Supporting Resilience in the Salish Sea

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Who we are

Marco Hatch - Member of Samish Indian Nation - Doctorate from Scripps Institution of Oceanography - interested in how this place changed over the past 500 yrs

Skye Augustine - Family from Stz'uminus First Nation - MSc from UVic – interested in the role of place-based technologies in the resilience of coastal systems

Rosa Hunter - Member of Port Gamble S'Klallam Tribe - B.S. from NWIC - interested in the microscopic world
SSRC Research

Student Success

Science That Matters

Partnership & Outreach
Student Success

- Bonding
- Sovereignty
- Indigenous Ways of Knowing
- Retention
- Voice
- Recruitment
- Relevance
- Communication
- Learning
- Self Determination
- Empowerment
- Fun
- Place-based Research
- Graduate School
- Work Force
- Celebration
Student Success - Science that Matters

- Tribal College Research Grants Program – Visiting Scholar Option

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  Tom Schultz\textsuperscript{3} \textsuperscript{1NWIC, \textsuperscript{2UW, \textsuperscript{3WSU}}

- (1) Monitoring methods
- (2) Landscape scale
- (3) Increase STEM literacy
Student Success - Science that Matters

- Used Portage Bay as an example for eelgrass research and monitoring

Figure from Aissa Yazzie and Jefferson Emm
Student Success - Science that Matters

Applied methods to quantify eelgrass in Portage Bay

On the ground

Aerial Imaging

Hydroacoustics

Drone

Photo: Beau Garreau
Student Success - Science that Matters

Multiple data types used to create a landscape scale picture of eelgrass dynamics in Portage Bay.

Bringing in additional data – $\text{H}_2\text{S}$
Student Success

Read & understand scientific papers
Engage in conversations about validity of conclusions
Evaluate the quality of scientific information
Self rated overall scientific literacy

![Bar chart showing changes in student success metrics before and after a course.](image)
Student Success

“You turned a class into a family I’ve never been in a class when everyone stuck beginning to the end. Brought everyone out of shells. Broke boundaries. Broke a bubble”

“This is the first class I’ve been in since I started college that all the students have been engaged inside and outside the classroom both”
The role of healthy eelgrass beds in reducing red tides (NIFA)

- Compares the frequency of harmful algal blooms (e.g. red tides) to the health of eelgrass beds
- Specifically, we will test a hypothesis the healthy eelgrass beds promote the growth of a bacteria which attacks harmful algae
- This work explores the intricate interconnectedness of the Salish Sea
- Project is a collaboration between NWIC, Friday Harbor Laboratories and Hokkaido University

Marco Hatch¹, Skye Augustine¹, Sandy Wyllie-Echeverria², Vera Trainer³, Tom Schultz⁴, Haru Inaba⁵, Ichiro Imai⁵ ¹NWIC, ²UW, ³NOAA, ⁴WSU, ⁵Hokkaido University
Science that Matters

Project explores the role of algicidal bacteria in keeping shellfish safe and how breaking of interconnected relationships degrades ecosystem health.
Student Projects
Outreach

• Our Food is Our Medicine
• Saturday Science Academy
• First Nation Youth Camps
• Wisdom of the Elders
• State of Bellingham Bay
Hy’shqeq

Bonding  Learning  Self Determination  Empowerment
Sovereignty  Indigenous Ways of Knowing  Empowerment
Retention  Place-based Research  Work Force
Ways of Knowing  Graduate School  Fun
Voice  Recruitment  Celebration
Relevance  Communication