## ASsquare_logo.tif Coastal Fund Agenda

## Associated Students

Tuesday, 11/13/18, Nati Conference Room

**CALL TO ORDER** 6:01PM by Jordan, minutes recorded by Emily and Rebecca

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) |
| **Jordan Gallagher**  **Chair** | **Present** | **Jem Unger Hicks**  **Outreach Coordinator** | **Present** |
| **Maria McCausland**  **Co-Chair** | **Present** | **An Nguyen**  **Outreach Coordinator** | **Present** |
| **Lauren Enright**  **Undergraduate Rep** | **Present** | **Sarah Siedschlag**  **Advisor** | **Present** |
| **Angela Chu**  **Undergraduate Rep** | **Absent (excused)** | **Rebecca Nishide**  **Administrative Assist** | **Present** |
| **Kate Mcleod**  **Undergraduate Rep** | **Present** | **Emily Orr**  **Administrative Assist** | **Present** |
| **Alana Ayasse**  **Graduate Student Rep** | **Present** | **Alex Funk**  **Senate Liaison** |  |
| **Juliette Verstaen**  **Graduate Student Rep** | **Absent (excused)** | **Alli Adam**  **Senate Liaison** |  |

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

*MOTION/SECOND: Jordan/Lauren*

*Motion language:Motion to approve attendance and proxies*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. **Approval of Minutes**

*MOTION/SECOND: Jordan/Lauren*

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

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. **PUBLIC FORUM**

(Announcements, appreciations, concerns, requests to have items added to agenda)

* Star fish sighting
* licensing waivers
* Sarah got a marine wallpaper, its still default but at least its marine

1. **REPORTS**
   1. **Advisor Report: Siedschlag**

* forum on sustainability plan Elison 3621 9:30-10:30 am
  + stop by if you can!
  1. **Chair Report: Gallagher**
* Guy who runs Rancho Marina reserve in Cambria passed away
* should think of a way to make comments for minor grants
  + maybe one giant google doc for all minor grants, or a separate google doc for each one
* only got 6 applications for new board members
  1. **Senate Report: Funk & Adam**
  2. **Administrative Report: Nishide**
* minor grants due on Friday
* making final minutes and workbook
* got an updated budget from COPR, raised all internships except land steward to $550
  1. **Coastal Service Program Report: Orr**
* housing is confusing, we’re working on it
  1. **Outreach and Education Report: Unger Hicks & Nguyen**
* An went to EOP outreach event, tried to advertise board position and CSP
* working on brochure and new stickers
  1. **Sub-Committee Reports**
* nothing to report

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

*MOTION/SECOND: Jordan/Lauren*

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

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. **OLD BUSINESS**
2. **(item)**

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

*Motion language:*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. **NEW BUSINESS**
2. **Winter 18-05 Extension Request**

*MOTION/SECOND: Jordan/Lauren*

*Motion language: Motion to approve 18-05 Extension Request with stipulation that they send in a progress report by end of February*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

**3. Pizza for Decision Meeting**

*MOTION/SECOND: Jordan/Alana*

*Motion language: Motion to approve $100 for pizza for decision night*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. **Sea Center Co-Sponsorship**

*MOTION/SECOND: Alana/Lauren*

*Motion language: Motion to approve Santa Barbara Museum of Natural History Sea Center co-sponsorship for $3,000*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. **DISCUSSION**
   1. (first item)
2. **PROJECT REVIEW**

Project Title: Fall 18-05, The Coastal Oil Recovery and Protection Project

Sponsoring Organization: EDC

Presenter Name: Linda Krop, maybe Kristen Hislop

Summary:

EDC was founded in response to the devastating 1969 blowout from Platform A, at the

time the largest offshore oil disaster in our nation’s history. From our beginning, EDC

staff have served as leaders in the fight against irresponsible oil development in our

region and across our state. We have retired offshore oil leases, defeated numerous

attempts to expand oil development, and when disaster struck once again in 2015 with the

rupture of the Plains All American Pipeline, EDC led the nonprofit community’s efforts

to ensure an adequate response and clean-up. The Coastal Oil Recovery and Protection

Project is a research-based project focusing on two interrelated issues: 1) fully restoring

our coastline from the 2015 Refugio Oil Spill; and 2) protecting our coast from new

offshore oil development.

* Two part project
  + Responding to something, and preventing other disasters from happening
* Would provide intern with intense exposure
* First part of application deals with Refugio Oil Spill, mitigation for oil spill
* Third intern they’ve applied for with Coastal Fund
* Public part of process is beginning
* Draft restoration plan- early 2019
  + Opportunity for public input, workshops
* EDC been lead for NGOs
* Will draft comments, make sure scope of project is doable
* Going to be challenging for EDC to modify their draft, but have to have legal and scientific basis to get them to change draft
* Intern will help craft their plan, make sure students/people in community are outreached to
* Second project: prevent more oil development on coast
  + Administration has proposed to open whole CA coast to oil leasing
* Already commented on first step: no leasing
  + SB count is a target area because we have existing oil infrastructure
* Krop expects that administration will come out with a second draft, pulling out WA and OR, maybe even North Cal
* Will receive proposed leasing program and environmental impact statement-JAN 2019
* Intern will be exposed to environmental review process
* Allow for interns to come up with their own ideas

**Interview Questions**

* WIll it be the same intern for both projects?
  + yes
* How do you legally fight the opening of the Channel to oil leasing?
  + Have to go through whole process before filing a lawsuit
  + Once lawsuit starts, can’t bring up any new information
  + Evidence for future lawsuit will all be found now, need to anticipate all angles now to do lawsuit later
  + Can work with other agencies that have a say, California Coastal Agency, National Marine Safety, National Park, etc.
  + If we can keep at bay for a couple years, can hopefully see new administration who will just throw this out
* Best case scenario is what?
  + Delay
  + Build potential challenge
  + Will need to bring challenge before 2020 to make sure that next plan if we delay is a good one
* For the inter, will you be the primary advisor
  + For the oil leasing part of the project, Kristen will be for the other part of the project
* Since this is a large topic/ unspecific work, what are you looking for in an intern?
  + Definitely look at intern’s background, prior experience and coursework
  + Even if they have no background, research/ communication skills are desired
  + They can teach them if they have skills and interest, experience not necessary
  + Writing is super important
* How will you find the intern? How will you advertise?
  + Send to ES listserv, Bren, not sure if they use other ones
  + No shortage of applications
* Are the wages able to sustain the student to only have one job? (this internship)
  + Thought wage came from us
  + Their perspective: would like to pay as much as they can, they do not have another funding source for interns
  + Would love to pay living wage to interns
* NRDA hasn’t come out on timeline that you’ve been hoping for, how do you feel about current timeline?
  + Keep hearing January 2019
  + There is a schedule that they have already failed to meet
  + Deadline for settlement is set by schedule, otherwise law suite, already come and passed
  + Must be close to settling
  + Expecting both to come out in Jan which would be hectic for EDC, if they’re staggered it would be better for them
* How much direct oversight will the intern get?
  + Interns work 10 hours a week, usually meet with supervisor (check in meeting) from 15 minutes - 1 hour, but will get additional contact with supervisor
  + Interns meet with other staff in office as well
  + Hopefully will meet twice a week because now they have two supervisors
* Have you seen much continuity with their internship and what they do after?
  + A lot of them are fourth year students
  + Some will continue to volunteer at EDC for events
  + Some go onto grad school/law school

Board Discussion:

*MOTION/SECOND: Jordan/Lauren*

*Motion language: Motion to table discussion of 18-05*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

Project Title: Fall 18-15, Quantification of Pharmaceuticals and Personal Care Products in a Santa Barbara  
Wastewater Treatment Plant

Sponsoring Organization: BREN

Presenter Name: Violane Desgens-Martin

Summary:

Pharmaceuticals and personal care products (PPCPs) are micropollutants categorized as

emerging contaminants (ECs). Their effects on aquatic organisms, their bioaccumulation

and their potential for ecotoxicity have been studied to some extent (de Solla et al., 2016;

Kavaliers, M., 1981; Meador et al., 2017; Sanderson et al., 2003; Yeh et al., 2017).

Pharmaceuticals and drugs reserved for human and veterinary uses end up in the

environment via pathways such as leaching from household trash, aquaculture,

agricultural runoff, wastewater treatment plant (WWTP) effluent and hospital wastewater

(Gaw et al., 2014; Mendoza et al., 2015). Currently, PPCPs are not regulated in WWTP

discharge, which may become problematic if they accumulate in surrounding waters at

levels that may affect the local aquatic organisms. The purpose of this study is to

determine at what level PPCPs are present in the Santa Barbara WWTP discharge and

whether they are accumulating in organisms near the discharge area.

Presentation Notes:

* Out of commission for lab work for a year, found this new project while she was out
* Outcome would not have been as meaningful for her previous project
* Pharmaceuticals are easy to discern as anthropogenic
* Contaminants of emerging concern, although they have been consumed for a very long time
* Wastewater treatment plants not extensively studied despite being a big source of pollutants
* Not a huge concern for humans, released in such minute concentrations
* Concerned about fauna
* Opioids in mussels
* Metformin is found in any experiment testing whether its present or not, in very high levels
* Prescribed at pretty high conc. 500-25 mg per day
* Excreted unchanged, human consumption excretes into waste water
* Few studies done on effect, but small amount of studies
* Some studies in fish show endocrine disruption at 40mg/L level
  + Sometime below what is found in great lakes
* 35,000 mg/L in effluent
* Between 70-99% of metformin does get transformed
  + Where does the rest go?
* Input rate is so high that output rate is still pretty high
* Other compounds like caffeine, tylenol, IBuprofen, antibiotics, opioids
* Screening for this compounds sheds light on wastewater treatment plant
  + Has been done elsewhere, not as extensively in the way she is going to do it
* Normally influent and effluent
  + Wants to know what happens to it in the wastewater treatment plant
* Wants to do 13 points, all steps of wastewater treatment plants
* Will shed light into whether it binds to sledge, where it goes, etc
* No regulation at this time
* Maybe there’s no problem, but there’s nothing that's really telling us that
* Would screen within the wastewater plant, hopefully all points
  + Some evidence that it does get degraded in wastewater treatment plant
  + Do some compounds bind to biosolids, go to agricultural land? Whole other study but may be interesting
* Second goal is then to figure out what’s going on with the mussell exposure concentrations
  + Is this well correlated with their biological stress response?
* Compare what is going on here to control site and high populus site
* Second water treatment site wanted to remain anonymous, but if we publish this could we leave the Santa Barbara one anonymous
* Wastewater treatment plant #2 has million inhabitants to be covered
  + See if population and demographic is a correlation
* Also going to look at how winter and summer are differently affecting the concentrations

**Interview Questions**

* Could you talk a little bit about the intern and their role?
  + Will definitely need help, L jars, 13 sampling points
  + Would come to wastewater plant
  + EPA method is pretty extensive
  + Looking for ideally two interns, some weeks will be heavy workload, at least 5-10 hours per week for them
  + Great learning experience for undergrad, great for job market/grad school
* Are you using or are you sending it somewhere?
  + It’s in their lab
* Do you expect to find significant concentrations of metformin?
  + no
  + Idea is to look at oxidized stress exposure as a proxy for what they were exposed to
  + Doesn’t bioaccumulate in muscles
  + Can use this data to backtrack and correlate
* How can you connect oxidative stress back to the pharmaceuticals in the water?
  + Going to be challenge because metformin doesn’t accumulate
  + Going to have to use proxies and extrapolate
  + Lots of trial and error
* How independently do you see interns working on the project?
  + Once the setup is done and once they understand the process, she will be more hands off
  + This is her project, she will be there as much as possible, needs this work they are doing for her own degree
  + Labor intensive, will be working alongside
* For the collection of the mussels, are you going to collect by the outflow pipe?
  + Needs to speak with UCSB divers, will be hiring them
  + Depends where they mostly see them, near outlow would be ideal but outflow is 75 ft down
  + Were willing to collect by the outflow before, but may not find them there
* At your secondary location, could you sample all 13 points?
  + They had no problem with 5 points
  + Depends on safety of collecting samples
  + mostly looking at influent and effluent concentrations
* If you don’t get all 13 points, will it negatively affect your project?
  + No, its just to be extremely thorough
  + One plant has tertiary treatment and one does not
* How are the 33-34 compounds chosen out of the 100 that can be scanned for?
  + Lab already working on the 33 compounds, added metformin
  + Method is already set up

Board Discussion:

*MOTION/SECOND: Jordan/Lauren*

*Motion language: Motion to table discussion for FALL 18-15*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

Project Title: Fall 18-14, Anacapa Island Fish Health Project

Sponsoring Organization: MSI

Presenter Name: Marisa Morse

Summary:

When quantifying marine reserve efficiency, ecologists expect many fish species to grow

bigger and become more abundant. These are common ways to measure restoration

success, but they fail to describe other ecosystem functions such as fish health and

trophic structure. As a result, my project will examine 22 kelp forest fish species to

determine the relationship between parasite communities and fish growth rate, gut

content, and trophic level. Managers can use this information to predict how changes in

kelp forest ecosystem structure will reflect on fish health, parasite transmission, and

ulitmately the fishery. To complete this project, I am requesting 3 undergraduate interns

for three quarters. Since several measurements are taken from each fish, students can

develop personalized, independent projects based on individual research interests.

Support from the Coastal Fund will substancially enhance the trajectory of the Anacapa

Island Fish Health Project.

**Presentation Notes**

* By banning fishing, ecologists thought species would become larger and more abundant
* Fail to look at response on protection of individual fish
  + Should be looking at individual responses
* Examining parasite community
* Not much info on how changes in fishing alter parasite community
* Advance knowledge on fisheries,act
* Information looking at parasite host population dynamics
* Another way to Quantify ecosystem services
* how many parasites in each fish, percentage of fish in population infected
* How does life expectancy of fish affect parasite population, size stages, diet affect
* Would like to better understand size stages, and if those are influenced by the parasites were seeing
* How will diet be affected and how does that influence the parasites
* Sampling fish species within four locations
* Two state marine reserves, one state conservation areas, and reference location: entire backside of anacapa island is open to all recreational activity
* 22 kelp forest species represent major players that are usually in kelp forests
* Will cut open in lab, separate all the organs, use dissecting scopes with light underneath, show parasites, count them
* Also collaborative effort with MSI
  + Looking at trophic structure, ect
  + Collecting data sites like fish ear bone, data will be complementary
  + Gut content, gonad, DNA surveys
* Several of these fish are being taken out of marine protected areas and they are very valuable
  + Want to use fish to full extent
* Rare for research permits like this, using fish taken to fullest extent for information
* Going through one host at a time, focusing on california sheephead dissections
  + Super important urchin predators
  + Urchins become super abundant, create urchin barrens when urchin predators are not present, kelp decreases, other organisms lose habitat
* Have done 19 sheep head dissections so far, have found 28 or more species of parasites
  + Eg neobenedate, lives on outside of fish, eats scales
  + leprocredium , parasitic flatworm
  + Copepod 1, found in every single sheep head, average 87 in one gill feeding on blood
* Also started collections of kelp baths(?), etc.
  + Will be collecting over 17,000 individual fish !!!
* Help from undergrads is necessary
  + Collaboration provides a lot of opportunity for undergraduate independent project
* Can be tailored to each undergrads preferences
* Want each undergrad to pick a host, be responsible for that host and the “local expert” for that fish, do all the dissections for that fish
* Also would allow students to have ownership of data and publish it in the future
* Dissections will require a lot of time, expertise required for parasite recognition
* Bigger commitment than lab volunteer position
  + Wants students to be supplemented for their hard work!
* Goal would be that they would complete dissections winter, spring, and summer and then write their manuscripts by winter
* Started training three undergrads, ready to start immediately
* Benefit UCSB, all money is for highly motivated undergrads,
* Looking for journal of parasitology
* Planning on making catalog of all parasites and would donate the extra to zoology and parasitology classes
* Data would allow future grad/undergrad students other projects
* Highly applicable to campus point, tell us if fish are healthy in campus point marine reserve
* Coastal fund support is pivotal to this project

**Interview Questions**

* Were the interns already working in the lab?
  + They all reached out to her, they all took parasitology course last year
* Are you assessing health just by the number of parasites?
  + Yes
  + In the future would like to look at physiological differences, osmoregulation and respiration effects in future
  + For now just doing counts
* How detrimental are these parasites? Could they just be passive hosts?
  + Hard to say because some of these have not been specifically looked at before
  + Parasitic flatworms common in other fishes, some have significant detrimental effect
  + Known that parasites in low counts can be very detrimental and regulate host populations
* How much time per week have the trainees been training?
  + About 10 hours per week
  + 2 go in on their own
* Are they unpaid right now?
  + Yes
* Have the marine reserves expressed interest, or are you interested in reporting to them
  + Yes, she used to work for California Fish and Wildlife
  + Past employees seem really excited about this
* Will you be assessing fishing pressure or presence absence of fishing?
  + Presence absence of fishing
  + Will not be collecting on transects, but will be using transects as measure of abundance by collecting near transects
* When there’s higher densities of populations, are they more likely to have more parasites?
  + There are some parasites that are dependent on densities like fish that school
  + Some parasites are transmitted by food consumption so they are less common sometimes in larger populations
    - More fish less food
* Would you want to increase your intern stipends?
  + Yes, but it might be her department cap
  + Adding paying them to write about it to her budget as well
* Assessing 22 species, all fished?
  + Yup all fish
  + They are not all harvested, vary in fishing pressure
  + Some are in fish farms, some are banned from fishing everywhere
  + Vary in size

Board Discussion:

*MOTION/SECOND: Jordan/Lauren*

*Motion language: Motion to table discussion for FALL 18-14*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

Project Title: Fall 18-18, Autonomous Aquatic Research Vessel

Sponsoring Organization: MSI

Presenter Name: Ed Romero

Summary:

The goal of this project is to build an autonomous research vessel (ARV) for making

oceanographic measurements in coastal waters offshore of Santa Barbara, CA. The

ARV will be carry sensors for measuring currents and water properties such as

temperature and salinity. The vessel will be able to operate in the ocean for periods

of a few days while navigating pre-programmed routes. Although other autonomous

research vessels have been developed in recent years, their complexity and high cost

are barriers to their widespread use. We propose a new generation autonomous

vessels based on readily available drone technology. The ARV will be used to study

ocean currents and their effects on nearshore ecosystems such as the kelp forests

offshore of UCSB. The ARV will also have other scientific applications, including

pollution measurements in the coastal ocean. Unlike traditional boats with crews,

ARVs can be deployed quickly with sensors and equipment designed specifically for

particular missions.

\*jordan has worked with Ed before, recusing himself from discussion

**Interview Questions**

* On the bigger boogie board, are you planning to have more things attached?
  + All the instruments will log internally, not centralized
  + Less points of failure with components isolated
* How many interns help usually?
  + Average 4 interns per quarter
  + Full time job is not mentoring
* Are most interns engineering?
  + Envs, comp sci, engineering, ecology, physics, interns
  + Likes diversity within majors for interns
* Are interns typically on a volunteer basis
  + Yes
  + Sometimes get REU students
* What would you request money for in the future?
  + Yes maybe to add more features
* Would you be willing to request money from us for stipends?
  + If we can we try to pay interns, especially if they have work study
* Would you probably get enough returning interns to pay them?
  + School first, when you pay them they are obligated to come but school first
  + The students have too full of a workload to be paid
* 3D printers?
  + Prototype filament
  + Resin printer for higher quality
  + Used to teach CAD, knows how to design
  + Interns learn how to 3D print
* Contact washburn when he is gone

**Closing Comments**

* He is adorable, really enthusiastic
* Video
* Seems that volunteering works for interns because they are busy with engineering
  + Less detraction/commitment for schoolwork
  + Less distraction from his work
  + Works for this project because it is mostly a curiosity thing
* Alana: In favor of funding supplies
* Worried to get very good data
  + Possibly issues once you start measuring optically
* Alana: Calibrating radar data with that is a really good idea
* Lauren: likes that he’s going to make a video after
* Money is going to student experience
* Continuous funding to keep adding tidbits maybe not, for now this is cool
* It’s getting engineering majors involved in the environment

Board Discussion:

*MOTION/SECOND: Alana/Maria*

*Motion language: Motion to table FALL 18-18*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

**ADJOURNMENT AT 9:10 PM**

*MOTION/SECOND: Jordan/Lauren*

*Motion language:Motion to adjourn meeting at 9:10 a*

*ACTION: Consent*

*Additional approval required: NO*