

From: Ken Berg <bergk@cox.net>  
To: nnmi\_comments <nnmi\_comments@nist.gov>  
Cc:  
Date: Mon, 10 Sep 2012 12:44:01 -0400  
Subject:

Dear Dr. Schen:

Attached are letter and schematic reflecting in two pages, two significant recommendations:

1. Industry should ramp up their collaboration with education to graduate more people having advanced skills.
2. A survey should be done to expose all the elements of education, along with a plan to coordinate and continuously improve them.

The recommendations are inter-dependent. Industry can't 'buy-in' unless there is a credible proposal for improving education that goes back to first principles. The following notes amplify the process. It can be expedited simply by making direct contact with senior officers in industry to gain their tacit agreement to consider an escalated collaboration with education--dependent on the presentation of a credible plan offering continuous improvement of the system and its results.

Yours truly,

Kenneth L. (Ken) Berg

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**From:** Ken Berg [<mailto:bergk@cox.net>]  
**Sent:** Wednesday, August 29, 2012 9:40 AM  
**To:** 'michael.schen@nist.gov'  
**Subject:** re-send

Michael: this is re-send. Original got bounced. ken

Dear Michael:

I would like to talk about this draft before submitting it in response to your AMNPO RFI. I'll give you a call next week. I'd like to know if all responses to your RFI will be posted to invite commentary and argument? This is important to advancement of knowledgeable and motivated learners for advanced manufacturing--and industry in general. I'll suggest a low-cost, fast response--high results program that only requires industry to ramp up their collaboration with teachers and learners, while government gives off-setting tax credits to them. Probably, retirees, guided by current staff, will be best suited to convey industry needs and the attitudes for meeting an unknown and uncertain future to the classrooms of the nation.

Here in Orange County, we're into the third year of a manufacturing program initiated by Professor Michael McCarthy at the University of California, Irvine (UCI) in collaboration with other universities, colleges, high-schools, industry, private entrepreneurs and inventors. The program embraces all of the elements of industry, from design through manufacturing, testing, competition and continuous competitive improvement of materials, process ... and results! In other words, we're doing now what the Additive Pilot is gearing up to do, while the other 15 research Institutes are years away. I want to suggest to AMNPO and AMP that industry come forward now, and accelerate their participation with the schools at levels that will support the creation of a more knowledgeable and competitive 'workforce', whether for the factory floor, or the executive suites of the nation. It's in their hands! Teachers and Learners are in place—restrained only by the gulf between the academic classroom and the real world of industry.

The solution I want to propose is to put 'school' in place of 'institute' and that we create not 15, but an infinite number of facilities composed of schools supported, mentored and funded by industry, and having digital systems to draw the Lessons Learned of valuable programs, for wide

dissemination--rationalizing the needs of industry within an interactive, one-on-one teacher-learner relationship, and demonstrating the results of the resources (teachers and learners) meeting those needs, all to be subject to continuous improvement monitored by all concerned. Thus, each facility is set for Research, Development and Implementation of Competitive Strategies and Tactics meeting the aims of the Gathering Storm report--reducing government involvement while generating gifted and talented people for continuous improvement of our technological and social well-being.

You folks are in position to encourage the manufacturing community into much-accelerated collaborations with teachers and learners. What will it take to help make this happen?

Cordially ...

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<http://academia.edu>.

<http://www.usc.edu/libraries/archives/arc/lasubject/records/id277.html>.

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<http://smittyandtheprofessor.com/>

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**Kenneth L. Berg-archivist**

Who's Who in the West 1998, Honorary member 4<sup>th</sup> Armored Division, Associate member Veterans of the Battle of the Bulge, biographer of Smoky Joe Wood, Leo Goossen, Dale Drake, John Drake, Lou Meyer and other notables, Burgess Shale Foundation, East Kootenay Childhood Foundation  
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<http://www.usc.edu/libraries/archives/arc/lasubject/records/id277.html>.

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3 September 2012

Friends and colleagues:

Subject: 'Gathering Storm' and STEM Competitiveness

It is timely to take stock of our situation and create an engineered network of the issues confronting us along with a plan for dealing with them. In the past I have suggested this be done as a taxonomy. New friends at Quadrigy Inc. created the 'Socrates' program for government programs--displaying the full scope of issues involved and providing the wherewithal for improving their performance. It is suggested that this program, now called the TechnologyspaceMap® for Automated Innovation be considered as an essential step on the pathway for creating new doctrine for education, observing the needs of industry, while inducing a competitive work ethic for continuous improvement in learners. Attached schematic highlights some issues to be resolved ...



1. Gathering Storm report, 2005 ... Recommendation A: "Increase America's talent pool by vastly improving K-12 science and mathematics education".
2. Advanced manufacturing and materials industries need academically knowledgeable talent having a competitive instinct for continuous improvement. Will industry ramp up their collaboration with education? Will government provide tax set off incentives?
3. K-12 learners and teachers--when linked to community colleges and universities in competitions with energy-conserving vehicles, such as the Performance Engineering Competitions of the University of California, Irvine--suddenly become aware that academic knowledge, when implemented in competition, is relevant to their individual and team achievement and satisfaction. The Lessons Learned from these competitions can be digitized for wide dissemination as interactive, one-on-one teacher/learner programs uncovering the genius of the gifted and all other learners; and then become a closed loop in which learners feed back their knowledge and experiences into industry, education and society for continuous improvement.
4. The Executive Office of the President and other federal, state, county and regional agencies all have a part to play in supporting industry in conveying their present and future needs for talent, into our education system. Commissioning a TechMap for education would provide an overview and context not previously seen. I hope that you will support Quadrigy's proposal. It will benefit education and industry.

*Kenneth L. Berg*

Schematic suggesting elements to be brought into alignment for improved academic teaching, learning and competitive implementation of knowledge. It is suggested that a taxonomy of issues be created and that industry ramp up their collaboration with education to deal with the issues and that government support industry in their efforts.

Kenneth L. (Ken) Berg ... Mission Viejo, California, (949) 830 6888 ... 3 September 2012

