

In 2012, three members of NCSEA Member Organizations under the age of 35 received scholarships to attend the Annual Conference in Saint Louis for writing essays on the benefits of Young Member Groups (YMGs) within Structural Engineers Associations (SEAs). Heather Anesta's submission appeared in the NCSEA News portion of the April 2012 issue of STRUCTURE magazine. The two others are included here, along with a piece written by a more senior professional to provide an additional point of view.

issues affecting the structural engineering profession

The Benefits of a Young Member Group

By Dallin Pedersen, P.E.

SEAs are prolific throughout the United States. Organized by structural engineers who care about their profession and want to improve and elevate those who practice it, SEAs meet regularly to discuss current advancements, network, and provide continuing education for their members. The organization of most SEAs caters primarily to experienced, practicing design professionals; however, a young engineer or student can sometimes feel left out. Young engineers are getting valuable design experience in their offices, but might feel intimidated when it comes to asking questions of their more experienced colleagues. The purpose of this essay is to describe how a Young Member Group (YMG) within an SEA can benefit both the young engineer and the profession in the areas of education, licensing, and networking.

Regarding education, young engineers typically come into the profession with a deep desire to learn. In college, their learning was mostly limited to analysis and design of typically straight-forward, textbook examples. Once employed, they discover that the world of design is extremely different from what they experienced in school. Code requirements, consultant coordination, construction administration, and other aspects of practice are thrust into their laps with some guidance and a directive to "do your best" from their employers. The YMG is intended to provide a risk-free environment for young engineers to collaborate, discuss problems and learn from the situations that they and their colleagues have faced. The YMG gives them the opportunity to share their successes and lessons learned in a context that is open and inviting.

As young engineers learn from each other, they can discuss what was missed during a peer review, how to handle a certain code provision, or what structural systems they have employed. The YMG can also be place where more experienced engineers from within the SEA can teach these young minds. The pressure of appearing as competent as possible will lessen as a forum is established where questions and respect are first and foremost. As young engineers collaborate and edify each other through these discussions, quality of design,

efficiency in analysis and responsiveness in coordination will increase throughout the profession.

YMGs can also aid young engineers with their first post-graduate milestone, which is attaining licensure. When studying for exams, synergy between engineers in the YMG can lead to higher exam passing rates. As young engineers both learn and remember the concepts required by the exams, collaboration can increase the likelihood of success. By helping with structured study sessions, engineers can study for the PE and SE exams while still keeping their busy professional and personal lives in balance.

Finally, young engineers are constantly surrounded by new faces, which may consist of professionals within the SEA, consultants from other engineering fields, architects, and contractors. The benefit of networking is that the vibrant talent of young engineers can be diffused into the professional community to enhance the influence of the SEA. Interaction among young engineers within construction companies, detailing shops, and various consulting firms will have a positive effect on the SEA by broadening its base of knowledge, and may even strengthen the local economy by working out potential issues and exploring better ways to design and construct.

The sooner an engineer becomes involved in an SEA, the better. Joining a YMG is the initial and best path into professional structural engineering. When an SEA has a YMG, the SEA can reach out to the young engineers and find ways for them to get involved and assist in their own development. By helping others, we all can help ourselves.

Dallin Pedersen, P.E. is a project manager with BHB Consulting Engineers in Salt Lake City, Utah. He can be reached at dallin.pedersen@bhbengineers.com.

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Three Perspectives on Encouraging Younger Engineers

By Dallin Pedersen, P.E.,
Emily Guglielmo, P.E., C.E. and
Timothy M. Gilbert, P.E., S.E.



How Can Young Member Groups Benefit Both Young Engineers and the Entire Profession?

By Emily Guglielmo, P.E., C.E.

Structural engineering is at a critical crossroad. Focused and visionary leadership from young engineers is vitally needed to address our current professional challenges, including a worldwide recession, pressure for sustainability and green building designs, and the potential for future outsourcing of work. Further complicating the situation for young engineers is unpreparedness due to a lack of practical experience early in a career, combined with increasing code complexity. In addition, structural engineering falls short with respect to the gender and ethnic diversity required for a healthy profession, which should reflect the society that we serve, especially considering the vital importance of what we do in the community at large.

Young engineers need sufficient technical training and strong career mentorship to be adept in addressing the previously mentioned challenges. SEAs are in a position to play a major role in enhancing the success of young engineers and the profession as a whole.

Several local SEAs have already established active YMGs, which have provided outstanding value for those who participate in them.

In Northern California, the SEAONC Young Members Forum provides PE mentoring, consistent email updates, and an active working committee. This program has the potential to provide its members with a strong skill set, improving the likelihood of professional success and creating a pipeline of leaders for the profession.

While these local efforts are beneficial, I believe that a national Young Members Committee within NCSEA would offer more universal benefits to young engineers nationwide. This virtual community could offer several benefits for younger engineers.

For example, a secure, universally accessible platform for discussion could be created through an online member's only forum on the NCSEA website. It could be specifically designated for young engineers and would provide a safe source for dialogue, support, and learning. Another mechanism for encouraging young engineers' professional development would be to enhance and further focus NCSEA's technical articles and E-newsletter to include basic tips specifically aimed toward young engineers.

SEA, SEI, and ASCE seminars have proven to be invaluable to my success in

my career. While NCSEA offers content covering numerous key topics, relatively few explicitly focus upon the needs of junior engineers. Focusing on practical aspects of structural design, such as lessons learned from completed projects, reviews of common mistakes and their avoidance, and discussions of techniques for verifying the accuracy of computer analysis and design would be invaluable for younger engineers. Similarly, offering an online "Frequently Asked Questions" page addressing subjects more relevant for new professionals would result in another key resource.

While today's professional challenges appear daunting, I view this time as one that offers an excellent opportunity for young engineers. As a valuable investment toward the development of the next generation, Young Members Groups, both locally and nationally, unequivocally benefit young engineers, the profession, and society.

*Emily Guglielmo, P.E., C.E.
(EGuglielmo@martinmartin.com),
is a senior project engineer with Martin/
Martin, Inc. in Larkspur, California.*

Encouraging Younger Members

By Timothy M. Gilbert, P.E., S.E.

The recent NCSEA Annual Conference provided engaging and exciting learning opportunities for all in attendance. One

of the highlights for me was the energetic and thought-provoking presentation by one of the Young Member Group (YMG) Scholarship Award winners, Heather Anesta. Her obvious passion for structural engineering and persuasive communication show that the future of structural engineering is in good hands.

Before we "pass the torch," let me offer a challenge to those of us in leadership or supervisory positions. Heather made plain that one of the services that YMGs offer is an opportunity to ask questions without fear of reprisal. I challenge us to help bridge the divide created by that fear. Let us work to establish environments where young engineers can freely seek the knowledge needed to advance within the profession.

One way in which we can work toward this goal is to build better relationships with

younger staff. Here, there is no substitute for regular one-on-one meetings. Supervisors and project leaders can build a communication bridge by establishing recurring occasions when – this is important – the other person opens the conversation with a topic of his or her choice. Giving the first move to the young engineer helps demonstrate our receptivity to his or her thoughts and helps avoid creating the impression of receiving a lecture. We may choose to follow up with a response or different topic later in the meeting.

Our tight project schedules and increasing workload might make this concept appear to be a luxury. A different point of view is worth considering; those schedules and workloads make this kind of process even more imperative. Incomplete and ineffective communication can obstruct or even derail our objectives. We can use our time

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in these meetings to make sure that our previous messages have been properly received and understood by the listener. On today's complex, fast-paced projects, subject to quick changes, a robust communication bridge is vital. It can help minimize errors and rework, improve employee and client satisfaction, and – best of all – let us learn from the bright young engineers in our offices.

Along with regular meetings, frequent feedback about specific items can help develop more effective practices. The term “feedback” is often used to describe criticism, but the intent here is different. Provide comments about particular items and their effects. Positive feedback can produce great results, and negative feedback delivered respectfully offers guidance. Here are two examples:

- “The sketches that you provided in the connection calculations were very helpful in checking your work. Please keep it up!”
- “The equations that you used in the shear wall calculations did not include a reference to the code section. Could you please be sure to add that next time?”

Frequent feedback about small issues can help avoid big problems. One important thing to consider prior to delivering feedback: take a few moments to reflect on your own career and the mistakes that you yourself have made in similar situations. This can help us say what needs to be said with kindness and humility, which will make it more likely to be heard.

It is up to us to help today's young engineers become tomorrow's outstanding engineers. After all, they are the ones who will design our grandchildren's schools and the bridges over which they will travel.

Timothy M. Gilbert, P.E., S.E. (TGilbert.PE@gmail.com), is a Principal Quality Engineer with Louis Perry & Associates in Wadsworth, Ohio. He is also a Director and the Licensure Committee chair for the Structural Engineers Association of Ohio (SEAO).

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