

Write your name and affiliation and disciplinary interest

Jason Briner, Univ
Buffalo, glacial
geology, cordilleran
ice sheet
history/chronology,
exposure dating,
lake sediments

**Charlotte
Lindqvist,
Univ Buffalo,
evolutionary
biology**

Ingrid Hendy:
University of
Michigan: Marine
sedimentologist
hoping to do further
drilling and coring
in the NE Pacific

Scott Starratt USGS
Micropaleontologist

Jocelyn Colella
University of Kansas
Biodiversity
Institute, Genomics

**Jim
Baichtal,
retired.....**

Jason Addison,
USGS, Marine
sediment
geochemist,
Paleoceanography
of SE AK, History of
primary productivity
of the Subarctic
North Pacific Ocean

**Chris Darvill,
Uni. of
Manchester,
glacial
chronology**

Carol Reeb, Hopkins
Marine Station,
Stanford University.
Evolutionary
Population Genetics

Shaun Woudstra,
University of
Alberta,
tephrochronology &
volcanology

Britta Jensen,
University of Alberta,
Earth and
Atmospheric
Sciences, I am a
geologist who
specializes in
stratigraphy,
tephrochronology and
dabbles in
volcanology.

Scott Starratt USGS
Menlo Park
Micropaleontologist

Alia Lesnek, Queens
College. Glacial
geology, lake
sediments,
cosmogenic
nuclides (^{10}Be , ^{36}Cl)

**Nick
Schmuck,
University of
Alaska
Fairbanks,
Archaeology**

**Sue
Karl**

Susan Crockford,
Pacific
Identifications in
Victoria, BC.
Zoology,
evolutionary biology

Write your name and affiliation and primary disciplinary interest

Summer Praetorius,
USGS,
Paleoceanography

Summer Praetorius,
USGS,
Paleoceanography

Sandra Talbot
(retired USGS). Now
FarNorthwestern
Institute of Art and
Science, Anchorage.
Genetics/genomics

Lauren Davies, Uni.
of Cambridge,
Tephra/chronology

Caleb Walcott,
U. Buffalo,
glacial
geology

Nathaniel Lenhard,
Missouri State
University, Igneous
Petrology/Geochemist
ry

Charlotte
Lindqvist, UB,
Evolutionary
biology

Flavio Coelho,
University at
Buffalo.
Evolutionary
biology

Karlee Prince
U. Buffalo,
Glacial
Geology

Jason Briner,
Univ Buffalo,
glacial
geology

Beth Caissie, USGS
Paleoceanography

Lindsay
Worthington,
University of New
Mexico, marine
geology and
geophysics

Chris Hebda, Hakai
Institute,
Palaeoecology/Archae
ology
(pollen/sedaDNA)

Joe Licciardi,
Univ. New
Hampshire,
glacial
geology

Toni Androski,
University of New
Mexico, evolutionary
biology and
conservation
genomics

The biggest gaps in knowledge of natural history in SE Alaska?

The relative timing of glacial advance/retreat along the entire Cordillera +4

Access to fossil data for genetic species IDs and isotopic dating

If black and brown bears didn't survive in a SEAK refugium, is there evidence for the source population that corresponds to the right time period?

What was the vegetation on the continental shelf - anyone want to count pollen in MD02-2496 - I have the fine sediment (ILH) +2

There is limited paleoenvironmental data (other than Tom Ager's pollen) to calibrate conditions in different bedrock conditions. This applies to sites currently on land as well as those submerged. +1

sedaDNA data on algal groups to support the hard microfossil group record of lacustrine to marine transition offshore.

Jason B wants to see offshore cores taken from shelf lakes during sea level low stand +2

Ice sheet advance history (not just retreat) +1

Sea level history off present coast (particularly during early deglaciation?)

the timing of pre-LGM glacial advances -- and if they are slightly offset from central AK and BC +1 (or other ice sheets like the Laurentide?? -alia)

Timing of human arrival to SEAK and the Pacific coast more broadly +1

More terrestrial stratigraphy: river/stream/road cuts, coast bluffs, caves, man-made quarries, landslides scars, etc. Much of this was done decades ago with some preliminary work but not much since then.

1. Connectivity of marine populations in the eastern Pacific. 2. Connectivity of "Sky Island Populations" in western N. America. +2

A massive lack of terrestrial dates on volcanism +3

How do atmospheric / ocean / ecosystem dynamics of the North Pacific interact over long time-scales?

Understanding ice-ocean interaction better (incorporate ice sheet modelling?), + RSL histories via "coupling" with solid earth/GIA modeling.

Relationship between human settlement patterns and dynamic post-glacial sea-level change +2

Fully resolve the volcanological history of the Mt. Edgecumbe Volcanic Field +1

Core more fjords! Some of them appear to have pre-deglacial sediments (like EW0408-11JC)

Pre-MIS 2 --to understand glacial history AND biological history? [Yes!] +2

What is the biggest gap in knowledge in the natural history of SE Alaska?

Chronology of volcanism at Mount Edgecumbe / well-dated tephra records

Refugia under water?
Where? +1

How long did hypothesized now-submerged refugia exist? +1

Lack of long-term climate records +1

plant genome work +1

When did the LGM ice advance over SEAK? +2

timing and affects of forebulge collapse

longer term comparisons of central Cordilleran ice sheet behavior to northern and southern--e.g. source to sink processes at MPT and PPT

We didn't talk about it much at this workshop, but there's not much known about the sea ice history and specifically how sea ice and glacial ice interact in the region. +1!!

finer scaled coupling of climate and biotic change through late Pleistocene/Holocene +1

Changes in climate related to diversity in diamicton cores

Causes of the Siku events +1

Incomplete fossil record +1

Comparison of different volcanic fields in Southeast Alaska

related to Edgecumbe/volcanics --mantle to surface connections along transform faults +1

Volcanic hazards posed by Edgecumbe

Climate variability throughout the LGM +1

Changes in marine ecosystem composition

Approaches and goals to fill those gaps in knowledge?

Core lakes and bogs in a variety of bedrock types with a full range of proxies to establish a basis to better understand the lacustrine sequences in offshore sites.

Boots on the ground for some of the terrestrial work - some is off the road networks or relatively accessible by boat and doesn't necessarily involve an enormous amount of money

Ingrid (ihendy@umich.edu) will organize a group to write a site survey proposal for IODP +2

There are international collaborative funding opportunities through NERC (UK) and NSERC (Canada), some are dependent on existing funded grants but might be other opportunities.

Jason B:
infrastructure for offshore work, on continental shelf, too

Leveraging field logistics, team up with USFS, USGS, Academia, Institutes

create (or is there one?) an interactive GIS-based database of parameters that constrain/affect/track ice location/advance/retreat. Needs an assigned database manager.

Expanded taxonomic sampling and sequencing across islands to construct gene-flow networks

Pre-MIS 2 glaciations: dating volcanics that bracket older tills, multi-isotope cosmogenic isotope dating and/or rock cores, marine sediment coring with IODP

Collaborations to collect DNA/eDNA samples of marine species to monitor northward migrations as climate warms as well as reconstruct population patterns from glacial times.

Combine efforts--could be appealing for interdisciplinary projects/funding too

Coordination of researchers to leverage each other's resources (re: Jason and Sue's idea)

Boots on the ground on ecologically productive YD/BA paleoshorelines for archaeology.

Collaborations coordinating Tlingit/Haida interests with those of the scientific community +1

To keep people in contact: focused topical sessions at GSA, ESA, AGU, etc. on a regular basis to keep people connected and to draw in more interest in workshops like this.

Approaches and goals to fill those gaps?

Targeting the hinge areas to look for early archaeological sites

Marine cores in submerged basins on shelf +3 yes, plus imaging!

Sampling of submerged glacial and volcanic features +2

Ice sheet and GIA modeling to simulate glacier loading/unloading and impacts on crustal stress fields

more genomes of subfossils! +1

speleothems +1

eDNA coupled with later field reconnaissance in places where interesting eDNA is found +2

sedaDNA to infer the paleoenvironment +1

site survey and ocean drilling from shallow to deep water transect for longer term records

More interdisciplinary conversations to ID things of interest to other groups. Ex: Jason Briner wants to know basal ages of sed. cores to get at timing of glacial retreat...this might not be imp. part of paleo study...

MinION for genome sequencing in the field

Challenges to meet those goals?

Energy

More time:
Can the
biologists
figure out
immortality
yet?

\$\$\$\$\$\$\$\$\$\$\$\$
+100

Communication
(Sue Karl's message
board idea!)

Chris: Could get
better at answering
questions from
multiple angles
within single
project/grant

(e.g. onshore +
offshore for glacial;
lots of people for
refugia). Can be very
attractive for some
funders

Challenges to meet those goals?

No proximal ice sheets (no terrestrial climate records from ice cores - other than Mt. Logan)

glacial sediments make finding other things in the sediments very difficult/glacial overprint on landscape +1

**Funding
+2**

**Access to
suitable
field sites**

**SEAK
transportation
accessibility**

**SEAK
weather :(**