

WAML Annual Meeting Minutes
October 15-17, 2018
Friday Harbor Labs,
Friday Harbor, WA

Members Present: Billie Swalla, Brian Bingham, Gary Cherr, Bob Cowen, Neil Davies, Ted DeWitt, Terry Donaldson, Margaret Dutch, David Gillett, Jim Harvey, Jan Hodder, Karina Nielsen, Dean Pentcheff, Bob Richmond, Ben Ruttenberg, Brian Tissot, Steve Weisberg, Regina Wetzer

Guests Present: Megan Dethier, Maria Kavanaugh, Chris Meyer, Gustav Paulay, Peter Shum, Ed Smith, Joel Widder

Day 1 – October 15, 2018
WAML Biocode Project

Regina Wetzer (L.A. Museum of Natural History – new WAML members!) – showed a tree of spheromatid isopods – they fall out really well into different clades from all along the West Coast of the U.S.A. There was good sampling all up and down the West Coast, but we can use more specimens from Oregon and Alaska. This will be a publishable unit!!

Did we get samples from enough locations?

Yes, but none from Oregon or Alaska.

Did we get good sequences from the samples?

Yes, there are some that seemed off, but then the vouchers were reanalyzed.

What do we do with the data analysis?

There is definitely enough data for a research manuscript here.

How do we get the best invertebrate library for the West Coast?

How do we do best practices for invertebrates?

How do we distinguish invasives from local species?

Advice for doing Biocode in Invertebrate courses ?

At FHL, they did a demo of the procedure but probably should have checked to be sure that the students followed the protocol exactly. OIMB wrote up a cookbook for the students to do their work. They did not allow class time to do it. It made 10% of their grade, but some students were not very pleased about it.

FHL told the students that they should pick something that was not in the Genbank database and they got extra credit for it.

ATBIs – All-Taxon Biodiversity Inventories

Gustav Paulay – Talked about doing BioBlitzes at Hakai Institute and Kaneohe, Hawaii, but most of this is still dark data (only available to a few people).

We are building these FHL databases in order to use them for a Genomic Observatory at FHL – locally 2700 species – species from Kozloff's book

Copepods and hydroids
Metabarcoding
Provide free access for housing, dining, lab space, etc.
Collaborative proposal at NSF!

Action Items

1. Richard Emlet has a cheat sheet that he and his co-instructor made for their Invertebrate Course that we'll get from him and share with everyone.
 2. WAML will continue to discuss the possibility of having BioBlitzes at different sites on the West Coast – but only if the data is available to WAML members that participate.
 3. List of West Coast taxonomists that might be interested in particular species that would like to collaborate with the NAML West Coast network.
 4. ARMS deployed to accumulate samples from all WAML members.
 - Can we standardize how we do this as an official network?
 - How to distribute the ARMS and coordinate training?
- * Ben Ruttenberg, new WAML member from CalPoly, offered to coordinate the recovery and use of ARMS by WAML.

Day 2- October 16, 2018

WAML Meetings

8:45 Joel Widder - Federal Science Partners FY18 & FY19

Feb 2018 budget deal raised spending caps for FY 18 and FY 19.

There is \$50 billion left on the table for FY 19.

NSF – level for the next year

NOAA – Is doing well in spite of suggested budget cuts

NIH – It has had a couple of good years in spite of the Administration's suggestions of cuts.

DOE –

FY20 – Anyone's guess right now!

Legislative Update of Interest to Marine Labs

1. Save Our Seas Act Signed Into Law – gives NOAA the authority to regulate aquaculture.
2. Magnuson Stevenson Act Reauthorization
3. Trump has replaced the Obama National Ocean Policy
4. SOST Report (interagency Subcommittee on Ocean Science and Technology)
Comments on draft by August 27, 2018
5. NAML's comments on the SOST Report – A Decadal Vision – Placed-based education and research

Should we invite the EPA and NOAA to the NAML meetings in Washington, D.C?

10:20 AM Discussion of WAML Invertebrate Genomics Initiative - Steve Weisberg, Neil Davies and Chris Meyer

1. **Cosmopolitan Species Project** – Look up and down the U.S. West Coast and across the Pacific Ocean to have all of the labs work together to document genetic differences.

This has been an active proof of concept! 18 WAML labs agreed to participate and we actually got samples from 10 members. 1 more lab added samples at the meetings! We will leave this open and encourage other WAML labs to participate.

A. **Ampeliscid amphipods** – These are wide-ranging and ecologically relevant (they are used in toxicological testing). They are a multispecies complex with unresolved taxonomic issues, adding an interesting component to the project as the barcoding will likely help resolve some of those issues. The Ampeliscids are found in soft-bottom muds in shallow to moderate depths. They are of generally small size, so the mud will have to be sifted and you will need to pick them off screens.

B. **Tellinid bivalves** – These are also wide ranging soft-bottom organisms with multiple species, and should be even easier to pick off screens. The tellinids are a group with difficult morphological separation, and addition of any information allowing molecular species determinations to be refined would be welcome.

C. **Sphaeromatid isopods** – This group not only extends the full length of the coast, but should be a group that extends into the Pacific Islands (although being more prominent in the Pacific northwest). These organisms occur primarily in rocky intertidal algal mats.

2. How do we develop a genetic library of West Coast Invertebrates for further research?

- A. **BioBlitz** - Gustav Paulay was a proponent of targeted BioBlitzes, bringing taxonomic experts to a particular place for 1-2 weeks and have them collect and process samples continuously. When will the data be available? FHL data was collected over 3-4 years ago and has not been shared yet.
- B. **ARMS (Autonomous Reef Monitoring System)** – Work together with the Smithsonian Institution. Put these out in triplicate for a year at a time. Training for how to recover the ARMS – Series of courses to bring people together to learn how to process the samples. Ben Ruttenberg, new WAML member from CalPoly, offered to coordinate training on the use of ARMS by WAML.
- C. **SI Student Biocode projects** – Steve Weisberg, Billie Swalla and Karina Nielsen will work together to establish the protocol for doing projects.
- D. **WAML \$\$** - Treasury to buy ARMS, Money for BioBlitzes at West Coast Marine Labs

Neil Davies – Genomic Observatories

How to gather Metadata to make the Genomic Data even more valuable?

Ocean Sampling Day – make collections, send samples of marine microbial sampling to contribute samples.

What kind of funding can we leverage to maintain the network?

We should ask NSF and NOAA at our March meeting!!

4. Maria Kavanaugh – MBON – Marine Biodiversity Observing Network

mkavanau@ceoas.oregonstate.edu

NASA, NOAA, BOEM, NSF funded Sanctuaries, SBLTER, and AmBON

Contribute to the understanding of biodiversity

Data management structure and platform

New methods to extend/integrate existing surveys

eDNA - use NGS or PCR for certain species

satellite based Seacapes – Ocean Dynamics, Ecosystem comparisons,

real time cruise planning

MBON core measurements

Connecting with shareholders

MBON Portal: Interactive Tools - Data Integration

National Marine Sanctuaries – from microbes to whales with a single water

sample: (Djurhuus et al. 2017, *Frontiers in Marine Science*)

(Santora et al. 2017)

Kelp and broader biodiversity

ONR – Funding for MBON projects – National Oceanographic Partnership Program (NOPP) 2019 Broad

1:30 Science Presentations

Ken Sebens – FHL Ocean Observatory

Mackenzie Gerringer – Research in the Cyclops I from OceanGate at FHL

3:00PM WAML Business meeting

Treasurer's Report

Bob Richmond reported that WAML currently has \$40,333.11??. He had two people (Billie Swalla & Steve Weisberg) audit his treasurer's report. The auditors reported that everything is in order.

WAML Education Committee Report

Jan Hodder reported that there are four leaders for NAML Education. They communicate with leaders through a Google Group. They hold periodic phone meetings to discuss the progress in education. We need a new WAML Education leader because Jan is retiring. The other 5 leaders are very good and they all have PI status.

Election of WAML officers and Board members for 2018-2019

Billie Swalla began the discussion by clarifying that her term extends through the end of 2019, but there is a Board role that is open, since Dean Wendt has become a Dean, hence he is Dean Dean Wendt.

Four WAML Board members serve as Board members for NAML. The following four people serve in that capacity: Weisberg, Swalla, Tissot, and Wendt. We will need a replacement for Dean Wendt. Please let Billie Swalla know if you are willing.

Day 3- October 17, 2018

WAML Meetings

9:00AM Dean Pentcheff (L.A. Museum of Natural History – new WAML members!)

Summary of samples that have been collected so far in the WAML project

How to find the WAML datasets? **WIZC (WAML IZC)**

Looking up data in BOLD – If you don't have an account, then you have to find the records by taxonomy. You can easily create an account.

9:45 AM Jan Hodder

Undergraduate Research Experiences for STEM students

NAML and OBSF meetings in Woods Hole

NSF RCN – PI Kari O'Connell U-FERN

Field-based educators, scientists and social scientists collaborating across disciplines to do research on student learning.

Landscape Student Undergraduate Field Experiences

Landscape is varied

Majority of students are UG STEM majors

NSF defined URM participation is low – 9.9%

Need for mentoring and educating the educators to do field-based mentoring

Assessment Working Group

UFERN Webinar Series

Susan Singer “Undergraduate

Ufern.staff@gmail.com

Webinars starting December, 2018

Interactive Find a Collaborator Database

Ask Jan for her slides!

Action items:

1. Follow up discussion and outline manuscripts at the next NAML meeting in Washington D.C.
2. Review data and discuss further progress and collaboration at the NAML meetings at OSU next fall.

Respectfully submitted – Billie J. Swalla