



University-National Oceanographic
Laboratory System
~UNOLS~
**Deep Submergence Science
Committee Meeting
(DeSSC)**
December 13, 2015

**New User Program Presentations
Part II**



Olivia Lee

Research Assistant Professor

Email: oalee@alaska.edu

International Arctic Research Center, University of Alaska Fairbanks



Research interests:

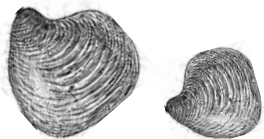
- Changing sea ice habitat for Arctic pinnipeds
- Remote sensing & traditional knowledge use to track sea ice change



AGU posters:

- GC23D-1173: Sparse sea ice habitat
- PA33A-2173: Scenarios use to engage decision-makers

New to deep submergence field research



Interested in building collaborations for:

- Linkages between marine mammals & benthic prey
- Technology for benthic ecosystem monitoring



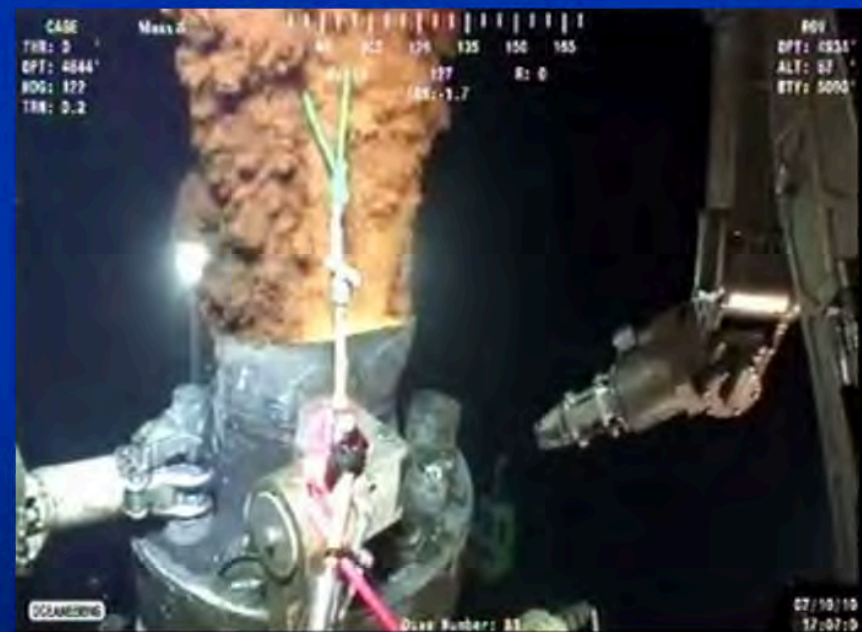
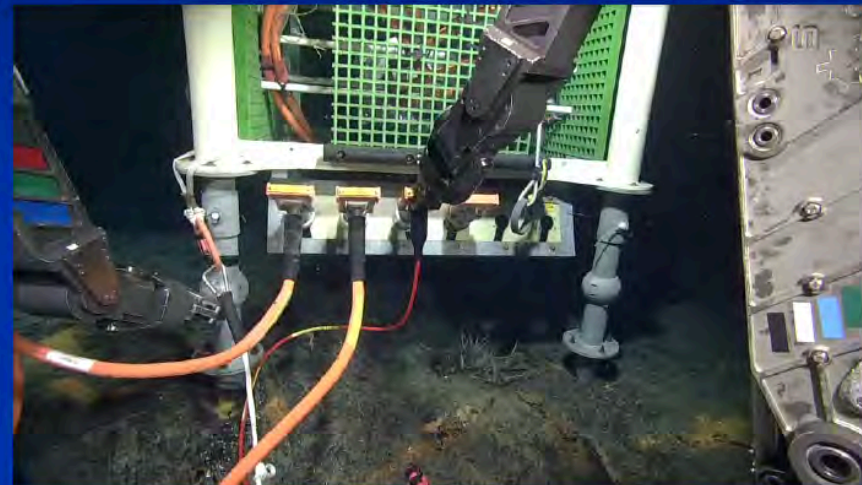
Aaron Marburg

Postdoc @ UW-APL

Interests:

- Robotic perception & situational awareness
- Robotic autonomy
- Photogrammetric data proc.
- Sensor fusion:
Vision + { sonar, ... }

Looking for interesting problems!
amarburg@apl.washington.edu



CHRISSY MASCHMEYER

Graduate Student in the Marine Geophysics Lab at the University of South Carolina

Interests

- Seafloor mapping
- Submarine Volcanology
- Coastal Management

Current Projects

- Morphology-derived automated classification of lava composition at the Alarcon Rise, Mexico
- Seafloor substrate classification from sonar backscatter offshore South Carolina

Future Plans

- Doctorate in Geological Sciences at the Marine Geophysics Lab, University of South Carolina
- Apply geoclassification techniques to determine estuary response to sea level rise in coastal South Carolina

Contact Information

- Email: chefron@geol.sc.edu
 - Phone: 803-431-1955
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Nicole Morgan

Florida State University

- Currently working on North Pacific seamount community research
 - Focus on megafauna community structures
 - Looking for recovery potential after human impacts
- Next stage will look at population genetics of precious corals among North Pacific seamounts



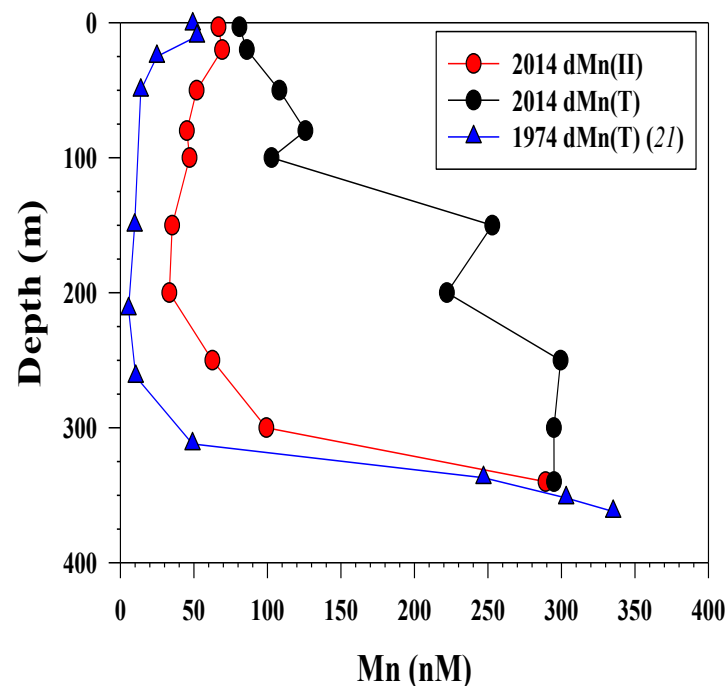


Véronique Oldham

PhD Student with Dr. George Luther
at the University of Delaware

Looking for Post-doc in Spring 2017

- Studying **trace metal speciation, and redox chemistry** - focusing on **soluble Mn(III)-L** in different O_2 regimes: *St. Lawrence Estuary, Atlantic Shelf, Chesapeake Bay and the Great Marsh, Delaware*.
- **We find Mn(III)-L likely ubiquitous in the marine environment**, compared to previous work which assumed that dissolved Mn speciation was dominated by Mn(II)
- Interested in broadening my research of trace metals by **incorporating different elements, their coupled reactions, and reactivity in different systems** – like the deep ocean!



Gina Oliver

- ❧ Second year PhD. student at Rensselaer Polytechnic Institute under Dr. Karyn Rogers
- ❧ Research focus: High-pressure geomicrobiology
 - ❧ High-pressure batch culturing with a model organism, *Archaeoglobus fulgidus*
 - ❧ Effects of high-pressure cultivation on cellular growth and physiology
- ❧ AGU poster session: Tuesday, December 15th from 8am-12:20pm (Biogeosciences, Moscone South-Poster Hall)
 - ❧ Abstract B21C-0462



Rensselaer

Adelaide Rhodes, Ph.D.



Copepods

- Extremophiles
- Bioluminescence
- Lipid Bioconversion Pathways

Tanaids & other Peracarids

- Biogeography
- Deepwater Horizon

Comparative Genomics

- Looking for Samples from the Deep Sea

Sarah Seabrook



- First year MS student
 - Oregon State University
 - College of Earth Ocean and Atmospheric Sciences
 - Ocean Ecology and Biogeochemistry
- Research Interests:
 - Community dynamics, functional contributions, and trophic interactions of micro- and macrofauna in deep sea and polar marine environments

Clara Smart

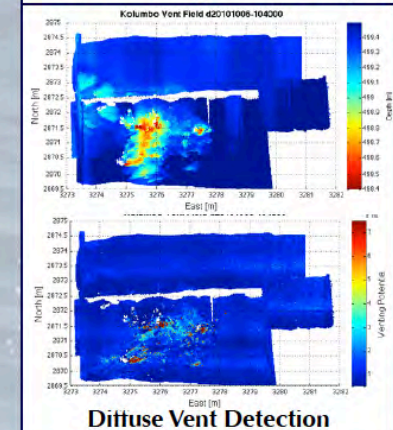
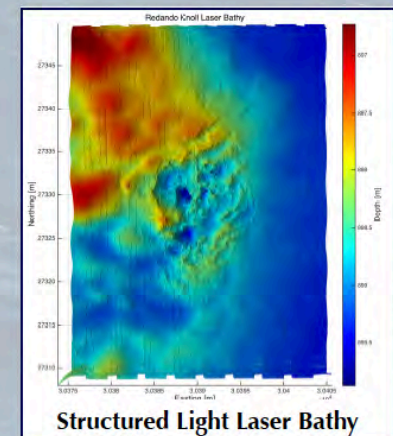
University of Rhode Island
Ocean Engineering, Ph.D. Program
Advised by Dr. Chris Roman

Research

- High resolution seafloor mapping (visual and acoustic)
- Detection of diffuse seafloor venting using structured light imaging
- Remote analysis of brine pool surface characteristics and internal structure through acoustic imaging
(AGU poster - OS33A -2001, Wednesday 12/16)
- Anticipated graduation: Summer 2016
- Future goals: Engineering for science. Post doc? Job?

Field Experience

- *E/V Nautilus* (Ocean Exploration Trust)
- ROVs *Hercules* and *Argus*
- 2011- 2015 (19 legs/cruises)
- High Resolution Mapping Specialist (2013-2015)
- Scientific Navigator (2011-2015)



Phillip J Turner

2nd Year PhD Student

Marine Science and Conservation
Duke University

Current Research

- Biogeography of seep communities on the US-Atlantic Margin
- Valuation of ecosystem services
- Ecological importance of rare-species (i.e. singletons)

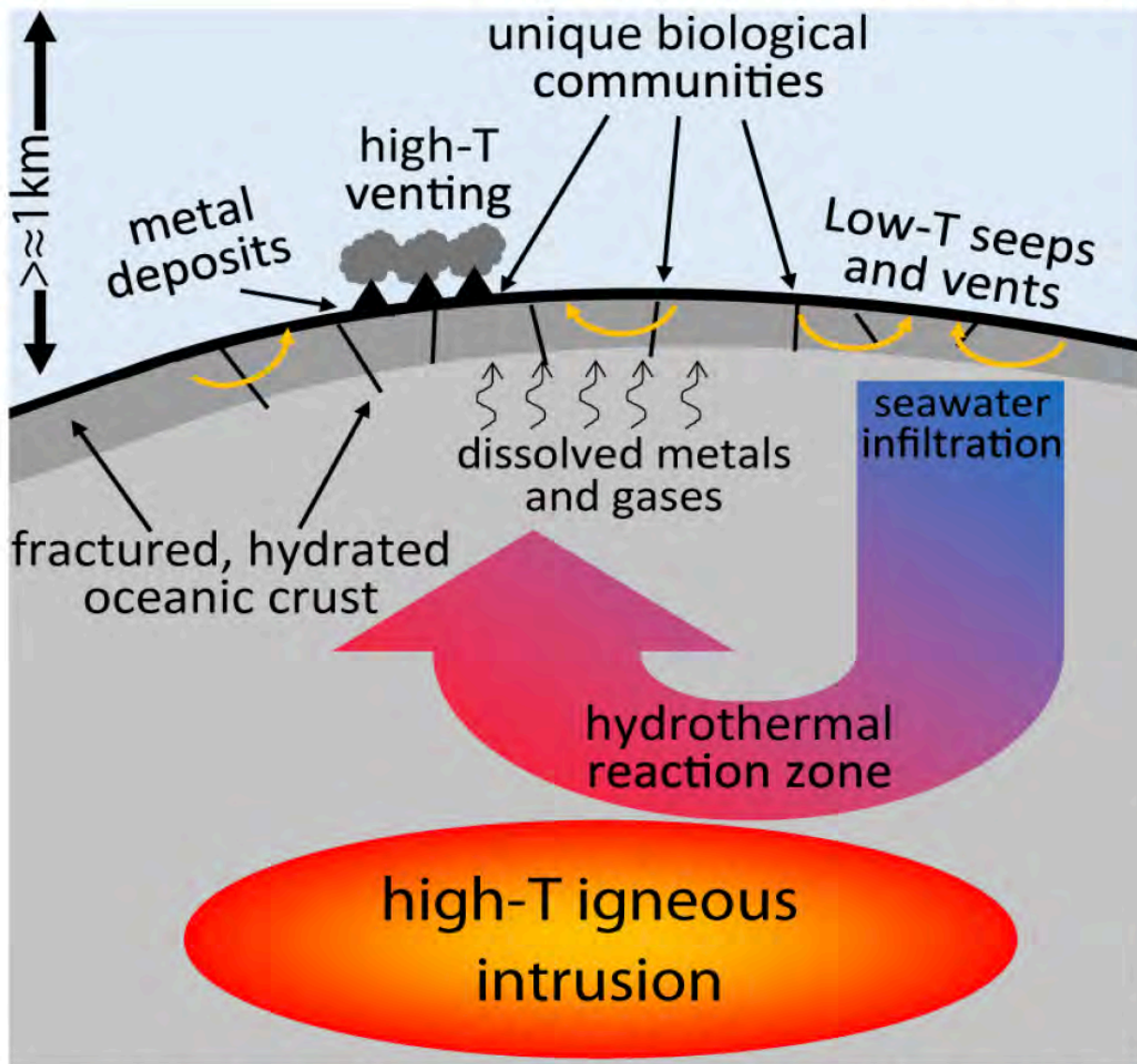


Laurel Hiebert and I pre-*Alvin* dive

Interested in Industry/Marine Policy Internships

phillip.turner@duke.edu

Reactive Transport Modeling of (Sub)seafloor Hydrothermal Processes



Motivation

- constrain unobservables
- test hypotheses
- define “the scope of this study”
- calculate fluxes through Earth history

Challenges

- Rapid, accurate calculation of water/solute thermo properties
- Roles of kinetics, mineral surface areas, W/R ratio?
- Fluid flow properties
- Microbial parameterizations

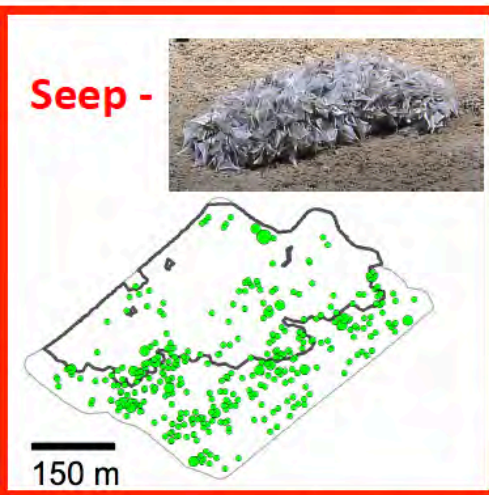
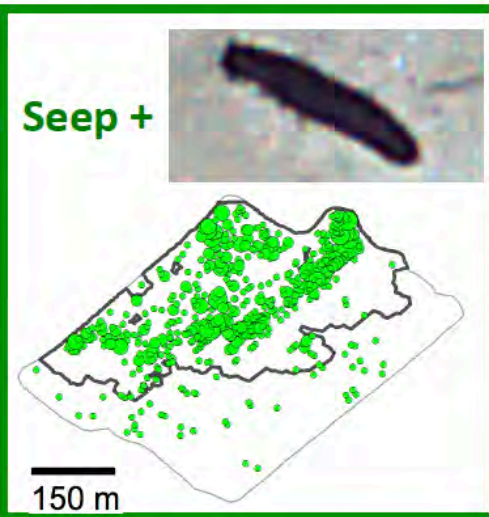
Benjamin Tutolo – Postdoc at University of Oxford

Jamie Wagner



Ph.D. student in Marine
Science and Conservation

Van Dover Lab
Duke University, NC



Integrating genetic and geospatial approaches to deep-sea seeps

- GIS mapping of megafaunal assemblages
 - Connectivity and demography among North Atlantic seep mussel communities
- =====

Research cruise experience

- DSV *Alvin*, AUV *Sentry*, ROV *Jason*, R/V *Atlantis*: Mapping and genetic sampling for seep connectivity studies
- ROV *Hercules*, E/V *Nautilus*: Mapping and sampling of seeps and OMZs; reef, slope, and shipwreck biology

Poster OS33A: Wed. afternoon, Dec 16

The role of seep ecosystems in distribution patterns of deep-sea megafauna



GEORGIANNA ZELENAK

Scripps Institution of Oceanography

Geophysics Masters Student

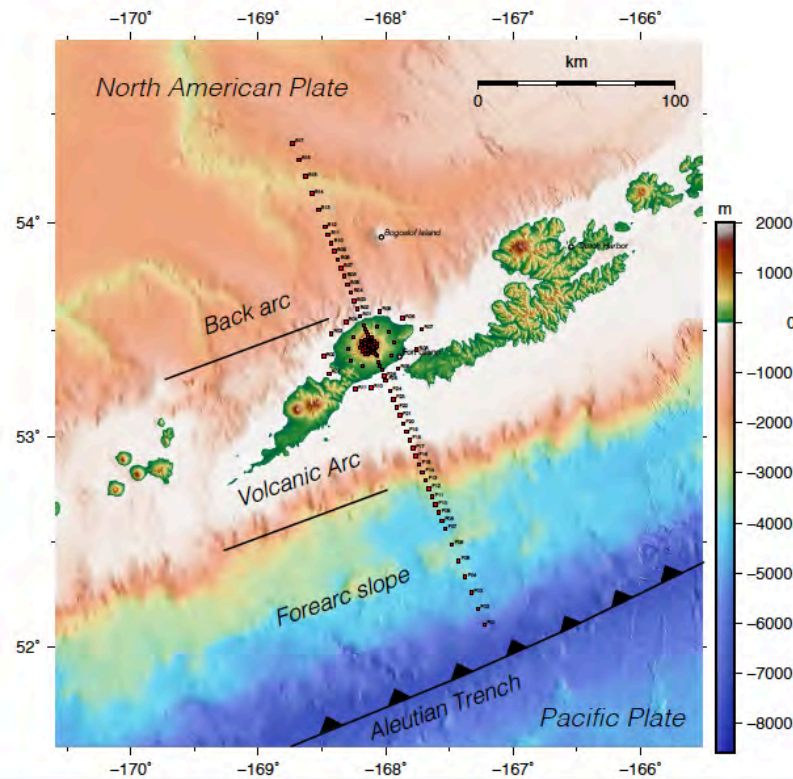
Expected completion summer 2016

Current research:

- Imaging magmatic system beneath Okmok Caldera in the Aleutians using amphibious profile of electromagnetic instruments
- AGU poster: V43A-3091, Thursday afternoon

Next step...?

- Looking for opportunities that would let me use deep submergence technologies!





Xubo Zhang

I am a Ph.D Student from Tongji University, Shanghai, China. Now I am a Guest Student at Woods Hole Oceanographic Institution.

Research Interests

I am interested in structural and thermal evolution of oceanic lithosphere, especially the processes after the cessation of seafloor spreading. And I am also interested in fluid dynamics of near-bottom hydrothermal plumes.

AGU poster

Investigation of turbulent flows and near-bottom hydrothermal plumes at mid-ocean ridges.

Mohamed K Zobaa

mohamed.zobaa@mst.edu

Education: PhD, 2011 - Missouri University of Science and Technology

Area of Expertise: Applied Palynology - Biostratigraphy; Hydrocarbon Exploration; Paleoenvironmental and Paleoclimatic Reconstructions

Research Interests: The distribution and accumulation of sedimentary organic matter in time and space and how they can be employed to understand the vertical and lateral facies evolution within the enclosing depositional system

Looking For:

A- Potential collaborators with the same research interests

B- Stable job “niche” where I can settle and continue to pursue my research goals

