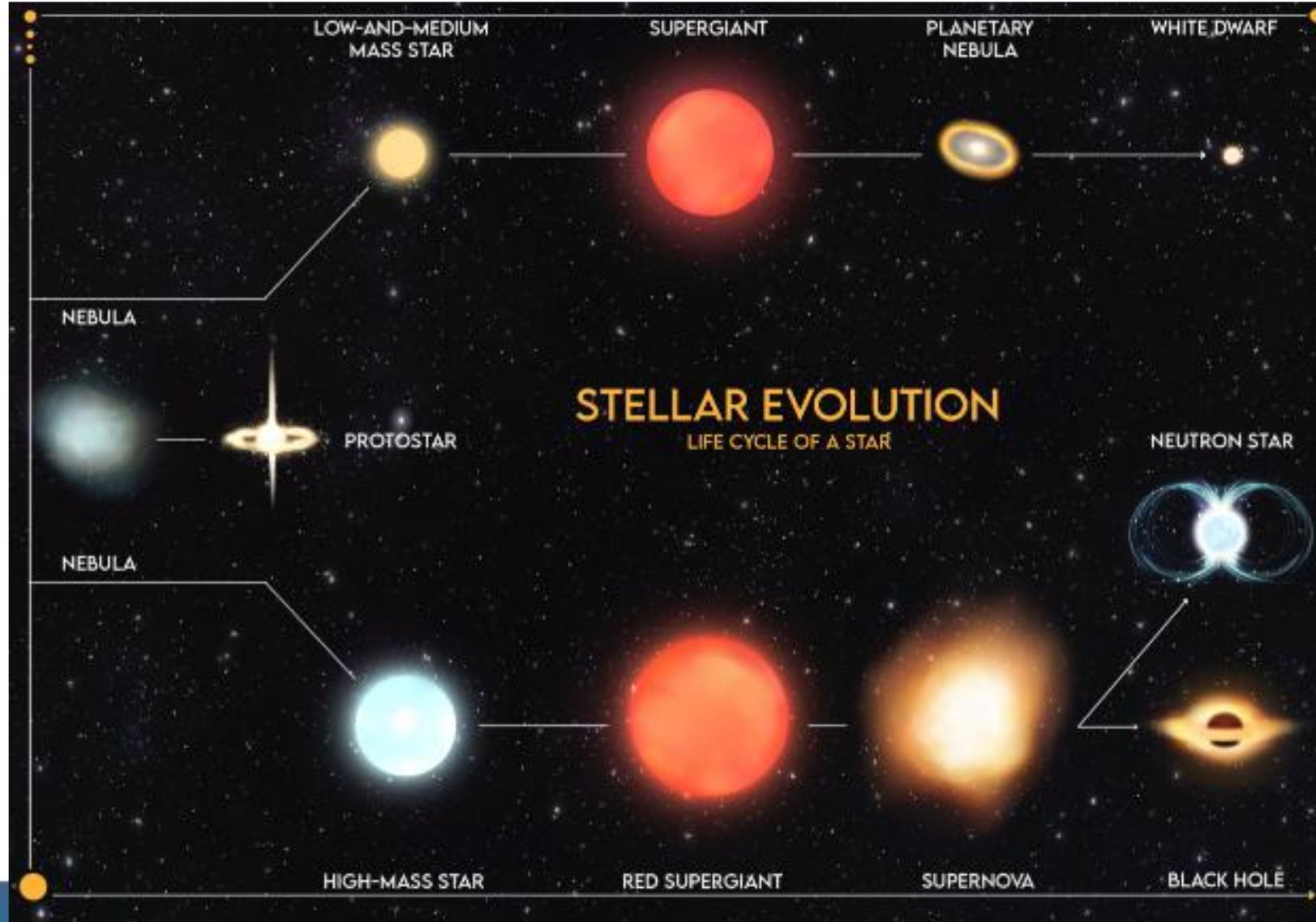


The STAR Origin Story

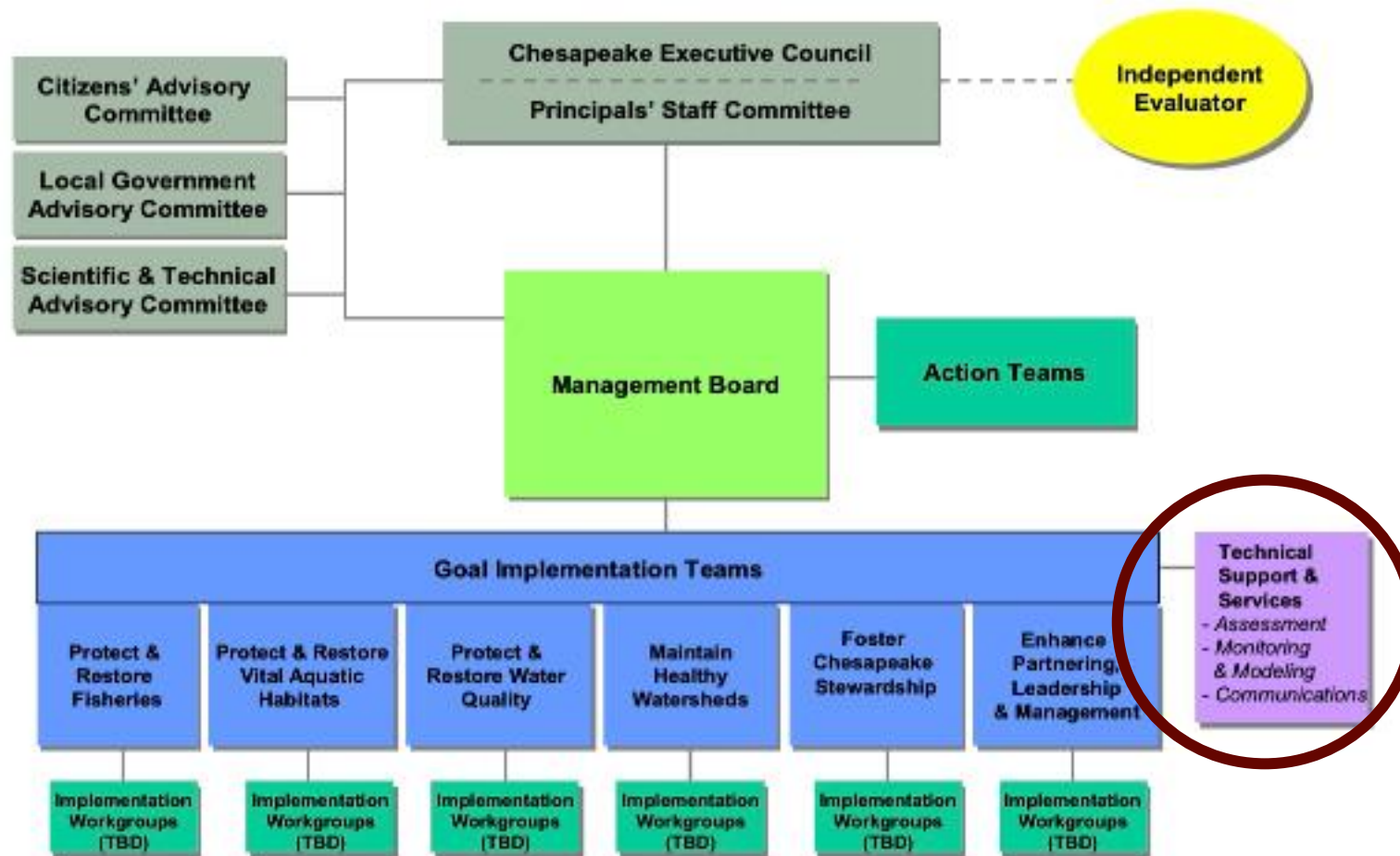
Bill Dennison
25 June 2026



Stellar evolution = two potential pathways (Go big or Go home)



Proposed name = Technical Support & Services (TSS): The path to a white dwarf



Proposed name = Technical Support & Services (TSS)

What is TSS? (Total Suspended Solids)


#AquaTrendsHub

Definition:
TSS represents the total amount of solid particles suspended (not dissolved) in water or wastewater.

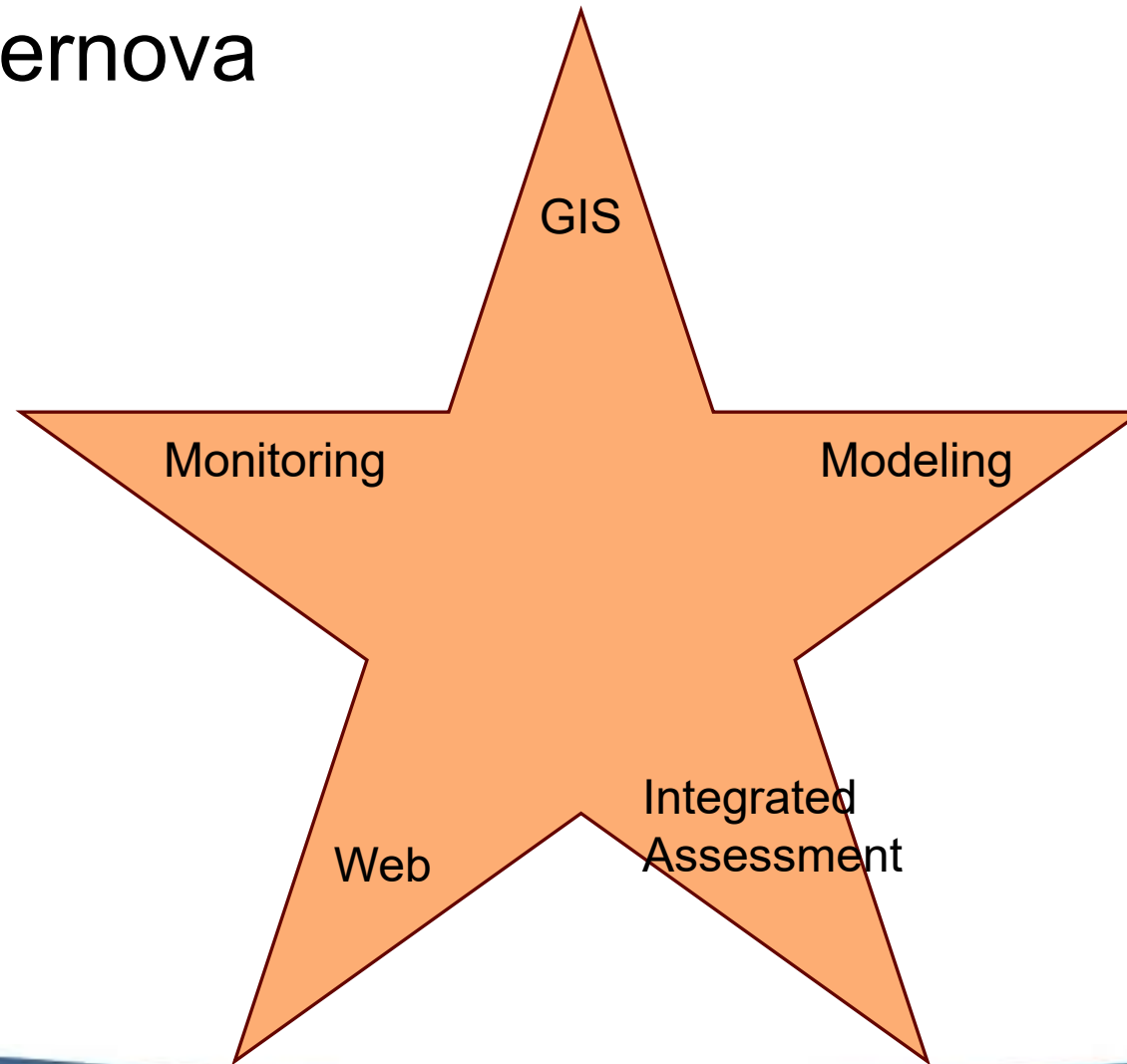
Unit:
mg/L (milligrams per liter)

Importance:
High TSS reduces water clarity, affects aquatic life, and indicates poor treatment efficiency.

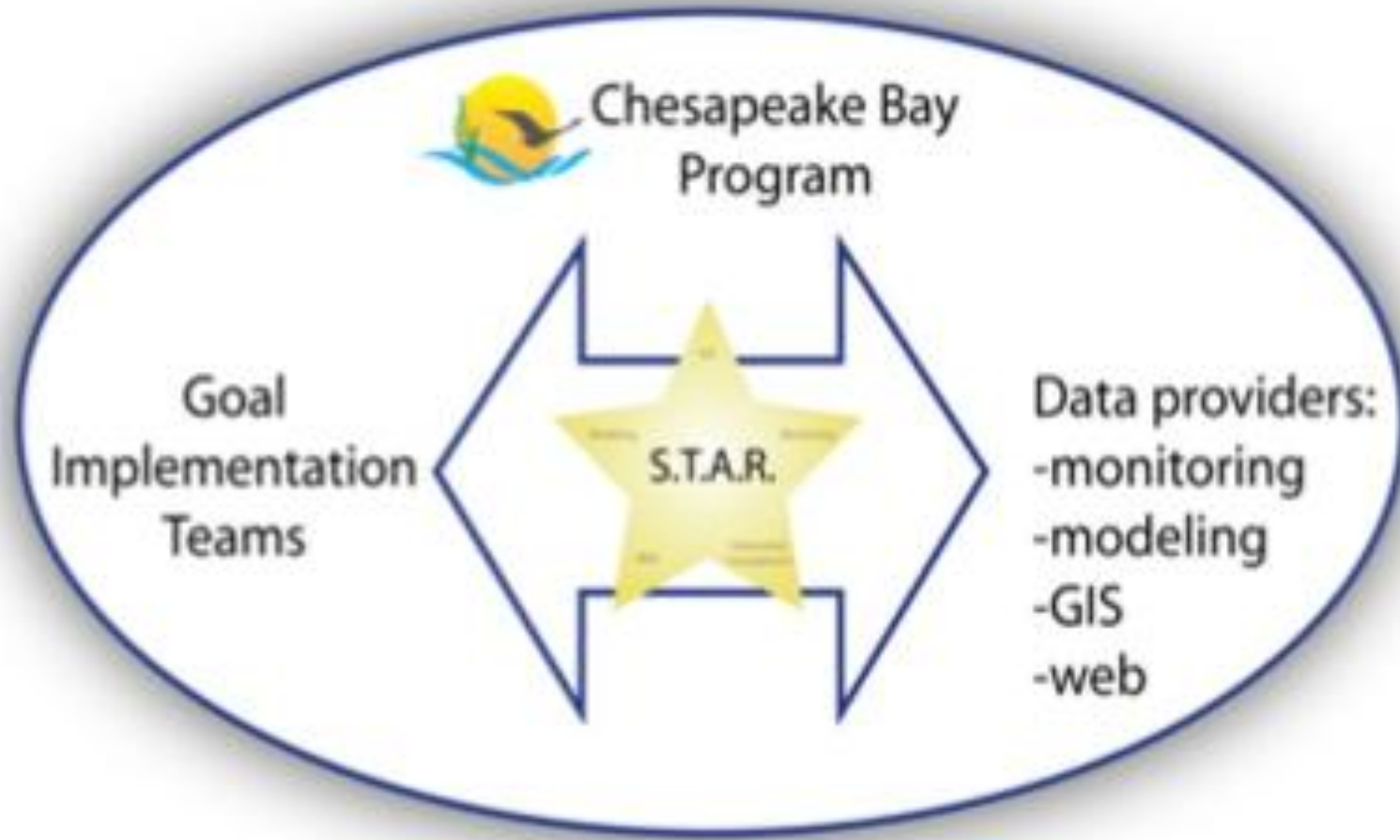
Measurement:
TSS is measured by filtering a known volume of water sample through a filter paper, drying the filter at 103–105°C, and weighing the retained solids.



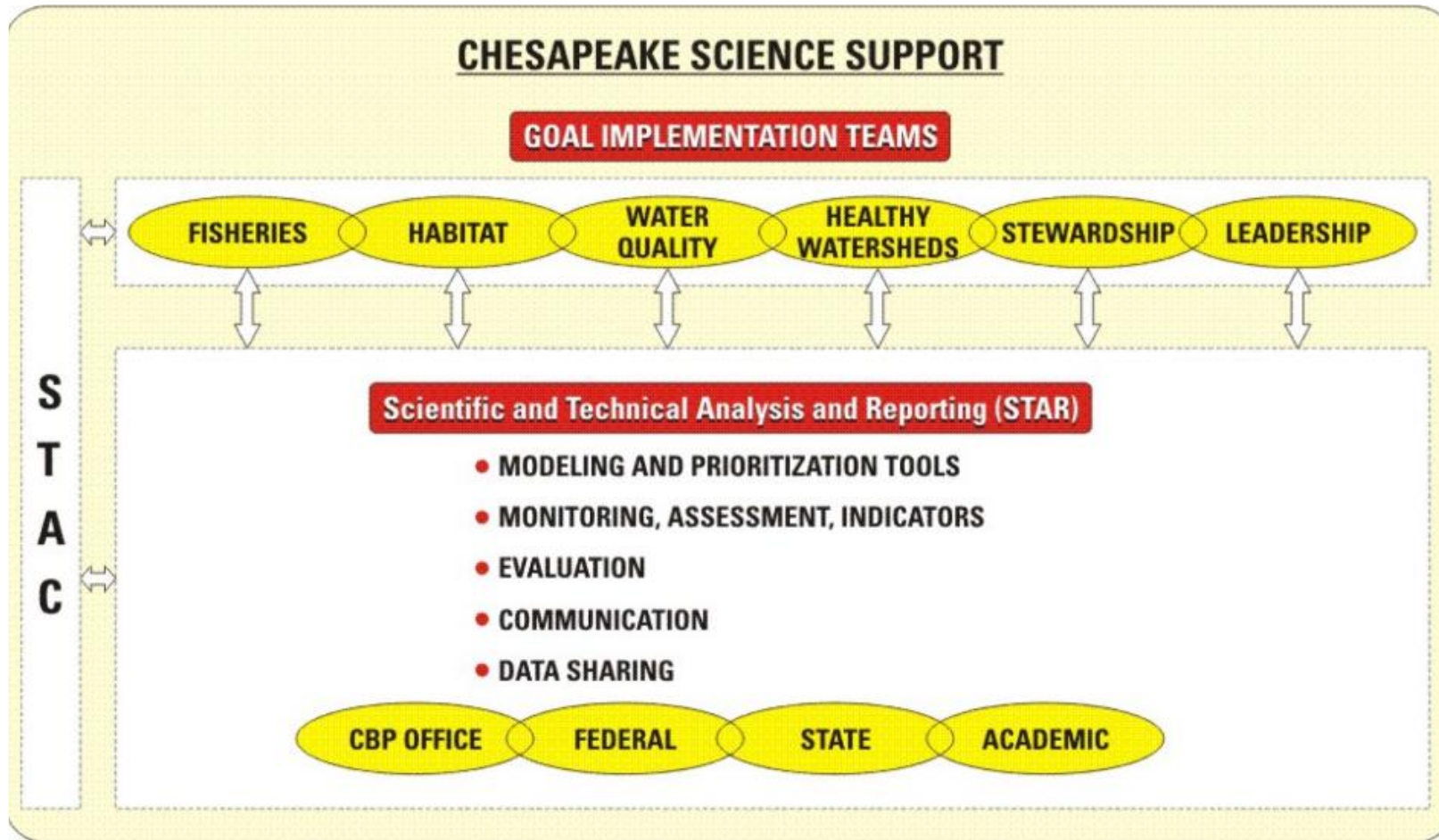
Scientific & Technical Assessment & Reporting (STAR): The path to a Supernova



STAR linked Goal Implementation Teams to Data Providers



STAR interfaced with STAC and with agency & academic scientists



STAR provided great titles



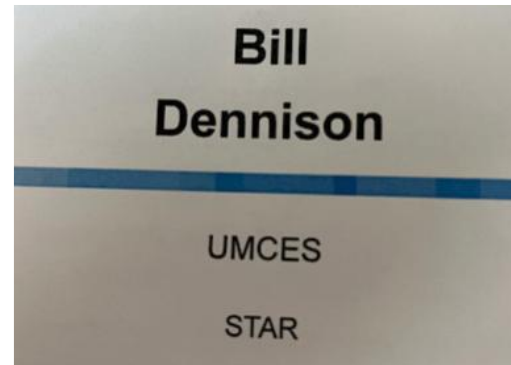
Breck Sullivan

Scientific, Technical Assessment & Reporting Coordinator

[← Back to all staff](#)



Breck Sullivan is employed by the U.S. Geological Survey and works at the Chesapeake Bay Program (CBP) as the Scientific, Technical Assessment and Reporting (STAR) Coordinator and Ecosystem Analyst. She oversees strategic direction for meeting the science needs within STAR and the CBP Goal Implementation Teams. She also supports analysis activities to advance understanding of factors affecting trends in estuarine water quality and living resources. She holds a bachelor's degree in Environmental Studies from Salisbury University. She received her master's degree from State University of New York College of Environmental Science and Forestry (SUNY ESF) in Environmental Monitoring and Modeling.



Nebula stage: STAR had its genesis in 2010 following MRAT
(Monitoring Realignment Action team)



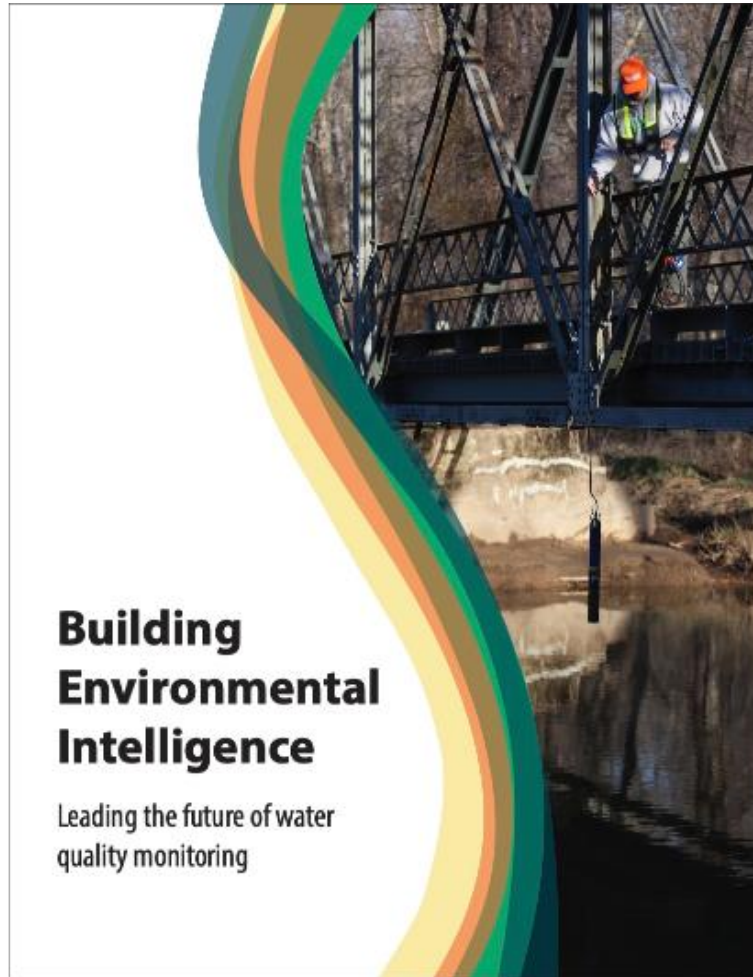
Summary of Initial Ideas to Evolve STAR

Scott Phillips, Mark Bennett, Peter Tango, Bill
Dennison

STAR meeting, December 21, 2010



Red supergiant stage: STAR report: Building Environmental Intelligence 2014



Water Quality Monitoring Networks:



Tidal Water Quality
Measures water quality conditions for oysters, crabs, fish, and their habitats



Shallow Water Quality
Measures water quality conditions for submerged Aquatic Vegetation



Phytoplankton
Measures algal and microscopic plants which are indicators of the nutrient conditions and eutrophication



Zooplankton
Measures microscopic organisms that indicate the condition of the food web



Submerged Aquatic Vegetation
Measures the amount of SAV, which is important habitat for fish and food for water fowl



Benthic
Measures clams and worms which are important food sources for bottom-feeding fish and shellfish



River Input Program (RIM)
Measures the amount of nutrients and sediments entering the Bay to help assess if BMPs are having the desired impact



Watershed Water Quality
Measures the amount of nutrients and sediments throughout the Watershed to help assess if BMPs are having the desired impact

Selected Monitoring Studies:



Ecosystem Process
Study to better understand the linkage between nutrients and SAV, DO, zooplankton, and phytoplankton



Nutrient Limitation
Study to better understand the linkage between nutrients and phytoplankton (algal biomass)

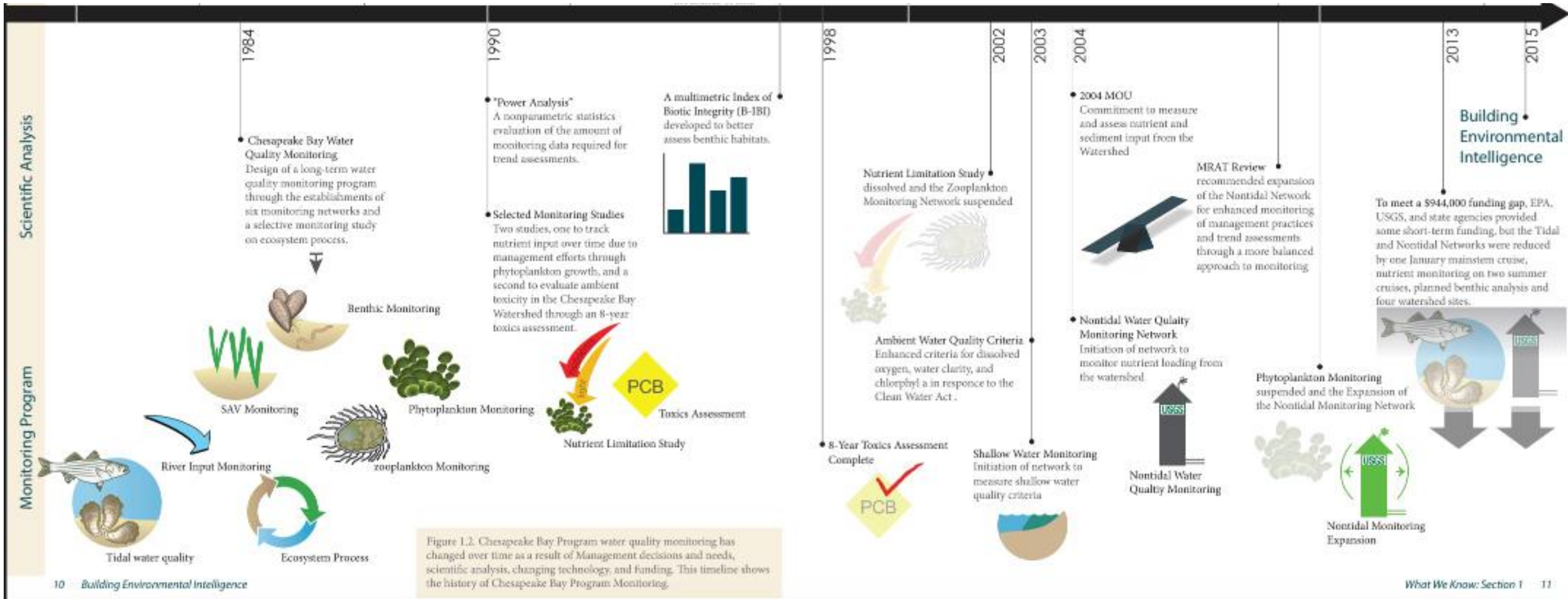


Toxics Assessment
Study to document the presence of contaminants that could harm fish, and limit their consumption by people

Figure 1.1. Elements of the Chesapeake Bay Program Water Quality Monitoring Networks, including selected monitoring studies funded throughout its history. *What We Know, Section 1* 9



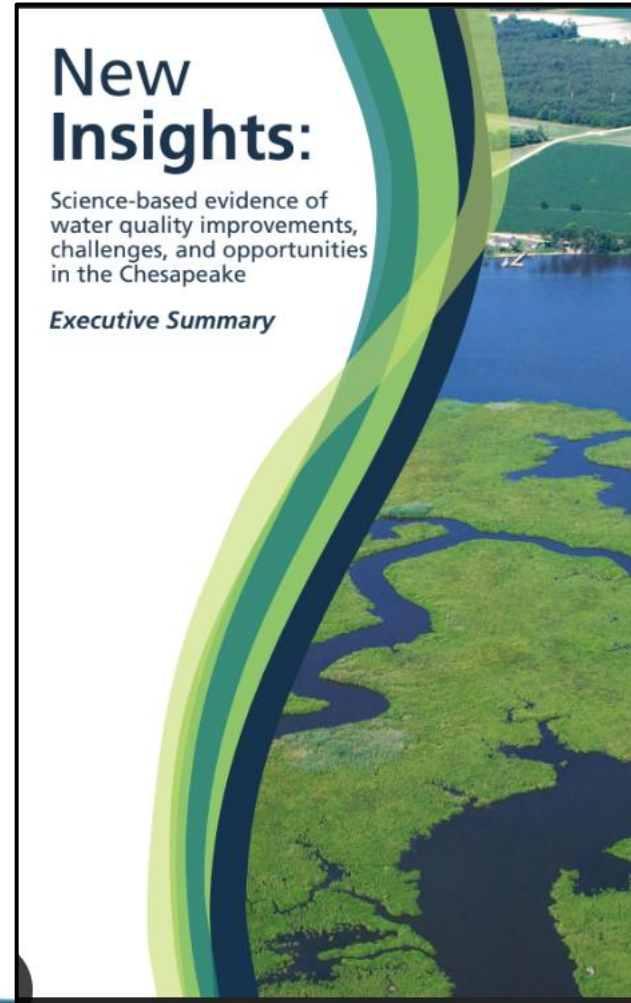
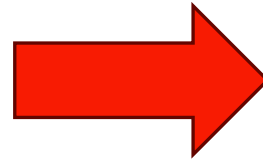
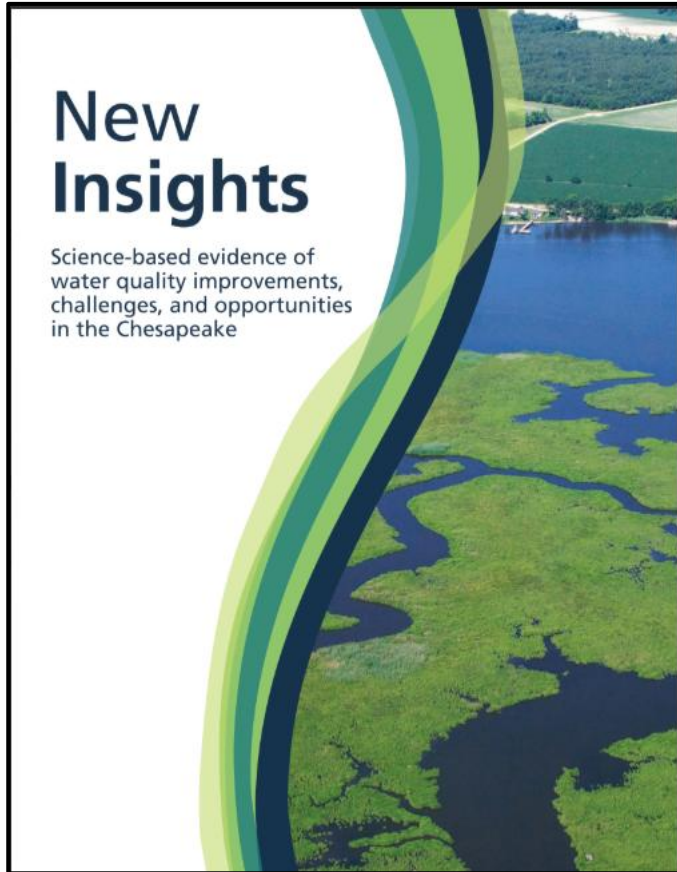
Time line of science and monitoring in CBP



Supernova stage: New Insights synthesis report; 2015

Full report
52 pp.

Executive summary
6 pp. trifold



Take home points

Adjusting our course

The examination of water quality monitoring data associated with best management practice implementation in the Chesapeake Bay watershed reveals multiple implications for continued efforts in Bay restoration:

- 1 Investments in sewage treatment plants provide rapid water quality improvements.
- 2 National requirements of the Clean Air Act are benefitting the Chesapeake Bay watershed.
- 3 Some agricultural practices are providing local benefits to streams.
- 4 Lag times that delay improvements mean patience and persistence are needed to realize the results of our efforts.
- 5 Expanding population, increased fertilizer use, and more livestock may counteract water quality improvements.
- 6 Science should be better used to guide restoration choices and subsequent monitoring is needed to evaluate effectiveness.
- 7 Proven and innovative stormwater management practices need to be implemented and evaluated to maintain and improve Bay health as urban and suburban development expands.



Authors
Richard Batiuk, Ana L. Hernández Cordero, Margaret M.G. Enloe, William C. Dennison, Catherine Kristan, Christina M. Lyerly, Scott Phillips

Online Availability
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Front Cover Photo © Chesapeake Bay Program



University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE

Supernova stage: New Insights synthesis report; Media event



Speakers (Black hole): Rich Batiuk, Nick DiPasquale, Scott Phillips, Bill Dennison, Don Boesch



Science communicators (Neutron stars): Catherine Krikstan, Brianne Walsh, Margaret Enloe, Christina Lyerly



STAR leadership; Formation of the THREE AMIGOS

Originally Mark Bennett (USGS) and Bill Dennison (UMCES);

Scott Phillips (USGS) added

= THREE AMIGOS



1:30 PM

Amigos Planning Meeting

- BASIN Report and Intelligent Monitoring Tri-fold update & next steps
- Meet Mindy
- Discuss a possible "User Council"
- Presenters list for New Technologies Webinar Series
- Questionnaire for New Technologies Webinar Series



STAR met monthly in the “Fish Shack”



STAR meetings 10-12, instead of 10-3; start and end on time



STAR seminars followed 10-12 STAR meeting



STAR occasionally held joint meetings with staffers and coordinators



Chesapeake Bay Program
A Watershed Partnership

Joint STAR/Staffers/Coordinators Meeting **August 23th, 2012**

11AM – 12:30PM
305a Chesapeake Bay Program Office
Annapolis, MD

Conference Line 1-866-299-3188 code 2675715
Adobe Connect <https://epa.connectsolutions.com/cbp/>

<http://www.chesapeakebay.net/calendar/event/18625/>

Agenda

11:00 AM **Welcome Introduction and Updates – Bill Dennison (STAR Chair), Mark Bennett (STAR Vice Chair), Peter Tango (STAR Coordinator), Carin Bisland (Staffers/Coordinators Chair)**

STAR Leadership and Carin Bisland will give an introduction and request updates from the Goal Implementation Teams.



Numerous STAR workgroups formed

STAR Workgroups 2015 Workplans

Leadership of the workgroups/teams under STAR will present and discuss their 2015 workplans and/or the five major priorities of the workgroup for the year.

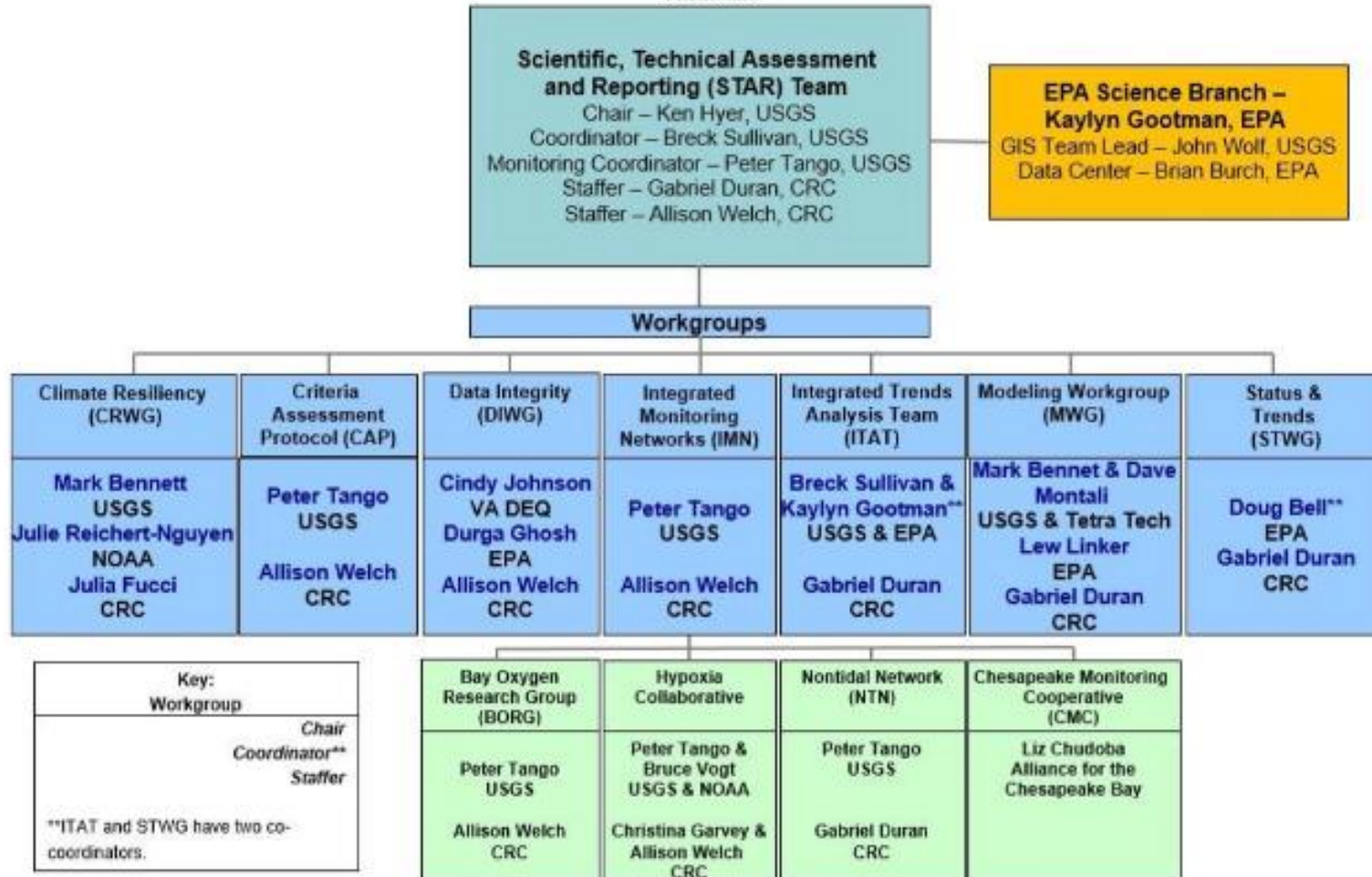
- **Integrated Monitoring Networks Workgroup** (*Peter Tango*)
- **Data Integrity Workgroup** (*Bruce Michael and Mary Ellen Lay*)
- **Status and Trends Team (formerly Indicators)** (*Jennifer Gundersen*)
- **Climate Change Workgroup** (*Zoe Johnson and Mark Bennett*)
- **Explain Ecosystem Condition and Change: Water Quality Trends Team** (*Jeni Keisman, Joel Blomquist and Jeremy Testa*)
- **Modeling Workgroup** (*Lee Currey, Dave Montali, and Lew Linker*)
- **Information Management & GIS Support** (*John Wolf*)



Multiple workgroups formed to support STAR

STAR Organizational Structure and Leadership

03/26/2025



My personal reflections on the stellar evolution of STAR

- Provided a vehicle for staying on top of Chesapeake Bay & Watershed science
- Developed key syntheses
- Linked agency and academic scientists with resource managers
- Facilitated interactions between modelers, data analysts, GIS and web team
- Enjoyable meetings supported by great coordinators & staffers

