“Ask an Engineer” Panel

Our Panelists:

Michelle Callahan, PE, LEED AP BD+C

Education: Master of Science in Civil Engineering from Northeastern University, 2011; Bachelor of Science in Civil Engineering (Minor in Business Administration) from Northeastern University, 2008

Job: Project Manager, Nitsch Engineering

What that means: I provide sustainable site design and environmental permitting for public and private developments.

Interests: Baking, yoga, binge watching shows on Netflix, and hanging out with my husband Mike, three-year-old daughter Ceci, and baby Jake

Email address: mcallahan@nitscheng.com

Deborah Danik, PE, CPESC, LEED AP BD+C

Education: Bachelor of Science in Civil Engineering from University of Massachusetts, Amherst, 2002

Job: Senior Project Manager, Nitsch Engineering

What that means: I manage a team of engineers to coordinate with other design consultants and the Owner the design and permitting for land development projects. We design everything outside the building: parking lots, walkways, stormwater management, utilities, and stuff underground that no one sees, but is very important to keep the site and building working.

Interests: Snowboarding, crocheting, trying new restaurants, and hiking

Email address: ddanik@nitscheng.com

“Ask an Engineer” Panel

Anna Murphy, PE

Education: Bachelor of Science in Civil Engineering from Northeastern University, 2015

Job: Project Engineer, Nitsch Engineering

What that means: I work with a team of engineers on civil engineering projects all over the Boston and Massachusetts focusing on grading, stormwater, utilities, and site design.

Interests: Running, music, reading, spending time with friends, spending time outside, and traveling

Email address: amurphy@nitscheng.com

Brittney Veeck, PE, LEED Green Associate

Education: Bachelor of Science in Civil Engineering from Tufts University, 2013

Job: Senior Project Engineer, Nitsch Engineering

What that means: I work on teams to design site solutions, focusing on stormwater management and sustainable sites.

Interests: Running, traveling, baking, and playing board games

Email address: bveeck@nitscheng.com

"Ask an Engineer" Panelist Responses

What characteristics made you a successful engineer/engineering student?

I wasn't afraid to ask my professors or classmates questions. Office hours with professors were a great time to make sure I understood the class material and to get to know my professor a little better. My classmates and I would often review each other's work and talk through how to solve problems together, which is also great because it helped prepare me for a collaborative career in engineering. ***- Brittney Veeck, PE, LEED GA, Senior Project Engineer***

Multi-tasking and asking for help. There are a lot of different cool things to learn in engineering, and most topics overlap with other classes. Being able to think about multiple things I had learned already to answer the current question, as well as knowing when I had to reach out for more help, really allowed me to excel at learning the coursework. ***- Deborah M. Danik, PE, LEED AP BD+C, CPESC, Senior Project Manager***

I would say perseverance. It kept me going in engineering school when I wasn't sure if I could do it, and it keeps me going now when I'm trying to figure out the best solution for tough projects. ***- Michelle Callahan, PE, LEED AP BD+C, Project Manager***

Did you think, entering college as an undergraduate, you would be doing what you're doing today?

Definitely not! A lot of what you think of when you consider civil engineering is the structural aspect of it. I assumed I would leave college doing that. After I took my first structural engineering class, I knew I would never do that as a career but luckily there were so many other aspects of civil engineering that I was exposed to in school that I was able to find something more interesting to me. ***- Brittney Veeck, PE, LEED GA, Senior Project Engineer***

I had no idea when I entered college that I would be helping design some of the coolest and biggest projects in Boston. And then, once they are constructed, I get to enjoy seeing how what we drew on paper came to life as a real building and site. ***- Deborah M. Danik, PE, LEED AP BD+C, Senior Project Manager***

What is the most important thing you learned in engineering school?

I think one of the most important things engineering school taught me is how to work as a team. A lot of work we did was based around group projects and even regular homework problem sets were often done as a group. I learned how to collaborate with all types of people and I think that skill is so important to my job now where we're always on a team of not just other civil engineers, but all types of specialists. ***- Anna Murphy, PE, Project Engineer***

“Ask an Engineer” Panelist Responses

What was your favorite class in high school, and what high school courses do you think are most important for a girl considering engineering?

My favorite classes in high school were Physics 1 and German. In college I was required to take humanities classes and electives and I was able to fill all of those time slots with German classes. I was happy to be able to continue one of my favorite classes from high school which I had assumed wouldn’t be possible before I started college. I think it’s important to take math and science classes in high school when you are considering engineering but equally important to take whatever classes you find engaging and fun. ***- Brittney Veeck, PE, LEED GA, Project Engineer***

My favorite class was physics. We studied all sorts of different topics, and did cool physical laboratory tests to prove written down theories. ***- Deborah M. Danik, PE, LEED AP BD+C, Senior Project Manager***

My favorite class in high school was actually art. I loved math and science as well, but I do think the cool thing about engineering is the fact that it’s so multidisciplinary. I think art made me very detail-oriented, and helped me with following through on projects until they’re finished and those skills help in engineering. If you like English, there is a lot of writing that goes into being an engineer. So while the technical subjects like math and science are very important, a lot of the other subjects teach you skills that help with civil engineering. ***- Anna Murphy, PE, Project Engineer***

What is your typical work day like?

I don’t have a typical day, as every day is different! These are just some of the many things that each of my day may involve: going to and from meetings, planning potential improvements for a development, designing plans and coordinating with other engineers, presenting a project at a public hearing, observing construction at a site, and even interviewing new people to come work at Nitsch, to name a few. ***- Deborah M. Danik, PE, LEED AP BD+C, Senior Project Manager***

Work is looking a little different these days than it used to, but the basics of what I do every day is still pretty similar. We work on a lot of different projects at one time so days can vary a lot. Some days you will have a lot of meetings with the project team, some days you will do a lot of calculations and design work, and sometimes you get to go out to the sites where your projects are to collect information. I like that my days usually have variety and every new project is a little different. ***- Anna Murphy, PE, Project Engineer***

"Ask an Engineer" Panelist Responses

What is it like to be a female engineer?

I think it's much less difficult to be a woman in engineering these days than it used to be. Even though there are still fewer women than men in engineering, I've always felt like I've had a great network of other women engineers, both at my level and above me who I've been able to lean on, learn from, and work with throughout my career. I've also been grateful to work at a women-owned, women-run company that sees how important it is to encourage women in engineering. And we have amazing female engineers as role models at every level. ***- Anna Murphy, PE, Project Engineer***

It's very empowering! ***- Michelle Callahan, PE, LEED AP BD+C, Project Manager***

If you had one piece of advice for young girls interested in engineering, what would it be?

Don't ignore English, technical writing, and public speaking classes that are offered in school. Engineers do a lot of writing in their careers and being able to communicate your ideas to others is just as important as being able to come up with them. ***- Brittney Veeck, PE, LEED GA, Senior Project Engineer***

Just go for it. Engineering is an amazing field to study and work in. You learn about how things work, how you can make them better, how to apply it to help our community, and then you get to make it happen! ***- Deborah M. Danik, PE, LEED AP BD+C, Senior Project Manager***

Believe in yourself! I struggled with this quite a bit throughout school and early on in my career, but it is so important for success. ***- Michelle Callahan, PE, LEED AP BD+C, Project Manager***