Employee Attraction and Retention
Marine Technology Industry in SE Massachusetts

Ocean Sciences, Technology and Operations Workforce Workshop
Nov. 10-12 2008
Monterey, California
Need for skilled employees
UMass Dartmouth Masters Public Policy

- Concentration in Ocean Science and Tech. Policy with focus on workforce issues. (Dec. 2009 Completion date.)
- 25 Year Veteran of Marine Tech Biz
- MOTN, MTR, MTS, WHOI, MIT, SEA
- Ocean Science Communications, Marketing, Tech. Transfer, Event Management, Publicity for Oceans, etc.
What is the Marine Tech. Industry?

- Companies, Universities, Govt. Agencies that develop, build, commercialize and utilize equipment and services to measure various parameters in the ocean.

- The equipment and intellectual property are directed toward providing solutions to Research, Military, & Commercial Customers.
Companies Surveyed

- 10 Companies and 15 Key Informant Interviews
- 700 Employees
  - 220 Prod. & Manufacturing
  - 139 Engineers
  - 94 Field Personnel that are Scientists (Observers)
  - 70 Technicians
  - 60 Management
  - 59 Admin
  - 37 Sales/Marketing
  - 18 Staff Scientists
  - Others 21 (support)

Salary Ranges in 1000s
- Production: 21-46
- Engineering: 60-120
- Scientists: 30-120
- Technicians: 35-70
- Management: NA
- Admin: 30-50
- Sales/Marketing: NA
Products Include

- Rugged underwater sensors for: CTD, Velocity, Temp. Acoustics, Pressure
- Deep Sea Moorings and drifters
- Autonomous Underwater Vehicles (AUVs)
- Remotely Operated Vehicles (ROVs)
- Submersibles
- Communication systems
- Cables, connectors, flotation, transmitters, etc.
Questions Asked

- # Employees (full time, part time, contract)
- Location
- Internships/Coops
- Types of Employees
- Ed. Levels
- Pay Rates

- Recruitment Methods
- How many will you hire: 2, 5, 10yrs.
- Attraction Issues
- Retention Issues
- Continuing Ed. Needs for existing workforce
Literature Review

- 2005 Study, *The Marine Science and Technology Industry in New England*, C. Barrow, R. Loveland, D. Terkla surveyed 481 companies throughout NE and found that attracting workers with required skills is a critical concern and a major obstacle to commercialization of new products and company growth.

- 2007 Study, *Marine Industry Cluster Development*, S. Andrade, T. Curry, M. Merrill, S. Peterson found that attracting skilled workers is of great concern to company owners.
### Marine Sector Sales ($M) in New England *

<table>
<thead>
<tr>
<th>State</th>
<th>Instrumentation &amp; Equipment</th>
<th>Materials &amp; Supplies</th>
<th>Research &amp; Education</th>
<th>Shipbuilding &amp; Design</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts</td>
<td>668.6</td>
<td>112.2</td>
<td>6.6</td>
<td>753.5</td>
<td>1,540.30</td>
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<tr>
<td>Rhode Island</td>
<td>786.5</td>
<td>182.3</td>
<td>0.1</td>
<td>35.1</td>
<td>1,911.30</td>
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<tr>
<td>Connecticut</td>
<td>72</td>
<td>86.2</td>
<td>0.1</td>
<td>42.6</td>
<td>945.4</td>
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<tr>
<td>Maine</td>
<td>2.8</td>
<td>19.8</td>
<td>N/A</td>
<td>0.7</td>
<td>868.1</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>436.4</td>
<td>56.8</td>
<td>N/A</td>
<td>10.1</td>
<td>503.3</td>
</tr>
<tr>
<td><strong>New England</strong></td>
<td><strong>1,966.30</strong></td>
<td><strong>457.3</strong></td>
<td><strong>6.8</strong></td>
<td><strong>842.1</strong></td>
<td><strong>4,868.9</strong></td>
</tr>
</tbody>
</table>

*Sales figures do not include R&D inputs.

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• Slide info. from T.Curry, Sept. 2007

More Than 400 Businesses
More Than 25,000 Employees
Research And Educational Institutions

Marine Marketing Services
Industry Opportunities

**Ocean Observation, Monitoring & Decision Support**

**Port & Maritime Security**

**Ocean Energy - Exploration & Infrastructure Support**
Industry Opportunities (continued)

• **Ocean Observing And Decision Support**
  
  The “Wired Ocean”: Federal, State and private investments in OOI, IOOS and other coastal, regional and global ocean observation, prediction & management systems

• **Ocean Energy - Gas And Oil Exploration**
  
  Need to provide greater sensing and operational maintenance through AUVs, ROVs and related support systems

• **Port And Maritime Security**
  
  From State to Regional Scale: RI, MA, CT, Long Island Sound Monitoring, NY

• **Marine Renewable Energy**
  
  Emerging: Offshore wind, wave and tidal energy generation
How Companies Locate Workers

- Trade Schools and Com. Colleges for technicians
- Co-ops and Internships occasional
- Reluctance to train entry level hires
- Job Fairs for technicians, ocean techs.
- Advertisements in trades and local papers
- Raid competitors is easiest no training needed
- Head Hunters for high level hires
Skills Needed

- Engineers: Software, Mechanical, Electrical
- Technicians for testing and evaluation
- Production and Manufacturing Assembly
- Sales and Marketing with ocean science background
- Experience in ocean field a plus
- Defense Contractors: security clearance and US citizen
Continuing Education for Existing Workforce

- HazMat Training; OSHA; USCG Certs.; EPA Certs.; GIS
- Software training to stay current
- $5000 tuition assistance/year standard
- Keep it local; nights and weekends for prof. degrees: Masters; Certificates
What’s Being Done Now

- Ocean Industry Workforce Needs Assessment Results Reported here.
- Ocean Technology Training Program just opened in St. John’s Newfoundland
- Community Colleges: boat repair, basic technician training
- Maritime Academies: Maine, MA, New York
- 4 year programs
Recommended Solutions

1. More Study is needed to identify skill sets
   - Bigger sample must be tested
   - Update Barrow study and MATE every 3-5 yrs.

2. Create a connection between workers and employers
   - Clearing house for jobs and talent
   - Job fairs, outreach, education

3. Use existing infrastructure for rapid response
   - Trade Associations;
   - Community Colleges, UMass-D
   - Collaborate with MATE and Others
Recommended Solutions 2.

- 2-way coms between industry and workforce professionals
- Incentives for companies to hire entry level workers
- Funded internships/co-ops with colleges
- Improved Coordinated PR Outreach to students, parents, faculty, career officers, etc.
Trade Association Role

- MOTN to link member companies with workers via events such as Ocean Tech Job Fair at the Sept. 08 Ocean Tech. Expo
- Help connect the dots
- MTS could create new student chapters at UMass-Dartmouth, MMA, WHOI, URI, BCC
Funding Mechanisms

- NSF, NOAA, DOD
- Workforce Training Fund
- Commonwealth Corp. Workforce Training
- Connect SouthCoast (MMA/BCC/BSU/UMass-D)
- MOTN Trade Association & MTS NE
- John Adams II Innovation Fund
Summary

- There is a substantial global market in Marine Science & Tech.
- Need for skilled employees with marine experience
- Funding and implementation mechanisms already in place
- Takes leadership and coordination
- Don’t reinvent the wheel: tweak it
Questions/Discussion?

- Full Report Available
  January 2009
- Leave Business Cards Here

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