**Objective:** Generate consistent, reliable and advanced ocean color products for enhanced monitoring of harmful algal blooms (HABs) and water quality in the Chesapeake Bay and Lake Erie

- **Approach:** Machine-learning model (e.g., mixture density networks; MDN)
- **Data:** In situ optical data + environmental/physical/geographic data
- **Products:** $a_{ph}$, $b_{bph}$, phytoplankton groups, and water quality indicators (e.g., chlorophyll-a & SPM)
- **Deliverables:** HICO-derived products – DESIS will be attempted.
- **Stakeholders:** NOAA, ECCC, MD DNR, VDH, OH EPA

**Chesapeake Bay**

**Western Lake Erie**

**Lake Erie**

**MDN**

**OCx**