UNOLS Early Career Investigator Chief Scientist Training Program 2011

Clare Reimers

Report to FIC

October 24, 2011

Special Acknowledgements

Linda Goad -for encouragement not to put this off, and program support

Daryl Swensen -for directing the participants through cruise planning from the marine technician perspective, as well as tireless work at sea (although admitting the second cruise was “an ass kicker”)

Program Goals

- teach early career marine scientists how to effectively plan for, acquire, utilize and report on time at sea for multi-disciplinary research and education
- demystify the process of ship operations and fulfill the intent of UNOLS to improve access to existing and future facilities
- offer new investigators opportunities to test compelling research ideas, work collaboratively and acquire samples critical for developing future oceanographic field programs

Funding Mechanism

NSF OCE Ship Operations Program Grant

Title: "RAPID: Training Chief Scientists for the Ocean Research of Tomorrow"

PI: Clare Reimers, OSU

Duration: March 15, 2011 - February 29, 2012

Award amount: $99,971

Total ship days: 20 days *R/V Wecoma*

Timeline

RAPID Proposal submitted to NSF	January 19, 2011
Grant approved	February 7, 2011
Release of training opportunity announcement for 2011	March 1, 2011
2011 Applications due (56 received)	April 15, 2011
Cruise 1 and Cruise 2 participants selected and notified	April 27, 2011
Pre-cruise planning for Cruise 1 (primarily through co-chief scientists, marine technicians and mentors)	May 1- July 3, 2011
Pre-cruise workshop at Hatfield Marine Science Center	July 6, 2011
Cruise 1 (MOB, days at sea, DeMOB)	July 7-15, 2011
Pre-cruise planning for Cruise 2	July 15-Sept. 15, 2011
Pre-cruise workshop at Hatfield Marine Science Center	Sept. 16, 2011
Cruise 2	Sept. 17-25, 2011
Review and compilation of post cruise assessments and questionnaire results	October 20, 2011

Participant data

Gender

16 female

12 male

Positions

1 Assist. Director of Science

1 Assoc. Prof.

10 Assist. Prof.

1 Res. Assoc.

7 Post-docs

8 Graduate Students

Disciplines

Chemical Oceanography

Biological Oceanography

Atmospheric Chemistry

Marine Geology and Geophysics

Physical Oceanography

Ocean Engineering

Participants- Cruise 1

Amy Townsend-Small, U of Cincinnati
Penny Vlahos*, U of Connecticut
Shellie Bench, UC Santa Cruz
Lindsey Koren, Virginia Commonwealth U
Kimberly Null, UC Santa Cruz
Russell Carvalho, Texas A&M, Galveston
Christopher Hintz, Savannah State U
Aaron Beck, VIMS
Sarah Brooks, Texas A&M
Daniel Thornton, Texas A&M
Joaquin Martinez Martinez*, Bigelow Laboratory for Ocean Sciences
Alysson Santoro, Horn Point Laboratory
Chandranath Basak, U of Florida
Yuehan Lu, U of Alabama

** co-chief scientist*

<u>Mentors/ Marine Technicians</u>
Clare Reimers, Oregon State U
Patricia Wheeler, Oregon State U
Daryl Swensen, Oregon State U
Meghan Donohue, Scripps Institution of Oceanography

Participants- Cruise 2

Amy Maas, WHOI
Craig McClain, National Evolutionary Synthesis Center
Paul Suprenand, U of South Florida
Jennifer McCay, Oregon State U
Danielle Wain, U of Washington
Meghan Powers, UC Santa Cruz/MBARI
Laurel Childress, Northwestern U
Sarah Hardy*, U of Alaska Fairbanks
William Browne, U of Miami
Pincelli Hull, Yale University
Henk-Jan Hoving, Monterey Bay Aquarium Research Institute
Karen Osborn, Smithsonian
Zoltan Szuts*, Max Planck Institute for Meteorology
Heather Beem, MIT/WHOI

** co-chief scientist*

Mentors/Marine Technicians
Clare Reimers, Oregon State University
Maureen Conte, BIOS/MBL
Daryl Swensen, Oregon State University
Chris Moser, Oregon State University

Opening Workshops

Speakers: Jon Alberts , Vicki Ferrini , Bob Embley , Damien Bailey, George Luther, Maureen Conte, Pat Wheeler, Clare Reimers, Daryl Swensen, Waldo Wakefield

Topics:

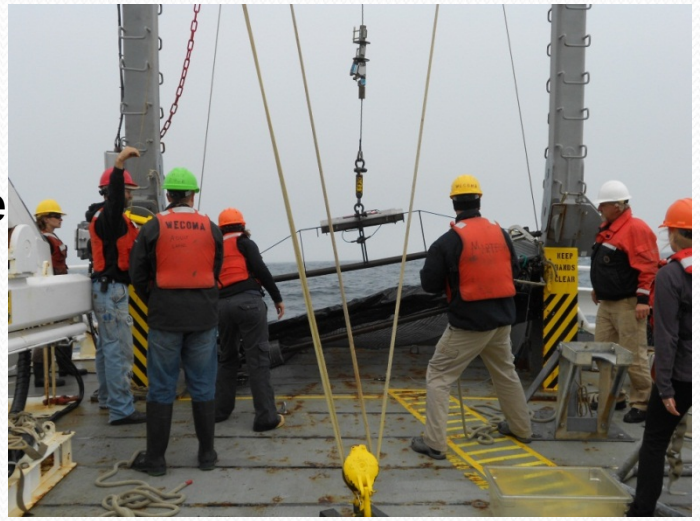
- History, Purpose and Structure of UNOLS and the UNOLS Fleet
- Ship time requests and scheduling
- Planning cruises from foreign ports
- Deep Submergence Facilities-access, assets and science
- Pre-cruise planning
- Bridge to transducer well tour of *Wecoma*
- Oceanography of the Oregon Coastal Upwelling System and Astoria Canyon
- From Proposal to Post-cruise: Responsibilities of a PI/Chief Scientist*
- Most Common Problems Encountered by a Chief Scientist

** Maureen Conte's PPT presentation-excellent!*

At Sea Meeting Topics

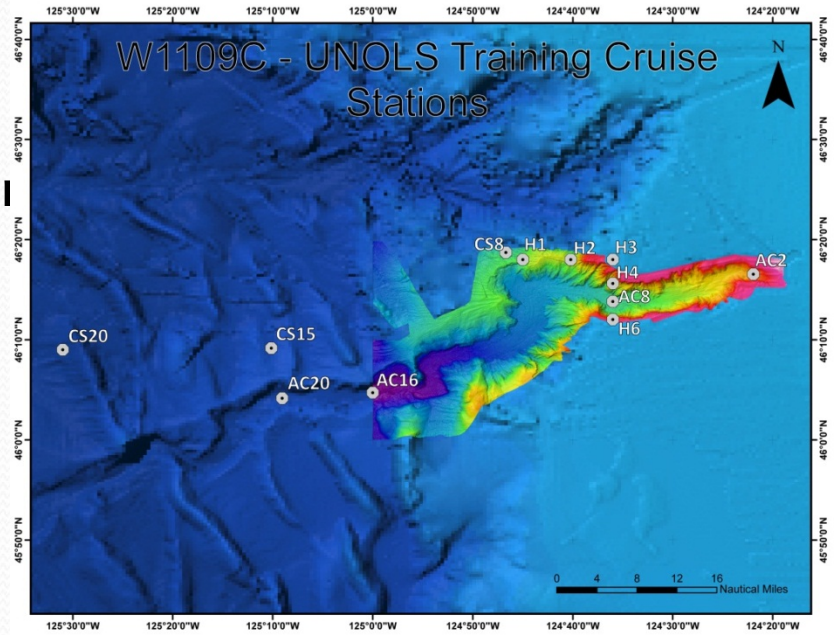
- Communicating cruise priorities, team building
- Importance of having a Plan of the Day and relaying/retrieving information from the bridge
- Whose in charge on deck? (different institutional approaches)
- Requesting the best vessel and equipment for your science needs
- Form and distribution of cruise data, value of a cruise report
- Post-Cruise Assessments-who sees them and how are they used
- When to return to port -reasons to and consequences of quitting early
- Decision processes, conflict resolution, sexual harassment, looking out for all

Science operations and ship science systems utilized



<u>Cruise 1</u>: 14 stations along 4 cross margin transe

CTD/Rosette casts (38)
RHIB ops
Plankton tows
Damped gravity corer
Surface flow through system and surface pumping
Meteorological data-atmospheric sampling
ADCP

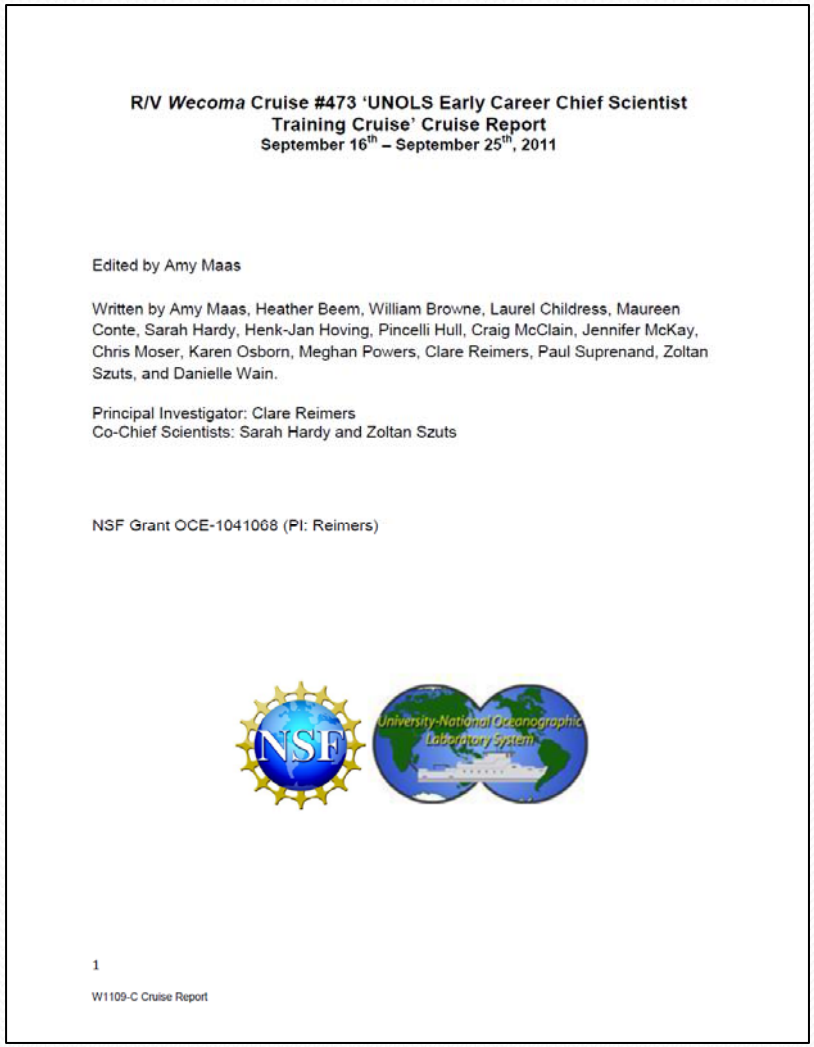


<u>Cruise 2</u>: 12 stations around Astoria Canyo

CTD/Rosette casts
ADCP
Large and Small Tucker trawls
Box, gravity and multi-corer sampling
Surface flow through system
12 and 4 kHz echo sounder

PCA and Cruise Reports

- PCAs have been (or soon will be) submitted for both cruises. Co-chiefs prepared them with input from all participants.
- Cruise 2 has prepared a "Cruise Report". The mentors encouraged this more strongly on cruise 2 and the group was more "gong-ho" than cruise 1.



R/V *Wecoma* Cruise #473 'UNOLS Early Career Chief Scientist Training Cruise' Cruise Report
September 16th – September 25th, 2011

Edited by Amy Maas

Written by Amy Maas, Heather Beem, William Browne, Laurel Childress, Maureen Conte, Sarah Hardy, Henk-Jan Hoving, Pincelli Hull, Craig McClain, Jennifer McKay, Chris Moser, Karen Osborn, Meghan Powers, Clare Reimers, Paul Suprenand, Zoltan Szuts, and Danielle Wain.

Principal Investigator: Clare Reimers
Co-Chief Scientists: Sarah Hardy and Zoltan Szuts

NSF Grant OCE-1041068 (PI: Reimers)

NSF

University-National Oceanographic Laboratory System

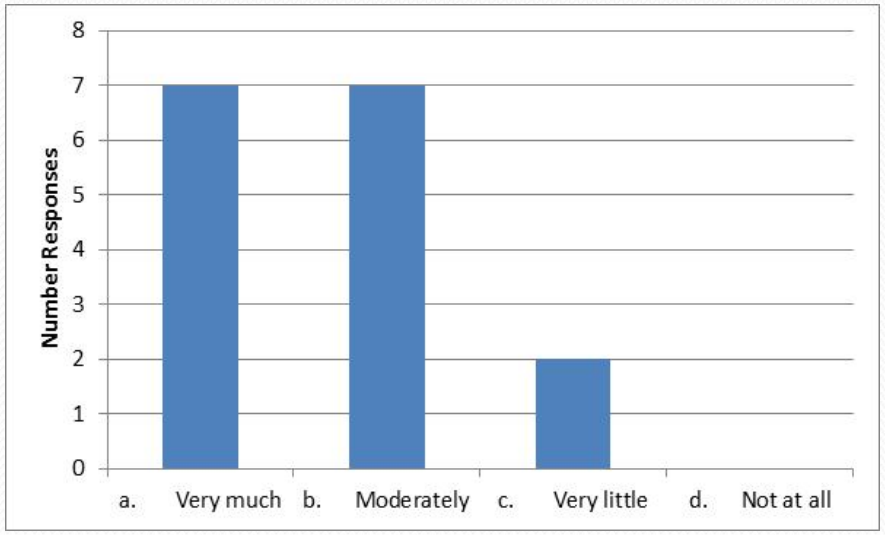
1

W1109-C Cruise Report

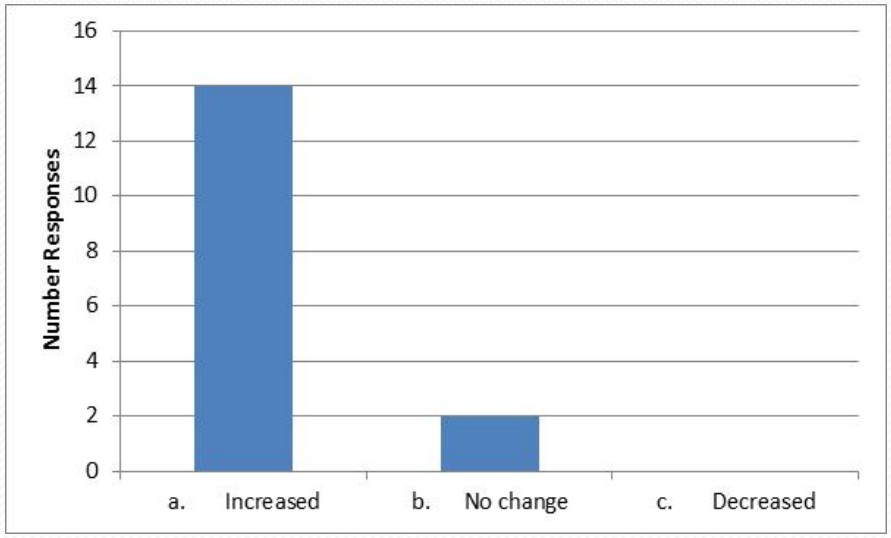
Post Cruise Questionnaire

- Web-based
- 14 multi-choice questions plus room for comments
- 16 of 28 possible responses received to date

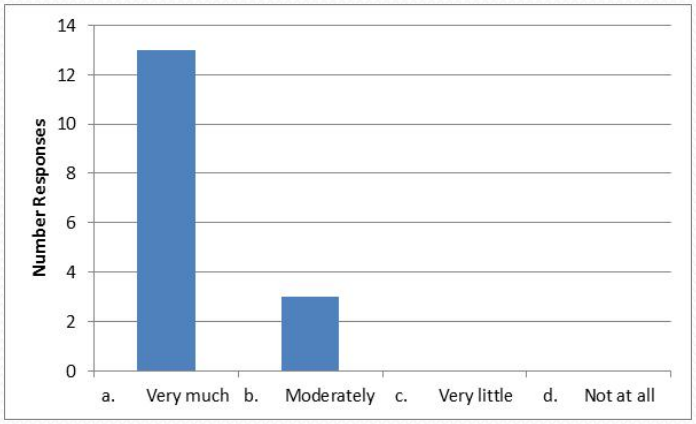
Q3. Did this program change your perception of the purpose and capabilities of the UNOLS Fleet?



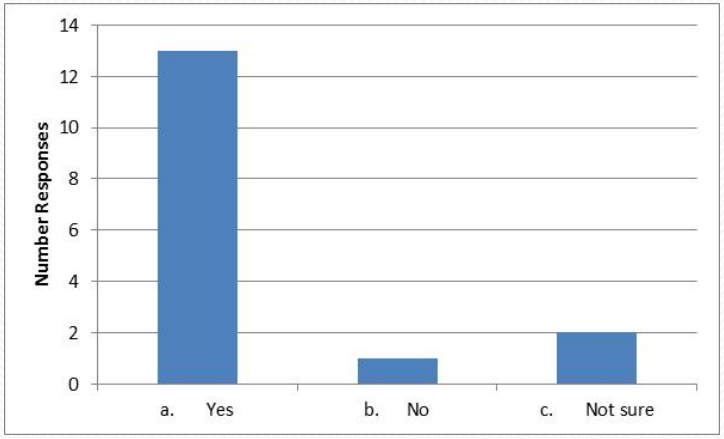
Q5. How did this program affect the likelihood that you will request ship time for future research?



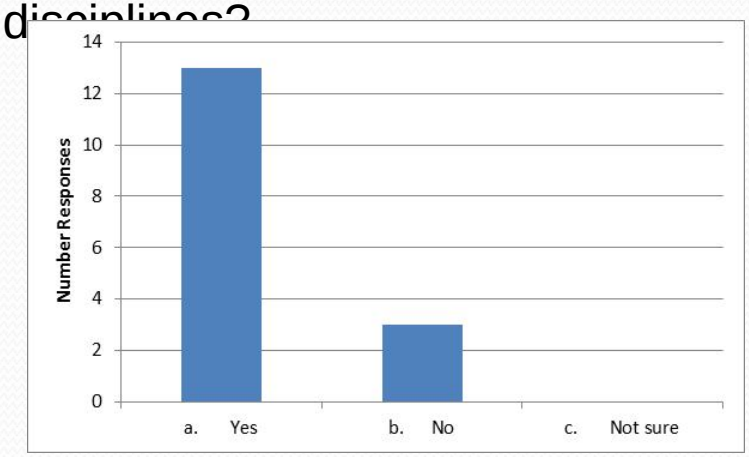
Q6. Were you able to complete useful research sampling or measurements on this cruise?



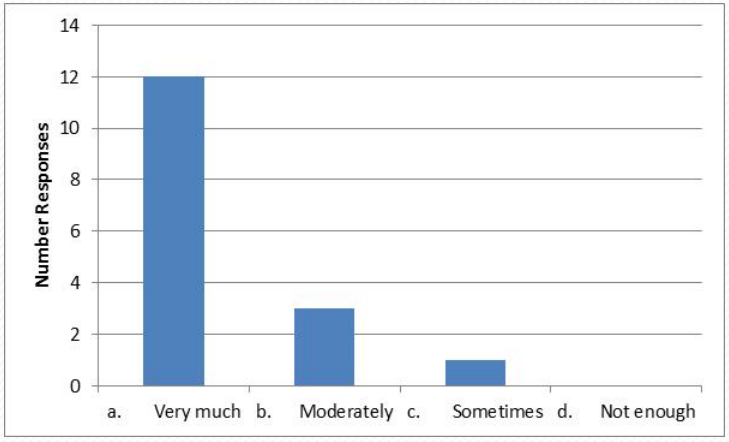
Q7. Did this cruise help you to form new collaborations with other scientists?



Q8. Did this cruise broaden your knowledge of oceanographic methods or techniques used by other disciplines?



Q9. Were the mentors of the cruise helpful before and during the cruise?



Q13. Do you feel you are now prepared to lead an oceanographic research cruise?

“After the training workshop, I certainly know better what is required of a chief scientist, but I have only limited cruise experience, and feel I need more before I would be comfortable leading a cruise.

I now feel better prepared to submit a reasonable, detailed (and hopefully successful) ship time request. I also feel that exposure to the diverse types of measurements involved on this cruise has better prepared me to meet and plan for the needs of other scientists in the event that I am their chief scientist.”

“I think I am definitely more prepared to lead an oceanographic cruise. This training cruise helped identify where problems may arise and how those can be avoided, most of the time with early planning and communication.”

“I think I could do it, but I don't have confidence that I could get the funding from NSF. I would like to have learned more about the proposal process.”

“Being selected for this program, I feel that I got good experience and advice from other mentors. It was nice to work with the R/V Wecoma to determine and understand what is needed for future cruise opportunities (i.e. equipment, cruise track planning).”

“Previous to this training I had no idea what happens after a cruise is funded or how much work is involved. In some respects this training makes the idea of leading a research cruise more intimidating, but now I know that there is a group of very experienced people in the UNOLS office and in ships operations who are there to help. Before this training I would have been hesitant about contacting them.”

Q14. Would you recommend that the NSF support more training cruises of this kind?

“NSF should ABSOLUTELY support more of these training cruises and not just because of the training aspect. This cruise allowed me to make contacts with other researchers not in my field of study and as a result I am now apart of two interdisciplinary collaborations. Furthermore, preliminary samples and data obtained during this cruise will help in the preparation of 2 (possibly 3) research proposals.”

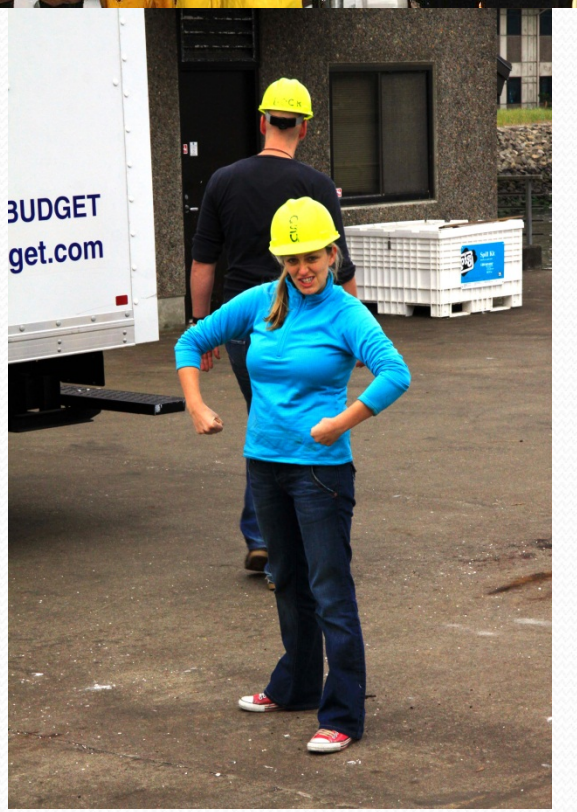
“In particular I came away with an enhanced understanding of how the ship operates as a multi-use platform. Thus I am sure that any future cruises that I am able to organize will make fuller use of a particular ship’s capabilities and thus involve a broader range of researchers and research activities than I had previously considered. This type of training which strongly promotes fore thought regarding ship resource use should enhance the science value on missions that are supported by NSF.”

“This has been a one of a kind, extremely useful cruise, in which the training for such endeavors has been a great void previously. This training cruise helps bridge the gap between being a participant and a leader. It think this was a very valuable experience and if nothing else, made the possibilities for application for ship time much more tractable.”

“I strongly feel that this training cruise will increase the quality and quantity of science being done with the UNOLS and Deep submergence facilities resources. For early career scientists it provides not only information and familiarity with the UNOLS fleet, but an opportunity to collect valuable preliminary shipboard data which could leverage oceanographic grants while fostering an environment of collaboration from which new ideas and projects begin.”

and one more….

"I would very much recommend training cruises like this. In my experience as a young scientist, it is only by chance that you get mentoring/training for leading cruises. Many things need to fall into place: If you land with a project that has a sea-going component, if your appointment allows for involvement with cruise logistics, and if there is a more-senior mentor who takes it upon themselves to provide the mentoring necessary (a large commitment). As a postdoc these conditions are not common, even for people who are very motivated to ask for such training. By providing training cruises like this, NSF can circumvent all of these conditionalities and make sure there is a cadre of young scientists able to take advantage of the UNOLS fleet."



Recommendations for Future

- Continue Program- 1 cruise per year for next 3 years
- Continue to use “Intermediates” but rotate host location and enlist new mentors
- Broaden the announcement circulation
- Improve the application process, include references
- Resolve whether participation is open to non-US scientists
- Track program effectiveness- number of participants who submit new ship time requests and are funded