

# OSTO Data Collection:

What do we need to know and how do we get it?



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# Major Occupations – what are they?

(Occupational Series, Groups or Clusters)

- Department of Labor
  - OES (SOC) 19-2042 Geoscientists
- Federal Government GS (general schedule)  
(Occupation Group, Job Family, Series)
  - GS-1360 Oceanography Series
- Business and Industry
  - Technical jobs at Shell Oil (Geologist/Geophysicist, Petrophysicists, Reservoir Engineer, Well Engineer, Production Engineer, Process Engineer, ...)

There are problems with defining the ocean workforce.  
So how far do we cast the net?

# Occupations in support of Ocean Observing Systems

<b>A. Design, Operation, and Maintenance of Facilities, Platforms, and Instrumentation</b>	<b>B. Analysis, Modeling, Forecasting, and Interpretation of Ocean Information</b>
<p>A1 - Divers and support personnel            A2 - Engineer – Electrical            A3 -Engineer – Mechanical            A4 - Engineer – Structural            A5 - Machinist/Welder/Fabricator/Carpenter            A6 - Ship Officer            A7- Ship Crew            A8- Technician – Electronics            A9 - Technician – Hydraulic            A10 - Technician - Marine            A11 - Technician - Marine Electronics            A12 - Technician – Remote sensing            A13 - Underwater vehicle pilot/technician</p>	<p>B1 - Scientist - Biological            B2 - Scientist - Chemical Oceanographer            B3 - Scientist - Hydrologist            B4 - Scientist - Geologist/Geophysics            B5 - Scientist - Meteorologist/Atmospheric            B6 - Scientist - Physical Oceanographer            B7 - Environmental Modeler/Forecaster            B8 - GIS Analyst/Technician            B9 - Remote Sensing Analyst/Technician            B10 -Resource Manager            B11-16 Science Technicians (5)</p>
<b>C. Data and Information Management</b>	<b>D. Education, Outreach, and Applications</b>
<p>C1 - Computer Programmer            C2 - Computer Software Engineer            C3 - Database Administrator            C4 - Information Technology Manager            C5 - Network Systems Analyst            C6 - Webmaster</p>	<p>D1 - Communications / PR Professional            D2 - Education/Outreach Specialist            D3 - Instructor            D4 - Ocean Extension Agent</p>

# Who else hires these people?

(Who will the OOS compete with for workers?)

- Basic and applied research
- Oil and gas
- Hydrographic surveying
- National security
- Ocean forecasting
- Resource management

# Methods

- Previous studies (MATE, DOL, others)
- CEO surveys/interviews
- Employer/supervisor surveys
- Employee surveys
- Collecting and classifying job descriptions
- Focus groups
- Collaborations with DOL and others

## **Prior Studies – MATE Center 2000**

- 1. Working conditions and remote work settings make recruitment and retention difficult.**
- 2. Positions most difficult to fill require KSS in electronics.**
- 3. Technicians with Navy education and experience especially sought after.**
- 4. High school and college preparation in math, science, and technology inadequate for employer needs.**
- 5. Many employers provide supplemental education and training.**
- 6. Recruitment problems acute in: (a) ROV design, development, and operation; (b) hydrographic surveying.**
- 7. Many OSTO employers compete for workers with IT employers.**
- 8. Research and environmental management employers find it difficult to compete oil and gas employers.**

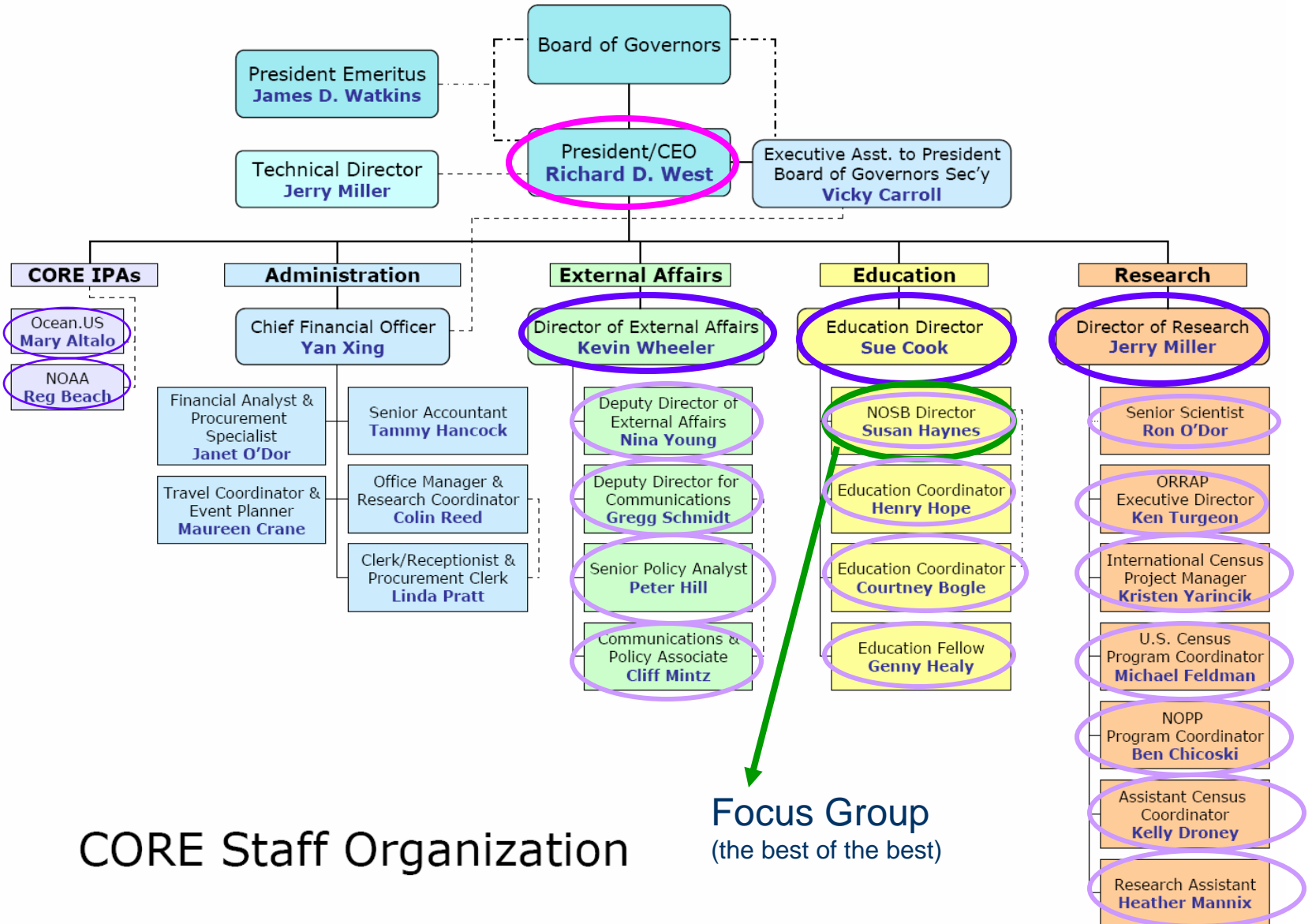
# Marine Science and Technology Industry in New England

University of Massachusetts, May 2005

## Greatest concerns of industry:

- Lack of labor with required skills/expertise (74%)
  - Engineers 53%
  - Technicians 45%
  - The least difficult positions to fill included scientists (25%) and managers (33%)
- Problems with recruiting employees: rural locations, cost of living in urban areas

# Work with organizations to define a survey strategy



CORE Staff Organization

# Types of information we want to know

Information Source Type of Information	Employer Surveys	Employee Surveys	Focus Groups	Job Descriptions
Job Function	X	X	X	
Job Titles		X	X	X
Job Description		x	X	X
Task Analysis (detailed KS)		x	X	x
Size of the Workforce	X			
Geography of the Workforce	X	x	x	X
Salary Range	X	X	X	X
Educational Background (& certifications /licenses)		X	X	X
Life Styles and Aptitudes			X	
Work contracted out	X			
Demand for workers	X	x	x	x
Future Trends	X	x	X	
Professional Societies associated with career		X	X	
Marketplace Competition	X	x	X	
Methods of Continuing Education		X	X	
National Certification Needs	X	x	x	

# CEO Information

- What are their workforce challenges and concerns?
- What are they doing to address their workforce concerns?
- What are their concerns for the future?
- Recommendations for the educational system

# Employer/Supervisor Information

- Nature of organization's work with relation to the OOS
- Current workforce
- Who is hardest to hire
- Projection of future workforce needs

*We will demonstrate this by reviewing the employer survey*

# Employee Information

- Personal Information
- Their path to getting where they are
- Current job situation
- Future

# DOL: High Growth Job Initiatives

- Advanced Manufacturing
- Aerospace
- Automotive
- Biotechnology
- Construction
- Energy
- Financial Services
- Geospatial Technology
- Health Care
- Homeland Security
- Hospitality
- Information Technology
- Retail
- Transportation

# Career Information Dissemination

- [www.oceancareers.com](http://www.oceancareers.com)
- Exploring Ocean Careers
- Collaborative Publication with MTS

# Questions for Discussion

1. What are your most pressing OSTO workforce concerns?
2. How well can you characterize your organization's workforce?
3. What would you like to know about your organization's OSTO workforce, and the OSTO workforce in general?
4. In what OSTO-related fields is your organization currently experiencing difficulty in hiring people?
5. What are your organization's concerns for the future of its workforce?
6. How is your organization dealing with, or planning to deal with, its workforce challenges?
7. In what ways could the educational system help your organization better meet its workforce challenges?
8. If you were to make up a new OSTO-related certification that would positively affect a potential worker's employability, what would it be? What sort of knowledge and skills would you expect for that certification?
9. If you were to make up a new OSTO-related certification that you would encourage your employees to get, what would it be? What kinds of knowledge and skills would you expect that employee to learn?