

# **What do educators need to know about the workforce, and how should this information be communicated?**

## **1. Definition of “workforce”**

- Includes science leaders at PhD level down to ship crew and deckhands
- Includes people that go to sea and people that support the people that go to sea with products and services
- Hugely diverse with many skillsets and large knowledge base

## **2. Critical occupations in short supply (representative examples of “workforce”):**

- Electronics technicians—lack of exposure to electronics; perception as a blue collar career among younger students; older students have a better perception; need to create a pipeline to

**a 4 year degree (electronic engineering, engineering technology for ex. at TAMU)**

- **“Professional scientist”-- people with skills of numerical modeling, data transformation and assimilation—4 year physical or atmospheric science degrees. For example, “professional science” master’s degree graduates. They will have many other opportunities besides marine science because other occupations are faced with huge amounts of data that need to be managed.**

### **3. What educators need to know**

- **3 things that attract people to the job: Money, sense of adventure, ability to work 6 months of the year, safer than military. These attributes are attractive to many people but not all of these would be attractive to us.**

- **The people that take high school AP classes aren't the target audience. The target is people that take vocational classes and these programs are being eliminated at the HS level due to funding problems. Critical to fix the HS problem. The educators need to know about career options that are outside of traditional "white collar" professions. The HS educators don't have the information about marine technology (specifically for ET careers) and there is a lack of understanding beyond "white collar" professions. Need to reach out to HS teachers and guidance counselors. They are rewarded by how many of their students go to 4 year colleges vs. 2 year.**
- **With any technical training, you have to be sure that there are enough math and science background to add new technical skills as older ones become obsolete.**

**If engineering and technical programs were paired, we might not lose so many students. Should they be paired? Suggestion that they should remain distinct. This will frustrate traditional engineering students.**

**How do other sea-going professions deal with this issue? The other professions don't have as many on-shore choices as ETs have.**

**Can't underestimate the draw of "home." People don't want to leave home. This is critical to overcome.**

**Also have to go after parents. Employers need to approach and appease the parents.**

**Successful programs build a real sense of community among the students and breaking down the traditional way that programs are administered.**

**What is the least common denominator for that specific segment of the workforce?**

**The level of competency required has decreased in many areas because we don't do repairs in the field**

**What are the best practices for aligning educational experiences with workforce needs?**

**Hiring managers need to “look outside the box” when hiring people and consider people with non-traditional backgrounds that have the right attitude and abilities.**

**The people who are highly educated and highly skilled professions are less aligned with workforce needs.**

**How do we address the outsourcing issue? The ocean is a global workplace. Hopefully we will see an overall increase in the number of ocean-related jobs so that will blunt the effect of outsourcing. This is more of an issue in the fabrication area.**

**There is some thought that you can't solve the problems we have with all US workers. The concept of globalization vs. the concept of outsourcing. Younger generations are more globally aware and will look to the global benefits of ocean careers as a positive. We need to be able to articulate this to that audience.**

**How can we attract people to occupations where there is an undersupply?**

**There has to be a reward / career path down the road for the sea-based work early in a career. Calling this by the broad term of "technologies" might help create a better perception among young people (those who see ETs as "blue collar")**  
**How do we capture them and keep them in the electronics tech jobs. Electronics techs aren't hard to find but they need to have IT skills. The major problem is how do you find ETs who want to spend 6 months at sea each year.**

**This type of person has many career choices. Solutions: 1. pay more, but only possible in industry. 2. public service oriented where the high salaries don't exist.**

**The culture of young people clashes with the culture of difficult ocean based jobs. Young people are not interested in manual labor—they want non-repetitive, creative, office-based work and have a negative perception of manual labor. We need to find the people who will do the job and stay in the job because of the love for the job.**

**How can we recruit and retain more people from under-represented groups?**

- Need to look at different entry points than we're used to; recruit in different places where we're now not looking.**
- The public sector (government) has to develop and fund programs (such as ROV competition)**

**to recruit and retain under-represented groups into the workforce so that industry has a pool of qualified candidates to choose from.**

- **Industry needs to take advantage of programs (such as the ROV competition) that focus on these groups.**
- **The “big players” (companies and organizations) need to get involved now and “seed” the field with under-represented groups to create a pool of qualified candidates**