



Oregon State University



RUTGERS



SAN FRANCISCO STATE UNIVERSITY

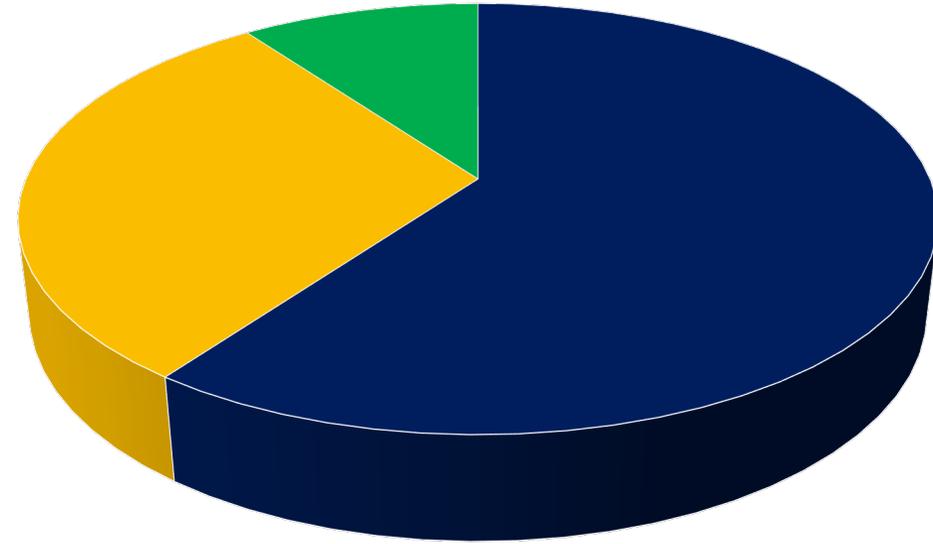


UNIVERSITY OF SOUTH FLORIDA



TRANSFORMATIVE CONNECTIONS

RESULTS OF PRE-SUMMIT SURVEY



■ Students

■ Faculty members

■ Administrators

SUBMISSIONS
(N=10)

BENEFITS DERIVED FROM NRT PROGRAMS

SYSTEMS THINKING AND UNDERSTANDING

- Systems thinking
- Improved understanding of the complexity of CNH issues
- It mirrors the complexity and connected system
- More holistic perspective of marine/coastal issues
- Better understanding of connection between marine and terrestrial systems
- Move research away from silo's
- Collaborative and creative solutions to difficult issues
- Learning more about how to deal with climate risk
- Improved science by drawing new connections
- Actionable research

IMPROVED COLLABORATIONS

- Multiple perspectives
- Facilitated collaborations
- Various viewpoints are helpful when dealing with complex systems/issues
- Co-learning and co-discovery
- It's fun
- More diverse network of colleagues
- Learn different processes through different disciplines
- Exchange knowledge
- Watching transdisciplinary collaborations unfold
- Teaching about collaborations

APPLICABILITY

- Direct application to management and policy

SKILL DEVELOPMENT

- Breadth of knowledge to help students prepare for a variety of jobs
- Development of a diversity of marketable skills

COMMUNICATION

- Improved ability to communicate with the general public and a wider group of stakeholders

TRANSDISCIPLINARY RESEARCH CHALLENGES

- Diverse disciplinary languages
- Research time constraints
- Limited guidance on how to achieve interdisciplinarity in practice
- Funding for projects
- Lack of understanding for what makes a good project for interdisciplinary research
- Lack of institutional value or incentive for this type of research
- The time and effort it takes to understand the work and concepts of my teammates
- Resistance/disciplinary and university silos
- Reward system for disciplinary effort
- Lack of practice and reward writing with "one voice"
- Lack of mediation, leadership, or point of synergy that might cause research and work to not complement one another
- Uncertainty associated with how committed people are to this type of research versus it being another avenue to pursue funding
- Trans work has to ask questions that can only be answered by trans research - it's not just about researchers working together - it must be driven by the question and the question has to integrate concepts that are found in diverse areas of studies - the answer has to integrate the same concepts

EMERGING RESEARCH TOPICS THAT WOULD BENEFIT FROM TRANSDISCIPLINARITY

- Climate ready fisheries management
- Designation of marine protected areas
- Facilitated migrations
- Cascading effects of climate change/changing ocean conditions
- International efforts for marine species management and conservation (fisheries and endangered species cross disciplinary and international boundaries)
- How to increase resilience of coastal ecosystems AND communities in the face of multiple stressors
- Effects of climate crisis
- Coastal resilience in the face of major weather events
- Climate change
- Marine pollution impacts
- Social division that stymies decision making
- Social ecological traps
- Coastal resilience
- Overfishing
- Alternative energy development

COASTAL RESILIENCE MARINE RESOURCES ECOSYSTEM SERVICES

- Combating Climate Change from a grassroots approach
- Integration of Indigenous/Traditional cultures into conservation practices
- Climate Change Education
- Climate change, nutrient management, coral restoration
- Coping with sea level rise (social and natural science)
- Resilience planning around increased storm risks
- Smart community planning measures (managing marine protein insecurity, storms, flooding, livelihoods, etc.)
- Hazard mitigation, climate adaptation and resilience of coastal cities
- Ecosystem services for coastal protection, and the general arena of green infrastructure in general
- Water and drought management

THE DEGREE TO WHICH YOU AGREE TO THESE BARRIERS

	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE
Diverse disciplinary “languages”	2	8	0	0	0
Research time constraints	3	5	1	0	0
Limited guidance on how to achieve interdisciplinarity in practice	3	4	2	0	0

CRITERIA TO INFORM PERFORMANCE METRICS

- Resulting product should be able to be applied across many disciplines and management bodies.
- Can the members of a team articulate a researchable question that includes everyone's interest and abilities?
- Can the team write with one voice?
- Do all members of the team see the benefit of this group effort for the group, the individual, and society?
- Would they do this again?
- Diversity of students in disciplines, and the number of classes students take that are interdisciplinary.
- Benefits to human health, benefits to natural resources, implementation and sustainability.
- Number of team members from different disciplines.
- Number of meetings formal and informal among team members.
- Jargon/concepts used in paper, esp. abstract and discussion/conclusion.
- Incorporation of stakeholders
- Appreciation of different knowledge types
- Communication

POTENTIAL PERFORMANCE METRICS

- External
 - External evaluators from multiple disciplines should review results, and share whether they found them to be relevant, and understandable.
 - Reduction in respiratory or waterborne diseases.
 - Involvement of stakeholders in problem structuring and/or research implementation
- Internal
 - Success of inter/trans students entering the job market.
 - Each member of the team can articulate at least three benefits for being involved in the effort.
 - Tracking presentations/projects/publications post NRT as a sign of continued engagement.
 - Exit interviews after NRT students move on from the academic institution.
 - Amount of research that is inter/transdisciplinary amongst the students.
 - Reduces jargon

DEGREE TO WHICH INDIVIDUALS AGREE WITH ADVICE TO ADVANCE TRANSDISCIPLINARY RESEARCH

	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY AGREE
Develop an area of expertise	2	4	4	0	0
Learn new languages	2	6	2	0	0
Be open-minded	9	1	0	0	0
Embrace complexity	9	0	0	1	0
Collaborate widely	6	3	0	1	0
Push your boundaries	5	4	0	0	0
Consider if you will engage in interdisciplinary research	3	4	2	1	0
Foster interdisciplinary culture	5	3	2	0	0
Champion interdisciplinary researchers	4	5	1	0	0

OTHER PIECES OF ADVICE

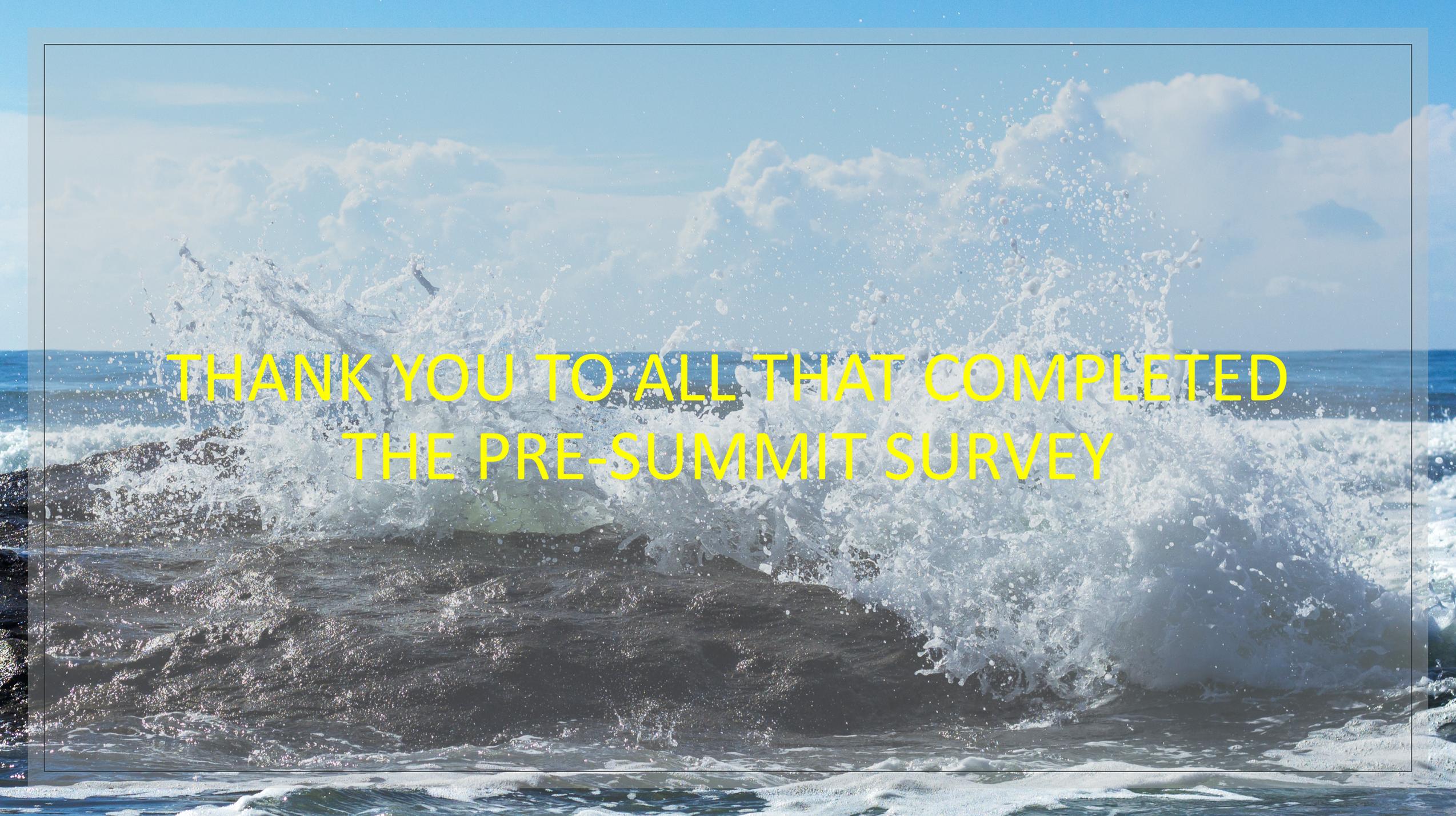
- Offer more funding opportunities, and more workshops teaching people how to engage in trans research
- Start early – old dogs can't easily learn new tricks
- Embrace asking questions! In upper-level academia, there's a stigma against asking questions or seeming like you know less than the next person. That should be embraced and celebrated.
- Become comfortable with tension/conflict. Listen to understand, speak to be understood. Be comfortable with uncertainty and flexibility.
- Be flexible with products and process.
- Fight for the experience you need in the career path you want because your program is not guaranteed to provide that.
- Exchange literature.
- With reference to learning a new language or languages, I am referring to disciplinary languages.
- Be curious about things that are outside of your comfort zone. Solve problems that are important for stakeholders/decision makers – applied science questions.

EMERGING SKILL NEEDS IMPORTANT TO DEVELOP SUCCESSFUL TRANS RESEARCHERS AND PRACTITIONERS

- Having effective conversations with people in other disciplines, avoiding jargon. Communication is key.
- Co-collection and analysis of quantitative and qualitative data.
- Coding languages such as R, Python, C++ need to be universally known, as they are the key to next-level trans data processing.
- Conflict transformation, dialogue/communication, celebrating small successes, humility, more curiosity and less judgement.
- Communication across disciplines.
- Willingness to embrace uncertainty as well as complexity.
- Humanities/logic/political science.

IDEAS TO ENHANCE NETWORKING

- Conferences and/or webinar series focused on inter/trans research. Require collaboration with practitioners and stakeholders.
- Push yourself to reach out of your usual and comfortable circles. Set boundaries and stand up for yourself/your perspective.
- Structured networking. Not every student arrives at grad school understanding the importance of networking and/or how to successfully network. Some students have barriers (e.g. social anxiety, selective mutism) and including structured small and large group sharing can make networking events more accessible to these students (e.g. pair-sharing, tables with one person who attended each session, giving discussion prompts).
- Conferences or journals that promote interdisciplinary research year-round.
- I am afraid I haven't mastered this beyond holding listening sessions with a few folks and then allowing them to introduce me to others, etc.
- Climate adaptation conferences, any applied science/engineering meetings where various stakeholders are present.



THANK YOU TO ALL THAT COMPLETED
THE PRE-SUMMIT SURVEY