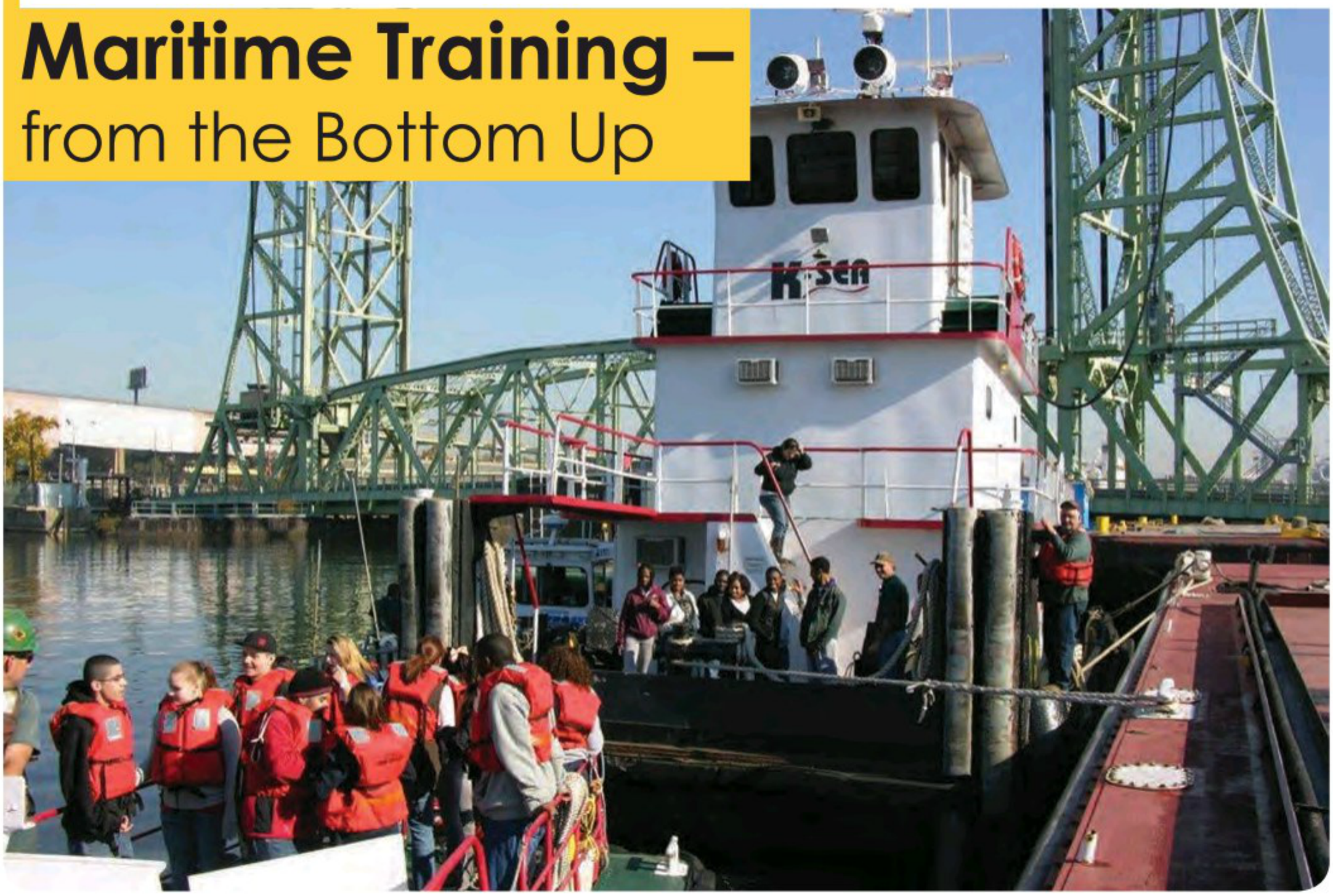
Maritime Training – from the Bottom Up



Finding innovative ways of engaging, educating and ultimately employing future maritime professionals starts by introducing K-12 students to the waterfront.

By Joseph Keefe

(*) All images provided by Dr. Art Sulzer

Organized maritime education can trace its roots back to January 1, 1875 in the United States when 26 young men, ages 14 to 21 reported aboard the New York Nautical School administered by the City of New York on a retired US Navy Brig. This first effort continues to operate today as State University of New York Maritime College. Other states followed suit over the next quarter century.

In 1937, as the need to find entry level mariners became apparent, the NY City Board of Education responded with the opening of the Metropolitan Vocational High School for Boys in Manhattan and aboard a laid up ferry which after the war was replaced by the victory ship *John W. Brown*. This high school graduated more than 5,200 students into commercial deck, engine and steward departments until it was shuttered in 1985 due a declining US merchant fleet.

Maritime stakeholders continue to predict dire shortages of qualified mariners in the not-too-distant future. U.S. Maritime Administrator Paul "Chip" Jaenichen recently said that the United States will need '70,000 new people' for the nation's maritime fleet by 2022. While maritime training for officers still continues in a robust fashion at the nation's (six state and one federal) academies, as well as at schools such as the MITAGS-PMI sponsored Workboat Academy, the task of increasing the level of awareness about maritime careers to middle and high students has lagged. Beyond this, the continued lack of representation on the waterfront from minorities and women has long been an issue; one which many schools and organizations are trying to solve.

Foundations

In 2001, industry leaders came together at a MARAD sponsored conference to discuss an aging workforce that did not show promising signs of renewing itself with the skills and in adequate numbers that the 21st century would require. That call was heard by the existing Maritime colleges, which began to expand and diversify programs and include new training as required by the IMO and the increasing sophistication of ships, tugboats and offshore infrastructure.

That call was also heard by Primary and Secondary (K-12) education stakeholders which realized that a maritime education offered a good pathway for urban students to not only get out of the city, but also into a rewarding post-secondary maritime education and career path. But, not if they hadn't before ever seen a ship or been introduced to the possibility that a maritime career was even a remote possibility. The need to bring an awareness of maritime career possibilities into the lower grades had never been more acute. That metric persists today.

Educational Collaboration

Schools in New York, Philadelphia and San Diego opened independently of one another. At first, these schools were arguably 'maritime' in name only, but recognizing that by working together and sharing best practices, these schools hoped to develop more quickly and spread the message. Momentum did build, and working with the Ship Operations Cooperative Program (SOCP), MARAD, industry and academic partners, a conference was created in 2008. Hosted at MITAGS and attended by more than 200 stakeholders, this event caught the attention of Congress; in particular Congressman Elijah Cummings (D-MD). The then-Coast Guard and Maritime subcommittee chairman eventually held hearings on the need for more schools and entry level mariners. By then, six maritime and marine schools were in operation.

Fast forward to 2015 and a second conference was sponsored by State University of New York, North American Marine Environmental Protection Association (NAMEPA) and SOCP with the purpose of bringing together K-12 schools – now numbering 56 – with post- secondary educators and marine employers. The process of urban education is not an easy one, with a raft of socioeconomic issues coming into play before the education process can even begin. And before that could happen, it was necessary to develop a focused, unified curriculum with which to get to the next step.

That curriculum is now here. It challenges students, increases their academic curiosity and develops the core characteristics necessary for a life at sea to begin – and to succeed. And, the metrics show that it is working. According to Dr. Art Sulzer, Founder of no less than four charter schools, including the Philadelphia-based Maritime Academy Charter School, a three-year case study conducted through the University Of Pennsylvania Graduate School of Education – *Maritime Tactile Education for Urban Secondary Education Students* – showed increased student attendance, academic development and markedly improved graduation rates at six maritime and public high schools located in Philadelphia, PA and Toledo, OH.

Today's Maritime Academy Charter School, now enrolling grades 2-12, has a total enrollment of 816 students, of which 281 are enrolled in grades 9 through 12. Beyond this, 49% of all students are female and 52% are identified as being Black, Hispanic and/or Asian in heritage. Sulzer adds emphatically, "The K-12 schools have stepped up and produced motivated and educated students. Post-secondary institutions and employers need to do the same and bring these young people into the mix."

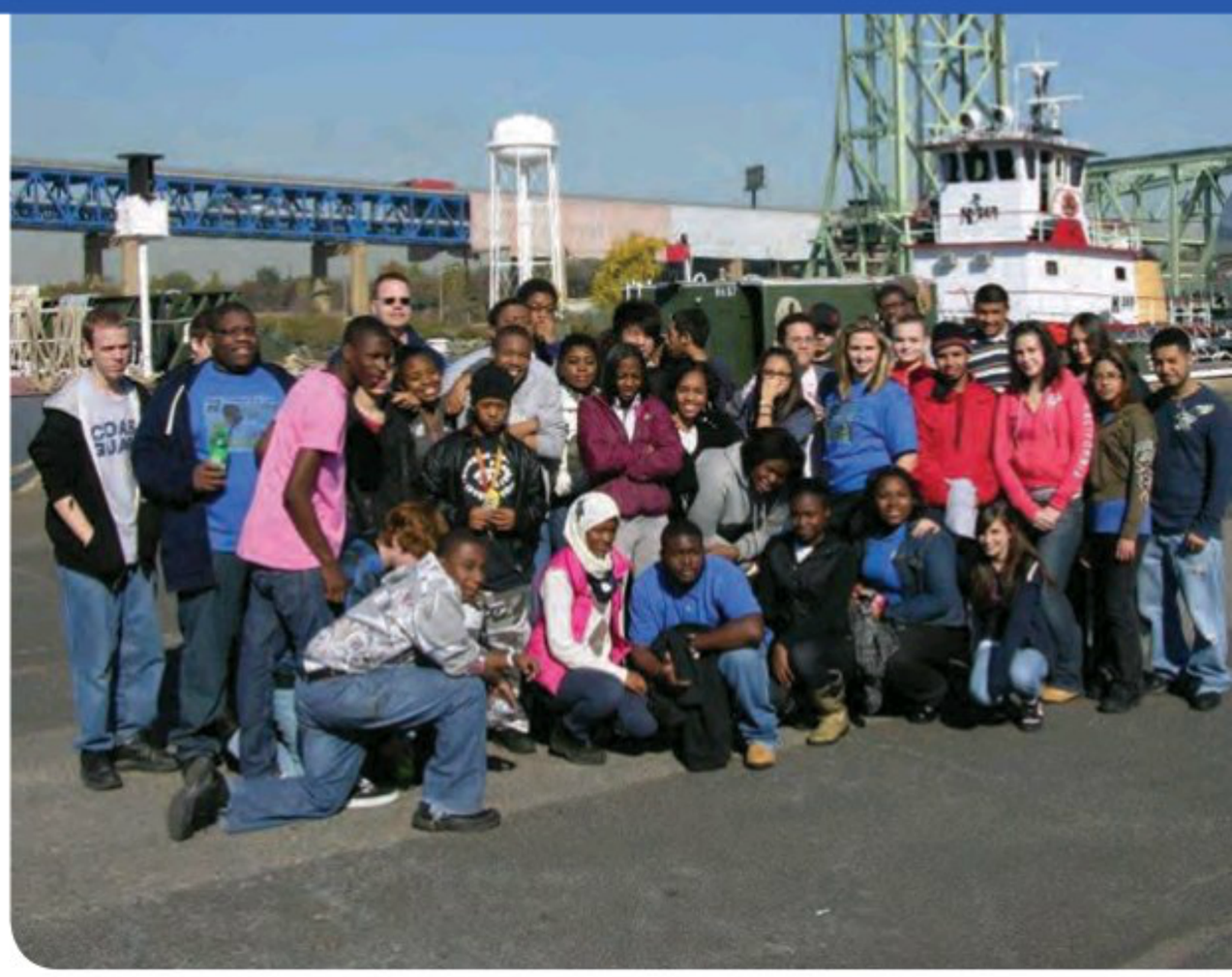
By the Numbers

From 2008 to 2016, the number of K-12 maritime oriented schools in the United States grew from just six, located in four states to 56 spread throughout 16 states. Beyond this, the student population at those schools grew collectively from 1,600 to more than 12,000. Examination of K-12 Maritime Education Statistics based on a 2012 University of Pennsylvania School of Education Case Study conducted by Dr. Sulzer revealed even more encouraging data:

Selected Statistics:
Toledo, Philadelphia Maritime & Public Schools

	Maritime Schools			Public Schools		
	Toledo	Philadelphia	AVG	Toledo	Philadelphia	AVG
Graduation Rate (1)	96%	88%	92%	84%	56%	70%
Test Averages (2)	68%	38%	53%	56%	29%	43%
Attendance (3)	96%	96%	96%	94%	81%	88%
Discipline Issues (4)	20	20	20	108	38	73

Notes:
1.) Based on attending 4 years of high school
2.) % Proficient (state tests / "No Child Left Behind")
3.) Based on the state required number of dates of attendance
4.) Expulsions and Suspensions (per year)



Ladders to Opportunity: Educators and Industry Step up to Assist

The various state maritime academies have been training young men and women to go to sea as officers for generations, tracing their roots back to the 19th century. That said; their populations have been largely homogeneous, with the first women graduating from SUNY Maritime in 1974. The institutions have tried to change their demographics of underserved populations and have made limited progress. RADM Francis McDonald, a 1985 graduate of the Massachusetts Maritime Academy and now its President, has made one his primary goals the introduction of more diversity on his Buzzards Bay campus.

At SUNY Maritime, leadership recognized that more effort was needed to recruit, retain and graduate underrepresented populations of students. In 2013, the college formed a working partnership with the New York Harbor School and the Maritime Academy Charter School in Philadelphia. This evolving relationship involves visits by staff and students between both institutions, the sharing of academic course material and the operation of a Maritime STEM summer camp. Other state maritime academies are starting to develop similar outreach program – the Massachusetts Maritime Academy, for example, runs a Maritime Leadership camp each summer.

Not every maritime career requires a four year academic degree. The growth of maritime programs at community colleges around the country has been steady, with that number now at 10 – and poised for even more growth. In Houston, San Jacinto Community College recently opened a $30 million dollar facility that specifically works with the city's five maritime-oriented high schools and the traditional high schools, as well.

Maritime museums have also begun to work more closely with neighborhood schools in order to understand the specific academic core requirements and tailor their programs accordingly. To that end, the Independence Seaport Museum in Philadelphia runs STEM classes weekly and has redesigned several exhibits to directly address academics in history, science and world commerce. The museum works closely with the Maritime Academy Charter School and maritime business leaders to promote its programs.

Likewise, tall ships have captured the American public's eye since OP SAIL 76. Currently, tall ships of one variety or another can be found in most of our major port cities. Now aware of the increasing number of maritime K-12 schools around the country, they have begun to introduce academics for their programs afloat and at sea, linking to common core academic requirements. In particular, the tall ship *Niagra* in Erie, PA offers two week programs that cater to maritime high schools around the country. In Wilmington, DE, the tall ship Kalmar Nyckel just completed a new training center, focused on K-12 education.

Industry Professional Organizations

Beginning in 2003, industry organizations such as SOCP, SNAME, the Sea Scouts and many others developed various programs and products to inform and interest youth in the sea and to consider a maritime/marine education and career. Dr. Sulzer serves on a National Committee of the Sea Scouts, and has worked to bring maritime/marine science awareness to this organization. Sulzer says, "A recent survey of Sea Scouts found that 25% had an interest in learning more about post-secondary maritime education and careers. That's the first time leadership ever asked that question."

And then, in 2008, as a result of the maritime education conference held at MITAGS, the Maritime for Primary and Sec-

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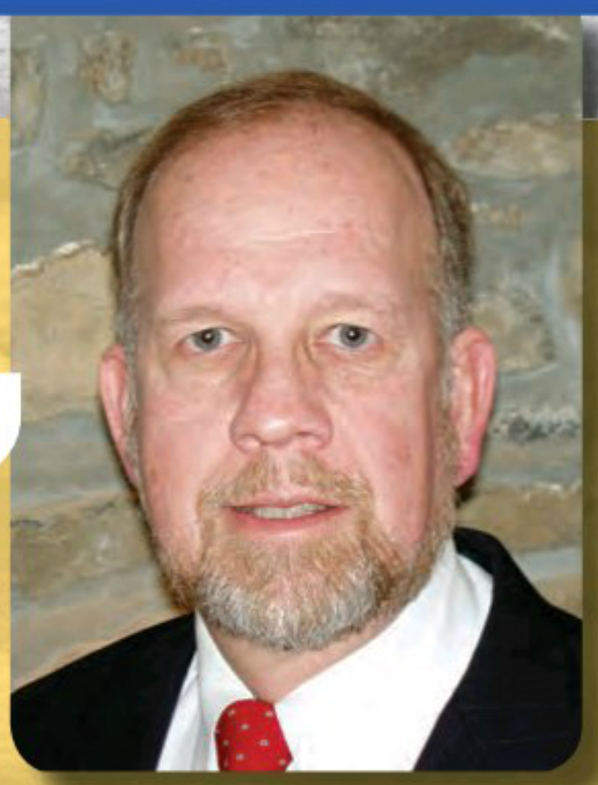
> **– Dr. Art Sulzer, Founder of the Philadelphia-based Maritime Academy Charter School**



ondary Education Coalition (MPSEC) was formed. Led by a chairman and advisory board that works in concert to promote and assist maritime/marine science K-12 education around the country, the coalition is comprised of maritime associations, private and federal maritime industry employers, institutions of higher education, maritime museums, tall ships and K-12 maritime/marine science schools.

The organization's primary goal is to offer all students in America's urban cities the unique opportunity to explore the nation's rich maritime heritage through maritime education and to follow a path to high school graduation and a career in the maritime /marine community. Membership is free and open to all who want to promote maritime education.

Maritime Curriculum (at last)

Sponsored by SOCP, the coalition has developed curriculum entitled, "Introduction to Maritime and Marine Science Education and Careers," a 170-hour course. Suitable for grades 8-12, the curriculum was developed by maritime high school teachers, comes in 19 modules and more importantly, follows the scope and sequence format that the schools already employ. Its modules cover all facets of the industry afloat and ashore, as well as the education pathways to reach them. It is now available to purchase through the SOCP at **www.socp.us**.

Supporting all of that are numerous organizations that sponsor various hands-on student programs such as "Sea Perch" by the Office of Naval Research, "Building to Teach" by the Carpenters Union, and maritime youth programs such as the Sea Scouts, Sea Cadets. Professional organizations such as SNAME, NAMEPA, WISTA, and the Organization of Black Maritime Graduates are available for mentoring and school career presentations. The coalition aims with its new web site, hosted by SUNY Maritime College, to connect all of these with the schools that could benefit from their help. The effort is starting to yield fruit, but the job is anything but done.

Progress and Issues: No time to take the foot off the gas …

Steady progress has been documented. Maritime students have risen to the challenge; many of these inner city schools post-graduation rates in the 90th percentile, as compared other urban schools which languish at graduation rates below 60%. Beyond this, students at the maritime/marine schools have also have also developed their academic proficiency to state requirements. Nevertheless, the socio- economic issues of inner city youth do not fade just because a student has risen to the top of their class. The issue of funding further education, as well as providing a smoother path to the next step – education and then gainful employment – remains largely unsolved.

With a true maritime curriculum in place, inner city students – and beyond – will now begin to advance to the point of that first entry level position or, in other situations, the college experience offered by the traditional maritime academies. But, the connection between K-12 experiences – now reaching maturity – has to be met by industry commitment to bring the job to fruition.

Firms such as K-Sea, Moran and McAllister have already stepped up to the plate. Others who want to get involved need only find a K-12 maritime school and connect with them by offering internships, scholarships, mentoring and employment. Post-secondary institutions – both academic and technical – need to follow suit and ensure that these students, once enrolled in their programs, have the support and financial resources to complete the program. The future of the North American maritime industry just might hang in the balance. **www.mpsecoalition.org**