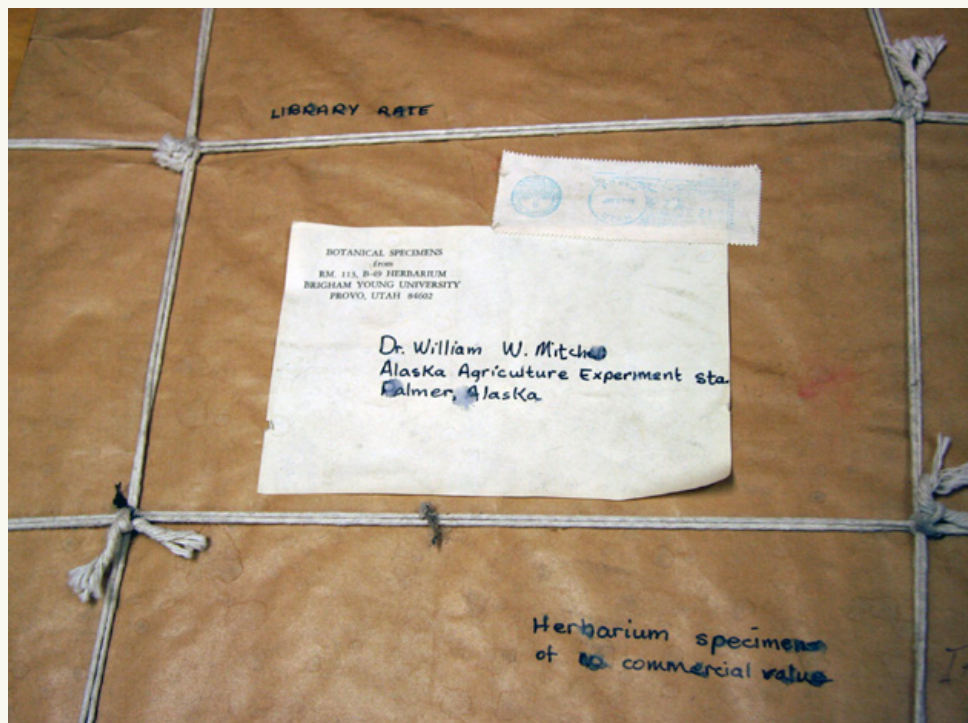
The AES collection was built up over many years by the faculty and staff of the Palmer Center for Sustainable Living's Matanuska Experiment Farm. Both facilities are components of the School of Natural Resources and Agricultural Sciences (SNRAS) and the AFES at Palmer. The collection broadly represents Alaska's flora, with geographic emphasis on the railbelt and the Dalton Highway corridor. The taxonomic emphasis is on species that have some intersection with agriculture, and is especially strong in grasses because of the research interests of long-time curator of the AES Herbarium and faculty William W. Mitchell.

Herbarium Curator **Steffi Ickert-Bond** says it's a fantastic addition to the museum's collections.

"These plants haven't been seen by outside researchers for decades. Some of them are the original specimens that these new species are based on. We are eager to digitize them so we can make them available to researchers all over the world for further examination and perhaps loan."

The transfer of specimens from Palmer to Fairbanks was generously supported by funds from the Provost office, the CNSM Dean's office as well as funds from the UA Museum Herbarium. UAF graduate student **Monte Garrouette** and former Collection Manager **Alan Batten** packaged the specimens and drove them via U-Haul to Fairbanks.

TOP TO BOTTOM: Herbarium Curator Steffi Ickert-Bond and Collection manager Jordan Metzgar examine some of the grass specimens donated to the museum's herbarium from Palmer. An unopened loan returned from Brigham Young University to AES in the 1970s was among the many treasures included in the transfer. Photos by Theresa Bakker.





Herbarium

SABBATICAL

Curator Ickert-Bond began an eight-month sabbatical in December 2012 at Ludwig-Maximilians-Universität in the lab of Dr Susanne Renner. She also visited Isabel Sanmartín at the Real Jardín Botánico in Madrid to work on a meta-analysis of patterns of biogeographic movement of plants between different regions of the Holarctic and spent one month with Catarina Rydin at Stockholm University working on modeling diversification rates while simultaneously inferring evolutionary shifts between insect-pollination and wind-pollination to explore its potential implications for the apparent fluctuations in diversity in *Ephedra*.

While in Munich, Ickert-Bond worked at the Botanical Institute, which is located on the spectacular grounds of the Botanical Garden and houses three million herbarium specimen in the Botanische Staatssammlung (M). Ickert-Bond also reviewed and annotated hundreds of specimens of *Ephedra* at several herbaria during her sabbatical, including the Berlin Botanical Garden and Botanical Museum (B), the Swedish Museum of Natural History (Naturhistoriska riksmuseet) in Stockholm (S), as well as the Komarov Botanical Institute of the Russian Academy of Sciences in St. Petersburg (LE), to complete her revision of New World *Ephedra*. At the Komarov, a treasure trove of type specimens from the New World were hidden between the paper covers, untouched since Carl Anton von Meyer wrote the first monograph of the genus *Ephedra* in 1848.

STAFF LISTING

Stefanie Ickert-Bond Curator
474 6277 smickertbond@alaska.edu

Jordan Metzgar Collection Manager
474 7109 jsmetzgar@alaska.edu

RESEARCH ASSOCIATES

W. Scott Armbruster

Al Batten

Bruce Bennett

Richard Bond

Reidar Elven

Sarah Fowell

Gary Laursen

Robert Lipkin

Cynthia R. Meyers

Barbara Murray

Carl Roland

Mary Stensvold

Stacy Studebaker

Donald A. Walker

TOP TO BOTTOM: Field trip to the nature sanctuary Pupplinger Au, an alluvial forest along the river Isar, about 20 km south of Munich. Pupplinger Au is a paradise for orchid enthusiasts, among those found there is the fly orchid (*Ophrys insectifera*). Plants in the genus *Ophrys* use sexual deception to attract male pollinators by producing the sex pheromone of virgin female pollinators in addition to providing visual and tactile cues.

The view from Ickert-Bond's office of the grounds of the Munich Botanical Garden (Botanischer Garten München-Nymphenburg), Botanical Institute, University of Munich in late spring. Photos by Steffi Ickert-Bond.





REPORTS

Jeffers S. 2013. A putative new species in *Claytonia* with affinities to *C. scammaniana* from Feniak Lake. Final report Murie Science and Learning Center Research Fellowship. National Park Service, U.S. Department of the Interior.

CONFERENCE PRESENTATIONS

Ickert-Bond SM. 2013. Insights into chromosome evolution in Gnetales using Fluorescence in Situ Hybridization (FISH) to detect repetitive DNA - first results. University of Stockholm, Botanical Institute. Stockholm, Sweden.

Ickert-Bond SM. 2013. Plant collecting expedition to the Chegitun River, eastern Chukotka, in collaboration with the Komarov Botanical Institute, St.Petersburg. Ludwig Maximillians University. Munich, Germany.

Ickert-Bond SM. 2013. Unraveling evolutionary relationships of Beringian plants. DCPS-Kolloquium. Dahlem Center of Plant Science, Freie Universität. Berlin, Germany.

Ickert-Bond SM. 2013. Pollination drops in *Ephedra* - safe sex and other oddities. Kolloquium Series. Ludwig Maximillians University. Munich, Germany.

Metzgar J and **SM Ickert-Bond.** 2012. Diversification and reticulation in the circumboreal parsley ferns (*Cryptogramma*). Botany 2012. Columbus, Ohio.

Bolinder K, R Alexandersson, **SM Ickert-Bond**, J Ehrlen, and C Rydin. 2012. Cenozoic evolution in *Ephedra*: Did a shift from biotic to abiotic pollination drive diversification? International Palynological Congress and International Organization of Palaeobotany Conference. Tokyo, Japan.

Wen J, R Ree, **SM Ickert-Bond**, Z Nie, and V Funk. 2012. Biogeography: Where do we go from here? Botany 2012. Columbus, Ohio.

Bolinder K, R Alexandersson, **SM Ickert-Bond**, J Ehrlen, and C Rydin. 2012. Cenozoic evolution in *Ephedra*: Did a shift from biotic to abiotic pollination drive diversification? Botany 2012. Columbus, Ohio.

Loera I, **SM Ickert-Bond**, and V Soza. 2012. Diversification in North America arid lands: niche conservatism, divergence and expansion of habitat explain speciation in the genus *Ephedra*. Botany 2012. Columbus, Ohio.

Von Aderkas P, S Little, C Pirone, T Cross, D Hardie, D Smith, J Han, S Jesse, N Prior, R Thornburg, K Bolinder, C Hou, **SM Ickert-Bond**, C Borchers and C Rydin. 2012. Degradome and proteome of pollination drops of *Ephedra* and other gymnosperms (Gnetidae, Ginkgoidae and Pinidae). Botany 2012. Columbus, Ohio.

Metzgar J, P Druckenmiller, D McDonald, and **SM Ickert-Bond.** 2012. Specimen imaging and databasing efforts of botanical and paleontological collections at the University of Alaska Museum. Botany 2012. Columbus, Ohio.

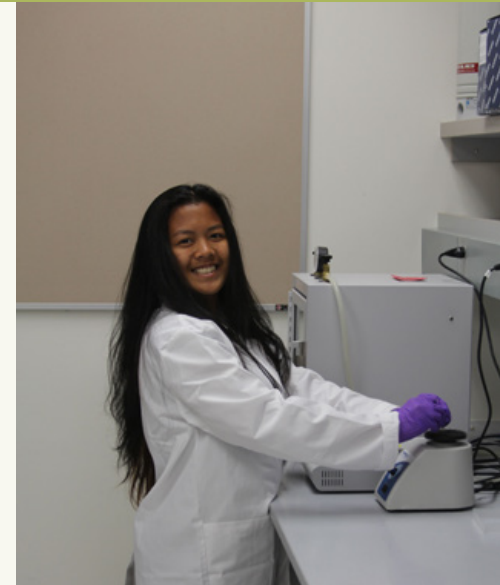
López A, SM Ickert-Bond, and **K Winker.** 2012. Improving STEM Teaching Through Integrating and Building Natural History Collections: Applications for Understanding Climate Change, Sustainability, and Adaptation. AISES National Conference. Anchorage, Alaska.

Winker K, SM Ickert-Bond, and **A López.** 2012. Using Natural History Collections in Biodiversity Research and Education at a University Museum. AISES National Conference. Anchorage, Alaska.

Lacey E, J Cook, S Edwards, and **SM Ickert-Bond.** 2012. AIM-UP!: Increasing Integration of Museums into Undergraduate Education. ScienceCasetNet.

Jeffers S and **SM Ickert-Bond.** 2013. The systematics of Alaskan *Claytonia*. Midnight Sun Symposium. University of Alaska Fairbanks.

Jeffers S and **SM Ickert-Bond.** 2013. Species delineation of the genus *Claytonia* in Alaska. Midnight Sun Symposium, University of Alaska Fairbanks.

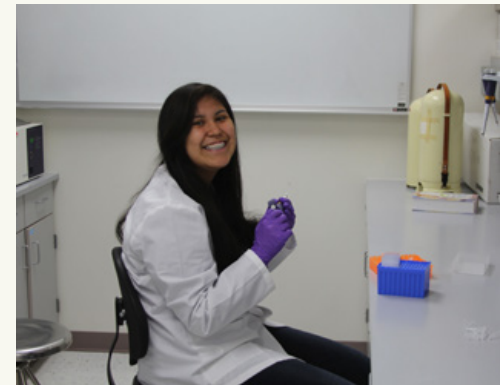


Rural Alaska Honors Institute (RAHI)

Collection Manager **Jordan Metzgar** worked with three high school students from Alaska this summer to unravel the mysteries of speciation in parsley ferns (*Cryptogramma*). The students were participating in the Rural Alaska Honors Institute (RAHI) research program that allows high school students from rural Alaska to gain research experience and earn college credit. Their research projects all involved using DNA sequences to study different parsley fern species, each of which has been hypothesized to be actively undergoing speciation and separating into two distinct species.

The students, Allyson Wukovich (Nome, Alaska), Roberta Walker (Unalakleet, Alaska) and Angela Bagoyo (Sitka, Alaska), used a combination of research approaches to study possible speciation in parsley ferns from North America and Asia. They learned field collecting techniques and how to prepare museum specimens. Museum specimens were examined to identify possible morphological differences and learn diagnostic traits for parsley ferns. These specimens were used for DNA extractions and subsequent PCRs to generate DNA sequence data. The students experienced the thrill of reading a new DNA sequence for the first time and practiced how to analyze these data. Each student also gained experience in presenting their research to an audience.

The students succeeded in generating valuable DNA sequence data that will help answer questions of speciation in the parsley fern. Their research ties into a larger herbarium research effort at understanding the evolution and population dynamics of these boreal ferns. Shortly after the program ended, Metzgar traveled to southwestern China with undergraduate research assistant **Mackenzie Stamey** to collect specimens that will further illuminate the history of the parsley ferns.



CLOCKWISE FROM LEFT: Angela Bagoyo, Roberta Walker, Jordan Metzgar and Hattie Schmidt-kunz examine lichen specimens on Murphy Dome. Photo by Kelsey Gobroski. Allyson Wukovich grinding leaf tissue for a DNA extraction. Angela Bagoyo vortexing a solution. Roberta Walker pipetting reagents for a DNA extraction. Photos by Jordan Metzgar.



Research and Collections

Mammalogy



Mammalogy

GROWING DEPARTMENT

The Mammal Collection grew significantly in terms of specimens and personnel in 2012-2013, with over 2,300 specimens added and two new graduate students joining the department. Grants from the Alaska Department of Fish and Game, the National Park Service, and the U.S. Fish and Wildlife Service funded continued fieldwork on Alaska's mammals.

Curatorial Assistant **Jon Nations** became the first undergraduate to obtain his own research funding that paid not only for small mammal field work but specimen processing as well, setting a lofty precedent for future graduate and undergraduate students alike.

BROADER INFLUENCE

Curator **Link Olson**, Collection Manager **Aren Gunderson**, and several students and volunteers conducted field work throughout the state, with trips to the Alaska Peninsula, the Alaska Range, and a major expedition to Montague Island among the highlights. Olson traveled to Thailand to visit future field sites and develop collaborations with Thai colleagues for his continued research on Southeast Asian mammals.

Staff and students submitted multiple manuscripts for publication and were very active in presenting their research at scientific conferences. In addition to the many paid student curatorial assistants, a dedicated and growing army of volunteers helped keep up with the active growth of the collection.



2,300
new specimens



CLOCKWISE: High school student volunteer Kelly May and Curator Link Olson survey the mountains near Valdez, AK for hoary marmots.

Photo by helicopter pilot Leigh Coates from Vertical Solutions in Valdez. Undergraduate Jon Nations sets his traps in trees to document tree-climbing in northern red-backed voles. Photo by Perrin Teal-Sullivan. A skull donated to the mammal collection by a former Alaska Fish and Game biologist. Photo by Theresa Bakker.

PREVIOUS PAGE: A view of base camp at Montague Island, AK during a survey for hoary marmots conducted by graduate student Nick Kerhoulas, Curator Link Olson, Collection Manager Aren Gunderson, and Genomic Resources Collection Manager Kyndall Hildebrandt. Photo by Aren Gunderson.





Mammalogy

ANCIENT DNA ILLUMINATES TREESHREW SPECIES

Research on whether Southeast Asia's treeshrews are more diverse than current taxonomy would suggest is ongoing at the museum, thanks to the first National Science Foundation grant awarded to the University of Alaska Museum of the North for research conducted in its ancient DNA facility, the only lab of its kind in the State of Alaska.

The cover of the April 2013 issue of the *Journal of Mammalogy* features one such species that was 'sunk' (placed in a previously described species or 'synonymized') exactly 100 years ago. This poorly-studied group of mammals, once thought to be the closest living relatives of primates and still considered to be representative of ancestral primates, underwent a major bout of taxonomic synonymization in the latter half of the 20th century. That's when over 120 described species or subspecies were 'sunk' into the 20 species recognized today.

Curator of Mammals **Link Olson** says this is one way our estimates of biodiversity can change--not because of discovery of new species or extinction of others, but because of taxonomic revisions made by biologists (often museum curators) based on existing museum specimens.

With funding from NSF and the National Geographic Society, Olson and several of his colleagues are trying to determine the actual number of treeshrew species using both DNA and morphological (anatomical, skeletal, histological, etc.) evidence.

"In this most recent article, we tested our own previous hypothesis based solely on DNA extracted from historic museum specimens up to 120 years old in the museum's Ancient DNA Laboratory," Olson said. "We obtained morphological (in this case, skeletal) data by X-raying these same specimens to accurately measure the foot bones, which traditionally were left inside the study skin while the rest of the skeleton was discarded. We found congruence between the two types of data and were able to 'resurrect' three species from synonymy, including the one gracing the cover. This served as a test case, and we anticipate

many more treeshrew species will be rescued from taxonomic obscurity in the near future."

Olson and colleagues hope their work will aid conservation and management decisions in Southeast Asia, which is one of the world's richest biodiversity hotspots and is undergoing rapid and accelerating rates of habitat destruction.

"In the case of treeshrews, we're finding that species previously thought to be common and widespread across multiple landmasses instead comprise many distinct species with, in some cases, very restricted distributions on single islands."



Image from the *Journal of Mammalogy*



Mammalogy



CLOCKWISE FROM TOP LEFT: Graduate student Michelle Cason near Cold Bay, AK in search of her species of interest, the Alaska Hare (*Lepus othus*). Photo by Link Olson. A collection of skulls donated to the mammal collection by a former Alaska Fish and Game biologist. Photo by Theresa Bakker. Mammal Collection Manager Aren Gunderson samples the whale bone on display in the Gallery of Alaska. The samples will be used by the Harvard Art Museums' Strauss Center for Conservation and Technical Studies to provide a known species reference for their database. Photo by Steve Bouta. Graduate student Nick Kerhoulas on a survey for Hoary Marmots on Montague Island, AK. Photo by Aren Gunderson.

STAFF LISTING

Link Olson

474 5998

Aren Gunderson

474 6947

Mallory Jones

Kelly May

Takae Nakajima

Jon Nations

Rachel Noriega

Shelby Surdyk

Krystal Fales

Curator

link.olson@alaska.edu

Collection Manager

amgunderson@alaska.edu

Student Assistant

Student Assistant

Student Assistant

Student Assistant

Student Assistant

Student Assistant

Technician

RESEARCH ASSOCIATES AND AFFILIATES

Kimberlee Beckmen

Karen Blejwas

Travis Booms

John J. Burns

Joseph A. Cook

Nikolai Dokuchaev

Brandy Jacobsen

Hayley Lanier

Stephen O. MacDonald

Thomas McDonough

Lori Quakenbush

Eric Sargis

Gay Sheffield

Dominique Watts

Neal Woodman



Mammalogy

MUSEUM RESEARCH EARNS FAIRBANKS STUDENT SPOT AT NATIONALS

A Fairbanks high school student attended the National Junior Science & Humanities Symposium in Ohio in Spring 2013 with a research project refuting an earlier study on the effects of climate change on Alaska's shrews.

Lathrop High School Senior **Kelly May** repeated a study published in 2005 using masked shrew specimens housed at the University of Alaska Museum of the North. The original study, which concluded that shrews in Alaska have gotten larger over the past half century, was based entirely on external measurement data downloaded from the museum's online database. The authors were not able to inspect each specimen.

May believed that not accounting for age in the original research may have biased the results. *"The exciting physical part of my research was finding each of the 650 shrews in the collection and looking at their teeth to determine age."*

Each shrew species has a unique tooth pattern. Since Alaska's shrews can be difficult to identify, May first confirmed the specimens were the correct species

(*Sorex cinereus*). Determining the age involved looking at the degree of wear on their teeth. Shrews do not hibernate and are active year round but rarely live more than 15 months. Adults that survive a winter show significant tooth wear, while shrews born in the spring do not.

Last year, May's science fair project showed that young shrews are significantly smaller than overwintered adults and that overwintered females are bigger than overwintered males. In contrast to previously published claims, this means that age and sex both need to be accounted for in studies of body size in shrews, according to the Curator of Mammals **Link Olson**.

"A recent study concluded that a common shrew species found throughout most of Alaska increased in size over the past several decades, possibly in response to climate change—longer summers and warmer winters result in greater food availability," he says. "However, this study did not account for sex or age and concluded that individual shrews are attaining a larger body size."

BELOW, LEFT TO RIGHT: Some of the 650 masked shrew specimens Kelly May studied for his research project. Kelly May examines shrew specimens in the UA Museum of the North mammalogy lab. Photos by Theresa Bakker.





Mammalogy

By analyzing juvenile and adult specimens separately and accounting for sex, May found that individual shrews are actually getting smaller but that more are surviving the winter, meaning that the proportion of (larger-bodied) adults in a given population is increasing. So although the two studies reached seemingly similar conclusions, May's results shed new light on the underlying mechanism: shrews aren't growing to a larger body size, they're just surviving winters better.

Olson says May's project has implications for studying how mammals are responding to climate change, an important justification for students to have access to the museum's collections.

"Seeing and using museum collections makes scientific inquiry and discovery tangible and can be intellectually empowering for students," he says. "Today's students are tomorrow's scientists. Middle school and high school students now have access to hands-on research opportunities my generation didn't until college or later. This is a decidedly positive trend."

BELOW: Examples of adult and juvenile masked shrew specimens from the UA Museum of the North mammal collection. Photo by Theresa Bakker.



PRESENTATIONS

Olson, LE. 2013. Climate change and body size: A review and plea for standards. Oral presentation, Annual Meeting of the American Society of Mammalogists, Philadelphia, PA.

Nations, JA and LE Olson. 2013. Scansorial and arboreal behavior in Northern Red-backed Voles in Alaska. Oral presentation, Annual Meeting of the American Society of Mammalogists, Philadelphia, PA.

Cason, MM, T Booms and **LE Olson.** 2013. Distribution and phylogeography of an Alaskan endemic: the Alaska Hare. Oral presentation, Annual Meeting of the American Society of Mammalogists, Philadelphia, PA.

May, KC, AM Gunderson and LE Olson. 2013. The effects of climate change on body size in the Masked Shrew in Alaska revisited. Oral presentation, Annual Meeting of the American Society of Mammalogists, Philadelphia, PA.

Everson, KM and **LE Olson.** 2013. Evolutionary relationships and divergence timing of oryzorictine tenrecs. Oral presentation, Annual Meeting of the American Society of Mammalogists, Philadelphia, PA.

Boria, RA, M Shcheglovitova, A Radosavljevic, SA Jansa, **LE Olson** and RP Anderson. 2013. Assessing niche evolution and population connectivity over glacial cycles for two Malagasy small mammals. Oral presentation, Annual Meeting of the American Society of Mammalogists, Philadelphia, PA.

Sargis, EJ, N Woodman, NC Morningstar, AT Reese and **LE Olson.** 2013. Morphological distinctiveness of Javan *Tupaia hypochrysa* (Scandentia, Tupaiidae). Oral presentation, Annual Meeting of the American Society of Mammalogists, Philadelphia, PA.

Boria, RA, M Shcheglovitova, A Radosavljevic, SA Jansa, **LE Olson** and RP Anderson. 2013. Assessing niche evolution and population connectivity over glacial cycles for two Malagasy small mammals. Oral presentation, Annual Meeting of the Ecological Society of America, Minneapolis, MN.



Research and Collections

Ornithology



Ornithology

YEAR IN REVIEW

This year the collection grew by 1,500 specimens, and department staff, students, and research associates produced 15 publications. Fieldwork took staff to Interior Alaska, the Alaska Range, Prince William Sound, Togiak National Wildlife Refuge, and Kodiak Island. We continued to have a wonderful assemblage of students and volunteers working with us throughout the year.

1,500
specimens

15
publications

To further understand how the science developed from use of the bird collection, we created a Google Scholar profile of the publications that are based on the collection (<http://bit.ly/14Z9fE7>). It turns out that the scientific impact of these publications is considerable, and we had a short note on that published in the journal *Nature*.

The bird collection is in dire straits with respect to cabinet space, and we submitted a proposal to the National Science Foundation to rectify this. As always, we thank our students, volunteers, and the Friends of Ornithology for their ongoing support, which helps enormously in being able to sustain these important activities.

STAFF LISTING

Kevin Winker

474 7027

Curator

kevin.winker@alaska.edu

Jack Withrow

474 7359

Collection Manager

jjwithrow@alaska.edu

RESEARCH ASSOCIATES

Johannes Erritzoe

Daniel Gibson

Kevin McCracken

Rose A. Z. Meier

Christin Pruett

Heinrich Springer



PREVIOUS PAGE: Field transportation, Kodiak. June 2013.

LEFT TO RIGHT: Eurasian Wigeon (*Anas penelope*) collected in Kodiak, June 2013. Field locations on Kodiak Archipelago, September 2012. Collection Manager Jack Withrow skins birds in the field, September 2012. Photos by Jack Withrow.



Field Research



Field Research



ARCHAEOLOGY

Aniakchak National Monument and Preserve
Alaska Peninsula National Wildlife Refuge
Noatak National Preserve
Raven Bluff Site, NW AK
Wrangell-St. Elias National Park



EARTH SCIENCE

Colville River (NPR-A, North Slope)
Gravina Island (Tongass National Forest, Southeast)
NORWAY
Janusfjellet (central Spitsbergen)



ENTOMOLOGY

Aleutians: Adak Island, Kasatochi Island,
St. George Island, St. Matthew Island, St. Paul Island
Creamer's Field
Cache Creek Rd
Fairbanks UAF Campus
Homer
Kodiak
Nenana
Palmer
Prince of Wales Island

Quartz Lake
Sitka



FILM

TANZANIA
Kibaya



FISHES AND MARINE INVERTEBRATES

Adak
Aleutian Island
Chukchi Sea
Kodiak
Yakutat



HERBARIUM

Aleutian Islands: St. Paul Island, St. Matthew Island
and Hall Island
Brooks Range
Denali National Park
Gates of the Arctic National Park and Preserve
Brooks Range, Itkillik Valley
Taku Inlet
ARIZONA
Canyon De Chelly National Monument

Hubbell Trading Post National Historic Site
McHood Park
Walnut Canyon National Monument
Flagstaff

CALIFORNIA
San Bernardino Mountains

CONNECTICUT
Danbury

MASSACHUSETTS
October Mountain State Forest

NEW HAMPSHIRE
Groveton

NEW YORK
Wawayanda
Middletown

OHIO
Geneva State Park

PENNSYLVANIA
Allegheny National Forest

VERMONT:
Silvio O. Conte National Fish and Wildlife Refuge

CANADA: BRITISH COLUMBIA
Nairn Falls Provincial Park
Vancouver Island
Mt. Seymour

CANADA: ONTARIO
Hibou Conservation Area
Bayview Escarpment Provincial Nature Reserve
Sharbot Lake Provincial Park
Black Lake

CANADA: QUEBEC
Saint-Sébastien



MAMMALOLOGY

Cold Bay, AK
Cache Creek Road, Fairbanks, AK
Prince William Sound, Montague Island, AK
Toolik Field Station, AK
Valdez, AK
White Mountains NRA, 12 Mile Summit

SOUTHERN THAILAND



ORNITHOLOGY

Alaska Range
Interior Alaska
Kodiak Island
Prince William Sound
Togiak National Wildlife Refuge



Publications by UAMN faculty and students

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Collections Outreach



Part of the museum's mission is to make collections accessible to students, researchers, and the public.

As these photos illustrate, curators, collection managers, and other staff spend a large portion of their time with people from outside the museum community.

122
professional
visitors

8,000
contacts with
the public

3,694
specimens
loaned out

475,397
database queries

TOP TO BOTTOM: Museum events like the annual Open House give our collections and research personnel a chance to interact with the public. Curator Andrés López shows off specimens from the fish collection. Research Archaeologist Scott Shirar answers questions about Alaska's ancient cultures. Earth Sciences Curator Pat Druckenmiller talks about the eating habits of dinosaurs. Photos by Theresa Bakker.

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Association of Academic Museums & Galleries Alaska Representative

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Pat Druckenmiller

Pat Druckenmiller

Angela Linn

Development

The museum relies on partnerships with businesses and donors from the community. Those funding sources provide 70% of our operating budget. Our major donors – Fairbanks Daily News Miner, Flint Hills Resources Alaska, Totem Ocean Trailer Express, and Wells Fargo – provide resources for our outreach programs, including Directed Discovery tours for school-aged children, our Family Day events, and family passes at local libraries.

And finally, it is our members whose support provides the lifeblood for the museum. We offer them admission to the museum, a discount at the Museum Store, along with other benefits. And we hope they will continue to tell the community about the treasured resource we have in the museum.

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MILITARY APPRECIATION RECEPTION

This year, Wells Fargo continued the tradition of inviting military members from area bases as well as the rest of the community to enjoy an evening reception during the month of November. Visitors were offered a look behind-the-scenes at the museum's research labs, as well as refreshments. In the coming years, Wells Fargo plans to shift the gift to an ongoing program that underwrites the admission of active duty military members serving in Alaska.

ARTISAN EXPO & SALE

The 2012 Artisan Expo & Sale featured 18 artists working in a variety of media. Friday's Evening with the Artists event offered a chance for guests to mingle and get a preview of the original artworks and displays. On Saturday, admission was free to the public. Around 400 people came to browse the Expo and visit the museum. The event raised more than \$3,000 for the museum's endowment fund.

BELOW, LEFT TO RIGHT: Thanks to support from Wells Fargo, local military and community members gather for a reception to honor the partnerships that benefit Fairbanks. Photo by Theresa Bakker. Members of the military community got a look behind-the-scenes at the museum's research collections. Photo by Theresa Bakker. A display of shibori silk scarves by Wendy Smith-Wood from the 2012 Artisan Expo & Sale. Photo by Tamara Martz.



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Gifts to the Collections

The museum's collections have grown through decades of fieldwork and research, careful cultivation and the generosity of people whose passion for science, culture and education leads them to support the museum's mission. We are grateful to our donors for their contributions during FY13.

GIFTS TO EARTH SCIENCES

Perry Barboza	Institute of Arctic Biology
Jim Moody	
Russell Redick	
US Fish and Wildlife Service	In kind
US Forest Service	In kind

GIFTS TO EDUCATION

Suzanne Black	Two pairs of Inupiaq mukluks
Phyllis Movius	Five spotted seal skins
Barbara O'Dell	Caribou hide boots with moosehide soles

GIFTS TO ENTOMOLOGY

Total 1,421 specimens/lots in 12 accessions during FY13

Matt Bowser	Delphacids from KNWR donated via loan to Charles Bartlett
Donna DiFolco	<i>Carabus vietinghoffi</i>
Matt Goff	Moths (including <i>Noctua pronuba</i>) and new AK record, <i>Carabus nemoralis</i> , from Sitka
Jock Irons	Dermestid-eaten specimens collected in the 1980s
Erin Johnston	Bed or swallowbug for identification, donation from basement room in Irving
Mia Kirk	Thrips and other Arthropods associated with peonies in Alaska
James J. Kruse	USDA Forest Health Protection / US Forest Service specimens from Dr. Robert Progar's project on the effect of the Pacific Decadal Oscillation on defoliator insects
Kitty L. LaBounty	<i>Aegialites</i> from Sitka
Alberto Pantoja	Thrips and other taxa collected from peonies as part of USDA ARS project; two almost full freezer boxes (100 slots each) of cryovials with thrips and coded data
Sylvan Robb	First millipedes found in Fairbanks
Dominique Watts	<i>Leptinillus</i> from beaver and Cimicids for identification

GIFTS TO ETHNOLOGY & HISTORY

Anonymous	Toy Matchbox car decorated with NWC formline designs
Jennifer Arseneau	Arctic Winter Games 2014 promotional items
Windy Beach	FACIT NTK mechanical calculator
Sylvia Burns	Alaska Pipeline board game from 1973
Kyoko Currier	Yup'ik coiled grass basket and one pair of beaded fur slippers
Phyllis Movius	Spotted seal skin
Robert Lee Valentine	Whale tooth cribbage board and 3-piece meat carving set from 1940s

Candace Waugaman	Gut wall pocket with bead embroidery, "Alaska Oil Game" board game, and four tourist art pieces
UA Geophysical Institute	Camera & accessories used for the Aurora Color Television Project (ACTP) undertaken by the GI (1984-2007)

GIFTS TO FINE ARTS

The Rasmuson Foundation Art Acquisition Fund	10 photographs by Ben Huff
Louise Barnes	
Sherrie Henry	
Ron Inouye	
Ed and Laurel McLaughlin	

GIFTS TO HERBARIUM

Ron Abbott	120 vascular plant specimens from Colorado
Bruce Bennett	100 specimens from the Yukon Territory from Bruce Bennett
Monte Garrouette	220 specimens from from St. Paul, Hall Island and St. Matthew Island
Stacy Studebaker and USFWS	229 specimens from Kodiak Island
Caroline G. Ward	Over 100 specimens from a botanical collection taken from St. Paul in the Pribilofs between 1955 and 1957
University of British Columbia Herbarium (UBC)	90 specimens
University of Washington Herbarium (WTU)	80 specimens

GIFTS TO MAMMALOGY

The mammal collection would like to thank these groups and individuals for donations.

Alaska Department of Fish and Game (Anna Bryan, C. Tom Seaton, Kimberlee Beckmen, Travis Booms, Mark Ross, Gay Sheffield, John Hechtel, James R. Dau, Christopher P. Barger)
Alaska Sea Life Center
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Andy Baltensperger
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Bureau of Energy and Ocean Management (Mark Schroeder)
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Thank You for **5,403 Hours** of Service to the Museum

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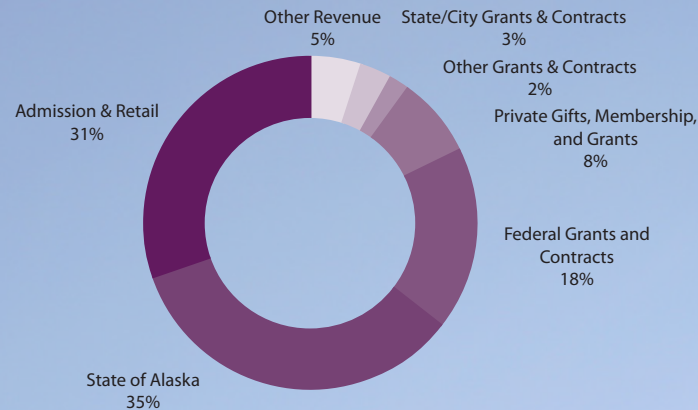
Financial Summary

INCOME

Admission & Retail	\$1,332,894
State of Alaska	\$1,500,118
Federal Grants and Contracts	\$766,962
Private Gifts & Grants	\$344,212
Other Grants & Contracts	\$68,225
State/City Grants & Contracts	\$122,720
Other Revenue	\$210,480

Total income **\$4,345,611**

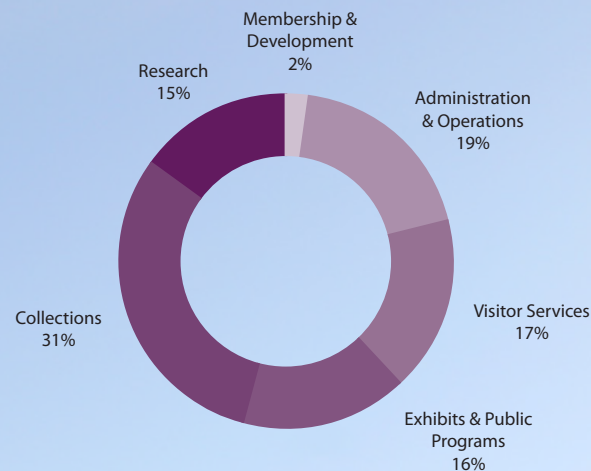
* Note: Revenue from museum memberships, bequests, and other private donations are held and managed by the University of Alaska Foundation and only appear in the museum's financial summary as those funds are transferred to the museum's spending accounts.



EXPENSES

Research	\$653,140
Collections	\$1,331,853
Exhibits & Public Programs	\$687,176
Visitor Services	\$728,442
Administration & Operations	\$826,769
Membership & Development	\$73,144

Total expenses **\$4,300,524**



Theresa Baker

Grants & Contracts Received*

July 1, 2012 – June 30, 2013

Alaska Department Of Fish And Game

Baseline surveys of arthropods in alpine and subalpine habitats in Southeast Alaska (Sikes)	\$8,000
Conservation genetics of the Alaska Hare (Olson)	\$46,099
Olive-sided Flycatcher breeding biology and migration in central Alaska (Sikes)	\$2,854
Systematics of Hoary Marmots (Olson)	\$40,803
Terrestrial arthropod responses to Tongass second-growth thinning (Sikes)	\$46,675

Alaska Department of Natural Resources

Archaeological Collections Care for State of Alaska (Rasic)	\$5,000
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Alaska Division Of Agriculture

Farm Bill Survey: Thrips associated with peony in Alaska (Sikes)	\$7,963
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National Park Service

Archaeological survey in the Chignik and Meshik Rivers region revision 3 (Shirar)	\$129,859
Bats of Klondike Gold Rush National Historic Park (Olson)	\$23,249
Denali Researcher in Residence Fellowship (Olson)	\$8,000
Herbarium cataloging and housing of plant voucher specimens from the National Park Service - Alaska Region (Ickert-Bond)	\$12,392
Herbarium cataloging and housing of plant voucher specimens from the National Park Service Central Alaska Region (Ickert-Bond)	\$18,255
Vanished villages: archaeological evaluation of prehistoric lakeside settlements (Shirar)	\$74,547

National Science Foundation

Arctic dinosaur paleobiology: Hypothesis testing through cross-latitudinal comparison (Druckenmiller)	\$100,000
PoLAR Climate Change Education Partnership (Topp)	\$113,728
Doctoral Dissertation Improvement Grant (DDIG). The <i>Cryptogramma acrostichoides</i> complex-phylogeography at the crossroads of Beringia and other refugia (Ickert-Bond & Metzgar)	\$19,042

UA Foundation

People's Endowment Awards (Kamerling)	\$3,829
Sikuliaq Project (Topp)	\$61,000

U.S. Air Force

Curation Archaeological Collection (Rasic)	\$20,000
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U.S. ARMY

Artifact Curation USAG FWA (Rasic)	\$20,000
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U.S. Fish & Wildlife Service

AMNWR St. Matthew Arthropods 2012 (Sikes)	\$5,000
DNA Barcode library of Alaskan Arthropods (Sikes)	\$98,763

U.S.D.A. Forest Service

Modeling the response of defoliator feeding guilds to changing climate in Alaska (Sikes)	\$71,584
Curate Ground Hog Bay II Archaeological Collection (Rasic)	\$17,000

STUDENT AWARDS

Alaska Quaternary Center

Fellowship (Jordan Metzgar)	\$1,500
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Arctic Institute Of North America

AINA Grant-in-Aid (Stephany Jeffers)	\$1,000
AINA Grant-in-Aid (Lisa Strecker)	\$1,000

iDigiBio

Specimen Digitization Tools and Practices Workshop Travel Award (Jordan Metzgar)	\$500
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National Science Foundation

CASE G-12 Fellowship (Stephany Jeffers)	\$30,000
Research Experience for Undergraduate (Alex Edgar)	\$6,694

Society of Systemic Biologists

Grant-in-Aid of Research (Katie Everson)	\$ 2,000
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UAF

eLearning Innovation Award 2013 (Stephany Jeffers)	\$1,000
Undergraduate Research and Scholarly Activities (URSA)	
Summer Undergraduate Research Award (Jon Nations)	\$4,864
Travel Award (Jon Nations)	\$1,995



* This list reflects grants and contracts awarded during the FY13 fiscal year only. It does not include multi-year grants or contracts awarded in previous years



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