



EDITORIAL

“*AMERICA MUST ACT NOW* to preserve its strategic and economic security by capitalizing on its knowledge-based resources, particularly in science and technology, and maintaining the most fertile environment for new and revitalized industries that create well-paying jobs. The building blocks of our economic leadership are wearing away. The challenges that America faces are immense.”

—Norman R. Augustine

Restocking America’s Talent Pool

We have read for years the reports of how poorly K-12 students in the United States compare in international science and mathematical competitions. To remain competitive in the “flat world” and global economy, the nation must maintain its leadership in the field of engineering. One way to do this is to ensure that K-12 students build the requisite skills in math and science so enough of them will feed the talent pool to become excellent engineers and scientists. The world is transforming at the most rapid pace in history. We engineers must get involved with a concerted and concentrated effort.

Can Tau Beta Pi alumni and students join forces to answer the challenge in an influential way? Our Tau Beta Pi leaders and volunteers intend to find out during the next four years.

Nearly a year ago, the national academies received a request from the U.S. Congress to identify and prioritize the top ten actions “that federal policymakers could take to enhance the science and technology enterprise so that the United States can successfully compete, prosper, and be secure in the global community of the 21st century.” A national committee led by **Norman R. Augustine, NJ A ’57**, retired chairman and CEO of Lockheed Martin Corporation, was established by the academies to answer the request. The team included **Dr. C. Daniel Mote Jr., CA A ’59**, **Dr. Lee R. Raymond, WI A ’60**, and **Dr. Charles M. Vest, WV A ’63**, among its 20 distinguished members.

Released last fall, “Rising Above the Gathering Storm,”¹ the committee’s powerful report, presents four recommendations and 20 implementation actions for federal policymakers to support and promote “the human, financial, and knowledge capital necessary for U.S. prosperity.” The carefully crafted recommendations are:

1. Increase America’s talent pool by vastly improving K-12 science and mathematics education.
2. Sustain and strengthen the nation’s traditional commitment to long-term research that has the potential to be transformational to maintain the flow of new ideas that fuel the economy, provide security, and enhance the quality of life.
3. Make the U.S. the most attractive setting in which to study and perform research so that we can develop, recruit, and retain the best and brightest students, scientists, and engineers from within the U.S. and throughout the world.
4. Ensure that the U.S. is the premiere place in the world to innovate; invest in downstream activities such as manufacturing and marketing; and create high-paying jobs based on innovation by such actions as modernizing the patent system, realigning tax policies to encourage innovation, and ensuring affordable broadband access.

How can Tau Beta Pi members become involved in this process? Where do we fit? Can we help to restock America’s pool of technically capable high-school graduates? It seems that Tau Bates could be extremely useful in enhancing K-12 science and mathematics education. We already know that real project-based hands-on learning will stimulate and reinforce interest in math and science.² Many of our 10,000 student members at our 230 collegiate chapters might be able to coordinate with teachers and visit classrooms to lead simple hands-on experiments. Perhaps 1,000 alumni could also volunteer in their local school districts. Student Tau Bates who participate in similar projects usually find their experiences immensely rewarding.

The Executive Council-elect is taking steps to develop a Tau Beta Pi K-12 Educational Initiative. The goal is to create and implement a comprehensive hands-on learning program, delivered by Tau Beta Pi student members, that positively impacts K-12 students, parents, and teachers and produces measurable results. One potential model under evaluation is based upon a program in the state of Florida that is reaching 337 teachers and impacting 55,000 young students per year after only four years of effort (www.gatortrax.eng.ufl.edu).³ To help support the efforts of our chapters, the new K-12 initiative could potentially incorporate the trained-volunteer facilitator model of our successful Tau Beta Pi Engineering Futures Program that sends approximately 50 alumnus members around the nation to present hundreds of sessions to engineering students on university campuses each academic year. The Executive Council has budgeted funds to support the formulation of the initiative during 2006-07, as needed. Our active collegiate chapters can continue their existing exemplary efforts to challenge youngsters and high-schoolers while the initiative develops, and chapter members will also be able to influence the strategy for the Association. Volunteers to help support this effort will be needed, and more information will become available at www.tbp.org.

This collaborative effort can be the right initiative at the right time. Please do something to help your students in your schools if you can (see www.engineeringk12.org).⁴ Please read the executive summary of the academies’ report (fermat.nap.edu/catalog/11463.html). Complacency is not an option.

J.D.F.

References

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2. Brown, A.S., “Engineering in K-12 Classrooms: A Revolution in Education,” THE BENT of Tau Beta Pi, Fall 2005.
3. Engineering Gatortrax, University of Florida, www.gatortrax.eng.ufl.edu.
4. ASEE EngineeringK12 Center, www.engineeringk12.org.