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2021 Young Member Summit Scholarship

What is your opinion about the public's perception of structural engineers? Provide suggestions for how structural engineers might increase recognition and general public awareness of the profession.

As society continues to grow, a demand for infrastructure increases to provide a sustainable and secured environment for people. Structural engineers design various types of infrastructure such as hospitals, schools, offices, bridges, roadways, and much more. These structures are vital for economic growth, population growth, and intellectual growth. As a structural engineer, it is our role to design these structures through various building codes and adhere to a code of ethics to provide safety. The American Society of Civil Engineers developed a code of ethics, the first code being “first and foremost, protect the health, safety, and welfare of the public” which complements the role of a structural engineer. We are taught these codes of ethics as we progress in our education towards becoming structural engineers. Prior to this introduction, I believed as a structural engineer I would be performing numerous calculations involving math and physics. I had no idea these calculations would be utilized as a tool to design a stable and safe structure for the public. I do not feel embarrassed for this misunderstanding of what a structural engineer is and the reason being is the lack of awareness of the profession. It is prevalent in social settings when posed with the question “What do you do for a living?” that I answer, “I’m a structural engineer and I design structures”. This response is typically followed by “so you are an architect?”, “you must do a lot of math”, or “what is a structure?”. It is important to understand where the public’s opinion of the profession stems from. The public’s limited knowledge of structural engineers can be remedied by early education in school and an increase in social media presence.

During our youth, we are reminded the importance of our education as it will provide us knowledge and a profession. These professions are introduced to us by our parents and many interactions we have such as a hospital visit, attending school, public safety by cops and firefighters. Additional exposure of professions is through our education such as guidance counselors, teachers, and career fairs. It is expected and understandable that we are presented a broad overview of many professions we can pursue either by college education, learning by trade, and entrepreneurship. With that context, it will be a challenge to capture and present the profession of structural engineering due to it being a subdiscipline of civil engineering and in a broader aspect of a discipline within engineering itself. As structural engineers, we must inform and provide a general overview of our profession by increasing our involvement through K-12 education. There are many opportunities for structural engineers to spread awareness such as attending career fairs, giving presentations, and participating in STEM education. Pursuing education outreach towards STEM programs, structural engineers can offer guest presentations

and project ideas to give students an opportunity to learn more about our profession. The importance of structural engineers' involvement in education outreach can be supported/facilitated by professional organizations and licensing. These organizations can implement guidelines for structural engineers to develop and provide a fundamental understanding of the profession to students. These guidelines can pertain to required hours of education involvement towards mentorships, programs, and guest speaking. For licensing, we are required to obtain 30 hours of professional development through courses, seminars, and conferences. Education outreach can be included as a means of obtaining professional development hours. As an organization we must highly encourage each other to inform the students through programs and internal guidelines.

Another great form of spreading awareness is having a bigger social media presence. With the increase availability of technology there has been a shift of in-person interactions to virtual. These interactions have been very beneficial in spreading information and expanding our social network. Most of the time, public opinion on topics is constructed/directed by media outlets and personal connections. This is notable for structural engineering, when structural failures occur and the media highlights the magnitude of the damage caused by failures such as the Tacoma Narrows Bridge, collapse of the Twin Towers, and Surfside condominium collapse. These very unfortunate events are shown by media and produces a negative portrayal of structural engineers. To lighten this perspective, structural engineers should create informative videos or write articles describing the role we have within the industry and designing to ensure the safety of the public. Another means of increasing awareness is simply by posting photos or descriptions of projects being designed through social networks such as Facebook, Twitter, and LinkedIn. This will generate interest from personal connections to comment or ask for more information that we can give feedback and will be accessible to others. Besides personally spreading awareness, structural engineering organizations can delegate active social media presence through a chair position. This chair position can manage the organization's account through social networks, YouTube, and Tik Tok. The purpose of these accounts is to share videos and articles, highlight organizations involvement to the public, and an open invitation to meetings. Increasing social media presence will allow to further develop and gain connections to spread awareness of our profession through the public.

The public's perception of structural engineering is limited due to the lack of exposure of the profession. Their current perception is our role is to design buildings, perform lots of calculations, or are architects. To enhance this perception, it is important to start from the fundamentals of what structural engineering is. These fundamentals can be explained through individual and organizational involvement with schools to provide presentations, participate in career fairs, and support STEM education. It would be best to shape the perception of structural engineering through the youth since they will be pursuing a profession in the future. For the public, we need to increase our social media presence through sharing information, initiating discussions, and inviting the public to structural organization meetings. Establishing this

engagement with the public will allow a clearer description of what a structural engineer is. As structural engineers we should take pride in our profession and inform the public the many challenges we encounter through design in providing safety.