



## COASTAL FUND AGENDA

Associated Students

Tuesday, (date), Nati Conference Room

CALL TO ORDER 6:04 by (name), minutes recorded by (name)

- **ATTENDANCE**

<b>Name</b>	<b>Note:</b> absent (excused/not excused) arrived late (time) departed early (time)	<b>Name</b>	<b>Note:</b> absent (excused/not excused) arrived late (time) departed early (time)
Tristen Thron Chair	Present	Peter Min Outreach Coordinator	Present
Matias Eusterbrock Co-Chair	Present	An Nguyen Outreach Coordinator	Present
Aral Greene Undergraduate Rep	Present	Peter Min Outreach Coordinator	Present
Jordan Gallagher Undergraduate Rep	Present	Rebecca Nishide Administrative Assist	Present
Esha Suri Undergraduate Rep	Present	Hannah Bone Administrative Assist	Excused
Alana Ayasse Graduate Student Rep	Present	Senate Liaison	
Courtney Thomas Graduate Student Rep	Present	Sarah Siedschlag Advisor	Present

- **COMMITTEE BUSINESS**

1. **Approval of Attendance and Proxies :**

*MOTION/SECOND: Tristen/Courtney*

*Motion language: Motion to approve attendance and proxies*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

2. **Approval of Minutes**

*MOTION/SECOND: Tristen/Jordan*

*Motion language: Motion to approve the minutes from last week*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

- **PUBLIC FORUM**

- **REPORTS**

- **Advisor Report: Siedschlag**

- **NOTHING TO REPORT**

- **Chair Report: Thron**

- [Broke: Santa Barbara Oil Pipeline Spill](#) Trailer for documentary made by EDC board member/filmmaker

- **Senate Report**

- **Administrative Report: Nishide**

- will scan documents before filing and ask applicants to shorten if it looks too long

- **Coastal Service Program Report: Bone** - not present

- **Outreach and Education Report: Min & Nguyen**

- small turnout to hallo-clean; lot of people out of town and not too much trash on streets
  - adopt-a-block appreciative of letter of support
- Let's talk about water is this Thursday at 6 at Bren
  - does anyone want to give a talk about what we do?
    - Alana will do it
- featured project was hydretain project, hydretain did not work, need new featured project
  - must be from last fall
  - Not urgent, but would like to get out soon
  - also did beach wheel chair and ACIDD
  - board members will look at FALL 16 projects and pick a new one
- beach wheel chair feature in daily nexus - interview with outreach
  - dedication has not happened yet

- **Sub-Committee Reports**

- **AGENDA**

1. **Approval of Agenda/Additions to Agenda**

*MOTION/SECOND: Tristen/Courtney*

*Motion language: Motion to approve agenda and additions*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

- **OLD BUSINESS**

1. **(item)**

*MOTION/SECOND: (name)/(name)*

*Motion language:*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

- **NEW BUSINESS**

1. **SPR 17-06 Reallocation Request**

*MOTION/SECOND: Tristen/Jordan*

*Motion language: Motion to approve Spring 17-06 Reallocation request*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

2. **Allocate \$375.14 for 500 pens**

*MOTION/SECOND: Tristen/Jordan*

*Motion language: Motion to allocate \$375.14 for 500 pens*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

- **DISCUSSION**

1. Scientific Dive Scholarship (Cont.)

- need to clear up how to disperse and how to make decision
  - will be more clear on how to decide once we have applications - we will be the ones deciding, will be small amount of applications
  - only people who have already gotten into class will be able to apply because of requirements thru class and limited spots
  - want it to be very clear that application is open and scholarship is possible for people in class
    - application is online, put our application next to it
  - will pass money once applicants have been chosen

2. Final Report Discussion (Cont.)

- ERI - Alana
  - FALL 16-11: Understanding dissolved oxygen/pH level variability in SB Channel
    - undergrad project- did not consider success
    - minimal data analysis but learned about data collection
      - inconsistent data, ran out of time for analysis
      - did not realize how time consuming it would be
    - learned about scientific process and how messy data could be

- one student got a fellowship and featured in bottom line newspaper- not a success but started his career
  - money was not wasted, but good to know
  - should we tell undergrads when their projects seem too ambitious? Should we not fund if it seems too ambitious?
    - we have funded if it seems too ambitious or lacking advising/support
    - we do not fund just a thesis
    - worth it to ask about unexpected timing issues when presented with big research projects
    - tell people with good ideas to focus and reapply
- EDC - Courtney, Esha, Tristen
- Fall 15-08 : EDC Goleta Watershed and education project
  - reapplied this fall
  - hired intern to plan/facilitate local creek cleanups
    - removed almost 4,000lbs of trash
    - average 13 volunteers at each cleanup
    - 11 cleanups total
  - Goal to identify areas of concern
    - pollution sources, syringes, spills, etc
  - Clif bar foundation and Union Bank supported after our grant
  - Practical experience, productive project
- SPR 16-01 EDC Goleta Watershed 14
  - coastal fund funding let to sb creeks council donating \$2,000, EDC donated \$1,000 of each
- SPR 17-05 : Phillips 66 Rail Spur Project - progress report, end date at end of December
  - successful, our money goes towards a good cause
  - good at keeping up with paperwork
  - Company gave up and withdrew railroad proposal; what did they spend their money on?
    - did not hire intern because coastal commission hearing did not happen
    - was planning on reallocating intern money for staff time
- Winter 16-10: Protecting CA coast from oil development
  - Grant was used to get additional funding
  - research false claim used in south Ellwood oil project
    - claim: drilling in channal has reduced natural seepage- false and inappropriate
      - risk from spilling completely outweighs any possible truth to this claim
      - only justification for oil rigs
      - poorly studied claim
- FALL 16-13: Hiring 2 interns for research project on NRDA's for Refugio Spill
  - Research to comment on oil spill plan that was to be released
  - Draft restoration plan was not released during project time frame
  - Interns got good experience - one was ex board member
  - Similar to proposal heard last week from EDC
  - success because interns accomplished research
- EDC seems to often not stick to time line because of bureaucratic process
- Gaviota Coast Preservation and Education

- intern to go over environmental impact report - community, biological, government experience
- tell public why gaviota coast needs to be protected
- successful; stopped loopholes that would have allowed harmful development
- made effort to work with concerned farmers
- only issue was scheduling
- EEMB Competition between Chaparral and invasive grasses - just a progress report
  - behind because of germination issues
  - graduate student project, undergraduates are being managed
- UCSB Environmental Studies, Graduate biomass ES project
  - on track
  - collecting seeds, taking data, germinating
- **PROJECT REVIEW: FALL 17-12**

Project Title: Green Cleaning for Blue Water

Sponsoring Organization: UCSB Facilities Management, UCSB Bren School, ERI

Presenter Name: Heather Perry

Summary: The widespread use of chemical disinfectants and harsh cleaning agents presents risks to air and waterways as chemicals are released into the environment. In an effort to reduce the deleterious effects of synthetic cleaning chemicals on campus, Procurement, Grounds and Custodial Services, and Post-doc Naresh Devarajan of Professor Holden's lab, are collaborating to test a more sustainable approach to managing harmful pathogens in restrooms.

Sarah is accompanied with Heather

Presentation Notes:

- Graduated 2008 in biochem, graduated Bren in 2014, Work at procurement office with sustainability initiatives for research
- Project is collaboration with facilities management, Holden Lab, Bren etc
- Green cleaning project - Trying to use green cleaning products
- Identified what could be more sustainable - restroom cleaner and disinfectant
  - Disinfectants cannot be certified by any sustainability standard boards
  - Use large quantities - every restroom on campus, applicable to housing
- \$30,000, 1,200gallons per year down the drain
- UC system and universities across world
- Microbial based cleaning products - have not been applied for general purpose cleaning
  - 3 peer review/publications done about using in hospital settings in europe
    - Bacterial resistance, disinfectant does not work
  - Some non peer review studies
- Microbial safe for humans and environment, work better than disinfectants and with different mechanism
  - Competitive exclusion
  - Longer loved cleaning
- Utilize non pathogenic beneficial bacteria (probiotics)

- Desinfectantes rely on biocidal chemicals, kill everything - kill everything living and surface can be quickly recognized
- Microbial products introduce healthy bacteria/ layer that outcompete harmful pathogens
  - Consume organic matter about 17 times faster than other microorganisms
- Still being studied, bacteria are naturally present
  - Very widely applied
- Identified two products to test on campus
  - low/no volatile organic compounds
  - Ecologo organic certified products
- Dr Holden's lab eager to test products, inline with what lab does and new application and new third party study
- Total study cost over 60,000
  - 15,000 from healthy campus, 1200 from bioscience products testing, 5000 from manufacture of other product
  - Budget request reduced to what has been requested from coastal fund
  - Ten month study proposal, detailed budget developed - submitted with proposal
    - Two months of developing design
    - Student intern mentored by Dr Holden, post doc running study
    - Publish manuscript upon completion
- Good collaboration, demonstrates commitment to innovative health and environmental research, minimizing contamination of ocean (proximity to storm drains)
- Less pressure on sanitary systems
  - Probiotics act as water treatment themselves
- Huge educational opportunity for everyone involved, local areas, other UC's
  - Lot of collaboration between campuses, a lot of interest expressed
- 

#### Board Questions:

- Assuming the study goes well, how soon do you think it could be implemented
  - As soon as results show that it works better or as well as normal cleaning products, transition could happen quickly
  - John Cooke is decision maker and he is a supporter of this project
  - Challenge is getting over stigma if disinfecting, relearning alternatives
    - Practices moving away from mass disinfecting
  - Will still have to purchase disinfecting
  - If results are possible, in the next year transition will be happening
- One peer review product was used in bathrooms in hospital, is that not enough evidence to use it here
  - Disinfectants have to be registered by EPA
    - Must show through testing that they can kill selection of pathogens
  - Microbial based products work under different mechanisms, cannot be registered under same classification as EPA, novel to US
    - Communication with EPA - started looking into this in 2013, published white paper about risk of respiratory disease

- Concerned about industry pressure on EPA and cooperation
  - Europe is a little more open to alternative practices, new research
- Will we be able to order product if its not approved by EPA
  - No state mandates for general purpose cleaning and how and when to disinfect, just to keep clean and sanitary
  - Transmission is from hand to mouth contact, quick repopulation that occurs after disinfectants is not effective
- Do you know what happens to disinfectants when they go down the drain and to treatment plants
  - She thinks that they do get treated properly, not entirely her area of expertise
    - Risk mostly not going into drain, going into storm drains, spills, improper disposal
    - Can follow up with trish about how sanitary system is affected
  - Issue before use phases- manufacture process, wasteful and chemical heavy
- Microbial products will only be tested on floors?
  - This is where samples will be taken from
- Are disinfectant chemicals still going to be used elsewhere in bathroom
  - Have to be careful about using together - using disinfectant would counteract microbial treatment
  - Cannot use at the same time - use on different surfaces
  - Ideal is to reduce purchase of disinfectants to very small amounts
- Big problem with traditional cleaning products is pre consumer? What is process for manufacturing microbial products
  - Do not know too much about it
  - Huge industrial application, concern about getting into it
  - Same microbes that are used in water treatment plants
  - Fact that Holden lab was excited gave more confidence
  - Certification by ecologo looks into chemicals in products, air pollutants, toxic release, packaging , pH - certification is only criteria looked at for cleaning products
- Do you know how much more it will cost
  - Contracted supplier; pricing will be comparable
  - Buying a lot of product means discounts can be made
    - UC system has a lot of purchasing power
- Do you know if undergrad intern will be considered for publication
  - Do not know, would assume yes because involved in six months of project

Board Discussion: Board goes into closed discussion

*MOTION/SECOND: Tristen/Jordan*

*Motion language: Motion to table discussion for FALL 17-12 with intent to deny funding*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

## FALL 17-13

Project Title: Scoping and Drafting Best Management Practices for Offshore Aquaculture

Sponsoring Organization: UCSB Bren School

Presenter Name: Phoebe Racine

Summary: Growing population and declining fish stocks create a necessity for aquaculture production, but the U.S. has yet to develop a strong aquaculture industry and relies on importing about 80% of its seafood. The seafood trade deficit is greater than \$10 billion/year, with complex and opaque supply chains. To help solve this, recent research in ocean planning reveals Southern California can lead the way in producing a domestic and sustainable seafood product by growing aquaculture offshore (Gentry, et. al. In Review). Santa Barbara area is highlighted as one of the best places for offshore aquaculture growth, spurring the development of newly formed offshore aquaculture projects. To ensure this new industry minimizes their impact to marine ecosystems and promote sustainability, this project requests funds to create a guide to Best Management Practices for offshore aquaculture and identify areas where further research is in need.

### Presentation Notes:

- Phoebe Racine passionate about aquaculture
- Josh on farming/ entrepreneur side
- What are best management practices
  - Practices thought to be most effective practical methods to reduce impact etc
    - Like debris
  - Create management practices to both target and overall better industry
- Best management important for Santa Barbara - huge potential for aquaculture
  - Number of people applying for permits for shellfish
  - Want to get in front of issues before issues like Tomales Bay
- Participated in Stakeholder meeting at Tomales bay
  - State will not do work because they are overstretched, focusing on industry
- Interest in offshore is new - want to get ahead before it just starts
  - Want to outline how to do it right and prevent ecological issues
- Literature is available, but not locally
  - Will do review to find what is applicable to santa Barbara
  - Will be able to identify research gaps
    - Can generate further work with MSI, etc with project ideas
- Why researching at this place - Starke is sustainable research center
  - Mission statement includes empirical work
  - Most responsive to needs of local aquaculture needs
  - Offshore best management's work fits into mission statement
- Big picture - results could go into permitting for aquaculture lease
  - Opportunity to help draft language that could be used for decades
- Why fun



Board Questions:

- What is pushing industry to offshore?
  - California is not spatially limited, but in shore aquaculture competes with local beachgoers
  - Fewer uses offshore
  - New technology that allows offshore aquaculture
  - More people have been testing practices
  - Economically advantage, larger water column
  - Pollution issues like proximity to water treatment on shore
- What kind of current aquaculture does Ventura shellfish have?
  - None
- What kind of relationship will you have with Ventura Shellfish Enterprise
  - Enterprise approached Phoebe because of her ecolabelling background applying to get group permit for offshore leases
    - Have capitol - sea grant
  - Nothing in the water yet
  - Almost a year's worth of public meetings
  - Want best management practices drafted for them
  - Director of aquaculture for fish and wildlife is encouraging best practices writeup
- Is there potential for necessity of field experiments to produce finished product
  - Want finished or near finished product to inform and for applications
  - Hope is to clearly identify research gaps to continuously improve
- Want to create best management practice for entire state, but state ecosystems are very different. How to do you make translatable
  - Can make them pretty broad, for state level they will have to be broad
  - They are focusing on one's specific to southern california
- Is there anticipated offshore aquaculture closer to santa barbara
  - Bernard freedman has 20 acre mussel farm off coast of Hope ranch, can work with him directly
  - Catalina sea ranch in federal waters
  - Network of local farmers to tap into
- Far more requests than money we can give out, what is bare minimum for project to succeed
  - Salaries are most important for incentive to work so it happens within a reasonable time
  - Could probably survive off less
  - Want undergraduate researcher so that undergrad can work in science- would not like to cut funding
- Will this project go to both phd and master thesis
  - PHD dissertation is carrying capacity in china, wants to stay related to local aquaculture
  - For Josh, abstractly connected - measuring condition in water
    - Dissertation could be useful, not really related
  - Both just really like aquacultures

Board Discussion: Board goes into closed discussion

*MOTION/SECOND: Tristen/Courtney*

*Motion language: motion to table discussion for FALL 17-13 with intent to fund in full*

**ACTION:** Consent

*Additional approval required: YES (Senate)*

## **FALL 17-14**

Project Title: Phytoplankton Community Composition in the Santa Barbara Channel

Sponsoring Organization: UCSB ERI

Presenter Name: Sasha Kramer

Summary: Phytoplankton form the base of the oceanic food web and produce half of the oxygen we breathe. There are thousands of species of phytoplankton that vary in composition and abundance on short timescales and variably affect higher trophic levels from whelks to whales. It is crucial to understand daily changes in species composition and abundance of phytoplankton to predict changes across marine ecosystems. This project seeks to characterize the phytoplankton community in the SBC by analyzing the abundance and composition of phytoplankton pigments via High Performance Liquid Chromatography (HPLC). To ensure high quality data, HPLC pigment data must be processed by the NASA Ocean Biology Processing Group at Goddard Space Flight Center in Greenbelt, MD. Storing, shipping, and processing these samples is costly, but this analysis is essential to our characterization of the phytoplankton community. Thus, we request Coastal Fund support to outsource these HPLC pigment samples for analysis at NASA.

### **Alana is friends with Sasha, will recuse from vote and stepped out for presentation**

#### Presentation Notes:

- Pigments are great biomarker for phytoplankton - basis of project
- Phytoplankton use visible light for photosynthesis
  - Chlorophyll
  - Accessory pigments - absorb light where chlorophyll does not (blue and red only)
    - Allow more energy harvest in different conditions
- Some accessory pigments are unique to species
  - Measuring concentration can tell precise and quantity of phytoplankton
  - Pigments can all be concentrated on small filter paper from large volumes of water
- Large sample size, exact method
- Fits well locally
- Massive database exists to make satellite algorithms, use info about what is in water to validate algorithm
  - Data should supplement algorithm from nasa, different timescale for new ways to look at data

#### Board Questions:

- Is this the first time this Method will be used in the channel?
  - No, current record is this method once a month
  - First time it will be used on that short of a scale

- What are the implications of knowing phytoplankton on fine tune scale
  - Single cell with short lifespans- population and tide and currents change day to day
  - Look at what is eating phytoplankton and grazing on species
  - Bigger phytoplankton on bottom of food chain support larger apex predators
  - Time that phytoplankton is consumed affects sustainability of trophic levels
  - Look at what might be good for organisms to eat, interesting to see what is in water and how it changes with grazers in water
  - Grazers will be sampled as well - what is available for them to eat
- This is one of the samples that will be done on cruise?
  - Yes, cruise is in december
  - Samples will be sent to NASA
- Concern about retroactive funding
  - Liquid chromatography results next spring, publications will be written then
- What is actionable implication of knowing about food chains
  - Interesting to have knowledge on short time scale
  - Related to other variables -T, water level
  - How stable system is to long term effects, how variable community changes naturally
  - What effect will different possible shifts have
- Could this project how climate change will affect phytoplankton
  - It could, once a month one has reflection of climate change
  - Four samples a day except one a month will give more context
  - Want to know what other variables have effect
- Will you be working with any other undergraduates
  - Undergrad will be working directly with pigment data, looking at harmful algae
  - Separate but needs more data
- Data collected from these samples will apply to many different projects
  - Yes

Board Discussion: Board goes into closed discussion

*MOTION/SECOND: Tristen/Aral*

*Motion language: Motion to table discussion for FALL 17-14 with intention to fund with potential cut to publication cost*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

#### **ADJOURNMENT AT (time)**

*MOTION/SECOND: Tristen/Courtney*

*Motion language: Motion to adjourn meeting at 8:29 pm*

*ACTION: Consent*

*Additional approval required: NO*

