NOAA’s Teacher at Sea Program

2012 Year in Review

December 2012
NOAA’s Teacher at Sea Program
2012 Year in Review

Overview
- 2012 NOAA Teacher at Sea Season Snapshot
- Return on Investment
- Opportunities & Challenges
- Background Material

"I loved being with new people, learning from them, getting to know the lifestyle of sailors, being an insider on how my country is involved in the global science initiatives with climate research, and gaining a whole different context of living and learning." – Sue Oltman, 2012
The 2012 NOAA Teacher at Sea Season

“What a privilege it has been to be a member of this team of researchers. I am honored to learn from them.” – Janet Nelson, 2012
2012 Snapshot

By the Numbers

- Teachers sent to sea: 29
- Days at Sea: 380
- Research Hours: 4500
- States represented: 23
- Teachers placed in labs & field: 11
- Active Alumni: 300+
- Outreach events: 21
- Science blogs: 340
- Graduate Credits Awarded: 21

“There was tremendous support before during and after the cruise. As an educator I felt very appreciated by NOAA Corps and scientists.“ – Debbie Campbell, 2012
2012 Return on Investment

Program Operations

- 220 teachers applied to the program
- Applications peer-reviewed by 60-person selection committee
- 25 selected and 9 alternates
- 70+ NOAA scientists offered berths to teachers
- 29 teachers sailed on NOAA research cruises
- Teachers represented 23 states and Bermuda
- Worked a total of 380 days at sea (4500 hours) side-by-side with NOAA scientists

"The ability to be such an integral part of a scientific research team was very important. It made me feel like I could more easily bring the feel of doing "real" research into the classroom." – Lesley Urasky, 2012
2012 Return on Investment

Program Operations

- 100% of the 2012 teachers who sailed completed survey and stated:
  - They benefited from participating
  - They would recommend the program
  - They were very satisfied with their research experience

- Updated and expanded online pre-cruise training system
  - Teachers extensively trained for at-sea experience
  - 8 - 10 hour course

I have learned how scientists operate in the field and can now create that bridge between scientists on the ship and my students in the classroom. I have also gained first-hand experience in doing fieldwork, which I will now share with my students and can encourage them to look into science-related careers.

– Andrea Schmuttermair, 2012
2012 Return on Investment

Web & Social Media

- Launched newly designed site in May 2012 that includes a searchable interface for over 600 blog posts and 5300 photos
- Conducted 24+ hours of training regarding blogging
- ~15,000 visitors each month to TAS blog
- Managed content of nearly 700 science blogs
- Managed ~5300 free for public photos
- 1,000+ Facebook “Likes” and ~5,000 reached each week
- 4,400+ Twitter followers
2012 Return on Investment

Web & Social Media

- Developed creative social media and web campaigns to lead people to blogs and photos
  - “Vote Now” campaign taught public about pollock and red snapper
  - Photo of the Week – provides science info about NOAA research at sea
    - Free to Public
    - High Resolution Versions Available
    - Example: Photo of the Week - 10/8/2012

“American lobsters have a long life span. Scientists believe some American lobsters may live to be 100 years old and can grow up to 44 pounds. This makes lobsters the heaviest marine crustaceans in the world! The lobster pictured here weighed in at 16lbs and then was returned to the ocean." - Kaitlin Baird, TAS.

*Photo By: Kaitlin Baird, TAS*
2012 Return on Investment

Teacher at Sea Alumni

- 21 TAS alumni presented and worked at education and science conferences (with approximately ~574,000 attendees) on behalf of NOAA
- 23 media posts (articles, TV, radio, web, etc.)
- 12 Hill acknowledgements (via letters)
- 2 alumni workshops in New England
- Received 80+ lesson plans, 50+ presentations, 500+ photos, and numerous other educational products from alumni
- Distributed 20,000+ TAS books and other NOAA education products
- 21 graduate credits awarded to TAS alumni

NOAA Northeast Region Teacher at Sea Alumni Workshop was held on May 19-20, 2012 in Woods Hole, MA at NOAA’s Northeast Fisheries Science Center and Woods Hole Aquarium
2012 Return on Investment

Teacher at Sea Alumni
“Spending time with fellow educators is always excellent, as it allows us to swap ideas. These ideas can range from individual hands on demonstrations that we use in the classroom to entire lesson plans. The exchange of ideas that occur at these conferences help every educator who attends them to grow tremendously.” – Jason Moeller, 2011 at NSTA in Louisville, KY 2012

A group of sixth and seventh grade students in TAS Rebecca Kimport’s class at Capital City Public Charter School in Washington D.C. got a special visit from NOAA marine mammal biologist Dave Withrow on February 22, 2012.
Partnerships

**Internal**
- Sponsoring NOAA Scientists and Offices
- Office of Marine and Aviation Operations
- NOAA Office of Education & Education Council
- National Marine Sanctuaries
- NOAA Corps and ships’ crew

**External**
- TAS Alumni
- University of St. Francis
- PolarTREC (NSF)
- Project Maury (USNA and AMS)
- Smithsonian Ocean Hall
- Cal Poly State University

“My goal as an educator is to create life-long learners who are engaged, enthusiastic, interested in their surroundings, and connected to the world around them. I’m excited to share this TAS cartoon series with others to help them understand the importance of the ocean, even if they never get to see or touch it.” – Cat Fox, 2011 at a gallery opening featuring her artwork
Future Opportunities & Challenges

- Enhancing communication and outreach capabilities
- Continuing expansion of program
  - Teacher at Sea
  - Teacher in the Lab (pilot phase)
  - Teacher in the Field (pilot phase)
  - Teacher in the Air (pilot phase)
- Further leveraging of alumni network
- Sharing program outputs and outcomes

“I feel I have a better sense of logistics, challenges, and the mechanics of a field campaign. As a climate modeller, I have a much greater appreciation of the data collection challenges that goes into the observed data we use to validate our models. All the scientists on board were hugely enthusiastic about having a modeller come and learn more about data collection.”   - Gina Henderson, 2012
A Teacher’s Perspective...

“Special thanks to our Commanding Officer and Chief Scientist for supporting the Teacher at Sea program. I know I speak on behalf of many teachers when I say there are many, many ways I will be bringing your work into the classroom, and I hope, helping recruit some of the next generation of NOAA officers and scientists!” Johanna Mendillo, 2012 (left)

“The Teacher at Sea Program is such an amazing opportunity. The benefits of this full-immersion program far outweigh any textbook description of the scientific process. Being a part of the science team, interacting with the researchers, asking questions, hearing their discussions, it is truly awesome!” – Marsha Skoczek, 2012 (right)
Background Material

Two NOAA Scientists Visit TASA Jennifer Goldner's Classroom and town Mayor Declares May 9, 2012 as NOAA Day in Jay, OK

NOAA’s Teacher at Sea Program   December 2012   http://teacheratsea.noaa.gov
2012 Teacher at Sea Class

[Map showing the distribution of Teacher at Sea classes across the United States and Bermuda.]
## 2012 Teacher at Sea Class

<table>
<thead>
<tr>
<th>Teacher Last Name</th>
<th>Teacher First Name</th>
<th>Subjects</th>
<th>Grades</th>
<th>School City</th>
<th>Cruise</th>
<th>Cruise Dates</th>
<th>Cruise Ports</th>
<th>Ship</th>
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<tbody>
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<td>Andrews</td>
<td>Carmen</td>
<td>Science</td>
<td>5th, 2nd, 3rd, 4th, 6th, 7th, 8th</td>
<td>Bridgeport</td>
<td>SEFIS Reef Fish Abundance Survey</td>
<td>07/07/2012 - 07/18/2012</td>
<td>Savannah, GA</td>
<td>R/V Savannah</td>
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<td>Bogan</td>
<td>Valerie</td>
<td>Science - Science</td>
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<td>Kokomo</td>
<td>SEAMAP Summer Groundfish Leg 1</td>
<td>06/07/2012 - 06/20/2012</td>
<td>Pascagoula, MS - Galveston, TX</td>
<td>Oregon II</td>
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<td>Campbell</td>
<td>Deborah</td>
<td>Science - 4 classes, English - 1 class reading/writing</td>
<td>7th</td>
<td>Chicago</td>
<td>Ecosystems Monitoring Survey</td>
<td>05/14/2012 - 05/24/2012</td>
<td>Charleston, SC; Savannah, GA</td>
<td>Nancy Foster</td>
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<td>Davenport</td>
<td>Scott</td>
<td>All subjects, Other - Physical Education</td>
<td>7th, 8th, 12th, 11th</td>
<td>Tununak</td>
<td>Juvenile Rockfish Leg 2</td>
<td>05/21/2012 - 05/27/2012</td>
<td>San Francisco, CA</td>
<td>Bell M. Shimada</td>
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<tr>
<td>DeLussey</td>
<td>Kathleen</td>
<td>English - Teacher Leader/ Writing Teacher/ specialist, Teacher Leader</td>
<td>1st - Full inclusion classes, 2nd, 4th, Kindergarten</td>
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<td>Steven</td>
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<td>CA</td>
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<td>Gillean</td>
<td>Alicia</td>
<td>All subjects - Library Media Specialist; Works with all teachers and students; all subjects</td>
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<td>Jenks</td>
<td>OK</td>
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<td>Middle grades and college</td>
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<td>Henderson</td>
<td>Gina</td>
<td>Science - Global Climate Change, Science - Meteorology, Science - Physical Geography</td>
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<td>Stacey</td>
<td>All subjects - Gifted &amp; Talented Program</td>
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<td>Kaiser</td>
<td>Susan</td>
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<td>7th</td>
<td>Reno</td>
<td>NV</td>
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<td>14</td>
<td>Keenan</td>
<td>Alexandra</td>
<td>Science - Physics, Science - Astronomy</td>
<td>11th, 12th</td>
<td>Rio Grande City</td>
<td>TX</td>
<td>Cetacean Biology</td>
<td>NMFS/NEFSC</td>
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</table>
# 2012 Teacher at Sea Class

<table>
<thead>
<tr>
<th>Teacher Last Name</th>
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<th>Subjects</th>
<th>Grades</th>
<th>School City</th>
<th>School State</th>
<th>Cruise</th>
<th>Line Office</th>
<th>Cruise Dates</th>
<th>Cruise Ports</th>
<th>Ship</th>
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<tbody>
<tr>
<td>15 Madrigal</td>
<td>Maria</td>
<td>Science - Marine Biology</td>
<td>Other - PreK-College</td>
<td>Redondo Beach</td>
<td>CA</td>
<td>Fisheries AUV</td>
<td>NMFS/PIFSC</td>
<td>04/02/12 - 04/16/12</td>
<td>Pago Pago, American Samoa</td>
<td>Oscar Elton Sette</td>
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<td>16 Mendillo</td>
<td>Johanna</td>
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<td>Boston</td>
<td>MA</td>
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<td>Oscar Dyson</td>
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<td>17 Nelson</td>
<td>Janet</td>
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<td>19 O'Donnell</td>
<td>Ellen</td>
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<td>7th, 8th, University</td>
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<td>GA</td>
<td>STRATUS</td>
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<td>Valparaiso, Chile and Galapagos</td>
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<tr>
<td>21 Peretich</td>
<td>Amanda</td>
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<tr>
<td>Teacher Last Name</td>
<td>Teacher First Name</td>
<td>Subjects</td>
<td>Grades</td>
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<td>Allan</td>
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<td>Rawal</td>
<td>Bhavna</td>
<td>Science - IPC, Oceanography, Environmental Science</td>
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<td>Houston</td>
<td>TX</td>
<td>South Florida Program</td>
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<td>08/06/2012 - 08/10/2012</td>
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<td>R/V Walton Smith</td>
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<td>Talia</td>
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<td>9/12/2012</td>
<td>Monterey</td>
<td>CA</td>
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<td>NOS/CBMS</td>
<td>07/24/2012 - 07/29/2012</td>
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<td>R/V Fulmar</td>
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<td>CO</td>
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<td>Skoczek</td>
<td>Marsha</td>
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<td>KS</td>
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<td>Wesley</td>
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<td>Idaho</td>
<td>Western Boundary Time Series (WBTS)</td>
<td>OAR/AOML</td>
<td>02/15/2012 - 03/05/2012</td>
<td>Charleston, SC</td>
<td>Ronald H. Brown</td>
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<td>Urasky</td>
<td>Lesley</td>
<td>Principles of Biomedical Sciences, Science - Geology/Astronomy</td>
<td>9th, 11th - 12th</td>
<td>Rawlins</td>
<td>WY</td>
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<td>Kristy</td>
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<td>Hillside</td>
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<td>05/23/2012 - 05/31/2012</td>
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<td>R/V Savannah</td>
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Teacher at Sea Alumni 1990 – 2012

NOAA’s Teacher at Sea Program  December 2012  http://teacheratsea.noaa.gov
## NOAA Teacher in the Lab and Field

### 2012 Participants (Pilot Projects)

<table>
<thead>
<tr>
<th>Lab</th>
<th>Scientist</th>
<th>Teacher</th>
<th>Grade</th>
<th>Research</th>
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<tbody>
<tr>
<td>Alaska Fisheries Science Center, Juneau</td>
<td>Bonita Nelson</td>
<td>Dustin Taylor</td>
<td>Pre-service</td>
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<td>Bonita Nelson</td>
<td>Brielle Kemis</td>
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<td>Kathleen Galau</td>
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<td>Kelly Stewart</td>
<td>Shane Morales</td>
<td>Pre-service</td>
<td>Turtle</td>
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<td>Kelly Stewart</td>
<td>Dana Tomlinson</td>
<td>Elementary School</td>
<td>Turtle</td>
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<td>Jon Baker</td>
<td>High School</td>
<td>Genetics</td>
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<td>Gary Winans</td>
<td>Elizabeth Gutierrez</td>
<td>Pre-Service</td>
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<td>Jennifer Duncan</td>
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<td>Gary Winans</td>
<td>Michele Wolski</td>
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<td>Gary Winans</td>
<td>Rachelle Carnes</td>
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<td>Genetics</td>
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</table>
NOAA Teacher at Sea Program Goals

Short-term Goals (Skills and Knowledge)
Teachers will:
- Understand how NOAA oceanic and atmospheric research is linked to National Education Science Standards and Ocean Literacy Principles.
- Understand the education and training paths that lead to NOAA-related careers.

Mid-term Goals (Behavior and Action)
Teachers will:
- Use NOAA data and resources in classroom activities.
- Use NOAA-related career information in classroom activities, when mentoring students and when working with colleagues.

Long-term Goals (Social, Environmental, and Economic)
In support of NOAA’s mission, the Teacher at Sea Program will:
- Build an understanding of earth system science among teachers and students.
- Build a workforce for science, technology, engineering, and math careers.

Note: Goals were created using the Bennett Logic Model. External evaluation data indicates we are meeting our Short- and Mid-term Goals, and beginning to meet long-term goal.
History & Status

A matrix program, NOAA’s Teacher at Sea Program is housed within NOAA Fisheries, receiving support from the Office of Marine and Aviation Operations and providing educational resources to all the NOAA line offices.

OMAO Years
- 1990: Established within OMAO by NOAA Corps Officer (LT Ilene Byron)
- 2003: OMAO hired program manager
- 2004 – 2007: Program in formative years

NMFS Years
- 2008: Program moved to NMFS for expansion
  - Teacher in the Lab, Teacher in the Field, and Teacher in the Air are being piloted
- 2011 - present: Program operating out of Fisheries Communications Office
Operations

Call for Applications (October)
- Call for applications takes place from 10/1 – 10/31
- Eligible candidates include full-time K-20 teachers, as well as museum and aquaria educators
- Receive an average 200 applications per year

Selections (December – January)
- Applications reviewed by a panel of 50+ TAS alumni and NOAA employees
- Reviews follow rubric
- Number of participants determined by budget, but usually around 30
- Final selections approved by NMFS Deputy Assistant Administrator and applicants notified by March
Operations (continued)

Placement Process (February – November)

- Ship Placement – Teachers matched with cruise based on availability, research interests, and geographical preferences
- Training – Teachers must complete online training course prior to sailing
- Deliverables – Teachers must agree to a Statement of Work but prior to sailing (Standard, but can be modified)
- Travel – Program funds and arranges for participants (at least one month before cruise)
- Communication
  - With teacher (frequent)
  - With scientist (frequent)
  - With ship XO (frequent)