

# QED NEWS

Quality in Education K-12 • Higher Education • Workforce Development



Editor: Mandy Ellis, M.A.

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VISION STATEMENT: Shaping the Future Through Quality in Education and Professional Development

QEDNews is the ASQ Education Division's newsletter for members with articles contributed by members.  
It is published twice a year, in the fall and spring.



## Message From the Chair

by Fernando F. Padró, Ph.D.

A new year began with a new leadership team in place. We have an excellent executive leadership team with Belinda Chavez as Chair-Elect, Ardith Beitel as Treasurer, and Norma Simons as Secretary. Their experience and interest in

what the Division does ensure that things are done well and in a timely manner. I want to personally thank each one of them for already stepping “up to the plate” with initiatives and making sure that I don’t make too many mistakes.

Continued participation by the Past Chair, Cindy Veenstra, ensures a smooth transition and continuity of efforts. Her organizational skills put the Division on an excellent footing to continue what we are doing to provide maximum benefit to our members while reducing the workload among the leadership team. I want to personally thank her for all her efforts past and present because she has enabled the Division to increase its presence in the primary/secondary and tertiary/higher education sectors.

An expanded leadership team ensures that key activities are supported and all three constituencies are represented properly and more members are involved in the Division’s decision-making processes. They deserve all the credit for the good job we are continuing to do.

The Division is doing well, but there is more to be done to improve on what we can provide our members. There are two areas in particular on which we need to concentrate. The first is revisiting our support of workforce development. The second is continuing to find ways to recognize and support our international members (without breaking the budget).

The Division’s approach to managing the three sectors (primary/secondary, tertiary/higher education, and workforce development) as interrelated is sound because all three sectors have one thing in common: learning; thus, they are complementary in many ways (Garavan, 1997). There is the possibility, however, that we may be losing some of our focus on the workforce development sector because of our efforts to increase and expand visibility and impact in the primary/secondary and tertiary/higher education sectors. Our challenge in the workforce development arena is identifying the interconnections—those areas where linkage is possible—to maximize opportunities among the three. The Division has to ensure that its activities and products (e.g. webinars) are of sufficient scope and value to meet the needs of our members who are interested in this sector. Value in this sector must be based on improving human capital as a means of establishing and maintaining a competitive advantage and accelerating the realization of

benefits accrued from training (Salas et al., 2012; Aguinis & Kraiger, 2009). We need input from the membership in identifying and implementing activities that will be useful to our members interested in workforce development issues.

Identifying ways of doing more for international members has been an ongoing concern. There have been times when international members and sections have asked for our assistance, but usually in the form of funds for professional development activities. Unfortunately, this is a limiting factor because the Education Division is a small division within ASQ and does not generate the revenue necessary to provide that type of support. This area is of particular importance to me because I now live and work in Australia, thus technically making an international member the Chair of the Division. Now we need more international members involved with the leadership team. It’s not all about the funding limitation; it’s about identifying and supporting various issues that may be different from those dealt with in the United States. It’s about looking at education from an international perspective and seeing how the Division can serve as a voice that supports the efforts of members in their countries or geographical regions.

Supporting the international membership also means improving our networking with other divisions, sections, and elements within ASQ to generate partnership and create opportunities by coming together to harness the resources within the whole of ASQ. The Division has been in this position before and was not successful when we could have had the opportunity to support an entire region with some of its higher education quality assurance needs. This does not mean it cannot happen again if we are able to leverage interest and opportunity.

Becoming a listened-to voice in education still presents many obstacles to the Division, more so in the United States than abroad (in my opinion, this is our greatest opportunity). The leadership team cannot do it alone. I invite you to share your thoughts and submit ideas on how we can become a strong voice in the mainstream of the primary/secondary education, tertiary/higher education, and workforce development sectors. It’s you that gives us the needed environmental scanning to become a recognized voice of quality in these three arenas.

### References:

1. H. Aguinis and K. Kraiger, “Development for Individuals and Teams, Organizations, and Society,” *Annual Review of Psychology*, 2009, Vol. 60, pp. 451-474.
2. T. N. Garavan, “Training, Development, Education, and Learning: Different or the Same?” *Journal of European Industrial Training*, 1997, Vol. 21, No. 2, pp. 39-50.
3. E. Salas, S.I. Tannenbaum, K. Kraiger, and K.A. Smith-Jentsch, “The Science of Training and Development in Organizations: What Matters in Practice,” *Association for Psychological Science*, 2012, Vol. 13, No. 2, pp. 74-101.

# ASQ Advancing the STEM Agenda Conference to be Held in Grand Rapids June 3-4

by Cindy Veenstra, Ph.D.

Conference Website: <http://asq.org/conferences/stem-agenda/>

Join us at Grand Valley State University's (GVSU) in Grand Rapids, MI, June 3-4 for the best Advancing the STEM Agenda Conference yet! This is the third year the ASQ Education Division has sponsored the conference to effect changes in the paradigms on STEM education and collaboration. This year the conference is sponsored with the GVSU Seymour and Esther Padnos College of Engineering and Computing, with a theme of "Collaboration with Industry on STEM Education." STEM (science, technology, engineering, and math) educators as well as industry collaborators and leaders will meet to discuss advancing the STEM agenda to improve STEM education and increase the number of engineers and scientists in the workplace. This conference is particularly significant as the leading ASQ event for connecting the ASQ community with the urgent issues of improving the STEM pipeline and the transition of graduates from college to careers in quality, science, or engineering. The President's Council of Advisors on Science and Technology (PCAST) has predicted a need for one million more STEM professionals than we are currently graduating in the next decade (PCAST, 2012). The only way to address this need is to have more effective collaboration between industry and both schools and universities.

This conference is a very reasonably priced, made available by the volunteer efforts of both the Education Division and GVSU and collaboration with GVSU. The Grand Rapids Section is helping get the word out in the Grand Rapids area and will host a hospitality table on June 3.

Attendee Rates	Regular Rate
Conference attendee	\$225.00
Students	\$100.00
Workshop (June 3, 2013)	\$25.00

We are particularly thankful to GVSU and wish to report to our members about the outstanding GVSU conference facilities we will be using—first class! Since the conference is in June, it is an ideal time to combine our conference with a vacation in West Michigan.

## GVSU Recognized as an Exemplar of "Real World Engineering Education"

Significantly, GVSU's School of Engineering within the Seymour and Esther Padnos College of Engineering and Computing was recognized in 2012 by the National Academy of Engineering as an exemplar of "Real World Engineering Education" for its co-op and capstone programs. With the programs that led to this recognition and GVSU's focus on continuous improvement (see the current issue of *Quality Approaches in Higher Education*), the campus is an ideal location to discuss STEM education. The conference has a strong focus on partnerships for co-ops, internships, senior capstone projects, and K-12 outreach. This innovative conference will feature two panel discussions with national leaders on improving strategies for effective and successful collaboration between industry and education—one from the perspective of industry and the other from the perspective of universities.

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## Note From the Editor

by Mandy Ellis, M.A.

It is my privilege to join the ASQ Education Division as newsletter editor. It is my goal to ensure that each newsletter shares the best practices in quality education. I wish to extend my gratitude to those contributing authors and experts in the continuous improvement journey. *QEDNews* provides a platform to share the newest information from the ASQ Education Division and share best practices and research that supports our guiding philosophy and mission. I invite you to read, learn, continuously improve!

The banner features the ASQ logo on the left with the tagline "The Global Voice of Quality". To the right, it reads "2013 ASQ STEM AGENDA CONFERENCE". Below this, it states "Collaboration with Industry on STEM Education" and "Grand Valley State University June 3 - 4, 2013 | Grand Rapids, MI". A prominent green button at the bottom says "REGISTER NOW".



STEM Agenda Conference continued from page 3

We invite all stakeholders to attend the conference, including employers who can really influence progress by providing more co-op and internship experiences and significant capstone projects along with the current K-12 outreach activities that have been so successful. Come to the conference and hear the latest thoughts on industry-sponsored experiential learning and leave with the latest ideas and approaches for working with students on co-ops, internships, and senior projects for their successful transition to industry.

### Keynotes

The keynotes will include the following nationally-known speakers:

- **Paul D. Plotkowi**, dean of the Seymour and Esther Padnos College of Engineering and Computing, GVSU.
- **Glenn Walters**, deputy cabinet secretary at New Mexico Higher Education Department and a past keynote speaker at WCQI.
- **Reginald McGregor**, manager of engineering employee development R & T Strategy at Rolls-Royce Corporation (RRC) in Indianapolis, IN.
- **Carrie Houtman**, regulatory affairs leader at Dow Chemical, who recently led Dow's STEM education initiatives and represented Dow on President Obama's Advanced Manufacturing Partnership.

The panel discussions will include STEM leaders from NASA, JR Automation, GE, and The Right Place, Inc. and include faculty from GVSU and the University of Cincinnati. International co-op experiences will be included in the discussions. The conference will advance the STEM workforce with discussions on STEM partnerships, preparing STEM teachers, the challenges of helping students be college-ready in STEM, K-12 STEM outreach, the STEM gap and representation, and improving STEM teaching in higher education.

Peer-reviewed conference papers from STEM educators and collaborators will be presented. The breakout sessions will also feature a special session on senior projects with Grand Rapids area employers.

In addition, the Advancing the STEM Agenda conference will include four workshops:

- **Improving Graduation Rates at a Comprehensive University: A Case Study of Institutional Alignment and Process Improvement in Higher Education**
- **How to Make Your Entrepreneurial Dreams a Reality**
- **Developing Highly Effective Industry Partnerships: Co-op to Capstone Courses**
- **Implementing and Assessing STEM Learning Communities**

As a special note, the "How to make your entrepreneurial dreams a reality" workshop will discuss "STEM and Entrepreneurship: Problems, Discovery, Inventions, Opportunity!" Workshop leaders will include **Dr. Thomas Zurbuchen**, who is the founding director of the Center for Entrepreneurship, in the College of Engineering at the University of Michigan. He will be joined by **Kevin McCurren**, executive director of the Center for Entrepreneurship & Innovation at GVSU, Seidman College of Business and **Richard Sheridan**, entrepreneur and CEO of Menlo Innovations. STEM is tied closely to entrepreneurial thinking and innovation, and this workshop is sure to be energizing and a fun experience.

We welcome the ASQ Automotive Division as our Gold Sponsor for the conference. If you are interested in contributing to the success of this conference as a sponsor, please visit our exhibitor/support page at [asq.org/conferences/stem-agenda/exhibitors.html](http://asq.org/conferences/stem-agenda/exhibitors.html) or contact Cindy Veenstra or Greg Mazzotta via email at [conference@asqedu.org](mailto:conference@asqedu.org).

For more information, visit the conference website at [asq.org/conferences/stem-agenda/](http://asq.org/conferences/stem-agenda/).

### Reference

1. President's Council of Advisors on Science and Technology (PCAST), Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering and Mathematics, 2012, Washington, D.C.: Office of the President, [http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-engage-to-excel-final\\_feb.pdf](http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-engage-to-excel-final_feb.pdf).

### About the Author



**Cindy P. Veenstra, Ph.D.**, is a conference co-chair for the 2013 Advancing the STEM Agenda Conference. She is the immediate past chair of the Education Division and an ASQ Fellow. She was a co-editor of the Division-sponsored book, *Advancing the STEM Agenda: Quality Improvement Supports STEM*.

## Tribute to Christine Robinson, ASQ Education Division Volunteer

by Cindy Veenstra, Ph.D.

ASQ and the ASQ Education Division has lost a true friend and dedicated volunteer. This article shares some of Chris Robinson's many contributions to ASQ and the Education Division. She passed away on April 6, 2013.

Chris joined ASQ 37 years ago, and she was involved with ASQ in many ways. She was one of the first Certified Managers of Quality and Organizational Excellence and was also a Certified Quality Auditor as well as a Certified Quality Engineer. Most recently, Chris was recognized as a Six Sigma Black Belt by Anderson Packaging.



Chris Robinson

How many people do you know who have an email address that starts with CQE? That was Chris' dedication to ASQ and the ideas of process improvement and quality assurance. I first knew Chris from reading her articles in the *Journal for Quality and Participation*. They were always interesting and informative. I met her for the first time at a NQEC conference in 2010 when our division decided to set up a booth there. We had a brand new booth with a new design, and she had volunteered to have the exhibit sent to her house and then set it up at the conference. I enjoyed talking with her; she was very down to earth and interested in telling visitors about the Education Division.

She was also involved with the *Quality Approaches in Higher Education (QAHE)* as the editorial assistant and contributed significant volunteer hours to setting up the processes for peer-reviewing the papers. She co-authored the article "In-Class Versus Interactive Television Instruction: A Study to Determine Comparability" with David Plum in the Feb. 2012 issue of *QAHE*. She also contributed heavily to the *Workforce Development Brief*.

Chris always had a strong interest in the "voice of the customer." This was evident from her articles. She liked doing surveys and conducted our 2011 membership survey. In 2011, she became interested in Kano analysis and applied it to customer satisfaction of our *QAHE* journal with a survey to our membership. For this innovative research, the division presented her with a 2012 award of special merit, which was in the shape of a light bulb that lights up, exemplifying innovation. That symbolism seemed very appropriate because Chris showed us the way in quality innovation.

**Note:** Chris Robinson is sponsored by the Division for the nomination of ASQ Fellow.

### About the Author

**Cindy Veenstra, Ph.D.**, is immediate past chair of the Education Division and an ASQ Fellow.

## Workforce Development (WFD) Committee

by Arthur (Art) Johnson, M.S.

As your new Workforce Development Chair, I would like to provide a brief summary of my background. I worked in the auto industry for many years and have had a career spanning the fields of engineering, manufacturing, maintenance, quality assurance, and project management.

I changed course in 2004 and began a career as a full-time public school educator. Due to my background, I was hired as a career and technical education teacher. I have worked in the K-12 system as well as in vocational education. I have earned ASQ certification as a Quality Auditor and currently hold certification as a Quality Improvement Associate.

During my time in vocational education, I had a great deal of interaction with employers at the local level. What I heard from them, almost to a person, is that they can't find qualified workers. One way to improve this situation is to gather specifics from employers as to what their needs are and then incorporate this into the education process. This can only happen if there is a collaborative effort between business and our school systems!

We are interested in increasing discussion on workforce development and collaboration between industry and education. Please join with me in supporting our Workforce Development Network by adding events or news of interest to the network. We also are planning on more taped webinars/podcasts. Please send me any suggestions you have for speakers or topics.

I am looking for any and all ideas as well as people to join me on the WFD team. You can contact me at [wfd@asqedu.org](mailto:wfd@asqedu.org).

### About the Author



**Arthur Johnson** is the 2013 Workforce Development Chair and is certified as a Quality Improvement Associate. He has had a career spanning the fields of engineering, manufacturing, maintenance, quality assurance, service and education. Arthur holds a B.S. from Rensselaer Polytechnic Institute and M.S. from Eastern Michigan University.

## Volunteer to Help the Division

Check out opportunities to participate in the Division's activities. We welcome your participation. <http://asq.org/edu/interaction/getinvolved-edu.html>

## Why Would Students Choose an Engineering Education Degree?

by Kenneth Reid, Ph.D.

Ohio Northern University introduced a new bachelor of science program in engineering education in 2011. Graduates of the program earn a bachelor's degree in engineering and meet the requirements to obtain licensure as a high school or adult and young adolescent (AYA) mathematics teacher. The engineering plan of study is similar to a general or interdisciplinary engineering degree offered at a few universities. An initial cohort of four students began in the fall of 2011, with a new cohort of six in 2012. Additionally, two students transferred into the program for a total of 12 students in the second year.

One recurring question is: Why would a student choose this major when a typical, discipline-specific major would offer, on average, a much higher salary than a secondary school teacher? Clearly, students who select engineering as their field of study motivated by potential financial gain would tend to be attracted to other, more typical disciplines within engineering. Students who might have selected a more typical major within education may seek a degree from within engineering for the ability to practice engineering as well as teach.

### Motivation to Study Engineering

A report from The Center for Advancement of Engineering Education (CAEE) found that students were motivated to study engineering by (in order):

1. Intrinsic (psychological) factors
2. Intrinsic (behavioral) factors
3. Social good
4. Financial
5. Influence of mentors
6. Influence of parents.

Further, students who were motivated to study engineering for their intrinsic reward were more likely to persist. These findings indicate that students who may be more driven toward engineering for intrinsic factors and/or the desire “to do good for society” often select engineering for a field of study; that desire for future financial gain is not the primary motive of many students entering engineering. Students entering the engineering education program were asked a series of questions to find their motivation for selecting this degree program.

Each of the students said that they specifically had planned to major in engineering while in high school, and each of the respondents said that they had some interest in teaching or working with children in some aspect. The two students in the new cohort both said that they chose this program after discovering the possibility of an engineering education degree in four years.

One student in the first cohort said:

“I had always enjoyed the idea of being a teacher, but I was unsure which subject I would end up getting a licensure for. My Calculus teacher served as one of my biggest influences for wanting to teach math, and my parents were receptive (of) that goal. This surge of inspiration didn't hit until after I had toured colleges for engineering. Once I heard about the new program, it seemed like the perfect combination of my interests that I just couldn't ignore.”

The strength of the degree program with foundations soundly in both areas seems to be an important factor—more than simply the novelty of a new, unique, or innovative degree program. Each student said that his/she selected engineering education because it bridged the gap or brought the two interests together. Further, students said that the fact that the major was new and unique had no influence in their decision; in fact, two specifically suggested that students should not to choose a unique major simply because it was unique. While the sample size is small, it is rewarding to see students reporting that they selected the major on its merits rather than its novelty.

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Ohio Northern University engineering education major Meghan Letizia tests the robot arm designed by her team in introduction to engineering course.

Why Students Choose Engineering continued from page 6

One student discusses the advantages of being one of the first in an innovative major:

“So far, after my first semester, I got to participate in a STEM field day at an elementary school, was on the front page of the University website, and authored a paper about my major, was asked and interviewed on television about a scholarship I received and what engineering education is, and I am co-authoring some conference papers. The professors really care about you and go out of their way to make these the best four years of your lives and who wouldn't want that. We only started with four students in this major and it is growing bigger and bigger each year. Now we are up to about 12 and are planning on getting larger and showing the world what we can do.”

Another said:

“I wasn't expecting graduate schools to take such interest in the engineering education program and the students. So far, what I've experienced so far has exceeded my expectations.”

Overall, we found that students who formed the initial two cohorts of a brand new plan of study in engineering education had some similar and useful experiences and paths toward their selection of majors. Each had interest in both areas prior to college and found the major fit their interests rather than constructing a new vision based on the uniqueness of the major itself. This can be an important finding for universities planning innovative degree programs. It may be important to establish an interest in the program based on its merits rather than simply for its novelty. Finally, the vision for the future is a combination of working as a practicing engineer, a K-12 teacher, and/or graduate school.

#### About the Author



**Kenneth Reid, Ph.D.** is the director of first-year engineering, program director of engineering education, and an associate professor in electrical and computer engineering and computer science at Ohio Northern University. He is active in engineering within K-12, having served for ten years on the IEEE-USA Precollege Education

Committee. He co-developed “The Tsunami Model Eliciting Activity,” which was awarded Best Middle School Curriculum by the Engineering Education Service Center in 2009. His research interests include success in first-year engineering and engineering in K-12. His email address is [k-reid@onu.edu](mailto:k-reid@onu.edu).

## Quick, Relevant Networking

by David Davis, M.S.

In the time you spend waiting for the barista to make your drink, you could engage in meaningful networking, seek expert advice on a tough problem, find a lead on grant funding, mentor the next generation of quality practitioners, or begin framing out your next research project. The Education Division's social media spaces are as close as your smart phone and are a valuable professional resource.

**ASQ Discussion Boards:** The Education and *Quality in Higher Education* discussion boards supplement the Division's formal publications. In the discussion boards, readers can find informal information and recent updates on Division conferences and events, links to outside articles about quality issues in education, and grant announcements. Those interested in sharing knowledge and experience can find questions on everything from statistical methods to the best graduate programs for aspiring quality practitioners to industry best practices. The discussion boards also create a venue for members and guests to get career advice or to seek or post jobs.

**Bookmark the board's main page on your phone:**

<http://community.asq.org/forums>

**LinkedIn:** With its broad user base, LinkedIn creates an opportunity to extend your quality Q&A to those outside of ASQ and even to those who can offer insights from other fields. At the same time, you can advertise ASQ's Education Division to the rest of your professional network, as well as to prospective clients, employers, and research collaborators. The Education Division's LinkedIn presence currently focuses on the theme, *Advancing the STEM Agenda*, and is frequented by professionals from industry, academia, and government.

Take a moment to join the discussion at: <http://goo.gl/NtIXp>

Like with other social media tools, the value of these sites increases exponentially with increased use. The more people use and create quality content, the more other Division members and guests get out of it, thus attracting more quality content. Bookmark the pages, start helping to shape the community, and boost your career today.

#### About the Author

**David Davis, CMQ/OE, PMP**, is a team lead at New West Technologies, a consulting firm specializing in engineering and technical services, program and grant management, and legislative and regulatory analysis. He holds a master's degree in management from the University of Maryland University College in Adelphi.

## ASQ World Conference Held May 5-8 in Indianapolis

ASQ's World Conference on Quality and Improvement was held on May 5-8 at the Indiana Convention Center in Indianapolis, IN. The conference offered an exceptional opportunity for educators, legislators, business executives, and anyone else interested in learning more about quality-focused topics to meet and exchange ideas about implementing quality initiatives in education and other sectors. This year's theme was "Managing Change." The following is from this year's program: "Change is ever-present, unpredictable, and occurring at an ever-increasing pace. In the face of this change, the 2013 World Conference on Quality and Improvement offers both respite and guidance in the navigation of today's changing world. The conference offers a forum of ideas and an international network of thought leaders, experts, and peers eager to share the proven results achieved through quality. ASQ invites you to share in its efforts to demonstrate the impact that quality can have on our ability to navigate today's changing world."

On Sunday, May 5, the Education Division held its WCQI membership meeting. We enjoyed meeting many of you at our exhibit at WCQI.

## 2011-2012 Business Plan Performance

by Cindy P. Veenstra, Ph.D.

For the 18-month business cycle from July 2011 through December 2012, the Education Division met 16 of its 21 goals, with an overall performance of percent accomplished of 110 percent. ASQ expects at least 75 percent performance for a quality division.

We achieved our goals to support the global transformation and the social responsibility agenda. In our quest to retain and increase membership, we exceeded our goal in sending emails to members and keeping them informed. We did not, however, meet our five percent increase in membership; we believe this is due to the cost of full membership for educators. As a new approach, we are encouraging new members to join as associate members for under \$100, a level which provides most publications online. We also have a new "[join this division](#)" page which is more user-friendly. With this webpage and the networking we do at our three conferences, we expect membership to increase. We expected to double our student membership with the new student membership, which includes one division. However, this change in the student membership has been slow; we expect to see more student members in the second half of 2013 when the membership with a division option will become active. The Education Division proposed the student membership including one division, which was approved by Division Affairs Council (DAC) in November 2011, and then approved by the ASQ Board of Directors in November 2012.

We had three goals for our peer-reviewed journal, *Quality Approaches in Higher Education*; we accomplished two of them, publishing two issues and recruiting five reviewers. However, we had a goal of expanding our second issue of 2012 to five articles instead of three. Starting in 2012, we are accepting fewer articles and rejecting lower quality manuscripts. We expect to see an increase in articles in late 2013. In the area of workforce development, the two planned issues of the *Workforce Development Brief* were published; and the webinars were finished and a complete success, but we could not publish the desk reference due to lack of volunteers. We also struggled with an over-optimistic goal of 100 members in the Workforce Development network (ASQ communities), achieving only 27 members despite articles in our publications and emails about the network. The conclusion is that we have fewer members interested in the network than we had projected.

We accomplished our goals of leaders attending DAC meetings, conducting membership surveys, and significantly, having exhibits at all three of the conferences we support.

For the 2013 business cycle, we have developed a similar business plan with support for three conferences: the Division's Advancing the STEM Agenda Conference, the World Conference on Quality and Improvement, and the National Quality Education Conference (in its 21st year).

If you would like a copy of the business plan, feel free to contact our secretary, Norma Simons.

### *About the Author*

**Cindy P. Veenstra, Ph.D.** is the immediate past chair of the Division and an ASQ Fellow.

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## Update on 2013 National Quality Education Conference

by Julie Furst-Bowe, Ed.D.

*Creativity and Innovation: Keys to 21st Century Learning* is the theme of ASQ's annual National Quality Education Conference. The conference will be held in Milwaukee on November 17 and 18, 2013. Focus areas for the 2013 conference include innovation through shared leadership, process management to improve services and learning, creative collaboration and common lesson planning, common core standards and student learning, improved achievement through differentiated instruction models, and scholarship of teaching and learning (SOTL). Currently papers are being reviewed for several higher education sessions and include topics such as the application of Baldrige in higher education, the results of SOTL projects, and the use of quality tools and survey instruments in classrooms and administrative areas. The conference will include renowned keynote speakers, concurrent sessions and half-day preconference workshops, networking opportunities, and the Education Team Excellence Recognition awards.

For more information on the event, please see <http://nqec.asq.org/index.html>.

### About the Author

**Julie Furst-Bowe, Ed.D.** is the chancellor of the University of Southern Illinois Edwardsville and the higher education chair. She is leading the effort to bring more higher education sessions to NQEC. The NQEC is in its 21<sup>st</sup> year.



Education Division leaders James Teeple, Norma Simons and Cindy Veenstra at the NQEC booth.



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## Fall 2012 Survey Results

by Cindy Veenstra, Ph.D.

The Division conducted a "Voice of the Customer" survey in October 2012. An email message was distributed twice over a two-week period to 903 members who had not opted out of receiving emails. We received 59 responses (6.6 percent).

Respondents were asked: "Overall, how satisfied were you with the division?" with a possible reply of very satisfied, satisfied, neutral (neither satisfied nor dissatisfied), dissatisfied, or very dissatisfied. We had only two percent dissatisfied compared to six percent in 2011 and four percent in 2011. We had 64 percent satisfied (e.g., very satisfied or satisfied), compared to 74 percent in 2012 and 65 percent in 2011. It is difficult to assess the decrease with the small response rate. Some patterns of less satisfaction emerged, however.

We found that the highest satisfied groups are members of more than five years, K-12 members, members in industry, members who have earned master's degrees, and those who network at ASQ conferences. Least satisfied groups are members of one to five years, higher education members, or members whose

highest degree is a bachelor's degree. The less satisfaction of higher education members appears related to their more critical opinions of our publications. In the case of the *Quality Approaches in Higher Education*, we have a concentrated effort to improve the quality of the journal. The editorial team decided to offer an annual best paper award, which we hope will attract even more high quality manuscripts.

With the survey questions we were able to determine that a higher percent of the dissatisfied members were those who did not attend any ASQ conferences. Then the question becomes, how do we engage these members? We were pleased to discover that 100 percent of our members who attended the STEM conference and WCQI conference were satisfied with the Division.

### Ratings of Publications

As shown in Figure 1, the ratings of our two Division-sponsored publications continued to increase and stood at 3.7 for the *Quality Approaches in Higher Education* and 3.55 for the *Workforce Development Brief*.

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Survey Results continued from page 9

In our efforts to increase membership, we were interested in learning the reasons members join. The top two categories (71 percent) were access to the Division’s knowledge through its website, publications, library, and discussion boards (39 percent) and joining ASQ colleagues and educators to champion the pursuit of quality in education (31 percent). This gave us valuable information for future efforts.

We were also interested in finding out member support for topics related to collaboration, K-12 outreach, and Baldrige/Six Sigma applied to the STEM fields.

We asked “How interested are you in seeing the following topics covered in the Advancing the STEM Agenda Conference?” Figure 2 shows the results for this inquiry.

We also asked “What topics on collaboration between industry and education do you support for future Division activities?” and Figure 3 shows this responses.

These responses confirmed our plans for our 3rd annual Advancing the STEM Agenda Conference, and we moved forward on a theme of “Collaboration with Industry on STEM Education.” Responses also encouraged the conference committee to develop two panel discussions on collaboration, particularly focusing on co-ops and internships with industry and educator representatives.

Although we were disappointed with the response rate, we understand members’ frustrations with too many ASQ surveys. We encourage our members, however, to complete our annual survey each fall to voice their opinions and share their needs with the Division.

About the Author

Cindy P. Veenstra, Ph.D. conducted the survey for the Education Division. She is the immediate past chair, an ASQ Fellow, and is passionate about using surveys to query members about member satisfaction.

Figure 1: Average Quality Rating for Division publications (5-point scale, Excellent =5, Poor=1)

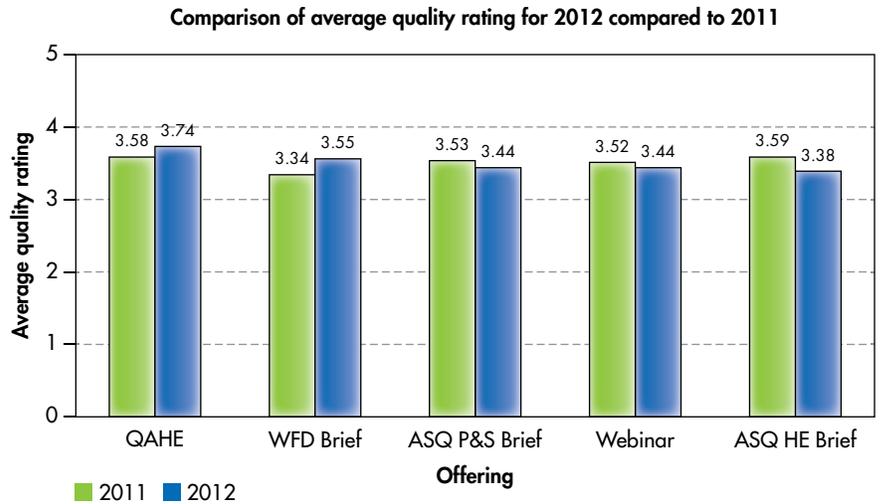


Figure 2: STEM Agenda Conference topics

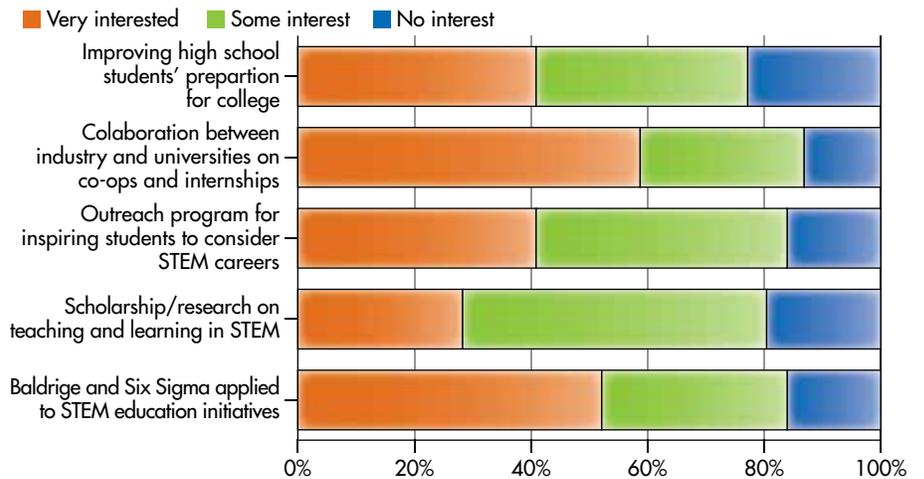
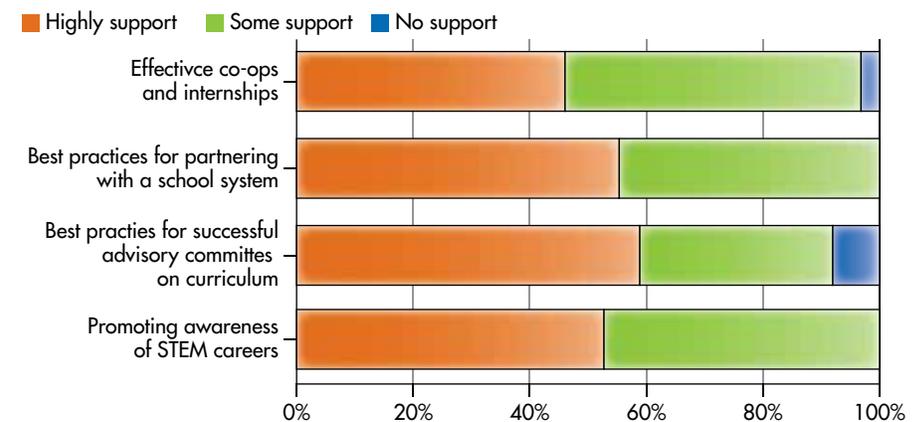


Figure 3: Topics for Division activities



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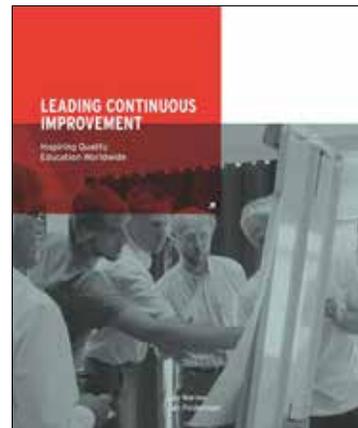
## Leading Continuous Improvement Inspiring Quality Education Worldwide

by Jay Marino, Ph.D. and Jan Polderman, Ph.D.

This e-book is a first-hand look inside American and Dutch schools as they share their continuous improvement journeys and seek to better their educational systems in the 21<sup>st</sup> century. The book chronicles the improvement journeys of three schools in Dunlap, IL, and nine schools in the Netherlands.

These schools have begun the continuous improvement journey and are willing to share their knowledge and experiences. The school teams in this book were working in different countries, in different cultures, and under different circumstances. Collectively, they have chosen the philosophy, approach, process, and the tools of continuous improvement as a way to work together to improve their school systems. They hope that their stories will inspire you to improve the quality of your education system. By working internationally with the continuous improvement model, we are aiming to improve the future of education for our children. The improvement journey continues!

The e-book is available from the Dunlap Schools website: <http://www.dunlapcusd.net/CI/Pages/default.aspx>.



## Education Division's Advancing the STEM Agenda Book

A collection of conference papers from the 2011 Advancing the STEM Agenda Conference. Available through ASQ Quality Press.

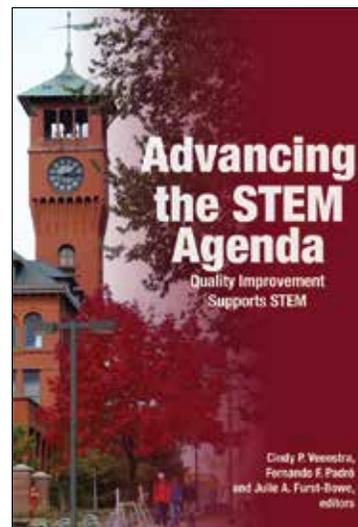
This publication is full of collaborative models, best practices, and advice for teachers, higher education faculty, and human resources personnel on improving the student retention (and thereby increasing the supply of STEM workers). Ideas that will work for both STEM and non-STEM fields are presented. The introduction maps out the current landscape of STEM education and compares the United States to other countries. The last chapter is the conference chairs' summary of what was learned from the conference and working with 36 authors to develop this book. This effort is part of a grassroots effort among educators to help more students be successful in STEM majors and careers.

“Veenstra, Padró, and Furst-Bowe provide a huge contribution to the field of STEM education. We all know the statistics and of the huge need in the area of STEM students and education, but what has been missing are application and success stories backed by research and modeling. The editors have successfully contributed to our need by focusing on collaborative models, building the K-12 pipeline, showing what works at the collegiate level, connecting across gender issues, and illustrating workforce and innovative ideas.”

**John J. Jasinski, Ph.D.**, President, Northwest Missouri State University

“*Advancing the STEM Agenda* provides a broad set of current perspectives that will contribute in many ways to advancing the understanding and enhancement of education in science, education, and engineering. This work is packed with insights from experienced educators from K-12, regional, and research university perspectives and bridges the transition from education to workplace.”

**John Dew, Ed.D.**, Senior Vice Chancellor, Troy University





## Best Paper Award

Beginning in 2013, The *Quality Approaches in Higher Education* editors will announce an annual best paper award to the author(s) of a paper published in *Quality Approaches in Higher Education*. The award will be announced in January of each year for the best paper from the issues of the previous year and will be based on the largest single contribution made to the development or application of quality approaches in higher education. There is no nomination form for this award.

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## QAHE Poster Session at The Ohio State University

*Quality Approaches in Higher Education* associate editors Ted Allen and Cindy Veenstra participated in a poster session at the American Society for Engineering Education (ASEE) North Central regional meeting at The Ohio State University on April 6. Dr. Allen is an associate professor of industrial systems engineering at Ohio State. There was much interest in our peer-reviewed journal and we anticipate the receipt of several high quality manuscripts as a result of the poster session.



QAHE associate editor Ted Allen with the Division's QAHE poster.

In other QAHE news, the editorial team has approved an annual best paper award to be presented in January of each year for the best paper published in QAHE in the previous year. Read our current May issue focused on STEM partnerships at <http://rube.asq.org/edu/2013/05/best-practices/quality-approaches-in-higher-education-vol-4-no-1.pdf>.

## Read a Member's Research on Science Career Motivation

### A Partial Literature Review on the Research of Science Career Motivation

by Victoria J. Fawcett-Adams, M.S.

#### Abstract

Many researchers are looking at factors that motivate students to choose a science career in an attempt to understand the current crisis and decline in a scientific workforce. One component of this literature review examines the findings of several studies spanning six decades for possible impact on the future of K-12 education and indeed STEM education. This paper explores the meaning of various factors related to motivation and a person's decision to pursue a science career. It examines background on the research of motivation, self-efficacy and organization theory related to culture and career choice.

**Editor's note:** Due to the length of Victoria's paper, it is included in our Division's library. Her research is relevant to our focus on STEM education and we encourage you to read her paper. The full paper is available at <http://rube.asq.org/edu/2013/04/career-development/a-partial-literature-review-on-the-research-on-science-career-motivation.pdf>.

#### About the Author

**Victoria J. Fawcett-Adams** is a member of the Education Division's leadership team and is working on her doctorate in education at Shenandoah University.



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## ASQ Education Division's Publications on Quality in Education

The number of ASQ publications on quality in education topics has grown in an effort to respond to the diverse needs of our members from our education sectors K-12, Higher Education, and Workforce Development. Some of these publications are sponsored by the Education Division and some by the ASQ staff. Except for *The Journal for Quality and Participation*, articles from these publications are available in our [online library](#). Note that we have links to these publications on the right-hand side of our [website](#). The table below summarizes our publications.

*QEDNews*, the Division's newsletter, provides information to members on our activities and includes contributed articles on interesting topics related to quality in education. All articles are contributed by Education Division members.

The purpose of our double-blind, peer-reviewed online publication, *Quality Approaches in Higher Education*, is to engage the higher education community and the ASQ Education Division membership in a discussion of topics related to improving quality and identifying best practices in higher education and to expand the literature specific to quality in higher education topics. The [journal web page](#) includes the latest Call for Articles and all the issues. Manuscripts are limited to 4,000 words.

The Division-launched *Workforce Development Brief* is read by members interested in Workforce Development. If you have an article that describes instructional design or delivery, adult learning theory, or other education topics related to workforce

development, please submit it to Deborah Hopen (debhopen@nventure.com). Articles should be 1,000 to 1,200 words and should be accompanied by a brief biography (75-100 words).

The *ASQ Primary and Secondary Education Brief* and *The Higher Education Brief* feature invited articles associated with each issue's particular education-oriented theme. Themes and articles are often suggested by the Division's leadership team. As a special publication, a joint issue on STEM issues is published annually in February to coincide with the celebration of Engineers' Week, since many of our ASQ members are engineers or are in the engineering field.

*The ASQ Journal for Quality and Participation* is a long-standing, peer-reviewed, combination print and online publication that focuses on the people side of quality. Each issue includes the department "Educators' World," which is dedicated to quality in education. This journal is published by ASQ.

In addition, stand-alone articles may be uploaded to the online ASQ Education Division library after a review.

We encourage you to tell us more about your activities and what you are doing to enhance quality at your institutions. An exchange of ideas, via published articles, helps us to further your research and get your ideas out into our learning communities so that we can all profit from your expertise.

We welcome your participation as a contributor and reader!

Publication	Sponsor	Invited/Contributed	Peer-reviewed	Frequency	Editors
<i>QEDNews</i> Division Newsletter	Division	Contributed only by Division members	No	Bi-annual	Mandy Ellis
<i>Quality Approaches in Higher Education</i>	Division	Contributed	Yes	Bi-annual	Fernando Padró
<i>Workforce Development Brief</i>	Division	Contributed and Invited	No	Bi-annual	Deborah Hopen
<i>ASQ Primary and Secondary Education Brief</i>	ASQ Publications	Invited	No	Six issues per year	Megan Schmidt
<i>ASQ Higher Education Brief</i>	ASQ Publications	Invited	No	Six issues per year	Megan Schmidt
<i>The Journal for Quality and Participation</i> , "Educator's World" department	ASQ	Contributed	Yes	Quarterly	Deborah Hopen



Education  
Division

The Global Voice of Quality™

## STRATEGIC “PLAN on a PAGE”



### MISSION

To promote networking worldwide on quality in education, including K-12, Higher Education and Workforce Development.

### VISION

Shaping the future through quality in education and professional development.

### VALUES & BELIEFS

We believe that:

- Members network in different ways.
- Our networking will improve student learning outcomes and achievement at all levels.
- Our networking will improve excellence in our education systems throughout the world.
- Helping low income school systems to achieve student success is part of ASQ’s social responsibility focus.
- Effective collaboration requires trust and mutual respect
- We encourage student members to network with us as they develop a career as a quality educator.
- Continual member feedback through surveys guides improvement.

### GOALS

- To network to improve student success at all levels.
- To use members’ dues effectively.
- To support ASQ’s global and social responsibility initiatives.
- To increase member satisfaction and participation in the Education Division.
- To empower educators to demonstrate 21<sup>st</sup> century leadership and learning.
- To provide publications, conferences and discussion boards for networking on quality in education and to provide targeted networking for each focus area: K-12, Higher Education and Workforce Development.
- To show how quality thinking can improve solutions to current educational challenges such as preparing students as leaders in the 21st century, decreasing the achievement gap, improving STEM education and providing a learning culture in the workforce.

### GUIDING PHILOSOPHY

We think of Quality in Education in two ways:

- "QUALITY in Education" Attaining excellence in the education system by monitoring key performance indicators and performing the strategic and tactical work necessary to meet goals and improve continually.
- "Quality in EDUCATION" Integrating quality leadership, thinking, concepts, and skill areas in K-12, higher education, and workplace curricula and classrooms.

# The Education Division Officers and Committee Chairs

We Welcome Your Email!

## Chair

Fernando F. Padró  
Senior Lecturer (Quality)  
University of Southern Queensland,  
Australia  
[fpadro@msn.com](mailto:fpadro@msn.com)

## Chair-elect

### Membership Co-chair

Belinda Chavez  
NASA Safety Center Audits and  
Assessments Office Operations Manager,  
Honeywell Technology Solutions  
[Chavezb1@people.com](mailto:Chavezb1@people.com)

## Immediate Past Chair

### Nominating Committee Chair

Cindy P. Veenstra  
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[cpveenst@umich.edu](mailto:cpveenst@umich.edu)

## Secretary

Norma Simmons  
President  
Performance Innovation LLC  
[norma@performance.innovation.com](mailto:norma@performance.innovation.com)

## Treasurer

Ardith Beitel  
Internal Auditor  
Boeing Test and Evaluation  
[ardith.m.beitel@boeing.com](mailto:ardith.m.beitel@boeing.com)

## Community College Chair

### World Conference Chair

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Ivy Tech Community College  
[jteeple@ivytech.edu](mailto:jteeple@ivytech.edu)

## Discussion Board Moderator

David Davis  
Team Lead  
New West Technologies  
[Da5id.da5is@gmail.com](mailto:Da5id.da5is@gmail.com)

## Examining Chair

Don Brecken  
Instructor/Business Program Advisor  
Ferris State University  
[www.ferris.edu/statewide](http://www.ferris.edu/statewide)

## Financial Audit Chair

John Dew  
Associate Chancellor  
Troy University  
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## Higher Education Chair

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## K-12 Education Quality Tools Chair

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Continuous Improvement Facilitator  
Cedar Rapids School District  
[martin@cr.k12.ia.us](mailto:martin@cr.k12.ia.us)

## K-12 Quality Systems Chair

### NQEC Conference Committee Chair

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## Workforce Development Chair

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## Membership Co-chair

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## QEDNews, Editor

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## Advancing the STEM Agenda Conference

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## Quality Approaches in Higher Education, Editor

Fernando F. Padró  
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## Workforce Development Brief, Editor

Deborah Hopen  
[debhopen@nventure.com](mailto:debhopen@nventure.com)

Shaping the Future Through Quality in Education and Professional Development