

Updated

Phase 1

Objective 1A. Assess phytoplankton biomass, C:Chl, and productivity using bio-optics.

Objective 1B. Conduct a regional satellite matchup analysis for the NGA to assess uncertainties in the current ocean color algorithms.

STEM Objective 1A. REU student to take part in an NGA summer cruise (2025).

STEM Objective 1B. Engage with local middle school classrooms and promote Arctic marine sciences using VR technology and (freely) share satellite oceanography lesson online.

STEM Objective 1C. Undergraduate internship to promote multidisciplinary science.

Phase 2

Objective 2A. Elucidate patterns and drivers of variability in phytoplankton community composition and spring bloom phenology across the satellite record.

Objective 2B. Develop and integrate time series metrics into fisheries forecast models to assess their predictive capabilities for the recruitment, survival, and distributions of commercially-valuable groundfish and salmon stocks.

STEM Objective 2A. Support of an Alaskan, URM graduate student in Juneau.

STEM Objective 2B. Work with educational specialist Katie Gavenus to develop outreach materials for an Alaskan audience.

Rational for Changes

STEM Objective 1B: SOSSI program was ended by NPRB and instead support has shifted to supporting a pilot educational VR program, which seeks to expose Alaskan students to “real” marine science and promote excitement and curiosity about science. Middle school children were identified as the most effective target audience. All course materials will be freely shared online (<https://www.alaskasciencestories.com/>).

STEM Objective 2A/1D: We determined that a fisheries oceanography student (Cunningham advises) would be positioned to make better connections between data products (i.e. ocean color) and traditional fisheries metrics than an oceanography student. Additionally, the Tamamta program has evolved and no longer partners with specific projects. Instead, the program allows students to design their own project independently of external programs.

STEM Objective 2B: Partnering with an Alaskan educational specialist allows us to develop resources and connections more productively and with better targeting.

As Proposed

Phase 1

Objective 1A. Assess phytoplankton biomass, C:Chl, and productivity using bio-optics.

Objective 1B. Conduct a regional satellite matchup analysis for the NGA to assess uncertainties in the current ocean color algorithms.

STEM Objective 1A. REU student to take part in an NGA summer cruise.

STEM Objective 1B. Visit and deploy the SOSSI program (satellite lookup activity) in a predominately Alaskan Native classroom (high school).

STEM Objective 1C. Undergraduate internship to promote multidisciplinary science.

STEM Objective 1D. Support a PhD student in Oceanography.

Phase 2

Objective 2A. Elucidate patterns and drivers of variability in phytoplankton community composition and spring bloom phenology across the satellite record.

Objective 2B. Develop and integrate time series metrics into fisheries forecast models to assess their predictive capabilities for the recruitment, survival, and distributions of commercially-valuable groundfish and salmon stocks.

STEM Objective 2A. Support a Tamamta Fellow (Native Alaskan MSc student).