2024 Community Challenge Report for the Marine Energy Colligate Competition

Making The Foundation: Community Engagement

Duck Duck Goose

University of North Carolina at Charlotte

Lead: Jacob Silknitter

Engineering: Ada Kersh, Patrick Hultberg, Krina Patel, Anthony Grancagnolo, Kyle Overberg

Business and Community: Heidi Zuk, Tejas Raj, Kashi Tumbapura, Gray Owen

Other Contributing Members: Kevin Manoj, Fairlight Strong

Post Midyear Action

Since January, Duck Duck Goose has strived to reach out and connect to multiple parts of the marine energy community. The team was able to connect with government officials and industry partners through NC TOWERS (North Carolina Taskforce for Offshore Wind Economic Resource Strategies), and the annual NCROEP (North Carolina Renewable Ocean Energy Program), symposium. In order to ensure a well-rounded outreach strategy, the team also reached out to multiple schools within the Charlotte-Greensboro area to do talks and or activities with the students. Duck Duck Goose was able to organize two events with two different middle schools, each with their own purpose. Through an interview, the team reconnected with some elected officials they met at the NC TOWERS reception. At the CSI symposium the team members were able to talk with the local community on the Kitty Hawk coastline, to understand their knowledge and opinion of wave energy.

While attempting outreach the team found that most emails go unanswered. This was the team largest challenge. To mitigate this problem the team personalized the initial email that would be sent out to start connections. The team also sent out emails to more people in an attempt to receive more responses and possible interviews.

In their rookie year, Duck Duck Goose was able to accomplish getting their name out, connecting with the state government, connecting to local industry members and participating in the educational community. From these experiences the team itself feels rooted in their community, a foundation of connections to further build upon in the future. From the industry connections made, the team can learn more about how a marine energy business operates, the mistakes made along the way, where the business found success, and how the industry is approaching the future. With the connections made to the government officials the team is able to gain an understanding of the perspective and opinion the officials have. These officials help us understand how the policies could change, why they would change and how to display the technical information in a convincing manner. From their work with their local community in education Duck Duck Goose was able to educate and empower young minds to think about marine energy. Through an activity the team inspired these students to compete and develop the best solution to a problem given to them. In doing so the team hoped to leave a lasting impression on the students and the teachers. Overall, Duck Duck Goose strived to build a foundational network within their community, and due to the efforts made by every team member they achieved their goal.

Metrics

One formal interview was conducted. 8 people were in attendance, 4 from the NC department of commerce and 4 from DDG.

Of those from the team: Kashi Tumbapura, Gray Owen, Kevin Manoj and Jacob Silknitter

Of those from the NC department of commerce:

- Chief of Staff **Marqueta Welton**
  marqueta.welton@commerce.nc.gov
- Assistant Secretary of Clean Energy Economic Development **Jennifer Mundt**
  Jennifer.Mundt@commerce.nc.gov
- Director of Policy and Strategic Planning **Emily Roach**
  emily.roach@commerce.nc.gov
- Special Assistant **Gena Renfrow**
  gena.renfrow@commerce.nc.gov>

The team first met Jennifer Mundt and Emily Roach at the NC TOWERS event, where they exchanged contact info. Soon after the team contacted these people to conduct the interview. After the interview, all the officials were open to continuing work with the team and stated optimism for years to come.

Duck Duck Goose held or attended four events. One Government reception, one symposium, two educational events.

North Carolina Taskforce for Offshore Wind Economic Resource Strategies Quarterly Report Reception.

There were over 100 attendees from around the state. From Duck Duck Goose, Jacob Silknitter, Tejas Raj, Krina Patell, Ada Kersh, Patrick Hultberg, Anthony Grancagnolo and Gray Owen were all in attendance.

Other than the student team the attendees ranged from industry partners, NC department of commerce and other universities professors. This event mostly represented North Carolina, but the company Clean Carolinas was in attendance, and they also represented South Carolina.

At this event Duck Duck Goose set up a table, poster and video to showcase not only our team but MECC as a whole. These people were mainly focused on wind, but their interest was piqued with the cost savings of collocation and the opportunity point absorbers could serve. The team's engineers explained the conceptual design while the business team explained how it could benefit offshore wind into becoming more area efficient. It was there the team introduced themselves to George Bonner, Director, North Carolina Renewable Ocean Energy Program at Clean Carolina’s. He found the team inspirational and told the team that they could test their project at his facility when the time came.

Figure 1: Picture with team and partners: (left to right)

Tejas Raj, Gray Owen, Goerge Boner, Saffeer Khan (faculty advisor), Jennifer Mundt, Machelle Baker Sanders (NC Secretary of Commerce), Jacob Silknitter, Patrick Hultberg, Anthony Grancagnolo, Ada Kersh and Krina Patel

Figure 2: Team Members in Attendance and Poster: (left to right)

Krina Patel, Ada Kersh, Gray Owen, Anthony Grancagnolo, Patrick Hultberg, Jacob SIlknitter and Tejas Raj

North Carolina Renewable Ocean Energy Program Symposium.

This symposium held about 100 people from around North Carolina. From Duck Duck Goose: Jacob Silknitter, Patrick Hultberg and Anthony Grancagnolo attended.

This event was to display the NCROEP projects completed over the previous cycle. All these projects were on marine energy and were displayed in a keynote speech. Most of the attendees were either industry or academia. Along with the researchers, there were multiple student research groups, including members from DDG, at the undergraduate and graduate level.

This event was hosted by George Bonner, who the team connected to at the NC TOWERS event, so they were invited to come and display their progression on the project. At the event, the members learned from wave energy industry partners and saw what the current research of wave energy is looking for. The team was able to visit Janet's pier, a fishing/research pier where WECs are deployed and tested to power a microgrid. From the event, the team connected with people in wave energy and continued their relationship with George.

Figure 3: Full Attendance of Symposium

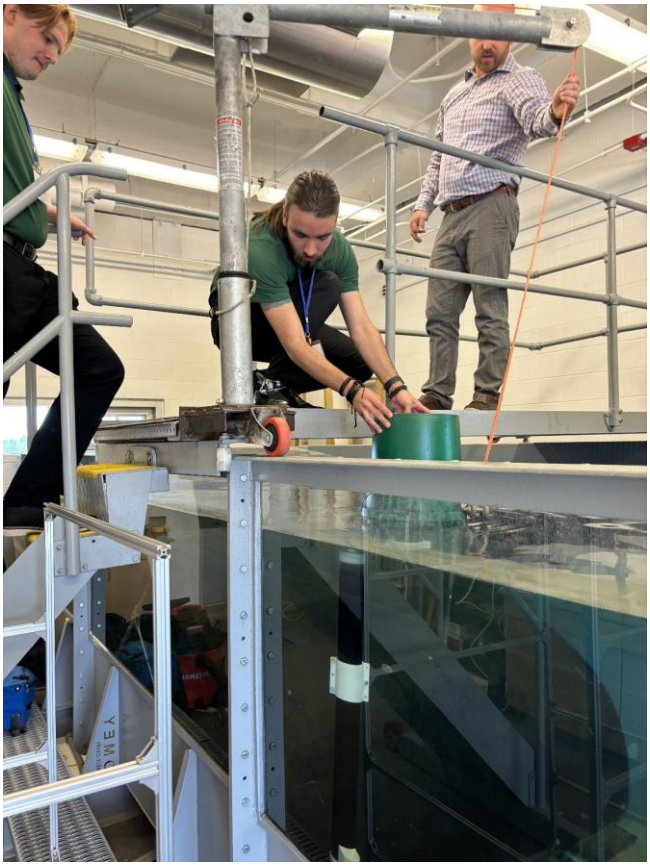

Figure 4: Undamped Tank Floatation Testing

Brown Summit Middle School, Lesson and Activity

The team was able to contact an administrator and a teacher at Brown Summit Middle school in Greensboro NC. At this event, team members taught a short lesson and held an activity on marine energy for three 8th-grade classes.

Each class had 25-35 students. From the team: Jacob Silknitter, Patrick Hultberg and Heidi Zuk were all in attendance.

At this event members of Duck Duck Goose went to Brown Summit middle school and met up with one of the members' former teachers. The teacher allowed the team to conduct a short lesson, 15-20 minutes, on energy, with a focus on energy coming from water. It was then followed by an engineering activity where the students were tasked with making the fins on a turbine. The students were given everyday craft materials, scissors, tape, popsicle sticks, plastic cups and paper plates, and then they were given some time to brainstorm ideas then more time to construct them. On this day, the activity was held 3 times, once for each class, and even though improvements could be made the students overall responded overwhelmingly positive. The team asked the class to fill out a survey and received responses like "The lab was really interesting." "It was cool and I got to have a hands on activity which helped my understand." and "PLEASE COME AGAIN, IT WAS SO FUNNN" (cited directly from their writing). This event helped inspire young minds about a future in renewable energy, specifically marine energy.

Figure 5: Jacob and Patrick Presenting Lesson

Figure 6: Student Project from Event, Faces Not Shown for Privacy Purposes

InnovatHERS Talk

The team contacted James Martin Middle School to talk about marine energy and they were put in contact with Leslie Cosentine and a student, name intentionally not shared, who ran a club called InnovatHERS. This club was about women and stem and inquired the team about coming to talk about women's struggles and successes. For this event male members of the team were asked to take a step back and let the non-male members of the team run the event.

At the event, about 15-20 students attended, and Heidi Zuk, Krina Patel, Gray Owen, Ada Kersh, Jacob Silknitter and Patrick Hultberg attended.

At this event non-male members from Duck Duck Goose shared their experiences and struggles in traditionally male dominated field. They were able to speak on ways to grow past the hardships and move forward into any field the student desires. Through this talk it taught the students to empower themselves and to not give up on their passion. It also created a space where the males of the team could see their wrongs and work to correct them. Overall, the team left a lasting impression on what they are doing on their field and how they got to that point.

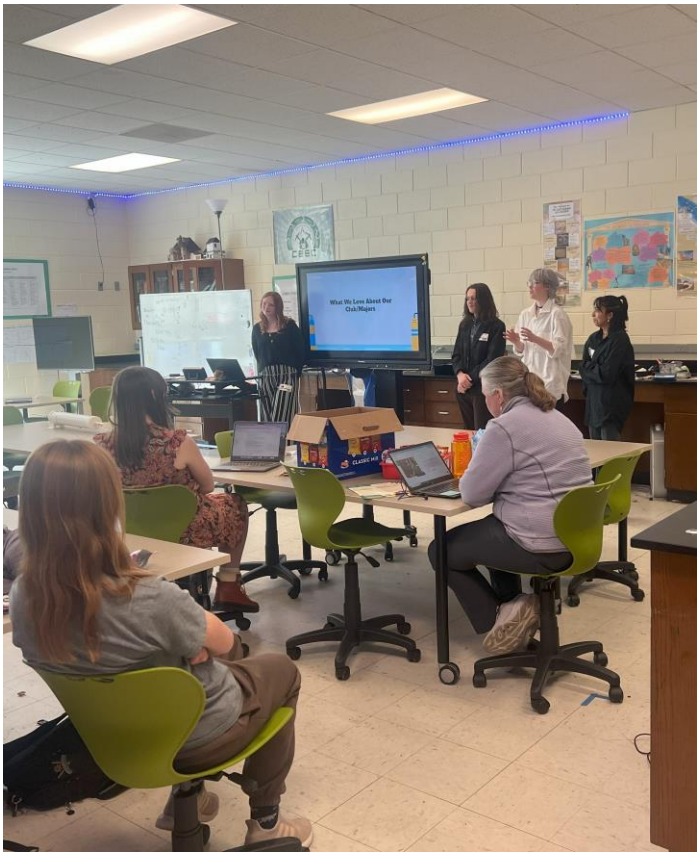

Figure 7: Non-Male Members Speaking at InnovateHERS

Outreach Strategies

Through outreach the team emailed 20 different organizations to organize events. Across all the events members of the team have impacted over 200 individuals. This outreach was mostly in person with one exception being virtual.

By participating in the 2024 competition Duck Duck Goose learned a lot about what it means to be a part of a community and how to participate in their community. Looking back at the outreach done over this cycle, Duck Duck Goose is proud of what they have accomplished, but they still want to make changes in the future. In order to have better outreach Duck Duck Goose is going to strengthen their connection to the industry by contacting more academia and industry points of contact outside of North Carolina. They plan to use virtual meetings more to gain a better understanding of the needs and the direction marine energy is going. However, what went well Duck Duck Goose will keep and improve upon, contacting more schools to hold activities and hopefully building a relationship with local teachers.

Social Media

The majority of the team's progress was displayed on the student lead's LinkedIn profile, linked here, in which the team accumulated 60 likes and was featured on UNCC EPIC's account which accumulated 28 likes. The team also developed a website using html, linked here, which will be published to have a place online where people can locate Duck Duck Goose and learn more about them.

Figure 8: Website homepage, main picture cycles between a slideshow.

This website will allow the team to have a set and reliable way to introduce ourselves as a legit organization. Once the website is fully developed it will be usable for teams in years to come.

Overall Duck Duck Goose started a foundation for an online presence. However, there is much more to do and create. The team was able to create connections and a network that will allow them to continue to present themselves as a professional organization. The image Duck Duck Goose has created has allowed and will allow for new connections to be made through professionalism and trust.