## ASsquare_logo.tif Coastal Fund Minutes

## Associated Students

Tuesday, 05/10/22, Zoom: <https://ucsb.zoom.us/j/89636182726?pwd=VU14ei8rQnVOV0xmR0xYeHh5MmhPUT09>

**CALL TO ORDER: 6:03 PM**  recorded by Carissa and Kathryn

1. **ATTENDANCE**

| **Name** | **Note:**  absent (excused/not excused)  arrived late (time)  departed early (time) | **Name** | **Note:**  absent (excused/not excused)  arrived late (time)  departed early (time) |
| --- | --- | --- | --- |
| **Ethan Estrada**  **Chair** | **departed early (7:00)** | **Visala Tallavarjula**  **Outreach Coordinator** | **departed early (8:02)** |
| **Mykala Listorti**  **Co-Chair** | **present** | **Carissa Stewart**  **Administrative Assist** | **present** |
| **Emma Swanson**  **Undergraduate Rep** | **present** | **Kathryn Bozanich**  **Administrative Assist** | **present** |
| **Erika Chan**  **Undergraduate Rep** | **present** | **Sarah Siedschlag**  **Advisor** | **present** |
| **Anannya Deshmukh**  **Undergraduate Rep** | **present** | **Ethan Engler**  **Senate Liaison** | **present** |
| **Austen Apigo**  **Graduate Student Rep** | **present** | **N/A**  **Senate Liaison Proxy** | **N/A** |
| **Michaela Sten**  **Graduate Student Rep** | **present** |  |  |

1. **COMMITTEE BUSINESS**
2. Approval of Attendance and Proxies

*MOTION/SECOND: Ethan/Kaley*

*Motion language: Motion to approve attendance and proxies.*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. Approval of Minutes

*MOTION/SECOND: Ethan/Austen*

*Motion language: Motion to approve minutes*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. **PUBLIC FORUM** (Announcements, appreciations, concerns, requests to have items added to agenda)
2. NCOS & Mesa Trail Grand Opening - this Saturday, May 14th from 10:00 AM to 2:00 PM
3. Los Padres ForestWatch Target Shooting Cleanup Site Visit Invitation
   1. if anyone is interested, let ethan know and he will try to set something up

1. **REPORTS**
2. Advisor Report: Siedschlag
3. has been checking out last week’s interview recordings
   1. looks like not all the undergrad videos have been uploaded
4. is making sure that COC groups get their funding as OSL phases out accounts
   1. processed on our end, but no one knows where the money is
5. not heard anything about honoraria, week 7 is typically the time they announce it
   1. winter honoraria should be available to pick up
   2. this year has been a mess, so not too sure
6. Chair Report: Estrada
7. Interviews continue this week, end this thursday
   1. will have come to a decision for both grad and undergrad positions by early next week

1. Vice Chair Report: Listorti
2. n/a
3. Senate Report: Engler
4. coastal fund does not have to apply for rollover, it is automatic
5. Administrative Report: Stewart & Bozanich
6. finished major grants on the master workbook
7. waiting for minor grants to come in
8. will be scheduling the may check-ins with sarah
9. Coastal Service Program Report: Stewart & Bozanich
10. one more beach clean up and one more restoration project
11. had a beach clean up this last weekend
12. Outreach and Education Report: Tallavarjula
13. working on final posts about staff, going out on thursday
14. after the quarter ends, there is a tabling opportunity at the Sea Center
    1. she is willing to do that
    2. would be helpful if someone could give her a ride and help
    3. mykala might be able to
15. Sub-Committee Report
16. External Communications
    1. didn’t meet last week, probably will not meet this week
    2. will send out an email to figure out a meeting time
    3. sent mykala a list of ideas for the retreat agenda
17. **AGENDA**
18. Approval of Agenda/Additions to Agenda

*MOTION/SECOND: Ethan/Anannya*

*Motion language: motion to approve agenda and additions to agenda*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. **OLD BUSINESS**
2. **NEW BUSINESS**
3. Extension Request for WIN 20-15

*MOTION/SECOND: Ethan/Anannya*

*Motion language: motion to approve extension request for WIN 20-15*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

* kaley is recused
* seems like they had covid delays
* right now they have a long processing time for DNA sampling
* requesting an end date for June 30, 2023
* austen notes that they have a good reason for the lengthy request: they won’t have the data for six months
* mykala doesn’t understand how it normally works, as they didn’t reach out until past their approved end date
* ethan is open to extending it but wants to mention that they should be on top of this
* they DID have an extension request already
* his approved end date was 6/30/22
* this is a second extension
* mykala is okay with it now that we know it’s their second approval
* this is another full-year extension
* we cut the others off at six months
* ethan thinks it’s fine since that would allow time for data analysis and writing the final report

1. Extension Request for FALL 20-04

*MOTION/SECOND: Ethan/Kaley*

*Motion language: motion to approve extension request for FALL 20-04 to June 30th, 2022*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

* used money from an expired grant without realizing it
* asking to extend the grant so they can use the money spent and return the remaining funds
* usually departments check in with Sarah
* ERI checked in with Sarah and asked her to go over closed and open grants
* hasn’t gone through them yet
* Lisa is not great about tracking her end-dates
* getting better and easier to track in fluxx, but older ones are harder to follow up on
* it is retroactive, but the funds ($40) have already been spent
* extending it until june 30 for reimbursement and then closing it would be the least messy option

1. Extension Request for SPR 19-14

*MOTION/SECOND: Ethan/Anannya*

*Motion language: motion to approve extension request for SPR 19-14 to June 30th, 2022*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

* ethan doesn’t fully understand it
* seems like they found a stipend they didn’t realize they had
* they want to use it this spring
* sarah thinks that at some point over the grant, their accounting listed a stipend twice that had been paid once, so where she thought she was out of money she now has that amount unspent
* should clarify that it be used for one of the restoration internships and not something else
* this was a part of the ongoing campus restoration projects, so it can just be repurposed for the same internship
* would be good to clarify to make sure that it is the same

1. Appointment of New Coastal Fund Chair for 2022-2023 Academic Year

*MOTION/SECOND: Ethan/Kaley*

*Motion language: motion to appoint Anannya Deshmukh as the new Coastal Fund chair for the*

*2022-23 academic year*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. **DISCUSSION**
2. Overview of Tonight’s Presenters

a. Ocean Alkalinity - James Gately

* kaley is recused
* returning project
* funded once previously
* seems like the next step in the project
* erika is curious why they only want an intern for one quarter instead of the whole year
* ethan wants to ask if they envision the intern being involved past the one quarter
* lot of the questions were based around the intern
* expected to work 8-10 hours a week, was that to work around availability or …?
* interested in what they think the internship will look like in the project
* wanted to ask how likely they will move onto this project immediately after they finished the previous one, will there be any additional steps in between

b. Novel Copepod Predator - Jaden Orli

* mainly focused on a parasitic species on crabs
* seems like a big deal for crab populations in the west coast and in SB
* didn’t mention a lot about the undergraduate team they already have, so anannya wants to ask how they found them and how they chose them
* what is the difference between intern work over the summer versus over the school year
* ethan is concerned that volunteers are only required to work 2 hours a week but they want them to work 5-10
* for volunteer work, what does that realistically entail?
* worried it will create a work environment where dedicated volunteers will do a lot of unpaid work
* could we change it to an hourly wage instead of a stipend?
* stipends were listed as a summer thing, during the school year work was voluntary
* why would they not request funding for volunteers to be paid instead?
* erika notes that they emphasize it being undergraduate led but there is no mention of a graduate student even though this is novel research
* what training is there for undergrads, is there an unlisted project leader, is there someone keeping them on track who will guide them?
* how is this all managed? how is time tracked?
* cool project, but not sure what is going on behind the scenes
* do they work on the weekends or is this a five day workload?

c. More Equitable Coasts - Tammy Elwell

* pretty big project, requesting $31,600
* different project than what we normally see
* looking at children's access to marine ecosystems
* the major part is reviewing policy on a global scale and getting empirical evidence/data by interviewing children of different areas and locations
* kaley wants to ask if they have gotten IRB approval or if they are in the process of that, need it since this is human involved research
* no doubt that they will get it, but it can take a long time
* mentioned summer work paying undergrad and graduate student, however the academic year is listed as 40 weeks when it is 30 weeks (not including finals)
* ethan is concerned that they are interviewing children that live in SB and in SLO county, so it extends outside our region
* kaley is less worried about them working in SLO than their work doing a global literature review, we don’t usually fund that
* mykala wants to hear more about it from them before establishing a set opinion
* the researchers are from SB and will focus on SB students, so mykala doesn’t see that much of a problem with it
* sarah thinks the overall dollar amount is a lot
* $31,000 is the total we funded for kids in nature, naturetrack, and the sea league altogether this year
* how much value is there in an undergrad and grad student researching education access when people have been doing it for decades and can do it on their own
* erika doesn’t think that half of their work being reviewing literature is as important as the programs we fund that physically take kids out into nature
* wants to know why they chose Cambria specifically to focus on
* austen doesn’t think that the lit review is too out of place with what we fund but is interested in hearing more
* sarah noticed the global review more than the literature review
* emma agrees with sarah, the amount of money is a lot in terms of value and what other groups we fund
* we fund other projects that fix the problem, this just looks at it
* anannya wants to ask about the proportion of time they spend on each project part

d. Tool Development - Chloe Jenniches

* mykala is recused
* chloe is an applicant for an undergrad board members
* she personally will not pursuing further funding for the project
* no conflict of interest determined
* kaley noticed the project referred to 20 weeks but didn’t mention when the timeline takes place in the year, whether they are concurrent or not
* ethan wants to ask about the mentoring, her experience in mentoring, how she intends to approach it
* kaley notes that 20 hr/week for an undergrad during the quarter is unreasonable

1. **PROJECT REVIEW**

**Project Title:** CF-202203-02346 | Assessing the Effect of Ocean Alkalinity Enhancement on Phytoplankton Community Structure and Diversity via DNA Metabarcoding

**Sponsoring Org:** Marine Science Institute

**Project Leader:** James Gately

**Summary:**

It is increasingly evident that meeting the 2015 Paris Agreement’s goal to limit the average increase in global temperature to “well below 2\*C” will require a portfolio of carbon dioxide removal (CDR) strategies, or negative emissions technologies (NETs). Various NETs have been proposed, but the ocean’s large capacity for CDR has historically been neglected. Although focus is shifting to so-called ocean CDR (oCDR) strategies, research into their potential environmental impacts is nascent; if a path to informed climate action is to be provided, oCDR strategies must be rigorously assessed. Our project addresses this need by building upon our previous research, which used monospecific culturing experiments to assess the response of phytoplankton functional groups to Ocean Alkalinity Enhancement (OAE) – a proposed oCDR strategy: we will conduct mesocosm experiments to quantify the impact of OAE on natural phytoplankton community structure – a required step prior to in situ experimentation.

**Presentation Notes:**

* **kaley recused**
* **asses the effect of ocean alkalinity**
* **carbon dioxide removal will be referred to as cdr**
* **gradual increase of c02 in atmosphere than steep increase in the last few decades**
* **the consequences of global CO2 emissions are ocean acidification, droughts, flooding, food shortages, wildfires**
* **sets a cap of 1200 gigatons cap**
* **even with that gap there is only a 50% chance of meeting the paris agreement emission goal**
* **will be exceeding this in just a few decades**
* **dissolved inorganic carbon in the ocean**
* **despite being a huge carbon sink, the ocean has been neglected in carbon removal discussions**
* **more technologies discussed to have ocean as carbon sink**
* **rock erosion carries sediment into the ocean and increases its buffer capacity**
* **removes hydrogen ions which increases pH-creates charge imbalance in the system**
* **shifts chemical equation to the right and causes the ocean to take in more CO2 for equilibrium**
* **wind driven upwelling creates a very acidic environment**
* **global average pH is 8-8.1**
* **in CA current studies, the pH is 7.6-7.75 locally**
* **the upwelling is supposed to intensify as the global temperature rises**
* **average pH decline per century in the SB channel is twice that of the global average**
* **we can see reduction in diameter in calcium carbonate shells in Foraminifera**
* **sea urchins are important in kelp forests and economy but are experiencing population deterioration**
* **important for ocean alkalinity project because it would work against the chemical reaction**
* **the calcification reaction produces CO2, which is why they chose calcifiers in last projects**
* **regardless of alkalinity enhancement, the growth rate was constant**
* **for the chaetoceros species they grew well**
* **saw that there was no significant correlation between alkalinity and growth**
* **results are encouraging but have to understand that these are only two species out of a whole ecosystem**
* **next step is to do a mesocosm**
* **goal is to access the affect of OAE on local phytoplankton communities**
* **will discuss potential biogeochemical and ecosystem implications of any observed variations in community structure as a result of alkalinization**
* **SB channel is affected by two major currents that cause upwelling and relaxation seasonal periods that make for a really interesting location to study**
* **methods will involve water collection, filtration to remove grazers, spiking with two alkalinity enhancements**
* **first one is limestone based techniques, second is sodium hydroxide**
* **using salts because they dissolve rapidly**
* **will analyze water chemistry and DNA metabarcoding to look at shifts in the phytoplankton community**
* **support would partially fund GSR salary, fund an undergraduate researcher**
* **funding will ensure that UCSB community continues to be involved in global research**
* **will help with purchasing supplies and running the experiment**

**Board Questions:**

* **can you talk more about the internship, the process of recruiting an undergrad, and what their work will look like?** 
  + **recruiting by reaching out through tas and creating flyers to distribute through the listerves**
  + **the work will involve assisting with research in the lab**
  + **came up with many interesting laboratory experiments that the undergrad can do**
  + **lots of opportunities for the undergrad student to take control of smaller experiments**
* **you are looking for only one quarter for the intern, why and how long is the intern expected to stay on the project** 
  + **he did one quarter as the bulk of the experiment will take one quarter**
  + **looking for 8-10 hours per week**
  + **thinking summer would provide est opportunity for that**
  + **if they find a good researcher who wants to stay on, then they have alternate funding to keep them on**
* **wondering about the time commitment at 8-10 hours a week is that based on an as needed basis or how does that work**
  + **it would be as needed**
  + **some weeks are busier than others, especially the weeks where they run the experiments**
  + **up to the undergrad to since they have other projects available**
  + **would work with the intern based on their availability to create their own timeframe**
* **this is an ongoing project, were there any challenges you faced and do you expect challenges working in a natural setting during this project?**
  + **ran into a lot of challenges the first thing was the mineral which was quicklime**
  + **couldn’t get the full dissolution quickly enough**
  + **reason why he started proposing electrochemical processes to speed up dissolution**
  + **also ran into issues with the original coaster? they were going to use**
  + **had shipping delays due to covid, waiting for months for some supplies**
  + **when you inject alkalinity solution, it will mix with surrounding waters and automatically decrease alkalinity, had to account for that**
  + **there were issues with permeating and local and international laws depending on where its going on**
  + **having to consider the long term fate of the carbon**
  + **even if c02 is picked up, if it isn't sequestered deep enough it could come up in a few years**
  + **great thing about SB channel is that they can test different scenarios in the environment**
* **CDR is getting a lot of attention recently, it is a critical mitigation project, could you talk more about where this research might be used and who some of your partners or agencies will be?**
  + **that's still up for debate the bering sea and southern ocean are two options**
  + **could be stored deep enough in the southern sea**
  + **places in the tropics have been looked at**
  + **adds to the strength of them doing research in the SB channel and CA**
  + **we have dynamic system here**
  + **primarily funded by philanthropic organizations right now**
  + **the government has not jumped behind funding yet**
  + **university of hawaii are involved in the current proposal they are writing**
  + **teams in europe doing some more work**
  + **involved with other UC campus: UCSD and UCSC**
  + **initial investments coming from philanthropists**
  + **in any real world application, needs government involvement**
  + **the legal aspect of it needs to be addressed as well from a legislation and justice and equity stand point- making sure other countries are involved as well**

**Board Discussion:**

* **worked with them before**
* **generally in support, the evolution of the project to this phase made sense**
* **austen thought it was cool that he came in from past funding**
* **erika appreciated how straightforward he was about challenges**
* **he seemed very knowledgeable**

*MOTION/SECOND: Mykala/Erika*

*Motion language: motion to table discussion for CF-202203-02346*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

**Project Title:** CF-202204-02367 | A novel copepod egg predator infesting commercially important rock crabs in Santa Barbara, CA

**Sponsoring Org:** EEMB

**Project Leader:** Jaden Orli

**Summary:**

The family Nicothoidae consists of copepodid egg predators that use their host’s egg masses as a source of nutrition and location for oviposition. Descriptions of copepod nicothoids had been limited to the East Coast of North America, as well as Japan, India, and Australia. In October 2021, nicothoids were discovered in Cancer productus hosts along the west coast of North America, indicating a significant shift in geographical range. This project will use a monitoring protocol on various species of cancer crabs to determine copepod lifespan, rate of autoinfection, and rate of crab egg mortality. It is hypothesized that an increase in nicothoid presence on egg masses of Cancer sp. along the West Coast will correlate with an increase in crab egg mortality and a resulting decrease in the number of viable adult crabs for harvest. Further understanding of the impact of nicothoids on individual cancer crabs will allow us to analyze the potential extent of harm to Santa Barbara fisheries.

**Presentation Notes:**

* **copepods are small aquatic crustaceans found in any body of water worldwide**
* **some can be symbiotic or parasitic**
* **when crabs lay eggs, parasitic copepods can hide amongst the eggs**
* **hard to see, they look very similar to the eggs**
* **currently in the process of defining the species with help of copepod specialists**
* **p lan to do more research on the exact species**
* **only three species identified**
* **never been identified on the west coast**
* **highly suspected to be a new species**
* **collect specimens from 200-300 foot depths through crab pots**
* **rock crabs are economically important in the area but are loosely managed**
* **there is not log book requirement**
* **crabs have more generalist diet which contributes to the food web**
* **prey to CA’s spiny lobsters that are a keystone species for the food chain**
* **prioritizing the protection of rock crabs**
* **research is primarily done by undergraduates who will write protocol and research papers**
* **promotes long term community within ucsb**
* **most research papers are from the 1930’s so they plan to “rewrite the species”**
* **very time sensitive as other species within the genus left the area very fast**
* **three main objectives: life cycle, autoinfection**
* **haven’t done the third one yet but hoping to soon**
* **will isolate 100-200 egg fascicles**
* **keep them in separate compartments to keep them isolated**
* **submerge tackle box in running water to keep them alive**
* **cover with mesh to keep them from escaping**
* **record number of popped eggs**
* **red eye spots in eggs are signs of being close to hatching**
* **noticed later in crab development stages, they turn dark red during the end of the life cycle**
* **autoinfection will determine ratio of parasites to eggs then look at infection rates**
* **did serial sampling of 1000 eggs**
* **crab data collected was number of viable eggs, number of nicothoid eggs, number of empty crab eggs**
* **number of adult and juvenile ggs**
* **results found that the number of nicothoids increases and then there is a sudden drop**
* **early egg development stages shows increased yolk, but after they mature there is an increase in egg carrying capacity**
* **once we move into the goal it will be same as the normal life cycle but with a control**
* **found that juveniles do stay within the crab gills**
* **major part of budget is the trinocular compound microscope**
* **have five scopes but less light boxes**
* **backbone of the team is undergraduate researchers**
* **to continue this project they need to offer financial support to the two undergraduate researchers**
* **ambition for the summer is species identification and research publication**
* **two undergraduates will be compensated for summer work using a stipend**
* **needs are continuing to adjust**
* **decided to focus on species identification**
* **it is not realistic for two people to conduct a full blown trial over the summer**
* **they want to reallocate the funds that would have gone to the microscope to funding more work hours**
* **need a drawing tube and a camera and adapter**
* **will lose access to current camera for microimaging over the quarter**
* **scale they are working out is so small**
* **need additional equipment like glass slides for species identification**
* **new budget is brought down to $12501**

**Board Questions:**

* **can you explain the volunteer duties and their commitment throughout the school year?** 
  + **have daily monitoring going on**
  + **always someone in the lab for seven hours a day**
  + **counting 1000 eggs from 5-7 crabs a day**
  + **start at three at a time**
  + **very helpful to have larger group of undergraduates**
  + **just recently have had a couple people sick but have someone always there**
* **why are you only requesting funds for the volunteers to be paid during the summer? is there a reason for using summer specifically and not other quarters?** 
  + **decided to do species description this summer**
  + **worked out with the amount of money they planned on asking for**
  + **difficult to ask for compensation for seven people**
  + **instead of financial support some people are getting credits instead**
  + **summer workers will need rent money and thus need to be paid**
* **on average how much do interns work a week?**
  + **ask people to sign up as much as they can**
  + **fluctuates week to week**
  + **do not force people to come in**
  + **everyone involved is highly motivated**
  + **have not run into an issue where no one can come in on a day**
* **wanted to ask about the undergraduate interns that you already selected and what kind of mentorship are they getting**
  + **everyone that comes in has around zero experience**
  + **they all get to learn about a very specific subject**
  + **the copepodologists are the only two within the state, everyone is fairly new in the field**
  + **anyone who wants to join gets to join**
  + **two new people possibly coming in and joining in the fall**
  + **it is a group project, people who have been there the longest help with training**
  + **base protocol off of a paper from a doctor**
* **wondering about the change in plans and equipment, can that equipment be used down the line in fall quarter or in other future trials?**
  + **the camera can be used for the trials, the drawing tube are more particular to scientific drawings, if not used for this project it will definitely be used in the lab**
  + **pretty much everything will be used**
  + **this equipment will be kept in Keuris lab**
* **was wondering how much longer you anticipate the auto infection study to continue** 
  + **currently on the first trial which included 15 crabs**
  + **plan to do at least one other trial before writing a paper to get as much data as possible**
  + **want to eventually expand the range beyond the Gaviota Coast**
  + **will maybe looking at different species of crab depending on what the fisherman can get access to**
* **can you clarify if it is 7 hours a week or 7 hours a day**
  + **it varies by day since the schedules are different**
  + **life cycle monitoring is done every day**
  + **autoinfection monitoring is done in three day cycles**
  + **total daily work is about 7 hours so its broken up into 4 hours and people come in 2-3 times a week**
  + **some days are very light with only three hours of work**
* **with that kind of time commitment would you consider asking for an hourly wage instead of volunteer hours only?** 
  + **they could consider asking for that but it would be hard for 7 people to set up all of the accounts because she believes that people should be compensated if they do not get credits**
  + **no one is required to come in for a set amount of time each week**
  + **would like to compensate them if they can in the future**

**Board Discussion:**

* **kaley is horrified about how much uncompensated labor goes on in this lab**
* **20 hours a week, unpaid, is a lot to expect**
* **everytime we asked about it for clarification, the answer seemed to change a lot**
* **they kept emphasizing that no one was pressured to go into the lab but the monitoring required constant work**
* **anannya mentioned that when salary work was mentioned, they seemed adverse or unsure about the idea**
* **sarah thinks that the people running the lab don’t want to manage that many separate payrolls**
* **we could email them about wanting them to be more fairly**
* **kaley thinks that this is a problem of supervision, lots of questions about where the PI supervision is**
* **who is in charge of this research that isn’t an undergrad?**
* **it is a lot to expect of a first year, going to be second year, student**
* **the lack of management is very concerning**
* **erika noted that they reached out to copepod experts, but they live in orange county and we’re in SB**
* **austen doesn’t think that it is an excessive amount of paperwork to do to get them paid, seems like it is unfair**
* **a lot of this grant is asking for equipment to do the experiment, in that respect it seems fine**
* **want to support the students as much as possible for their work and passion**
* **the fact they are getting through this much without the mentorship we hope to see is commendable**
* **austen thinks we can send an email but it is unlikely anything will change with the lab**
* **no one can hold PI’s accountable**
* **no rules are being broken, it’s just not ideal**
* **mykala wants to support them as much as possible**
* **we are mostly funding their equipment**
* **kaley notes that they will still be working in these conditions whether we fund them or not, so we can at least make it easier for them**
* **emma think it might be good to email them and make sure that everyone has the option to get credit**
* **sarah wants to add that note to their final feedback, they seem nervous that saying the wrong thing will prevent them from getting funding**
* **want to send an email**
* **think the project will continue with or without coastal fund**
* **funding decision cannot be based upon their lab conditions that are out of their control**
* **will do a stipulation in the feeback**

*MOTION/SECOND: Mykala/Kaley*

*Motion language: motion to table discussion for CF-202204-02367*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

**Project Title:** CF-202203-02316 | Building more equitable coasts: Assessing children’s access to marine ecosystems near UCSB and beyond

**Sponsoring Org:** Marine Science Institute

**Project Leader:** Tammy Elwell

**Summary:**

We are requesting funds to support two student interns who will help us carry out cutting-edge social science research that examines children’s access to marine ecosystems. Recent studies have shown how transformative nature can be for wellbeing. These benefits, which range from sound health to pro-environmental attitudes to piqued interest in science, may be even more pronounced for children. Yet the ability for children to leverage these benefits depends on their ability to access nature. Although an emerging literature has shed light on barriers children may face in accessing time outdoors, studies continue to focus on terrestrial ecosystems. Rarely do studies examine how children access marine ecosystems. Interns will collaborate on interdisciplinary research that addresses these gaps. Findings have implications for global application to inform more effective coastal conservation strategies and improve children’s access to nature in general and marine ecosystems in particular.

**Presentation Notes:**

* **the main point is to involve two students in social science research**
* **if funded by CF, would be the first social interdisciplinary research at UCSB that looks at how children access coasts**
* **think this is really exciting because coastal fund as done a lot with physical access like signage and infrastructure**
* **CF also does a lot of outreach for k-12 education**
* **novel research**
* **we have an assumption that if we live near the coast it is easy for us to access marine ecosystems**
* **a lot of families who live by the coast cannot visit the ocean**
* **this is the case for students ages 8-13 who usually depend on adult caretakers to go**
* **if your family is working all the time or they do not have the resources, they probably would not be able to go as often or at all**
* **if we want more diverse and larger groups in marine science/education, we have to make more efforts to increase that access**
* **hypothesize that there are different kinds of aces that create complete access- perceived access, physical access, and outreach-based access**
* **perceived access - how people from different backgrounds feel when they visit, do they feel welcome or like they belong?**
* **two methods: global analysis and local/regional analysis**
* **what are existing access places for children and will create a data base that will assign a point system that will provide access in a certain way and looking to contribute to a manuscript**
* **CA is a leader in researching child access and inclusion**
* **student interns would be involved in planning, doing research, and writing up data**
* **local and regional analysis will draw from her previous experience**
* **will be the first time she is working with minors**
* **two of the team members are in education so they are working with them to develop methodology and processes**
* **making it fun to try and engage students**
* **will not have the outcome of a paper quite yet**
* **boosts creativity, imaginative play, interactiveness, calm emotions, solace**
* **UCSB has increased diversity in the environmental programs**
* **still a lot of work to be done in terms of increasing diversity**
* **early exposure is critical to create diversity in fields**
* **characterizing the ways in which children access marine ecosystems**
* **will look at things like government nature programs, state parks, and other programs**
* **how policies and programs improve children’s access**
* **will look at what mechanisms enable children from diverse socioeconomic backgrounds**
* **will be asking student participants what helps them focus and what access they have to coastal ecosystems**
* **will be asking what barriers prevent or discourage the access**
* **what aspects of marine ecosystems do children perceive as most important to wellbeing?**
* **outcomes will be a manuscript for high-impact journal, inputs for survey, two student interns as part of a research team**
* **game changer to be able to work on research as an undergrad**
* **big benefits include share potential solutions for how to increase access**

**Board Questions:**

* **wondering about the two teachers working on the project, do they have any experience working with children** 
  + **two team members/affiliate researchers**
  + **one is professor of education, other graduated as an education major from UCSB**
  + **have been helping with the logistics of learning how to apply research methods**
  + **lots of regulations with gaining access to questions students and they are helping with that**
* **it sounds like these interns will not have prior experience with literature reviews or this type of research, what will your management of their work look like based off of your own experience?**
  + **will be practicing and gaining feedback from research team**
  + **includes help from early, mid, and late career research scientists**
  + **will be practicing with them and learn along the way**
  + **they will make mistakes but will learn from them, discuss them, and improve for next time**
  + **all of these strategies contribute to the process which brings up a good point**
  + **looking for essential skills in interns**
  + **most essential is to be a critical problem solver and thinker**
  + **interest and enthusiasm and ability to learn quickly**
  + **ask students to describe past experiences and how they have applied learned skills in their application**
* **related to global analysis, what kind of infrastructure of support for interns, who is on the team and how do the interns fit into the team**
  + **larger team will be led by tammy**
  + **had led years of research internships through two summers with first generation college students**
  + **does have experience working with diverse students**
  + **experience with planning research projects together**
  + **if students feel they are contributing they take ownership of the project**
  + **would be great if all goes well, and there is engagement, to have the students be coauthors on the paper**
  + **big investment but a high return**
  + **really is a game changer for students**
  + **have the leadership and experience**
  + **they are open to seeing how students can contribute in their own unique ways**
  + **opened the call and have to wait until the deadline to read the application**
  + **will be removing names to stop implicit bias**
  + **at MSI there will be workspace, resources will be available**
  + **need to balance out the computer work**
* **noticed based on application that you were waiting on approvals from committee for human subjects, where are you with that process?** 
  + **this project is part of a larger collaboration have human subjects approve in chile**
  + **for UCSB, the materials are being currently prepared**
  + **the children are approved to participate**
  + **goal is to have materials prepared by june**
  + **am in touch with the team at ucsb**

**Board Discussion:**

* **kaley feels more strongly now that our funds are better spent on projects that directly provide access**
* **Mykala is in agreement with this**
* **doesn’t seem viable as a partially funded program**
* **if they wanted like $10,000 it would be more feasible but the cost is hard to justify with the value of this research**
* **don't think what they are doing entitles them to that much funds**
* **if there was a way to partially fund then she might be okay with that but thats it**

*MOTION/SECOND: Mykala/Anannya*

*Motion language: motion to table discussion for CF-202203-02316*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

**Project Title:** CF-202204-02459 | Development of a tool to increase the research capacity for investigating cycling of biotoxins in promising native aquaculture species.

**Sponsoring Org:** Marine Science Institute

**Project Leader:** Chloe Jenniches

**Summary:**

Domoic acid (DA) is a toxin produced by Pseudo-nitzschia diatoms that can have serious ecological, economic, and public health consequences. Most studies on the ecological impacts of DA are conducted during algal blooms, so target species can be exposed to DA in situ. Waiting for a bloom limits the research that can be done on DA because these blooms are unpredictable. The establishment of effective methods to dose different species with DA would advance our understanding of how DA impacts physiology, how it cycles through an organism, and how long its impacts may last. In this proposal, we outline a set of experiments that will evaluate methods for dosing bivalves with DA in a controlled setting and then compare the retention of DA in different bivalve species. This research will inform future studies on the impacts of DA on marine ecosystems and may also assist future research on California native bivalve species that are candidates for aquaculture.

**Presentation Notes:**

* **mykala is recused**
* **working in the culver lab**
* **studying biology that makes up local fisheries**
* **proposing project on toxic cycling in bivalves**
* **hoping to develop alternative method for dosing bivalves with domoic acid**
* **DA is very potent neurotoxin and bioaccumulates in food web**
* **can cause the closure of recreational fisheries**
* **linked with shellfish poisoning**
* **DA is unpredictable, occurs naturally in some but not all algae blooms**
* **really difficult to study and trace**
* **currently study DA by waiting for algae to bloom and then release species into the ocean**
* **waiting for nature to dose the species for them**
* **very expensive, have to hire transport and divers**
* **limits the scope and timing of research**
* **want to do DA project in the lab, but have not had a bloom in years**
* **harder to do the work if there was a DA bloom or if there was a standard way to dose the species without the DA algal bloom**
* **proposing a way to dose bivalves with DA when there is no natural bloom in the wild**
* **hoping it will support native aquaculture**
* **hoping to open up opportunities for other research**
* **plans to divide project into two experiment stages**
* **in the first one will be testing three different methods on a certain species of mussel**
* **majority of research on bivalves has been done on this species**
* **will give them good background**
* **Will be injecting**
* **will be feeding directly**
* **will be exposing them to demonic acid in the water**
* **will try these three methods**
* **based on effectiveness, feasibility, and cost they will choose one method**
* **second round of experiments, best method will be tested on five bivalve species**
* **will be testing native species of mussel, scallop, oyster, and a clam**
* **gives a wide breadth for research on different local species**
* **they are all candidate species for local aquaculture**
* **hoping research can be used for species resilience against DA in harvesting**
* **hoping to figure out how broadly the methods can be used and see if they can do it in a standard way**
* **hoping to see how different bivalve species process the toxins**
* **how fast the DA lasts in their system and if they take it up and how long it lasts in the species**
* **important to know when dealing with species that humans want to eat and cultivate**
* **Chloe is the project leader and hoping to hire two student interns**
* **interns will learn to take care of animals and take data**
* **will be learning how to run and troubleshoot experiments and develop outreach materials**
* **will spread research findings to all age/educational groups**
* **think it has a lot of potential to find out about DA in a broader sense**

**Board Questions:**

* **Noticed in the application it will take over 20 weeks, when are those 20 weeks occuring** 
  + **it will start over summer quarter with planning, set up, and at least first round of experiments**
  + **leaving room for flexibility, could finish both rounds of experiments but not sure**
  + **idea is that it will be for summer and fall quarter**
  + **have a general idea of what will take place in each block but leaving it open**
* **20 hours a week for 20 weeks, will that change in the fall quarter**
  + **not planning to have it change in fall**
  + **will be working full time over the summer**
* **mentioned that you are conducting an experiment with DA standard since no recent blooms, how often do you expect to see blooms in SB and in general over future years?** 
  + **there is some thought that with more climate change the frequency of demonic acid will increase**
  + **humans put a lot of cultivators like nitrogen into the water through runoff**
  + **instances of algal blooms can be more common**
  + **don’t know why and when the diatoms that make the domoic acid why they do it**
  + **difficult to pinpoint when they happen, but they are common in the SB channel**
  + **focusing on DA specifically as it is one of two common toxins that can occur in shellfish**
  + **psp is known about and is common toxin but don’t know a lot about the domoic acid one**
  + **SB channel is known as a hotspot for DA blooms**
  + **every 18 months to 2 years there was a DA bloom until 2016**
  + **has been difficult to do the work because there has not been any bloom**
  + **typically very common and is expected to become more common**
* **given that these blooms haven’t happened in a few years, if you get this process in place the next time there is a bloom, would you have to compare your lab results with the natural results that occur in the ocean? or could you use past data?** 
  + **hoping to do the pHD in this as well**
  + **but do have a good amount of data because muscles have been used as tracing organisms for DA**
  + **decent set of data already in CA from fish and wildlife but is limited to mussels**
  + **not a lot of literature on other kinds of bivalves**
  + **would be a good idea to go out and compare data with other bivalves**
  + **would like to do that research, it is just a matter of time**
  + **maybe a student intern could carry on with the work**
* **wondering if there are safety concerns with handling DA in the lab** 
  + **hazards of DA are from ingestion**
  + **would be using gloves and making sure it is not ingested in any way**
  + **not airborne and not a risk for inhalation**
* **how does one separate mechanisms of behavior and physiology in shellfish due to DA? is that built into your experimental design? (i.e. how do they know if they are uptaking it rather than ingesting it)**
  + **they will be leaving the species feeding for 24 hours on or with the DA**
  + **do intend to do a couple of sacrifices**
  + **will look at where in the tissue they are taking up**
  + **does it make it into the tissue that we eat?**
  + **combination of exposing them for a long enough time**
  + **scallops will feed on anything they give them**
  + **will be doing some sacrifices to figure out which tissue it is in**
* **it’s common for us to receive more funding requests than what we can provide for, if we could give partial funding, how would you adapt to that change?** 
  + **the most important thing is getting the technique squared away**
  + **the second round will not work without the second round**
  + **can cut the number of species in the second round or not do it at all**
  + **benefit of having second round is testing whether the experiment will work or not, will add onto our knowledge**
  + **the first round of experiments will only know on the well researched muscle already**
  + **first round would be prioritized**

**Board Discussion:**

* **anannya liked it, she seemed motivated and it was well thought out**
* **think its important for fisheries**
* **wished they talked more about where they would go with research after it’s completed**
* **seemed really motivated and passionate about the project**
* **kaley has two concerns: first being that she is applying for a board position and this is an enormous time commitment**
* **20 hours of research a week it might be more of a time commitment then she thinks**
* **second is that this project potentially has another funding source, so they are likely to get that other funding**
* **the ccs funding is restricted that our only for projects that don’t have other funding resources**
* **wouldn’t be equivalent but it would be something**
* **anannya wants to know how much phase one is in her budget as she would want us to prioritize that in funding**
* **the number of acid samples would also be lower in that case**
* **kaley thinks that we can’t partially fund this because it is unclear what phase one and two look like on their own**

*MOTION/SECOND: Anannya/Kaley*

*Motion language: motion to table discussion for CF-202204-02459*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

**ADJOURNMENT AT 9:36 PM**

*MOTION/SECOND: Mykala/Anannya*

*Motion language: Motion to adjourn at 9:36 PM*

*ACTION: Consent*

*Additional approval required: NO*