

Institutional Animal Care and Use Committee

Minutes for May 13, 2022

**Call to Order**

The Institutional Animal Care and Use Committee (IACUC) of Texas A&M University-Corpus Christi met on May 13, 2022, via Zoom. Quorum was confirmed and the meeting was called to order at 1:03 pm with the following members present.

Total Number of Members Present in Voting Capacity: 7

# required for quorum: 6

**Meeting Attendance**

Meeting Chair:

<u>Chair name</u>	<u>Voting Status</u>	<u>Membership</u>	<u>Affiliation</u>	<u>Scientific</u>	<u>Arrive late</u>	<u>Left Early</u>	<u>Teleconference</u>
Felix Omoruyi	Voting	Full	Affiliated	Scientific	N/A	N/A	Zoom

Members Present:

<u>Member name</u>	<u>Voting Status</u>	<u>Membership</u>	<u>Affiliation</u>	<u>Scientific</u>	<u>Arrive late</u>	<u>Left Early</u>	<u>Teleconference</u>
Frauke Seemann	Voting	Vice-chair Full	Affiliated	Scientific	N/A	N/A	Zoom
Jean Sparks	Voting	Full	Affiliated	Scientific	N/A	N/A	Zoom
Shayna Whitaker	Voting	Full/Vet	Affiliated	Scientific	N/A	N/A	Zoom
Daniel Coffey	Voting	Alternate, Orbach	Affiliated	Scientific	N/A	N/A	Zoom
Nathan Galvan	Voting	Alternate, Garcia	Affiliated	Scientific	N/A	N/A	Zoom
Larry Lloyd	Voting	Alternate, Banks	Affiliated	Scientific	N/A	N/A	Zoom
John Scarpa	Non-Voting	Alternate, Seemann	Affiliated	Scientific	N/A	N/A	Zoom
Paula Baker	Non-Voting	Alternate, Vet Whitaker	Affiliated	Scientific	N/A	N/A	Zoom
Wei Xu	Non-Voting	Alternate, Seemann/ Sparks	Affiliated	Scientific	N/A	N/A	Zoom

Staff and Guest Present:

<u>Name</u>	<u>Job Title</u>	<u>Teleconference</u>
John Scarpa	IACUC/IBC Coordinator	Zoom

**I. Conflict of Interest**

Members were reminded of their obligation to disclose any conflict of interest related to any of the items on today's agenda. The Chair called for any disclosure of conflict of interest. Conflicts were declared and are noted in the minutes on relevant items.

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**II. Minutes**

Minutes from April 8, 2022, were reviewed. IBC Coordinator pointed out that at the end of the minutes where there was a vote on schedule change, that we use the chat feature to record votes and we had a number of members who did not vote in chat and therefore are noted as excused.

The Chair invited additional comments, questions, and/or concerns. Having none, the motion to approve minutes as is was made, seconded, and carried.

Vote yes: 6

Recused: 0

Vote no: 0

Excused: 0

Abstain: 1

**III. New business**

The Committee reviewed new business items.

**A) Education:**

- 1) 11 May, USDA – Meeting the Requirements of the AWA. If attended, please send confirmation. Good review of AWA with particular emphasis on correctly conducting alternative methods searches. Material in MS Teams.
- 2) 11 May, USDA-APHIS – New Contingency Planning and Training of Personnel Rule. If attended, please send confirmation. Material in MS Teams. This new rule will now be followed by TAMU-CC as we are now a USDA registered research facility. See item #4 in next section (B).  
N. Galvan of EH&S commented that EH&S had a hurricane drill on May 11 and the question of live animals on campus and their care was brought up. Each PI is supposed to have a disaster plan as part of their IACUC protocol (The Guide). Principal Investigators with non-regulated animals are supposed to have a plan as per the emergency management plan of the university (<https://www.tamucc.edu/finance-and-administration/facility-administration/ehs/emergency-management/assets/documents/emergency-management.pdf>) and Research and Innovation (<https://www.tamucc.edu/research/assets/documents/research-emergency-mgmt-withquickreflist-june2021.pdf>).
- 3) PRIM&R IACUC courses; online webinars in June. Registrations ongoing.

**B) Other:**

- 1) ORC annual report (IACUC). Available for committee's information.
- 2) CPIRA Q&A, April 2022. Available for committee's information.
- 3) ORC Director, Rebecca Ballard, will be out of the office and unavailable from May 12<sup>th</sup> through June 5<sup>th</sup>, 2022.
- 4) USDA Registered facility (dogs & cats only). TAMU-CC has registered with USDA as research facility that utilizes dogs and cats. We do not house any of these animals on campus, but a research project involves use of USDA regulated animals off campus. Expect a visit by USDA personnel as part their review. Animal records beyond just USDA regulated animals are open for inspection by USDA personnel. All researchers, staff, and IACUC need to be aware of this and maintain their records for un-announced inspections. IACUC Coordinator will set up a flow-chart of people that have access to IACUC records (REDCap and MS Teams) for an un-announced inspection.

**IV. New Studies**

None.

**V. Amendment**

None.

**VI. Continuing Review**

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**IACUC #:** 2021-06-016 (rec #50)  
**Protocol title:** Collection of juvenile estuarine nekton  
**Principal Investigator:** G. Stunz  
**Primary Reviewer:** W. Xu and N. Galvan  
**Conflict of Interest:** K. Banks and D. Coffey  
**Species:** fish (multiple species and families)  
**Protocol Summary:** Estuaries along the Texas coast contain many highly productive habitats including seagrass meadows, oyster reefs, salt marshes, and mangroves. These critical areas function as Essential Fish Habitat (EFH) for a number of economically and ecologically important juvenile fishes and crustaceans (nekton) which play significant trophic roles in the estuarine food web. Understanding the use of estuarine habitats by these species of juvenile fishes and crustaceans is critical towards gaining a better understanding of the use and relative value of these estuarine habitats. The main objective of this project is to assess changes in nekton densities among important estuarine habitats in Texas bays and to examine the effects of re-opening tidal inlets to the recruitment and population dynamics of fishes and crustaceans in these estuarine environments.  
**CR Update:** The Corpus Christi Bay region includes Aransas Pass, a historically large inlet, and Packery Channel, a smaller natural tidal inlet permanently reopened in 2005. The purpose of this study was to (1) determine whether there is a difference in species diversity between the Aransas Pass and Packery Channel inlets and (2) determine if the distance from the inlet has an effect on species diversity. Shannon diversity indices were calculated from juvenile nekton (fish, shrimp, and crab) species collected using epibenthic sled tows from seagrass meadow sites near the Aransas Pass and Packery Channel inlets. There was no significant difference in species diversity between the Aransas Pass and Packery Channel inlet. In addition, distance (2-10 km) from the inlet had no significant effect on species diversity. These findings demonstrate that despite differences in size and age, Aransas Pass and Packery Channel support equally diverse nursery habitats across a range of distances for estuarine-dependent nekton species.  
**Adverse Events reported?** No  
**Alternatives to Animal Use?** No  
**Alternatives to Potentially Painful Procedures?** No  
**Not Unnecessarily Duplicative?** Yes  
**Enrollment Status:** CITI Training: verified OHP Enrollment: verified

**Open Meeting:** Dr. Coffey present at 1:15 pm

**Discussion:** No questions for Dr. Coffey

**Closed meeting:** Dr. Coffey exited at 1:17 pm (quorum maintained)

The discussion was summarized as follows: Everything in order, animal use numbers reported, number coincide with permit numbers. No issues or concerns. Note that protocol lists shrimp, although permit does not. Shrimp are an invertebrate species and not regulated by IACUC. Oysters (invertebrate) are on TPWD permit. Are shrimp TPWD regulated? Good question for Dr. Coffey when he re-enters. Dr. Banks has been reviewing all of Dr. Stunz's protocols as they were handled by a different researcher. Chair asked for vote before having Dr. Coffey re-enter as this is a permit question and not animal welfare per se.

The Chair invited additional comments, questions, and/or concerns. Having none, the motion to approve with a review period of one year was made, seconded, and carried.

Vote yes: 6	Recused: 1 (Coffey)
Vote no: 0	Excused: 0
Abstain: 0	

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Dr. Coffey re-enters at 1:21 pm.

Discussion continues: Does TPWD permit have shrimp listed as shrimp are noted in protocol? Want to be sure TPWD permit and your research are congruent. Dr. Coffey notes that permit does not list shrimp specifically but that they are covered by the invertebrate grouping listed. The shrimp listed on the IACUC protocol will be removed from this AUP once new permit is received.

**IACUC #:** 2020-07-006 (rec #24)  
**Protocol title:** Coastal Conservation and Restoration Ecology-Collection of Mobile Estuarine Nekton  
**Principal Investigator:** J. Pollack  
**Primary Reviewer:** J. Scarpa and D. Coffey  
**Conflict of Interest:** N/A  
**Species:** fishes  
**Summary:** Estuarine and coastal habitat occur in transitional zones where fresh and salt water mix, making them highly productive and critical to coastal fisheries, but subjecting them to frequent hydrological variation. Changes in environmental conditions can act as a disturbance, altering the structure of ecological communities via physical, biological, and physiological stresses. Broadly, our research aims to better understand (1) the relationship between changing abiotic conditions and their effects on biotic communities, (2) the role of human activities and natural (i.e. storm, climatic) disturbances on ecological structure and function, and (3) the ability of habitat restoration to replace ecological functions lost due to habitat degradation. It is important to understand these relationships between environmental conditions, habitat, and biotic communities to inform effective management strategies.  
**CR Update:** These studies are ongoing and methods have not changed since the initial submission. We continue to monitor anthropogenic and climate driven changes on coastal and marine ecosystems using field collections of water quality and faunal populations to help guide effective resource management decisions.  
**Adverse Events reported?** No  
**Alternatives to Animal Use?** No  
**Alternatives to Potentially Painful Procedures?** No  
**Not Unnecessarily Duplicative?** Yes  
**Enrollment Status:** CITI Training: verified OHP Enrollment: verified

**Discussion:** Dr. Coffey had no issues; animal use numbers are within that allowed by protocol and permit. Numbers listed are grouped as fish versus specific species, which is how the TPWD permit is written. IBC Coordinator also had no issues with the protocol and continuing review report, but asked how IACUC would like to see animal usage numbers listed (grouped or specific)? This protocol does list specific species, but no numbers were listed for each species for each year. Protocols that the IACUC reviews may be specific and others are general, which follows the TPWD permit. Committee Chair responded that numbers reported following what is listed in permit is good. Committee member commented that a wildlife study may be difficult to determine number used. IBC Coordinator noted that many wildlife studies will estimate numbers and then report specifically (number and species) what was caught afterwards (e.g., teaching and wildlife studies have reported afterward). Committee member commented that being precise for number and species can lead to reportable event; being broader is better and all should be similar. Chair noted that PI must follow permit number for overall use. IBC Coordinator clarified that the permit is a legal number, i.e., if over the PI must report to agency, as well as to IACUC. IBC Coordinator is asking if IACUC wants to know specifically (family or genus/species) what was caught under this protocol? Would we or the public want to know if an endangered or threatened species was caught? Committee member pointed out that the permit states right below the numbers allowed that the permit excludes species listed by Department as threatened or endangered, unless authorized. Coordinator restated that the question for the committee is general listing or specific as the protocol does have some species listed, but no numbers noted. Another committee member agreed with Chair to follow permit. IBC Coordinator will write up a FAQ or general guidance for committee to review at next meeting.

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The Chair invited additional comments, questions, and/or concerns. Having none, the motion to approve as is with a review period of one year was made, seconded, and carried.

Vote yes: 6

Recused: 0

Vote no: 0

Excused: 0

Abstain: 1

**IACUC #:** 2021-04-009 (rec# 47)

Protocol title: Assessment of the innate immune system development in larval marine medaka fish

Principal Investigator: F. Seemann

Primary Reviewer: J. Sparks and C. Gonzales

Conflict of Interest: F. Seemann

Species: fish, marine Medaka (*Oryzias melastigma*)

Summary: Understanding the development of the immune response is crucial to identify unique sensitive timepoints for environmental stress. The innate immune system as sole defense is particularly important until full immune system maturation. The proposed research targets to catalogue molecular changes of selected immune genes, initiators, mediators and effectors, in marine medaka (*Oryzias melastigma*) larvae at different timepoints and how the expression of these genes is affected in response to a pathogen challenge. The pathogen challenge will help to identify if the respective gene and the associated immune response pathway are active at that developmental timepoint.

CR update: We have identified *Edwardsiella piscicida* at a concentration at  $5 \times 10^5$  cfu as suitable for the host resistance assay.

Adverse Events reported? No

Alternatives to Animal Use? No

Alternatives to Potentially Painful Procedures? No

Not Unnecessarily Duplicative? Yes

Enrollment Status: CITI Training: verified

OHP Enrollment: verified

Open Meeting: Dr. Seemann present at 1:36 pm

Discussion: Dr. Sparks requested a review of the numbers as she was not able to make them work out (this protocol and for reportable event (RE)). *Edwardsiella* bacterial species was identified as suitable for assay. Are you using 450 fish for that? PI and reviewer agreed that 450 were used for first set of experiments. Dr. Sparks commented that RE and CR were intertwined. Original protocol number of 1050 (p 12 of protocol) was shown as well as how it was calculated (p 13 of protocol). 450 for first experiment and 600 for second. PI noted that for second experiment that 30 were used instead of 20 per treatment (thus RE submitted). Range finding test will be repeated as initial test did not give good results (just learned from student); this will be part of amendment to request higher numbers.

Questions for Reportable Event so as not to have Dr. Seemann in and out of meeting. Dr. Sparks is having trouble with verifying numbers. Initial was 450 for first test and total use was 1050, leaving 600 for second experiment. But when did experiments, used 480 for first experiment and 1200 for second. According to her calculations from what is written in RE, there were 800 used for second experiment and 480 used in first experiment, which is 230 over what was approved in protocol. PI was unsure if the student added one more age, which Dr. Sparks says makes up the difference when using 30 per treatment. PI mentioned a 10% mortality rate, which Dr. Sparks was also trying to ensure was used in requested numbers. Chair asked if any other questions for Dr. Seemann.

Closed meeting: Dr. Seemann exited at 1:45 pm (Dr. Xu replaces Dr. Seemann, quorum maintained)

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Discussion: Chair asked if any further questions. Dr. Sparks reiterated calculations of numbers used compared to her calculations. Original calculations show 800 should have been used instead of 600. Dr. Sparks is still unsure of original numbers as compared to what is in protocol now. Were numbers even correct the first time? Should they have been 1250 and not 1200. It is confusing. First experiment was to use 450, but used 480. Second experiment PI wrote 600 (total 1050), but now saying used 1500. If used 1500 and 480, then 1980, much higher than 1050 originally requested. Reminder we have two items to discuss – CR and RE. There are options the committee has to move on these two issues. Would reviewing the RE now be best? Dr. Sparks can not make the numbers match. In the RE, it is noted as 30 animals used per treatment, but PI also noted now that 5 ages were used instead of 4. Does committee wish to table or approve with stipulations. Chair clarified that the CR and RE are for same protocol (mistype protocol numbers in agenda). In CR, the PI reported use of 1680 (480 for host resistance assay and 1200 for molecular analysis, but only 4 ages noted instead of 5 as just reported, which would move that to 1500 larvae versus 1200). Is RE okay for numbers and for corrective action plan? Is PI asking for more fish in amendment, which needs to be submitted? After voting on RE, back to CR for discussion or motion.

Motion to approve with stipulations of 1) providing verification of animal numbers used (i.e., detail of experimental usage), 2) submit an amendment to increase animal numbers, and 3) submit a new Reportable Event for additional use of animals reported at meeting. To be reviewed by primary reviewer and Chair.

The Chair invited additional comments, questions, and/or concerns. Having none, the motion to approve with stipulations was made, seconded, and carried.

Vote yes: 6 (Xu for Seemann)	Recused: 1 (Seemann)
Vote no: 0	Excused: 0
Abstain: 1	

Dr. Seemann re-enters at 2:08 pm.

## VII. Reportable Events

**IACUC #:** 2021-04-009 (rec# 12)  
**Protocol title:** Assessment of the innate immune system development in larval marine medaka fish  
**Principal Investigator:** F. Seemann  
**Primary Reviewer:** J. Sparks and C. Gonzales  
**Conflict of Interest:** F. Seemann  
**Species:** fish (*Oryzias melastigma*)  
**RE Name:** Increased animal use for molecular work  
**RE Type:** Protocol Deviation/Violation  
**RE Description:** More fish were used as initially requested in the protocol. 480 larvae were used for the host resistance assay. 1200 larvae were used for the molecular analysis: 30 individuals per 5 replicates per 2 treatments for 4 ages.  
**Managed:** Not enough RNA was extracted for downstream analysis from pools of 20 individuals, thus the numbers were increased to 30 individuals per pool. Comparing fish numbers for the CR of the protocol revealed the discrepancy between requested and used larvae numbers.  
**Corrective actions:** The PI will confirm that the research personnel is reading and strictly adhering to the numbers permitted by the IACUC committee.

**Deviation Time Line follows:**  
**Date event occurred:** 03-02-2022  
**Date PI aware:** 03-16-2022  
**Days between event and PI awareness:** 14



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Date Report Submitted: 05-03-2022

Days between PI awareness and report submitted: 48

Open Meeting: Dr. Seemann present at 1:36 pm

Discussion: Used 480 for experiment 1, which was 30 over that requested of 450. For second experiment, used 1200 instead of 600. Originally was going to use 20 fish x 5 treatments x 2 x 4 ages = 800, which is greater than the 600 originally requested (was this originally incorrect). PI thinks student added one more age group, so that would be 1000 used, instead of 600, for a total of 1480 instead of 1050. Dr. Sparks tried to add in the 10% mortality noted to ensure numbers were accurate. Chair asked if any more questions for PI. None were declared.

Closed meeting: Dr. Seemann exited at 1:45 pm (Dr. Xu replaces Dr. Seemann, quorum maintained)

Discussion: Reportable event is reporting that more animals were used than requested in original protocol for first experiment (480 vs 450) and overall (PI reported 1680, but then said one more age group, there reviewer calculates 1980, vs 1050) for year 1. There still is a question if the numbers reported are correct as it shows 4 age groups and PI stated 5 were used. Are these numbers accurate? As written they are correct, but verbally in the open discussion the PI noted a 5<sup>th</sup> age group used and the RE stated 30 were used instead of 20. Therefore, is a second reportable event submission needed as number may even be higher (1500 for exp 2) than the current RE indicates (1200 for exp 2 and an extra 30 for exp 1)? This RE may be viewed for the acceptance of the corrective action plan as is with number reported. Motion to approve RE as is.

The Chair invited additional comments, questions, and/or concerns. Having none, the motion to approve report and corrective action plan as is within was made, seconded, and carried.

Vote yes: 6 (Xu for Seemann)

Vote no: 0

Abstain: 1

Recused: 1 (Seemann)

Excused: 0

Dr. Seemann re-enters at 2:08 pm.

### VIII. Semi-Annual Inspection and Program Review

#### A) Program Review

Discussion: IBC Coordinator reviewed Program Review for committee members. In November 2021, new questions had been added to checklist. These are not noted now as they are part of checklist. At this point, USDA is not applicable as just registered, so these questions will be on next program review. EH&S reviewed their sections of program review.

Motion to accept program review as is.

The Chair invited additional comments, questions, and/or concerns. Having none, the motion to approve was made, seconded, and carried.

Vote yes: 6

Vote no: 0

Abstain: 1

Recused: 0

Excused: 0

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**B) Off-Campus Facilities and Labs**

On May 4, 2022, the following IACUC members conducted a Semi-Annual Inspection of off-campus animals and labs/facilities: Shayna Whitaker (veterinarian), Shawn McCracken, Daniel Coffey, and John Scarpa. The off-campus locations inspected included the following (with deficiencies noted):

Location	Species	IACUC #	PI	Deficiency
Texas State Aquarium, 2710 N Shoreline Blvd, Corpus Christi, TX 78402	Fish (multiple species)	2021-10-035	Lloyd	No
Texas Parks and Wildlife Department, CCA, Marine Development Center, 4300 Waldron Road, Corpus Christi, Texas 78418	Southern Flounder Spotted Seatrout	22-18 and 2020-10-012	Geist (TPWD – Blandon)	Yes
Padre Island National Seashore (20420 Park Road 22 Corpus Christi, TX 78418) and Mustang Island State Park (9394 TX-361, Corpus Christi, TX 78418)	Canine	2021-10-034	Baxter	Yes

Committee reviewed inspection findings and potential corrective actions.

**Texas State Aquarium**

Open Meeting: Mr. Lloyd present at 2:32 pm

Discussion: The inspection committee reported that the protocol was present and complete. Approx. 4 dives left for the year. Have conducted 2 so far. No contact with fish or other species in exhibit aquariums, no purposeful interaction with species (i.e., non-invasive observation only). TSA personnel indicated there have been no incidences with species after sessions to date; TSA has divers in exhibit tank regularly for cleaning, therefore some acclimation to human diver presence. Protocols in place for cleaning gear and people before entering and after exiting tanks.

No deficiencies were noted.

**TPWD CCA Marine Development Center**

Discussion: The inspection committee reported that no animals were present for protocol 22-18 but pond experiment (2020-10-012) was ongoing. Veterinarian and PI contact info signage present on incubator. Committee member noted that fish were harvested from pond experiment recently. There was discussion of this experiment being moved to Palacios. Will it be just TPWD or still with TAMU-CC? Protocols and logs were present, but were not organized well; i.e., multiple copies of same protocol, difficult to determine water quality log data for which protocol, and an additional protocol 2020-05-004 was present (not from TAMU-CC, maybe from TAMU-Kingsville when used their assurance). Protocol 09-19 was present but is not performed there (on board ship, never executed). Should keep one protocol and its logs per book; label better. Plans are to close protocol 22-18 before expiration in June 2022.

22-18 (Metabolic rate studies, inside):

No animals present. Larvae acclimated for 2 days (oxygen and live food, but could not measure D.O.). Tanks were well-aerated.) Larvae in experimental system were fasted before respirometry experiments. Salinity / Temp



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combinations for larvae exposure. Tricaine- S, expired April 2022 (no experiments for 4 months). Euthanized by cold shock (<5 cm). Test strips for pH, NO<sub>2</sub>, NO<sub>3</sub> had expired last year (April 2021).

### 2020-10-012 (Pond study, outside):

Water quality - Automatic readings and daily manual testing in A.M.

No food supplementation – monitor food (plankton) 3x/wk.

Ponds are managed and maintained by TPWD personnel

#### Findings to Report:

- 1) Expired chemicals and test strips.
- 2) Protocols and data logs sheets were disorganized.

#### Requested Corrective Actions:

- 1) Dispose properly the chemicals and test strips. Resupply with non-expired materials as needed.
- 2) Organize protocols and data logs sheets for easy review.

Corrective actions completion date set for June 17, 2022.

Motion made to accept findings to report as minor, requested corrective actions, and complete by date.

The Chair invited additional comments, questions, and/or concerns. Having none, the motion to approve was made, seconded, and carried.

Vote yes:	6	Recused:	0
Vote no:	0	Excused:	0
Abstain:	1		

### **Padre Island National Seashore and Mustang Island State Park**

Discussion: The inspection committee reported that no animals were present. Reviewed protocol book at NRC lab in morning (no protocol present, but approval letter was present, as well as animal records). Dog records are in protocol books – medical records present for 1 test dog, owner will do daily records, still need an owner for 2<sup>nd</sup> test dog (Need medical records for control dog). Protocol was made available by ORC staff for inspectors. Protocol (pdf file) was sent to PI to be printed and inserted in protocol book at NRC lab. Inspectors asked “If handler with dog at all times?” PI responded - Yes, nearby as off lead, should be able to assist if hazard present. Each dog runs separate (test dog supposed to spot only on one type of oil, control on all types). PI mentioned during inspection for approval of beach area that dogs have goggles to protect eyes and boots on paws for protection (part of Chiron-K9 methods).

#### Findings to Report:

- 1) Protocol was not present (approval letter was present).
- 2) Animals records not present for control animal.

#### Requested Corrective Actions:

- 1) Print entire protocol and insert in protocol book in lab area.
- 2) Obtain records for control animal and add to book. Maintain records for all animals.

Corrective actions completion date set for June 17, 2022, for item #1 and by September 9, 2022, for item #2.

Motion made to accept findings as minor to report, requested corrective actions, and complete by date.

The Chair invited additional comments, questions, and/or concerns. Having none, the motion to approve was made, seconded, and carried.

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Vote yes: 6  
Vote no: 0  
Abstain: 1

Recused: 0  
Excused: 0

**C) TAMU-CC Facilities and Labs**

On May 4, 2022, the following IACUC members conducted a Semi-Annual Inspection of on-campus animals and labs/facilities: Shayna Whitaker (veterinarian), Carrie Ullmer (veterinarian), Kesley Banks, and John Scarpa. The on-campus locations inspected included the following (with deficiencies noted):

Location	Species	IACUC #	PI	Deficiency
Education Center for Mathematics and Science 114	Reptiles – <i>Anolis</i> (lizard)	2021-11-036	Orbach	Yes
Tidal Hall 114G	Zebrafish	2021-10-032	Xu	Yes
Tidal Hall 114G	Fish – Japanese Medaka	2022-03-048 23-19 26-19 2020-10-013 2021-10-009 2021-08-024	Seemann	Yes
Tidal Hall 251	Fish - Marine medaka	2021-04-009 2021-08-024	Seemann	No
Natural Resources Center 1018	Reptiles – Turtles	2020-09-009	Baxter	Yes
Islander Green Team garden	Fish – Japanese Medaka	23-19	Seemann	Yes

**ECMS 114, Orbach**

Discussion: The inspection committee reported that no were animals present, protocol and feeding logs were available. They found some food was still in aquarium (disposed of while there); recommend discarding substrate between cohorts (or sterilizing if possible). Needed veterinarian information on sign (added while there). Asked about environmental monitoring (temperature records, ability to control humidity?): Protocol does not have acceptable temperature or humidity ranges. Recommend amendment to add environmental monitoring and then measure, although the teaching area is not under control of PI for regulation temperature and there is no method to change humidity in classroom.

**Findings to Report:**

- 1) Sanitation - Some food was still in aquarium (disposed of while there); recommend discarding substrate between cohorts (or sterilizing if possible).
- 2) Veterinarian information on sign missing (added while there).
- 3) Environmental monitoring (temperature records, ability to control humidity?): Protocol does not have acceptable temperature or humidity ranges. Recommend amendment to add env. monitoring and then measure.

**Requested Correction Action:**

- 1) Submit amendment to add environmental variables that can be monitored and then measured as required.

Corrective actions completion date set for July 15, 2022.

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Motion made to accept findings as minor to report, requested corrective action, and complete by date.

The Chair invited additional comments, questions, and/or concerns. Having none, the motion to approve was made, seconded, and carried.

Vote yes:	6	Recused:	0
Vote no:	0	Excused:	0
Abstain:	1		

**Tidal Hall 251, Seemann**

Open Meeting: Dr. Seemann present at 2:26 pm

Discussion: The inspection committee reported that no animals present. All looked good and no concerns. No work done in area since Nov 2021. PI noted there will be work this summer. PI contact and veterinarian info present. BSL-2 area, temporary ABSL-2 area (incubator has own chain and lock) signage present. Protocol and logs available.

No findings or deficiencies to report. No corrective action plan needed.

**NRC 1018, Baxter**

Discussion: The inspection committee reported that no animals were present. PI stated that none have been brought into lab, yet. Will be in for 24 hr and then released back at site of collection. Protocol was available. Recommend adding a screen lid to tanks so turtles cannot climb out of tank; if they do they risk a fall from table top height and potential injury. PI stated they do not plan on adding so much material that turtles would have a chance to climb out. Still recommend lids. Recommend adding timers for lights to ensure day:night cycle for the 24 hr that turtles are in the lab (request assistance from EH&S and department).

**Findings to Report:**

- 1) Tank enclosures need secure lid to prevent turtle escape and fall from tabletop.
- 2) Room lighting is not controlled.

**Requested Corrective Actions:**

- 1) Adding a secure screen lid to tanks so turtles cannot climb out of tank.
- 2) Recommend adding timers for lights to ensure day:night cycle for the 24 hr that turtles are in the lab.

Corrective actions completion date set for June 17, 2022.

Motion made to accept findings as minor to report, requested corrective action, and complete by date.

The Chair invited additional comments, questions, and/or concerns. Having none, the motion to approve was made, seconded, and carried.

Vote yes:	5	Recused:	0
Vote no:	0	Excused:	0
Abstain:	2		

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**Tidal Hall 114G, Xu**

Open Meeting: Dr. Xu present at 2:15 pm.

Discussion: The inspection committee reported that protocols and environmental data/feeding logs present. Protocol was missing pages (e.g., personnel); need to add pages. Amendment needed to add a feeding protocol (not mentioned in protocol, how often, type of feed, etc.) – Found SOP that has feeding regime, recommend add to protocol via amendment. Tanks labelled, clean. Observed fish in sumps. PI claimed they were medaka from other systems in room. PI of other systems verified that that fish were not medaka, but were zebrafish. PI thinks that eggs or embryos may be sticking to nets used in tanks. Recommend fish removal from sump and determine how fish are getting into sumps, update cleaning / sanitation protocols for equipment (e.g., nets), needs to be done better as may be source of fish in sump. No environmental enrichment; consider as species is a well-studied model organism. PI noted a potential issue of having extra items or introducing toxins in system, there is no fighting or injuries noted, which is controlled by density. Tanks are smooth so no injuries, might differ if items placed in tank. Protocol based on experience and published methods. Feed expired (30 April 2022, Rotifeast) in refrigerator (disposed of while there). No signage regarding pest control (Is it allowed in room?) PI Seemann stated that it is labelled on the outside of the doors.

Closed meeting: Dr. Xu exited at 2:50 pm.

Discussion: Reviewed findings. Changes to requested correction action were made; removed signage need for pest control and environmental enrichment.

**Findings to Report:**

- 1) Protocol missing pages (e.g., personnel) and feeding regime.
- 2) Consider environmental enrichment.
- 3) Expired feed (April 30, 2022); disposed on spot.
- 4) Zebrafish in sumps.

**Requested Correction Action:**

- 1) Ensure full protocol, amendments, and approvals are in book.
- 2) Submit amendment to add feeding regime as noted in SOP.
- 3) Review cleaning/sanitation procedures with personnel to ensure no fish in sumps in future (remove current fish in sump and euthanize).

Corrective actions completion date set for June 17, 2022.

Motion made to accept findings as minor to report, requested corrective action, and complete by date.

The Chair invited additional comments, questions, and/or concerns. Having none, the motion to approve was made, seconded, and carried.

Vote yes: 6  
Vote no: 0  
Abstain: 1

Recused: 0  
Excused: 0

Dr. Xu, re-enters at 2:52 pm.

## Institutional Animal Care and Use Committee

### **Tidal Hall 114G, Seemann**

Open Meeting: Dr. Seemann present at 2:20 pm

Discussion: The inspection committee reported that tanks were labelled and looked clean; lighting on timers. Protocols were difficult to find (labelled binders were there). Noticed some fish with bent backs (e.g., tanks D116, D117, C132, C136); fish seem fine but hang near bottom and swimming seems to be a bit more difficult. PI explained that there were older fish, visualized daily, and they do react to feed with good swimming. Inspectors inquired if vibration from aeration system could be further dampened, particularly for tanks on the same rack system as the aerator on top of the rack. PI explained that the aerator is already on styrofoam board and limits vibrational problems; it is placed above for electrical safety. Eggs production does not seem to be affected. Inspectors inquired about environmental enrichment and if it has been considered. PI explained that it is not required as noted in SOP and group interaction (males and females) does provide stimulation. Adding items to tank would inhibit egg collection as eggs might stick as found with sponge filters in place that are already problematic. Inspectors noted can of brine shrimp (*Artemia*) eggs is expired (1/2022). PI explained that the expiration refers to hatch rate, not food quality. *Artemia* that hatch from the eggs are still good, but that the hatch rate decreases after the expiration date, therefore have to use more cysts (eggs) to get number of *Artemia* nauplii desired. In place was one set of fish in tanks acclimating for use on protocol 2020-10-013 (all looked good).

Cleaning area wall that was supposed to be fixed for mold and water damage after last inspection in Nov still has not been fixed (S. Ussery will follow-up and re-initiate request if needed).

Closed meeting: Seemann exited at 2:52 pm and did not return. (Quorum maintained with alternate Xu.)

Discussion: Reviewed findings and determined that all findings within control of PI were explained well. Concerns above were discussed by PI at mtg and no other follow-up is needed. EH&S submitted WO#106133 on 8Nov2021 to remediate and add backsplash to wash station area. S. Ussery and N. Galvan will follow-up; what will be replacement material so problem does not re-occur? N. Galvan noted that materials were ordered 5 May and facilities is waiting on that.

No deficiencies to report or corrective action plan needed for PI. ORC will follow-up with EH&S and Facilities regarding work order for wall repair.

### **Islander Green Team Garden, Seemann**

Open Meeting: Dr. Seemann present at 2:28 pm

Discussion: The inspection committee reported that the outdoor aquaponics system is fenced in and has a locked gate. The project uses fish that are retired from breeding protocol; fish look good (duckweed, lily pads, snails, clear water). Fish tank is also covered by chicken wire mesh. There is Veterinarian and PI contact info on gate and fence. New instruction signage is present and will be mounted to gate. The protocol is present. The feed and environmental data log is online. The April 2022 was printed off. It was noticed that feeding was not checked off daily as it should be, e.g., 3/17-21, 3/22-29, & 3/31 – 4/4. Food good. Dissolved oxygen (D.O.) is listed in protocol as being measured, but no measurements recorded on log sheets. No follow-up corrective actions are noted for when water quality variables are out of limits (e.g., pH on 4/12 and 4/23).

Committee questioned if there is a chlorine issue as using tap water for make-up? PI says that only a little is used so it is too low and has not effect. However, after reportable event of excessive mortality will now be doing 100% water changes during quarterly counts. Committee recommends using a carbon filter to remove chlorine or dechlorinate a reservoir tank of water before doing exchange so it is ready. Need to either dechlorinate water or

## Institutional Animal Care and Use Committee

document that chlorine levels in system are not detrimental within 15 minutes of adding water to system and then again after 24 rs. PI stated that the are using TetraAquaSafe to remove chlorine from water during water changes. New foam sponge has been added over intake hose in tank so that fish will not be sucked into water pump (most probably what happened for reported excessive mortality event). It is expected 10-20% mortality due to age (recommend to amend protocol if needed with this information).

Closed meeting: Dr. Seemann exited at 2:52 pm and did not re-enter. (Dr. Xu replaces Dr. Seemann, quorum maintained)

Discussion: Concerns above and findings below were reviewed. Although electronic record keeping is supposed to make record keeping easier, it does not seem to be working for students and staff on this project.

## Findings to report:

- 1) Log entries for feeding were absent (e.g., 3/17-3/29).
- 2) Log entries for dissolved oxygen readings are absent (never taken)
- 3) No follow-up corrective actions noted after water quality measurements are out of limits (e.g., pH on 4/12 and 4/23).
- 4) Make-up water is potable water; is there a chlorine problem?

## Requested Corrective Actions:

- 1) Review with personnel the need to maintain daily records.
- 2) Review with personnel the need to measure all variables as noted in protocol.
- 3) Review with personnel the need to document corrective actions and their outcomes.
- 4) Document dechlorinating water and chlorine measurements or document no detrimental effects of added water soon after addition and then again after 24 hrs.

Corrective actions completion date set for June 17, 2022.

Motion made to accept findings for both Tidal Hall 114 G and Islander Green Team Garden areas as minor to report, requested corrective actions, and complete by date.

The Chair invited additional comments, questions, and/or concerns. Having none, the motion to approve was made, seconded, and carried.

Vote yes: 6 (Xu for Seemann)

Recused: 1 (Seemann)

Vote no: 0

Excused: 0

Abstain: 1

ORC will follow up with PI Baxter, Geist, Orbach, Seemann, and Xu to alert them to corrective actions requested.

The Semi-Annual Inspection report will be drafted for review at next meeting.

**IX. Other**

The next meeting is scheduled to meet by Zoom on Friday, June 17, 2022, from 1:00 pm to 3:00 pm.

Meeting was adjourned at 3:01 pm.