

# Human and Intellectual Capital Next Steps



Marine Board Spring Meeting  
9 June 2016

Mr. Edward N. Comstock (Lead)  
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# Human and Intellectual Capital

- Marine Board recent focus session (12 Nov 2015) brought attention to issues of employee development programs and their effectiveness including adequacy of current resources, practices, and plans for improvement



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# Focus Session - Framing Questions

1. Given your experience over the last five years, what are the critical gaps in skills, knowledge, and abilities (KSAs) that you see in your organization? - *Federal agencies and ABS address at a high level*
2. What do you see as the key challenges your organization faces in the coming 5-10 years in terms of the acquisition and/or retention of talent with required KSAs? - *Federal agencies and ABS*
  - a) What challenges do you see in training, education, career development, licensing, and certification of existing and future staff?
3. What are some of the solutions you have implemented to address these KSA gaps (e.g., specific best practices) and what strategies have you found that have worked best for your organization? - *Federal agencies and ABS*
  - a) What solutions/strategies have not worked?
  - b) What are the various education/training programs currently available? Discuss their effectiveness and identify where there are gaps or needs for better or more effective training, education, licensing, or certification.
  - c) Address opportunities as to how such needs can be met.



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# Focus Session - Framing Questions

4. Have you found any specific techniques that work in attracting civilian talent given that the private sector can often pay more? - *Federal agencies*
  - a) Also, what strategies/techniques have you implemented to retain experienced talent and keep staff from leaving for higher paying private sector jobs?
5. What is the role for universities/other educational institutions or for professional societies/classification societies/licensing bodies in resolving the talent KSA gaps? – *Webb and ABS*
6. What are your priorities in human and intellectual capital for your various areas of interest? – *All*
  - a) **How can the Marine Board serve as a liaison with U.S. institutions delivering relevant curricula and performing related research to help promote and implement these priorities?**
7. **Do you see a role for the Marine Board/NAS in addressing these KSA gaps and challenges through research, commissioned studies, forums, or workshops? - *All***



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# Q&A #6.a)--Dr. Tim Arcano

## Technical Director, NSWC-CD

- Promote Diversity programs
- Promote increased sponsorship of student involved projects – “Learn-by-Doing”
- Encourage expansion of in-house government work in maritime research and design
- Promote federal government as “Lead Systems Integrator”



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# Q&A #7--Dr. Tim Arcano

## Technical Director, NSWC-CD

- Evaluate, Identify Best Practices and Encourage Mentoring as a Knowledge Management Critical Skill
  - Ample number of experienced people mentoring the inexperienced
  - Tools to facilitate learning in “safe-to-fail” environment
  - Inspiration as a necessity with Challenges and Intrinsic Rewards
- Monitor Trends in numbers of Naval Engineering graduates and where they are going
- Promote the Health of Naval Engineering – NNR-NE
- Encourage S&T investment in Ship Design – CONFORM, Tools, Processes



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# POSSIBLE MARINE BOARD ROLES AND APPROACHES – 1a

- Marine Board can focus attention on this opportunity as a priority for publicly-supported institutions
- At the informational stage, the Marine Board can work with potential sponsors to develop a list of priorities in human and intellectual capital for various areas of interest – **NAS listening session**
- Marine Board can then serve as a liaison with U.S. institutions delivering relevant curricula and performing related research to help promote and implement these priorities

ACTIVITY	CONSENSUS		DURATION	COST RANGE
	ADVICE	PRODUCT		
Convening Event	NO	Discussion only No report/proceedings	Needs 1-2 months planning time	\$25,000 - \$50,000 Multiple engagements cost more



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# POSSIBLE MARINE BOARD ROLES AND APPROACHES – 1b

- Marine Board can host a workshop with broad participation by the maritime and offshore industry, government agencies, and academia to identify the various training programs currently available, to discuss their effectiveness, and identify where there are gaps or needs for better or more effective training, education, licensing, and certification, and to address opportunities as to how such needs can be achieved
- Universities and employers can be better informed through such a **workshop facilitated by a rapporteur** providing a summary of discussions and the posting of all briefings

CONSENSUS				
ACTIVITY	ADVICE	PRODUCT	DURATION	COST RANGE
Conference/Workshop	NO	Proceedings/Research	Needs 6-18 months planning time	\$100,000 - \$500,000



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# 2015 North American World Maritime Day Conference

- “Maritime Education and Training Summit Collaboration for Industry's Future - Securing Maritime's 21st Century Workforce”
  - October 5-7, 2015 Maritime Inst. of Technology & Graduate Studies (MITAGS)
  - <http://worldmaritimedayna.net/>
- Joint effort among organizations
  - SUNY Maritime College
  - Ship Operations Cooperative Program (SOCP)
  - North American Marine Environment Protection Association (NAMEPA)
  - Maritime for Primary and Secondary Education Coalition (MPSEC).
- Featured individual speakers, plenary sessions, and series of workshops
- Three tracks of interest - Educators, Industry, and Administrators
  - Allowed attendees to sit in sessions that interested them



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# 2015 North American World Maritime Day Conference

- Topics included:
  - Mission maritime/intermodal Primary and Secondary school programs
  - North American labor developing a 21<sup>st</sup> century workforce
  - Workshops covering career tech programs
  - Military transition to maritime employment
  - Community organization support, STEM education programs, Post-Secondary Marine/Maritime Education and the future workforce needs and trends
- Previous conference 2008 Maritime and Intermodal Education for Primary and Secondary Schools in America
- POCs: MARAD Shashi Kumar, Assistant Associate Administrator for Workforce Development, MPSEC Dr. Art Sulzer

**Consider Collaboration with MARAD, USCG, USN, BSEE, ABS,  
and Other Activities for Workshop with Expanded Focus**



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# POSSIBLE MARINE BOARD ROLES AND APPROACHES - 2

- Marine Board can identify means to sustain and manage human capital in a fluid workforce environment where retention averages five years
- Government workforce pay is not necessarily competitive with industry
- This is a similar problem faced with BSEE inspectors where it is difficult to hire qualified and experienced staff
- Also, once trained, workers will often leave for higher paying jobs in private industry
- Part of the effort would be to determine if a better trained and educated workforce would improve retention by training personnel to do other jobs and provide more mobility and opportunities for career advancement within their organizations



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# POSSIBLE MARINE BOARD ROLES AND APPROACHES - 3

- Marine Board can conduct benchmarking studies of national and international educational institutions and government agencies to assess the effectiveness of their training, education, licensing, and certification processes and organizational development activities, including intra- and interagency job rotations, in conjunction with the above efforts
- Support from maritime institutions and industry outside of universities (e.g., MARAD, ABS) would facilitate the benchmarking studies
- Collaboration with the Ocean Studies Board may be beneficial, especially if the scope were to expand to address oceanography issues



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# POSSIBLE MARINE BOARD ROLES AND APPROACHES - 4

- Marine Board can develop an update to the “Naval Engineering in the 21st Century” study that evaluated the state of basic and applied research in naval engineering and related disciplines in the U.S. and reviewed the status of ONR’s efforts, through the National Naval Responsibility for Naval Engineering (NNR-NE) initiative
- Update would review the study findings and recommendations to identify topics/areas that merit further in-depth analysis, assess progress made to ensure a healthy research and educational enterprise that meets the future technology needs of the Navy, focusing on maintaining and developing human capital

CONSENSUS				
ACTIVITY	ADVICE	PRODUCT	DURATION	COST RANGE
Comprehensive Study	YES	100-300 pp report	18+ months	\$500,000 - \$1,500,000



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# Potential Sponsors

- U.S. Navy\*
- U.S. Maritime Administration\*
- U.S. Coast Guard\*
- National Oceanic and Atmospheric Administration\*
- Bureau of Safety and Environmental Enforcement\*
- U.S. Army Corps of Engineers\*
- Society of Naval Architects and Marine Engineers
- Society of Petroleum Engineers
- Offshore Operators Committee

\*Core Sponsors of the Marine Board



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# What Next?

- Establish priority
- Identify sponsors and resources to support convening activities
- Reach out to MARAD/MPSEC to identify future plans and collaboration opportunity
- Hold convening sessions with potential sponsors to further explore their issues and opportunities, determine workshop interest, and develop a list of research priorities in human and intellectual capital



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# Back-up



# Keith Michel

## President Webb Institute

### Challenges Facing NA/ME/OE Programs

1. Attracting the right faculty.
2. Attracting well prepared students.
3. Staying abreast of technology.
4. Coverage of the diverse marine sectors.
5. Achieving high graduation rates.
6. Maintaining industry involvement.
7. Ensuring financial sustainability.



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# Keith Michel

## President Webb Institute

### The K-12 Challenge

Most students are not sufficiently prepared for college.

We need to get the word out regarding NA/ME/OE, so we can attract the best and brightest to our industry.

Some of Webb's K-12 Initiatives:

- Engineering Day for 5th through 7th grade students
- Tutoring and mentoring programs for high school students
- High school boat competition
- Lectures on NA/ME at high schools
- Developing video on the marine industry with NNS
- Webb summer program



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# NOAA

- Sam Debow series of books sponsored while at NOAA:
  - <http://teacheratsea.noaa.gov/resources/index.html>



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