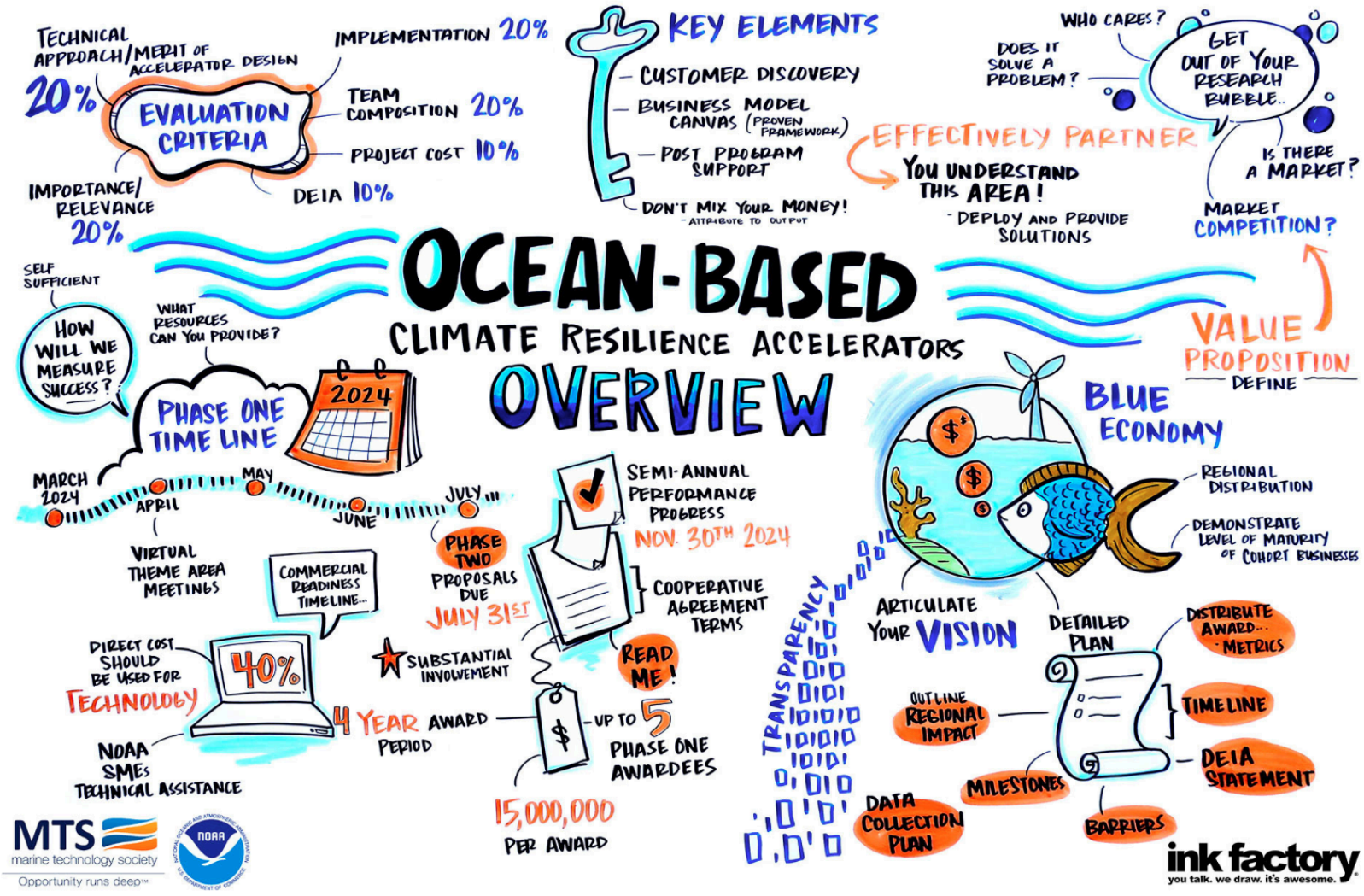
Event Synthesis

OCEAN-BASED CLIMATE RESILIENCE ACCELERATORS KICK-OFF EVENT



FEBRUARY 20, 2024

Prepared by Sea & Shore Solutions, LLC for the Marine Technology Society. March, 2024.

Contents

Acknowledgments

NOAA and the Marine Technology Society would like to acknowledge and thank participants and speakers for engaging in robust kick off meeting discussions. Each accelerator team was invited to participate in the kick off meeting. Team participation was not a consideration for Phase 2 applicants.

Meeting Overview

The Ocean-Based Climate Resilience Accelerators (OCRA) kick off meeting took place on Tuesday, February 20th at Hotel Peter and Paul, marking the initiation of a significant endeavor by NOAA. OCRA, a two-phase grant opportunity aimed at bolstering climate resilience through business accelerators, identified 16 Phase 1 awardees tasked with crafting Phase 2 proposals. These Phase 1 awardees were the primary participants at the kick-off event. Over the course of the next five years, approximately five Phase 2 awardees will be selected to spearhead Accelerator activities.

The primary objective of the kick off meeting was to familiarize Phase 1 awardees with the grant opportunity, provide insights into climate resilience needs identified by NOAA and federal partners, and furnish details regarding the impending Phase 2 funding opportunity. A significant portion of the day was dedicated to breakout sessions centered around the four key OCRA theme areas:

1. Coastal resilience and hazard mitigation
2. Offshore renewable energy
3. Ecosystem services
4. Carbon sequestration monitoring and accounting.

A full agenda is available in Appendix A. A total of 52 individuals attended the event out of 74 that had registered (Appendix B).

Throughout the event, a graphic notetaker recorded conversations in a visual manner. The final visuals are shared below alongside the respective session summary. The following session summaries include an overview of each agenda item, as well as any questions and responses discussed. Discussion notes have been minimally edited to best address kick off conversations.

Session Summaries

Welcoming Address: Dr. Rick Spinrad

Dr. Spinrad, NOAA Administrator, welcomed attendees with encouragement and inspiration, emphasizing the critical juncture for private sector involvement in materializing innovation for marine carbon dioxide Removal (mCDR). He underscored the urgency of the situation, stressing that there is no time to waste in this endeavor. He pointed out that unintentional experimentation with the oceans' capacity to absorb CO2 has already begun, necessitating intentional and researched approaches. Dr. Spinrad emphasized that only the private sector can adequately respond to this call, framing the issue as one of security encompassing energy, food, and safety. "*We are the people who wake up and decide we are going to make the world a better place*," he shared, expressing gratitude to attendees for their presence, energy, and innovative spirit. Dr. Spinrad concluded on an optimistic note, expressing anticipation for the transformative outcomes this program will yield in shaping the future.

Questions for Dr. Spinrad

Attendees had the opportunity to ask Dr. Sprinrad questions related to the funding opportunity and the ocean enterprise at large. Most questions focused around working with other agencies.

- **How does NOAA work in harmony with other agencies to use IRA funding?**
    - High level of coordination between agencies. There is simply not enough funding available, but the IRA offers a new source of money.
- **How should startups be thinking about working with NOAA? We talk about NOAA as a customer, but NOAA is operating on short timelines. Is NOAA willing to experiment with new technology?**
    - Dr. Spinrad encourages participants to look towards success stories, for example, Saildrone. Data and software is a service to NOAA and the federal government is a big buyer.
- **Will NOAA do data buys to support the accelerators?**
    - Dr. Spinrad encourages participants to look towards success stories, for example, SailDrone. Data and software is a service to NOAA. The government is a big buyer. NOAA can help with the success of that enterprise. Don't forget NOAA is in the Department of Commerce - so we are here to buy.
- **Does this funding help bridge the gap between working with other agencies?**
- **What is NOAA's role in accelerating offshore wind production?**

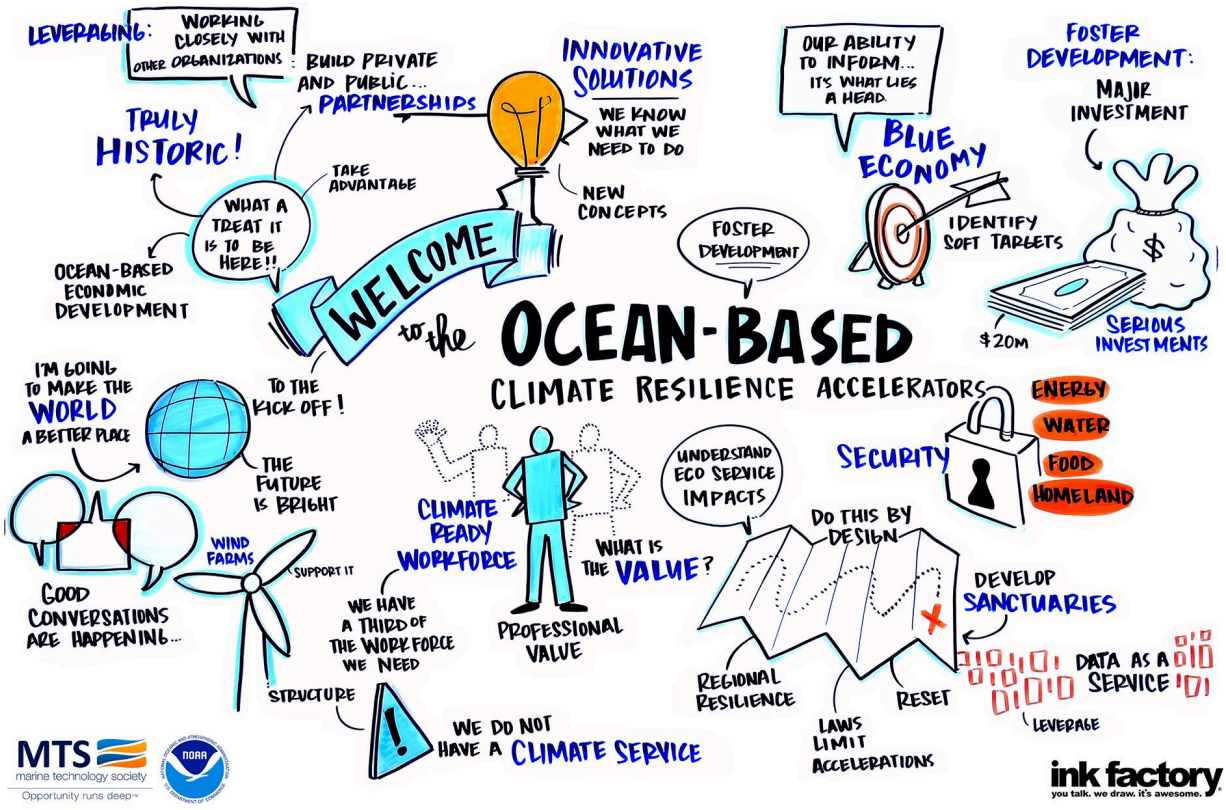


Figure 1. Graphic notes from Dr. Rick Spinrad's Welcoming Address.

NOAA Overview of Accelerator Program

Zack Baize and Caitlin Young, both representing NOAA, provided an overview of the Ocean-Based Climate Resilience Accelerator (OCRA) Program, detailing the Phase 2 process and emphasizing that the goal of Phase 1 is to prepare a proposal for Phase 2. The presentation included information on:

- Enabling challenges that revolve around blue economy
- Bridging the gap between NOAA and private and academic spaces
- High importance of customer discovery
- **Phase 1 Timeline & Target**:
    - Phase 2 proposal due July 31, 2024
    - Phase 2 RFA: $55 million. $15 million per award for a 4 year award period. Up to 5 Phase 1 awardees will be chosen.

Participants were encouraged to connect with NOAA staff (Zack Baize & Caitlin Young) and other content experts throughout the Phase 2 development process.

Questions

This was the first formal announcement of the Phase 2 RFA to the Phase 1 Awardees. Many of the questions and discussion items were addressed directly in the RFA. NOAA staff recognized the inconsistency with awards and greatly appreciated the applicants patience as the Phase 2 RFA information is being published.

1. **What type of data collection is needed? Data about the businesses the accelerator is supporting, or data about the actual projects?**
    - Business data is needed.
2. **What are the tracking requirements in terms of timeline? Any expectations for tracking impacts after the award period ends?**
    - Requirement is that you track within the award period.
3. **How should accelerator teams be considering the high variation within geography and the themes areas?**
    - NOAA suggests looking at the intersections between geography and teams and collaborations.
4. **How is phase 1 performance evaluated or considered for Phase 2?**
    - The primary goal of Phase 1 is to put together a Phase 2 proposal, so reporting about Phase 1 should be about how your team has prepared for Phase 2.
    - No cost extensions are available for Phase 1 efforts if you have not spent down the full Phase 1 budget.
5. **Can accelerators work/partner with international companies as clients or as project partners?**
    - Focus for this award is for US-based efforts and companies, but teams can certainly learn from other efforts.

6. **Phase 2 applications evaluation criteria generally considers:**
    - Connections with theme areas
    - Potential impact of operations
    - Technical approach and design, including a process for selecting and awarding cohort businesses for Technology Development and Commercialization (TDC) awards
    - Team composition and strategized incorporation of expertise
    - Diversity, equity, and inclusion (DEI) plan

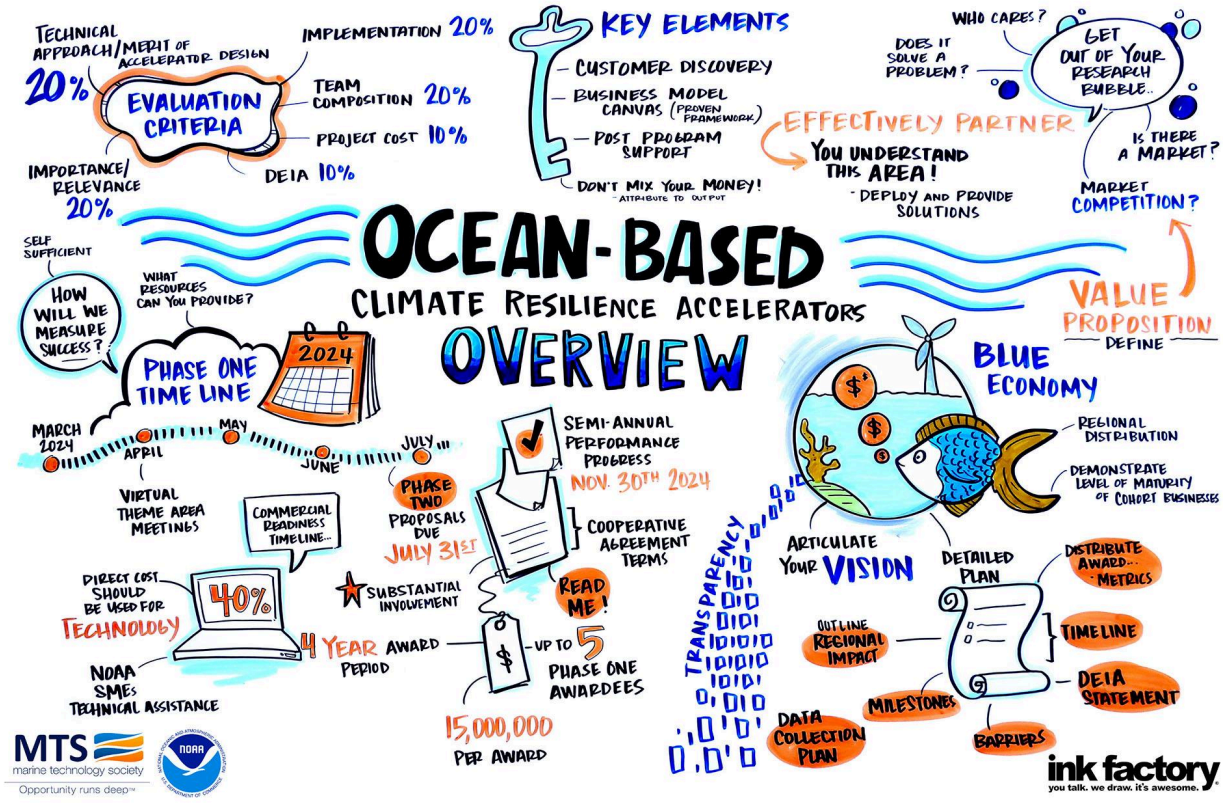


Figure 2. Graphic notes from NOAA's Overview of Accelerator Program

Master Connecter Panel: Best Practices for Ocean Accelerators

The Master Connecter Panel offered participants expert perspectives into best practices for business accelerators operating in the Blue Economy space. These economic and programmatic experts answered questions and provided insights into building a successful accelerator program focused on climate resilience. Panel members included:

- **Jyotika Virmani** (Executive Director, Schmidt Ocean Institute)
- **Craig McLean** (Former Chief Scientist of NOAA, Consultant)
- **Justin Manley** (Founder and Principal Consultant, Just Innovation Inc.; President of Marine Technology Society)
- **Jennifer Garson** (Director of the Water Power Technologies Office, U.S. Department of Energy)

- **Ralph Rayner** (Professorial Research Fellow, London School of Economics)
- **Alan Leonardi** (Vice President & Chief Scientist, Integrated Systems Solutions; former Director of the Office of Ocean Exploration and Research, NOAA)

Questions & Panelist Discussion Notes

Multiple panelists contributed answers to each question. The following response summaries consolidate panel discussions.

1. **How might you design effective accelerator programming to address the unique challenges and opportunities related to the identified theme areas?**
   To effectively design accelerator programming addressing unique challenges and opportunities within the identified theme areas, it's essential to reevaluate conventional accelerator wisdom and tailor strategies accordingly. Rather than focusing solely on technical solutions, consider the broader implications and intersections of the themes. Use insights from the business model canvas to inform program design and prepare for the competitive Phase 2 stage. Foster genuine partnerships where resources are shared for mutual benefit, extending beyond traditional technology advisors, to federal program managers, and aligned business entities.

   Embrace a cooperative mindset, recognizing the interconnectedness of themes, and prioritize customer engagement at every phase. Lastly, ensure entrepreneurs are equipped to navigate federal funding opportunities throughout their journey, recognizing the pivotal role of federal investment in research and development.

2. **What have the panelists seen in regards to these theme areas? How is maturity of markets different for each of the theme areas, and what does that mean for accelerators?**
   Panelists have observed various aspects related to the theme areas, particularly in the context of mCDR. They emphasized the importance of considering the technology involved and the challenge of transporting it to the ocean without increasing carbon emissions.

   Building trust in such a complex and large-scale business endeavor was identified as a significant hurdle. Despite the lack of maturity in certain sectors, panelists viewed this as an advantage, as it allows for greater creativity and innovation within an open space. They encouraged looking internationally for successful models that could be replicated in the United States. Panelists cautioned against underestimating technological advancements, as many players have hesitated to compete before the technology matures, only to regret their decision later.

   Given the dynamic nature of federal government administrations and their associated themes, planning for transitions is crucial. Acknowledging the uncertainty inherent in predictions and models, panelists stressed the need for ongoing monitoring and evaluation in mCDR investment, likening it to investing in an oceanic equivalent of Bitcoin without an established baseline. They underscored the importance of considering environmental consequences and the need for tools and technology for measurement and monitoring.

Founders were advised to be transparent about their needs, including resources, partnerships, and technology, while also having a clear understanding of their end goals to guide cohort progression toward scaling up and mass production. Lastly, the international market was highlighted as a significant opportunity, urging founders to keep global considerations in mind.

3. **Do you have any experience addressing DEI issues and challenges with respect to accelerator programming/cohort recruitment?**
   Addressing DEI challenges in accelerator programming and cohort recruitment requires genuine commitment rather than token gestures. Panelists emphasized the importance of expending energy and effort authentically, highlighting the moral and economic imperative of promoting DEI.

   While federal quotas may not apply, the private sector can lead by example in fostering diversity, recognizing the value of different perspectives, particularly from individuals with unique lived experiences. Panelists cited the example of Sea Grant fellows, where deliberate recruitment efforts led to a significant shift in gender representation but struggled to attract applicants from diverse racial backgrounds. Panelists stressed the need for deliberate selection in recruitment, considering unconventional backgrounds and reaching out to diverse communities through various channels beyond traditional industry spaces.

   Collaboration with social scientists and local communities, including marginalized and Indigenous groups, was encouraged to ensure a more inclusive approach and early buy-in from stakeholders. Panelists cautioned against treating DEI as an afterthought, advocating for its integration from the outset of program planning to avoid tokenism and insincerity. They recommended recruiting team members who represent diversity authentically without tokenizing their contributions.

4. **What do you think is missing overall from ocean-climate accelerator space? What are some of the common barriers?**
   In the ocean-climate accelerator space, there are notable gaps and common barriers that need to be addressed. Panelists highlighted the oversight of both subject matter and implementation mechanisms as a significant issue. Startups often struggle with the timing of funding rounds, finding themselves out of sync with the funding cycles they are accustomed to. Additionally, the lack of comprehensive ocean observations and monitoring poses a challenge, particularly in informing baselines for offshore renewables and ecosystem services. The traditional venture capitalist model may not align well with the unique dynamics of this sector, necessitating exploration of alternative investment approaches that prioritize realism and risk-taking.

   Setting clear success metrics and evaluating ocean conservation efforts are essential components, requiring engagement with various stakeholders and experts beyond the scientific and technical realms. Panelists emphasized the need for a government-led demand signal to secure funding, highlighting the importance of influencing policy to ensure ongoing financial support.

Regulatory hurdles and conflicts of interest were identified as potential pitfalls for business models, underscoring the importance of collaborative efforts to navigate these challenges effectively. Ultimately, panelists urged participants to consider the broader implications of their work within the context of the entire ocean science and technology community, emphasizing the collective role in shaping the future of the industry.

5. **How have you addressed conflicts of interests?**
   Addressing conflicts of interest within partnerships and collaborations requires a proactive and transparent approach. Panelists advised participants to consider mutual benefits when entering into partnerships, focusing on what each party stands to gain from leveraging their strengths together. Sharing best practices and working collaboratively with others within the community was encouraged, as success for one benefits the entire ecosystem.

   Collaboration builds networks, strengthens the market, and enhances the likelihood of securing additional funding, including support from the federal government. Panelists emphasized the importance of collaboration, noting that accelerators that work together typically fare better than those that don't. Advocating collectively and embracing metrics and transparency early on can help prevent misunderstandings and conflicts down the road. Despite competing in mass markets, maintaining transparency with competitors was encouraged, recognizing the importance of fostering trust and cooperation within the small community.

6. **How do you look at the difference between creating the market vs. capturing the market?**
   When considering market creation versus market capture, it's essential to address regulatory frameworks and identify gaps in the market landscape. This involves collaborating with others to advocate for necessary policies and seeking inspiration from international examples and alternative approaches. Understanding the trajectory of technological advancements and historical trends is crucial, as it provides insights into future needs and opportunities. For instance, the evolution of Artificial Intelligence (AI) and monitoring technologies indicates the direction of future market demands.

   Capturing the market involves innovatively servicing existing needs, whereas creating the market involves addressing needs that may not yet exist. Identifying market failures, such as those related to Diversity, Equity, and Inclusion (DEI), and leveraging diverse perspectives can facilitate the creation of new markets. Success metrics play a vital role in guiding efforts to either capture or create markets, while policy replication from other regions can inform effective policy making domestically. Collaboration, forward-thinking, and strategic alignment with evolving needs are essential in both market creation and capture endeavors.

In closing, the panelists urged participants to bring their passion for making a positive impact on both people and the planet. Each panelist highlighted the importance of embracing collaboration and avoiding the limitations of isolation. The Blue Economy community exemplifies a spirit of collaboration unlike any other, and panelists urged accelerators to build upon this strength. "*Blue economy space is one of the most collaborative areas - so think big and think outside the box,*" shared Jennifer Garson. While the

ocean presents complex challenges and these theme areas may seem in their infancy, we must foster change and deliver solutions crucial for the planet's well-being.

Panelists encouraged accelerators to be ambitious and go beyond simply aligning with a score sheet. "*Be visionary. Be genuine*", shared Craig McLean. Phase 2 application strategies and plans should reflect this ambition. Accelerator teams were highly encouraged to reach out to panelists for insight and support.

Other Questions

Discussion questions were collected from audience members throughout the panel. Due to time constraints, many of the collected questions could not be discussed. These additional questions include:

1. What do you think is missing from existing ocean/climate accelerators?
2. How can we encourage different government entities as mentors to startups without creating conflicts of interest?
3. Please describe one specific innovation you'd like to see the initiative accelerate - why are you excited about this innovation?
4. What is a realistic timeline to think about when considering the invention of a new product or service to reach commercial adoption?
5. Are there any "gold star" outcomes that we can use as a case study example?
6. How should accelerators look at "market creation" for blue tech innovations? How can we facilitate the demand?
7. What are some of the common barriers to funders building blue technologies to commercializing their products that we should be focussed on helping them overcome? Where do they get stuck?

Figure 3. Graphic notes from the Master Connector Panel

Welcome from the Director of IOOS

Carl Gouldman, Director of the U.S. Integrated Ocean Observing System Program of NOAA, extended warm welcomes to all accelerator participants, expressing eagerness to meet each one personally. He emphasized NOAA's commitment to supporting the accelerator program and facilitating connections within the community. Carl announced NOAA's initiative to develop a family tree diagram, mapping out all relevant players and networks in the ocean-climate accelerator space. This tool aims to enhance collaboration and build connectors, ultimately aiding participants in preparing for Phase 2 of the program.

Marine Technology Society Overview

Brendal Townsend, Senior Director of the Marine Technology Society's (MTS) Ocean Enterprise Initiative, extended a warm welcome to participants, introducing them to MTS. As the leading international community of ocean scientists, engineers, practitioners, policy makers, and educators, MTS is dedicated to promoting and enhancing marine technology worldwide. With a vision to become the foremost authority and advocate for marine technology and resources, MTS strives to foster member success and public understanding of marine technology's vital role in advancing ocean exploration and sustainability efforts. MTS has technical committees of thought leaders from all over the world in ocean spaces.

Brendal invited everyone to join MTS membership if they are not a member already. She encouraged membership so that MTS can connect accelerators with the right people and places throughout the globe.

> **Marine Technology Society Mission Statement**: Facilitate a broader understanding of the relevance of marine technology to wider global issues by enhancing the dissemination of marine technology information. Promote and improve marine technology and related educational programs. Advance the development of the tools and procedures required to explore, study and further the responsible and sustainable use of the oceans.

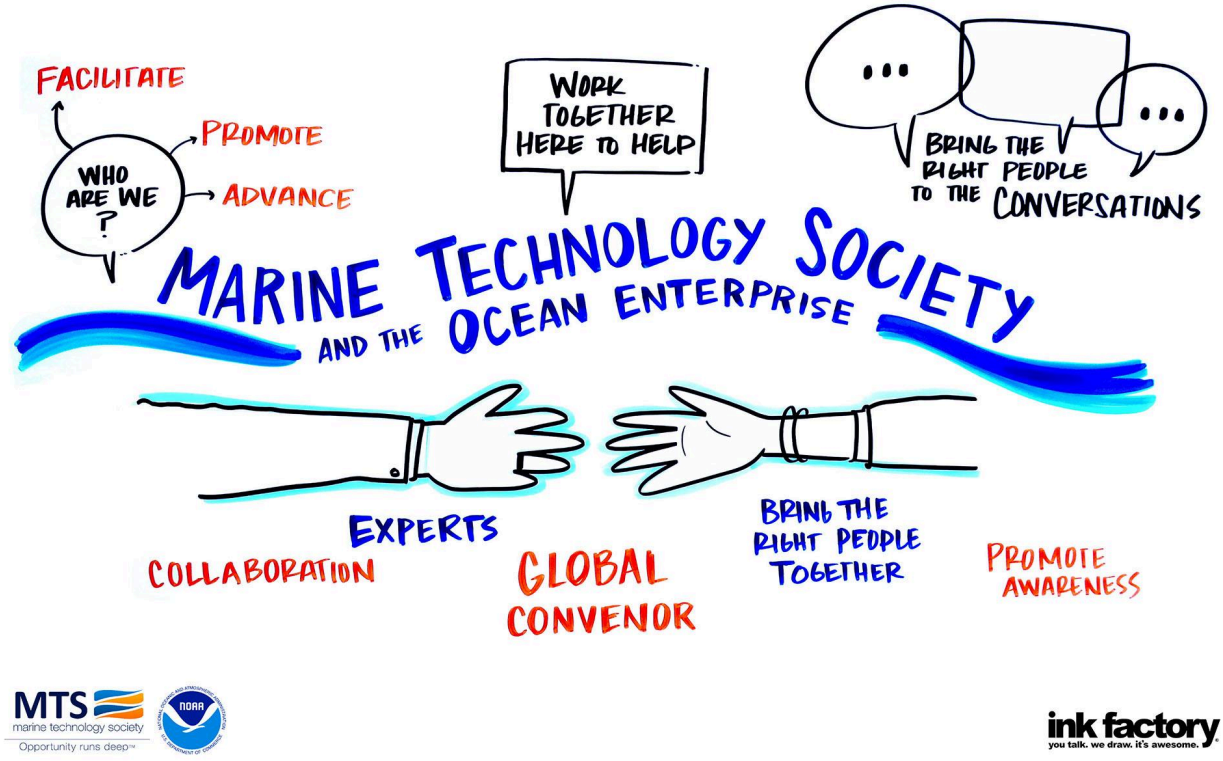


Figure 4. Graphic notes from the MTS Overview

Breakout Sessions

Breakout sessions were held where participants were provided with an overview of the theme area and needs identified by NOAA and other subject matter experts (SMEs). This was followed by a structured discussion, guided by prompts, on how business accelerators could tailor their programming to assist small businesses in launching coastal resilience and hazard mitigation efforts. Each breakout group focused on one of the four theme areas:

Theme Area	Subject Matter Expert
Ecosystem Services	Ralph Rayner (NOAA)
Ocean Renewable Energy	Zack Baize (NOAA)
Coastal Carbon Sequestration	Gabby Kitch (NOAA)
Hazard Mitigation & Coastal Resilience	Mark Osler (NOAA)

The breakout sessions aimed to provide participants with information on observation needs, data gaps, modeling and forecasting needs, and brainstorm ideas for gathering climate resilience needs from private sector and NGO entities during their Phase 1 award period. Additionally, participants learned about the strengths and limitations of other Phase 1 awardees, fostering networking and partnership opportunities across awardees to potentially enhance Phase 2 proposals. Each table had a facilitator and NOAA staff to guide the discussions, ensuring a productive exchange of ideas and strategies (see table above). The graphic notetaker attended 2 of these sessions: Hazard Mitigation and Coastal Resilience and Carbon Sequestration. Breakout sessions swapped once, so each participant was able to attend two topical breakouts. Below are summaries of the discussions within each breakout session topic.

Hazard Mitigation & Coastal Resilience

Customer Discovery

Customer discovery in the theme area of Hazard Mitigation and Coastal Resilience involves navigating various factors unique to this field. Lower-cost, medium-resolution technology is in demand, requiring comparison with gold standard tools to demonstrate efficacy and cost-effectiveness. Engaging with local procurement processes is crucial, as municipalities play a pivotal role in implementing hazard mitigation strategies. NOAA serves as a significant customer in this domain, highlighting the importance of understanding their needs and requirements. However, cultural shifts are necessary to overcome challenges such as the slow pace of government procurement processes and the willingness and capacity of agencies to invest in resilience measures. Addressing the disconnect between purchasers and end-users within communities is essential from an equity standpoint, ensuring that hazard mitigation solutions effectively meet the needs of all stakeholders. Customer discovery efforts must focus on identifying and understanding these complexities to develop tailored solutions that effectively address the challenges of hazard mitigation and coastal resilience.

Networking and Partnership Opportunities

Networking and partnership opportunities in the theme area of Hazard Mitigation and Coastal Resilience are multifaceted and influenced by various factors specific to this field. Geographic isolation in some

regions presents a challenge, emphasizing the need for innovative networking approaches to bridge geographical gaps and foster collaboration. In the short term, aligning with NOAA's vision and forming secondary partnerships can provide valuable networking opportunities, leveraging NOAA's expertise and resources. However, there may be a mismatch in the speed and size of investment and return on investment (ROI) expectations between some investors and NOAA. Educating the market about expectations, particularly regarding ROI, could enhance partnership opportunities and alignment. NOAA has the potential to educate alternative private sector customers, expanding the network of potential collaborators beyond traditional stakeholders. Addressing permitting and regulatory processes is crucial for facilitating partnerships and streamlining collaborative efforts in hazard mitigation and coastal resilience projects. Access to test beds for innovation and research is essential for developing and validating solutions, highlighting the importance of partnerships with organizations or entities that provide such resources. Leveraging NOAA's leadership can also enhance networking opportunities and amplify efforts to address hazard mitigation and coastal resilience challenges by mobilizing stakeholders and fostering collaboration at local, regional, and national levels.

Long-term Funding and Planning

In order to secure long-term funding and plan for the future, accelerators noted the importance of attracting investors with a long-term outlook and patient capital.

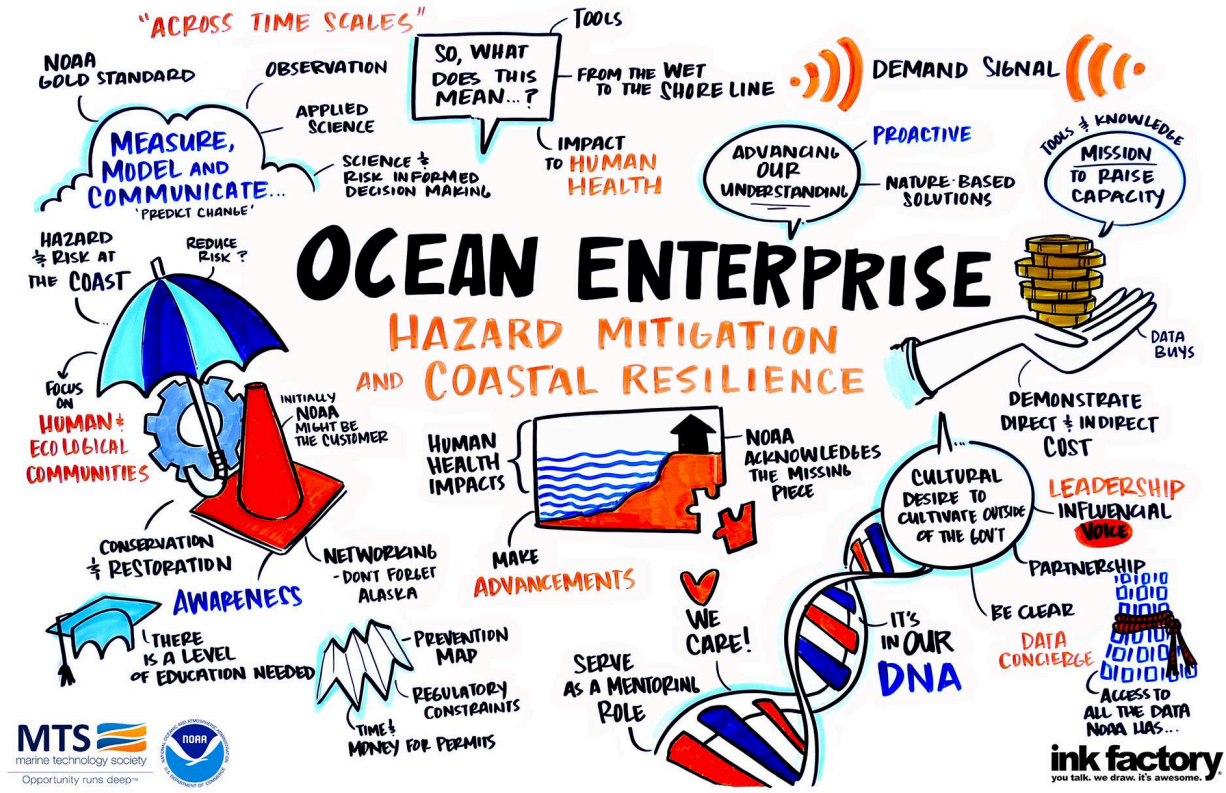


Figure 5. Graphic notes from the Coastal Hazards Mitigation and Resilience Breakout Session.

Carbon Sequestration & Monitoring

Customer Discovery

In the theme area of carbon sequestration and monitoring, accelerators discussed the role of customer discovery. They noted that companies are being incentivized to participate in programs aimed at learning new software tools pertinent to their endeavors. Networking within communities actively engaged in this field is crucial for establishing connections and sharing insights. However, obtaining contact information, particularly emails, can prove challenging, necessitating groundwork efforts. Many companies find themselves required to operate within the locales where their work is conducted, underscoring the importance of understanding the local chemistry and ensuring accurate accounting practices. Corporate partners play a central role in these programs, with existing customers possessing the capability to expand into seaweed cultivation but often opt for alternative avenues due to the absence of a robust market. The landscape is further complicated by market uncertainties, presenting ongoing challenges for participants in this domain.

Scalability

Participants identified several key considerations to address related to scalability. Access to resources for comprehending regulatory structures and obtaining information on policy development is essential for building out scalable initiatives. Having a dedicated policy liaison to assist accelerators becomes increasingly important, particularly given the rapidly changing regulatory landscape. Major corporations like Microsoft and Stripe wield significant influence in the Monitoring, Reporting, and Verification (MRV) realm, potentially shaping its trajectory. Involving end-users in the MRV process can offer valuable insights for scalability. Additionally, understanding the power requirements for mCDR activities and exploring possibilities for renewable energy colocation are vital factors to consider.

It is crucial to factor in policy, permitting, and regulatory frameworks when developing scalable solutions, with access to relevant resources being highly beneficial. Establishing test beds presents an opportunity to streamline costs and improve scalability. Overall, gaining a comprehensive understanding of the landscape is imperative for devising effective business models conducive to scalability in this domain.

Networking and Partnership Opportunities

Networking and partnership opportunities in this theme area are vast and diverse. Collaborating with end-users, permitting agencies, political stakeholders, academia, and domain experts is paramount for navigating the complexities of this space effectively. Technical assistance in networking is invaluable, aiding in establishing and nurturing partnerships crucial for advancing initiatives.

However, it's worth noting that the blue tech community can sometimes be exclusionary, highlighting the importance of creating a shared database to facilitate information exchange and foster inclusivity. Recognizing regional disparities, certain areas in the US may prove more receptive to pilot projects,

presenting strategic partnership opportunities. Engaging with startups and guiding them towards developing sensors for specific technological advancements is key to driving innovation. Collaboration with individuals involved in developing standards and transitioning from research to operational phases is essential for advancing the field.

Communicating success stories effectively is vital for inspiring further engagement and investment in carbon sequestration and monitoring efforts. Drawing insights from lessons learned in terrestrial carbon dioxide removal and monitoring, there are ample opportunities for model improvement and refinement in this space, underscoring the importance of ongoing collaboration and partnership initiatives.

Long-term Funding and Planning

Planning for long-term funding and sustainability after grant money runs out presents several challenges and considerations. Some companies may opt for military applications due to faster timelines, easier access, and potentially higher revenue streams, complicating efforts to secure long-term funding for civilian applications. It's imperative to advocate for ongoing government funding to support the transition from research and academia to operational phases, ensuring continuity and sustainability in carbon sequestration and monitoring initiatives.

Public-private partnerships are essential, particularly since the private sector may perceive these endeavors as too risky for sole investment. Leveraging networking opportunities and tapping into ocean-solution philanthropic funds can supplement public-private partnership funds, diversifying funding sources and enhancing long-term sustainability in this critical field. Collaboration and strategic planning are key to securing adequate funding and ensuring the longevity of initiatives aimed at addressing carbon sequestration and monitoring challenges.

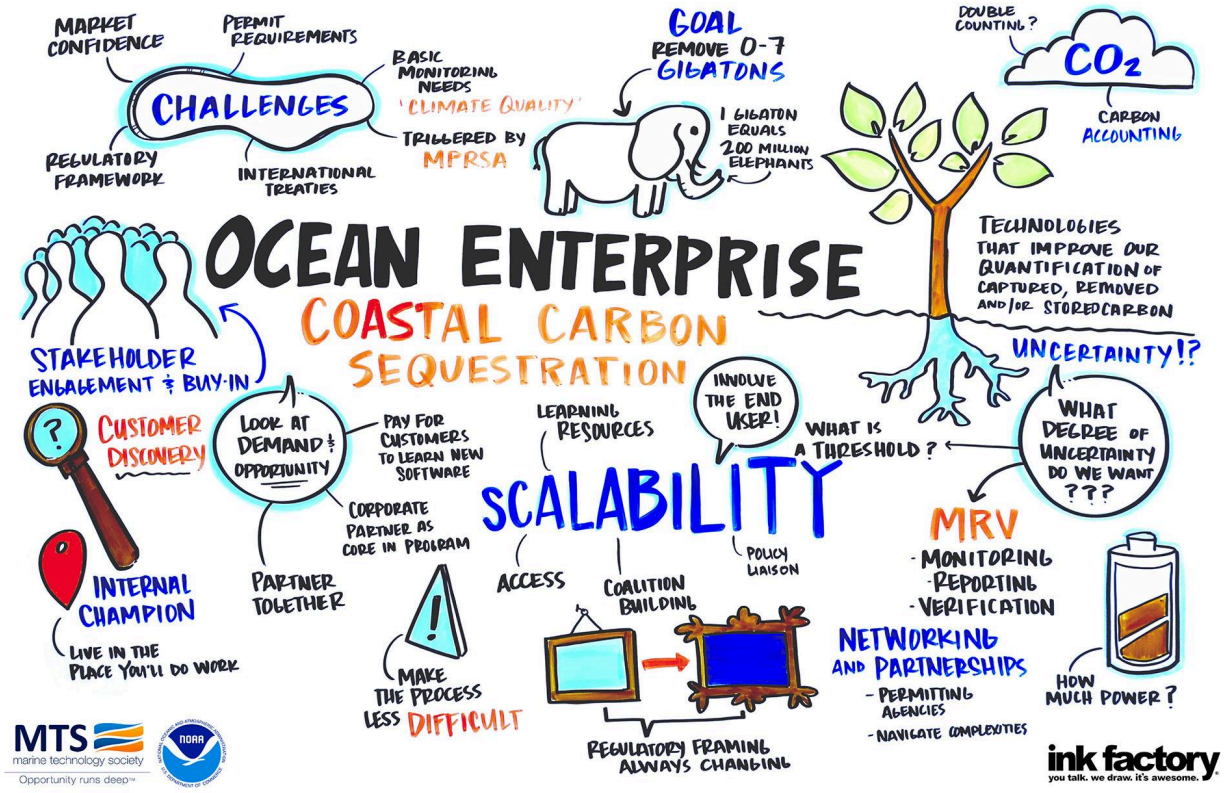


Figure 6. Graphic notes from the Coastal Carbon Sequestration Breakout Session.

Ecosystem Services

Customer Discovery

Customer discovery in the Ecosystem Services theme area encompasses understanding the multifaceted needs of stakeholders, which include addressing technological requirements, limited market availability, and potential buyers for risk analysis tools like insurance companies and international markets with reporting regulations. The demand for tools for monitoring, reporting, and accounting in ecosystem services parallels those in the mCDR space, emphasizing the importance of supporting dual-use technologies. The carbon credit market, particularly in the US, faces demand that exceeds availability, especially for international companies, necessitating ongoing monitoring and verification processes.

Coordination among stakeholders is vital for addressing challenges and seizing opportunities, including the potential for Accelerators to support subsidiaries of businesses engaged in adjacent work. It's essential to recognize that startups do not need to operate independently to be selected for support and investment, underscoring the importance of understanding and addressing customer needs and market dynamics to drive innovation and impact in the ecosystem services domain.

Scalability

Scalability considerations in the theme area of ecosystem services extend to understanding the specific technological interests of NOAA, particularly in tools that enhance and measure the benefits of ecosystem services, including detection and enforcement technologies and those aiding in managing conflicting uses. Identifying potential buyers and customers for such technologies is crucial for scalability, with cultural components such as tourism and ecotourism also playing a role in market scalability, despite potentially being smaller markets initially. Workforce development is integral to the solution, with a focus on "enabling technologies" that empower startups to engage in ecosystem services initiatives. Recognizing that startups may not readily identify with the term "Ecosystem Services," there's a need for rebranding to ensure inclusivity and participation in this sphere. Establishing a broad framework, such as the White House report, serves as a valuable example to guide scalability efforts in the ecosystem services domain.

Networking and Partnership Opportunities

Networking and partnership opportunities in the ecosystem services theme area involve strategic considerations for Accelerators when selecting companies closer to providing "immediate wins" versus long-term bets. There is a need for new financial tools to invest in companies that are currently "stuck" due to a lack of investment, particularly for high Technology Readiness Level (TRL) projects that may require just a final push to commercialization. Exploring adjacent markets can serve as a proving ground for businesses and open up additional partnership opportunities. Positive signs, such as European companies showing interest in the US ecosystem services market, indicate potential collaboration avenues. A notable use case includes proving the efficacy of ecosystem services, such as mangroves, in reducing flooding, which can serve as a compelling case for partnership and investment in this space. By strategically navigating these networking and partnership opportunities, Accelerators can maximize their impact and foster innovation in the ecosystem services domain.

Long-term Funding and Planning

Long-term funding and planning considerations in the ecosystem services theme area involve addressing challenges related to timeframes, particularly in measuring the impact of technology over extended periods. Modeling emerges as a potential solution to mitigate this challenge, enabling a more comprehensive understanding of long-term benefits. Leveraging existing US domestic models, such as the White House report on processes and mechanisms for ecosystem valuation, provides valuable insights and frameworks for guiding long-term funding and planning efforts. Moreover, exploring partnerships with industries like insurance, banking, and finance could accelerate the pace of adoption by providing innovative financial mechanisms to support ecosystem services initiatives. By addressing these challenges and capitalizing on opportunities, stakeholders can facilitate sustainable long-term funding and planning in the ecosystem services domain.

Offshore Renewable Energy

Customer Discovery

Customer discovery in the theme area of offshore renewables involves understanding the dynamics driving startup engagement, particularly their inclination towards spaces with a sense of urgency. Identifying areas where NOAA is willing to be a first adopter is crucial, as NOAA plays a pivotal role as an early adopter in this domain. Discovery efforts should focus on determining the geographical location of stakeholders, assessing the status of environmental monitoring, and identifying tier 1, 2, and 3 buyers, including intermediaries involved in the purchasing process. However, accessing developers directly proves challenging, highlighting the need for innovative approaches to engage with this key customer segment effectively. By addressing these customer discovery considerations, stakeholders can better tailor their strategies and solutions to meet the needs of the offshore renewables market.

Scalability

Scalability considerations in the offshore renewable energy theme area involve addressing barriers to testing and facilitating access to core physical sites for startups without the need to bring customers directly to them. Strategies to reduce testing barriers include establishing common testing platforms and leveraging NOAA's resources to catalog available resources that can facilitate collaboration through umbrella agreements. Additionally, attracting private capital to accelerators is crucial for scalability, requiring initiatives to demonstrate attractiveness to private investors through innovative funding models and potential returns on investment. By addressing these scalability challenges, stakeholders can foster an environment conducive to the growth and expansion of offshore renewable energy initiatives.

Networking and Partnership Opportunities

Networking and partnership opportunities in the offshore renewables theme area require a nuanced approach, acknowledging that stakeholders may have different orientations based on their positions within the industry. Identifying niche applications is essential, recognizing the diverse buckets such as funding and permitting, and subsequently bringing in subject matter experts to address specific needs. A major challenge in this space is that there is a need to have a deep understanding of the regulatory environment. This approach involves actively seeking partnerships with individuals or organizations possessing niche experience to enhance project outcomes. Moreover, building upon previous failures serves as a valuable learning opportunity, guiding future partnership strategies towards more successful outcomes. Early customer identification is pivotal, viewing customers as partners from the outset to collaboratively define needs and ensure alignment with project objectives. By adopting these strategies, stakeholders can leverage networking and partnership opportunities effectively to drive innovation and success in the offshore renewables sector.

Long-term funding and Planning

Long-term funding and planning in this theme area necessitate strategic partnerships with investment funds to ensure readiness for investment and attract additional capital. Prioritizing investment readiness

and bridge funding is crucial to facilitate technology transfer from academic institutions to broader markets. Addressing the challenge of stagnant technologies requires innovative approaches to help move these technologies forward effectively. Companies must demonstrate scalable solutions to attract long-term investment, often necessitating intermediate funding to support market development over extended horizons, potentially up to 20 years. Leveraging intellectual property (IP) as collateral for loans provides a viable financing option, contributing to investment taxonomy for the blue economy. Collaborating with major tech corporations like Microsoft lends credibility and resources to initiatives in the offshore renewables sector. Bridging the gap between "green" and "blue" financing aligns with corporate sustainability goals, emphasizing the importance of creating opportunities for organizations, including 501c3s, to lead initiatives in this space. By navigating these long-term funding and planning strategies, stakeholders can effectively support innovation and growth in offshore renewables.

Next Steps & Recommendations

Based on the robust discussions throughout the kick off meeting, a number of recommendations and best practices consistently arose. These recommendations aim to guide the Ocean-Based Climate Resilience Accelerators and similar initiatives in maximizing their impact on climate resilience, marine technology innovation, and sustainable ocean management. By fostering collaboration, innovation, and inclusivity, accelerators can play a vital role in addressing pressing challenges and shaping a more resilient and sustainable future for our oceans and planet.

- **Enhanced Collaboration and Networking:** Leverage NOAA's commitment and initiatives to foster collaboration and networking within the ocean-climate accelerator space. Engage with organizations like IOOS and MTS to facilitate connections, share insights, and identify partnership opportunities.
- **Tailored Programming and Customer Discovery:** Tailor accelerator programs to address specific needs identified in breakout sessions, focusing on customer discovery within each theme area. Develop strategies to navigate unique challenges, such as lower-cost technology demands in hazard mitigation and coastal resilience, and the need for scalability in carbon sequestration and monitoring.
- **Partnership Opportunities and Scalability:** Identify networking and partnership opportunities across different sectors, including government agencies, private corporations, and academic institutions. Foster collaborations to address scalability challenges and secure long-term funding beyond the grant period, particularly in areas like offshore renewables.
- **Diversity, Equity, and Inclusion (DEI):** Integrate DEI considerations throughout accelerator activities, ensuring inclusivity in participant selection, partnership engagement, and solution development. Actively recruit participants from underrepresented groups and engage with diverse communities early in the process and continue to engage communities often throughout the life of the project to foster innovation and address systemic inequities.

- **Regulatory Navigation:** Collaborate with experts to understand regulatory requirements and identify opportunities to streamline processes, particularly in areas like carbon sequestration and offshore renewables.
- **Long-term Planning and Funding Sustainability:** Develop strategic plans for long-term funding sustainability beyond grant periods, exploring diverse funding sources and investment models. Engage with investors, financial institutions, and philanthropic organizations to secure ongoing support for innovation initiatives in climate resilience and ocean conservation.
- **Communication and Knowledge Sharing:** Foster a culture of knowledge sharing and communication within the accelerator community, sharing success stories, lessons learned, and best practices.
- **Innovation-driven Approach:** Maintain an innovation-driven approach through accelerator programming. Innovative businesses should consider how to think outside the box and pursue ambitious solutions to address complex challenges.
- **Adaptability and Resilience:** Continuously assess and refine accelerator strategies by leveraging evaluations and benchmarks, to address emerging needs and ensure relevance and effectiveness in advancing climate resilience and sustainability efforts.

Appendix A. Agenda

Time	Topic
8:45 AM - 9:30 AM	NOAA Welcome Speech and Introductions
9:30 AM - 10:45 AM	NOAA Overview of Accelerator Program Phase I & II
10:45 AM - 11:00 AM	Break – Coffee/Snacks
11:00 AM - 12:00 PM	Accelerator Panel: Best Practices – Q&A
12:00 PM – 1:00 PM	Lunch
1:00 PM – 1:30 PM	Marine Technology Society (MTS) Overview and Support
1:30 PM – 3:30 PM	Blue Café Breakout Discussions by Accelerator Theme
3:30 PM – 4:00 PM	Break – Coffee/Snacks
4:00 PM – 5:00 PM	Summary, Questions and Discussion on Blue Café
5:00 PM – 7:00 PM	**MTS Social and Networking Event**

Appendix B. Participants

Name	Entity	Accelerator	Attendance
Aidan Mickleburgh	FedTech	FedTech Ocean Resiliency	Present
Aimee Rose	Activate.org	Activate.org	Not Present
Alan Leonardi	National Oceanographic Partnership Program	N/A	Present
Alison Barlow	St Petersburg Innovation District	Catching the Blue Wave: Accelerating America's Ocean Economy	Present
Ann Carpenter	Braid Theory	The Upwell Collaborative Accelerator (Co-accelerator) for Climate Resilience	Present
Ashleigh Sparks	The Idea Village	CLIMATEx Accelerator Program	Not Present
Audrey Hollis	gener8tor Management, LLC	Great Lakes Resilience Accelerator	Present
Benjamin Chesler	Northeastern University	Ocean-Based Climate Resilience Accelerator's Kick Off Event	Present
Blaine Grimes	Gulf of Maine Research Institute	Ocean Vistas	Present
Brad Ack	Ocean Visions	N/A	Not Present
Canon Purdy	Scripps Institution of Oceanography	StartBlue	Not Present
Carol Anne Clayson	Woods Hole Oceanographic Institution	NOAA Climate Resilience	Not Present
Charles Sears	Woods Hole Oceanographic	Ocean based climate resilience accelerator	Present
Chrissy Hayes	NOAA	N/A	Present
Christina Tamer	VentureWell	VentureWell	Present
Christopher Ward	startBlue Accelerator - Scripps Oceanography	startBlue	Present
Craig McLean	Former Chief Scientist of NOAA	N/A	Present
Dani Cattan	VentureWell	VentureWell	Present

Daniel Kleinman	Seaworthy Collective	Seaworthy Collective	Present
Daniel Rogers	Advanced Research Projects Agency - Energy (ARPA-E)	N/A	Not Present
Danielle Johnson	The Water Institute of the Gulf	Ocean Based Climate Resilience Accelerator	Not Present
David Koweek	Ocean Visions	NA	Present
David Millar	Fugro	N/A	Not Present
Debra Esty	IOOS NOS NOAA	IOOS Grants Manager	Not Present
Devon Thorsell	Washington Maritime Blue	Washington Maritime Blue	Not Present
Dexter Artienda	gener8tor	gener8tor	Not Present
Elizabeth Maxwell	The Idea Village	CLIMATEx - The Idea Village, Water Institute, & SeaAhead	Present
Emily Patrolia	ESP Advisors LLC	MTS	Present
Eric Siegel	Ocean Exchange	N/A	Not Present
Gabby Kitch	NOAA	Ocean Climate Resilience Accelerator	Present
Garrett Evridge	Alaska Fisheries Development Foundation	AFDF Startup Accelerator	Present
Genevieve Lind	NOAA	NOAA	Present
George Yarbrough	University of Hawaii	HITIDE	Present
Hailey Bathurst	Sea	BlueSwell	Present
Jennifer Garson	Department of Energy	N/A	Present
Jeremiah Cronin	OpenSeas Technology Innovation Hub @ Old Dominion University	OpenSeas Technology Innovation Hub @ Old Dominion University	Present
Jon Atkinson	The Idea Village	The Idea Village	Not Present
Jonathan Truong	Tampa Bay Wave	Tampa Bay Wave	Present
Joshua Berger	Maritime Blue	Maritime Blue	Present
Julian Fraize	National Offshore Wind	The National Ocean Renewable	Present

	Research and Development Consortium	Power Accelerator: Ocean RePower	
Julie Angus	Open Ocean Robotics	N/A	Not Present
Justin Manley	Just Innovation Inc.	MTS	Present
Jyotika Virmani	Schmidt Institute	N/A	Present
Karen Jensen	UC San Diego	StartBlue	Present
Kate Culpepper	NOAA	none, U.S. IOOS Office	Not Present
Lauren Usher	gener8tor	gener8tor	Present
Lavinder Liddar	FedTech	Ocean-Based Climate Resilience Accelerator	Present
Leah Yudin	Karp Strategies	Consultant team for Ocean Accelerator	Present
Lena Weiss	New England Aquarium	Accelerating Climate and Ocean Resilience with Bluetech Innovation (SeaAhead)	Present
Libby Jewette	NOAA	suggested by Gabby	Not Present
Linda Olson	Tampa Bay Wave	Tampa Bay Wave	Present
Lyndie Hice-Dunton	National Offshore Wind Research and Development Consortium	Ocean-Based Climate Resilience	Not Present
Meg Green	MassChallenge	Ocean Based Climate Resilience Accelerator	Present
Megan Balch	THE IDEA VILLAGE	The Idea Village	Present
Micah Weltmer	The Water Institute	The Idea Village / CLIMATEx	Present
Millicent Pitts	Ocean Exchange	Upwell	Present
Nadir Ait-Laoussine	SeaAhead, Inc.	BlueSwell	Present
Nick Zenkin	Xodus	Ocean RePower	Present
Nikhil Neelakantan	World Ocean Council	Upwell	Present
Peter Warden	Alaska Fisheries Development Foundation	AFDF Startup Accelerator	Present

Phillip Kim	Babson College	Woods Hole Oceanographic Institute	Not Present
Rachel Rabe	ACTIVATE GLOBAL, INC.	Activate	Present
Ralph Rayner	NOAA IOOS	All four themes	Present
Reece Pacheco	Propeller	Activate Oceans Fellowship	Not Present
Sinan Erzurumlu	Babson College	WHOI	Present
Soham Dalal	gener8tor	gener8tor	Present
Steve Auerbach	University of Hawaii, Office of Innovation and Commercialization	Ocean-Based Climate Resilience Accelerator	Not Present
Steve Woll	Little Creek Applied Science	Open Seas / Old Dominion University	Present
Stewart Sarkozy-Banoczy	World Ocean Council	Upwelling Project	Present
Toby Stapleton	Blue Venture Forum	N/A	Not Present
Tricia Compas-Markman	VentureWell	VentureWell	Present
Vanessa Scott	Scripps Institution of Oceanography, UC San Diego	StartBlue	Present
Wayne MacKenzie	NOAA	NOAA	Not Present
Holly Woytak	Fugro	N/A	Present