

STEM SESSION TRANSCRIPT

MARCH, FORENSICS

Lin Wozniowski

Hi, my name is Lin Wozniowski, and I'm currently the Chairman of the Science Olympiad Chemistry Rules Committee. My journey with Science Olympiad began in 1992, when I was asked to be an Event Supervisor for Crime Busters for a regional tournament. I had been introduced to Science Olympiad a few years earlier when my son was competing on his high school team, but there was not an opportunity to get involved then.

A couple of years later, I was asked to present at the Hammond Coaches Clinic. The coaches had a great time actually doing the experiments with chemicals that those team members were expected to conduct. In many cases, it was the first time the coaches had ever gotten to work with the chemicals, do burn tests on fibers, or density tests with plastic. It was the first time some coaches had ever looked at hairs under a microscope or done chromatography. They loved being able to know what they were doing so that when they went home to teach their members of their Science Olympiad Team who did Crime Busters events, they were confident in their own skills and knowledge.

There were so many requests for new information that I put a website together to teach how to do Crime Busters events. This led to an invitation to be the Indiana State Crime Buster Event Supervisor in 1995. That led to an invitation to be the National Crime Buster Event Supervisor in 2003. While I had always been impressed with how enthusiastically the team members attacked solving the crime at the regional level, I was really impressed with the vigor the students put into their crime solving techniques at the state and national level. It has always been a real challenge to produce a crime worthy of the students efforts.

In 2006, Crime Busters took a year off and I was asked to be the National Event Supervisor for Forensics, which is where I have been ever since. In 2009, the previous Science Olympiad Chemistry Rules Committee Chair decided to retire from Science Olympiad and I was asked to take over the post. I have had the opportunity to present all the chemistry events at the National Science Olympiad Summer Institute in Phoenix since 2009. It is really fun to pack all of the chemicals so I can get them by TSA as I fly them all over the country. I am known as the crazy chemist from Indiana at the Midway airport. Of course, not being able to fly for over a year because of COVID-19, I may have actually lost that regulation. I have presented at Science Olympiad teachers institutes all over the Midwest - I even run a coach's clinic in Indiana.

I have been Chairman of the Indiana State Science Olympiad Board and am currently the Treasurer of this organization. While I was Chairman of the Board, we were able to secure a large grant for Arcelor Middle Incorporated. I have expanded the website to include not only Crime Busters and Forensics but all of the chemistry events. We have experimented with expanding the chemistry events we offer to the Science Olympiad teams as they explore their chemistry of their world.

I got my start in science in 1956, when I was eight years old. The 17-year locusts came out and I was hooked. I could not get enough information on them or insects in general. I just wish Science Olympiad had been around at that time. As my education progressed, my fascination with Science never waned, although it did shift from biology to chemistry and physics. I currently hold a dual appointment in the Chemistry and Physics departments at Indiana University Northwest, where I have been teaching since 1989.



While I watched Science Olympiad grow and evolve over the years, I have always been impressed with the dedication of all the volunteers in the organization and all of the Science Olympiad team members. It would have been so easy to just give up during this pandemic and say we can't do anything about our current situation. Instead, the organization has been able to grow three new formats to help students learn and spark their curiosity about science. It is easy to see why one of Science Olympiad's biggest strengths has always been the dedication of its volunteer base. And as we have watched the teams competing in the new formats, it is gratifying to see how gracious they are when these new technologies show their glitches and how enthusiastically they work with the inevitable fixes that have to be made. The teams are truly showing that they have embraced the Science Olympiad spirit of friendly competition.

Of course one of the outstanding pillars of all Science Olympiad events is that they are based in the science standards of the grades the events are planned for. We plan in all of the committees to have entry level events, intermediate level events, and challenging events. Not all events are geared toward either the oldest or younger members of the team so the events, whether we are talking about traditional Science Olympiad events, or the MY SO events, are all planned around the same science standards that are being taught in the schools. This makes Science Olympiad an extremely good source of supplementary material for all the schools, and as the science standards have changed in the schools, Science Olympiad has been diligent about re-evaluating what standards the events are addressing and either adjusting the events or inventing new events so that they cover the new standard.

In the chemistry events, we have been adamant that all of the events must have a large hands-on component. We write the events so that if the Event Supervisors make the test a paper and pencil test, they are not only violating the spirit of the Science Olympiad competition but the letter of the event. The hands-on part of the event is what makes Science Olympiad events fun! Even in this competitions, where all the events have to be virtual, my assistant my 98 year old mother Joyce Black and I filmed the wet parts of the events being done so that your students would be able to identify the unknowns as close to the way as they would normally do so as possible.

It is now my pleasure to present Kate Doetsch, Materials and Process Engineer at Boeing in St. Louis. She is going to talk with you about her experience in Science Olympiad and how it has helped her in her career.

Kate Doetsch

Hi, I'm Kate Doetsch. I'm a Materials and Process Engineer at Boeing in St. Louis, Missouri. I've been working at Boeing since I was an intern in 2012. I now work on the 777x twin-aisle aircraft program. My job as an engineer is to prevent corrosion on the airplane that results from moisture and the interfaces between dissimilar metals like aluminum and composite. I work with our production line and our paint shops to use paint, sealants, and other materials to keep this from happening. Preventing corrosion helps make airplanes safe for people to fly in for years between having maintenance checks.

I attended the University of Missouri in Columbia, Missouri, where I graduated with a Bachelor's degree in Chemical Engineering and a minor in German. I was a Science Olympiad participant when I was in middle school. Science Olympiad has been part of my life in some way or form for almost 20 years now. I've competed on the Division B team at Sparing Middle School in St. Louis from 2004 to 2006, at both the regional and state levels. My signature event was Meteorology, and because of that I actually wanted to be a meteorologist for several years. I also competed in events like Write It Do It, Experimental Design, Picture This, Water Quality and Rocks and Minerals.

I ended up reconnecting with Science Olympiad when I was about to graduate college. The Missouri state tournament was hosted at my university that year, and our College of Engineering was looking for Event Supervisors, so I obviously jumped at the chance to volunteer and ended up supervising Rotor Egg Drop which was really fun for me since I had never participated in the building events as a competitor.

Less than a year later in 2014, I was working full-time at Boeing and saw an advertisement requesting volunteers for the southern Illinois regional tournament. That was about seven years ago, and I have been involved as an Event



Supervisor almost every year since. I've now supervised Rotor Egg Drop, Picture This, Fast Facts, and Density Lab, and I really love that I'm still getting involved with Science Olympiad every year even though I haven't competed in 15 years.

I really also wanted to share a little bit about an organization that's very important to me. I've been a member of the Society for Women Engineers, or SWE, since my freshman year of college, and I was actually president of my university's SWE section my senior year. SWE was founded in 1950 to support women in engineering at all stages of life. For me, SWE ignited my passion for STEM outreach by the team I had graduated college. I firmly believe that everyone deserves an understanding and appreciation of what STEM careers bring to our world, whether or not they decide to pursue a STEM career. All students deserve to have STEM experiences like Science Olympiad, science competitions, math competitions, and science projects so they can really explore STEM careers and decide if it's the right path for them. Through SWE, I've gotten to be involved in global outreach programs, visits to science classrooms, panels for students, parents and educators and I've gotten to have some cool experiences like speaking at FIRST robotics conferences and championships and the national Girl Scouts conference.

Three years ago, I also got the opportunity to chair SWE's K-12 outreach committee, where I led more than 40 volunteers around the country who worked on STEM outreach programs for students, parents, and teachers. For about five years I was also part of the planning team for SWE's Invent It Build It event, which introduced hundreds of students, parents and educators to engineering each year at SWE's annual conference.

So I'll leave you with this - when I was in high school, I thought that you had to have absolutely perfect grades to make it as an engineer or get a great engineering job. And I'll tell you that that's not true at all. I took many math, chemistry, and engineering classes, and I certainly got good grades in them, but not always A's, not always the top of my class, and I'll tell you this - I use the concepts I learned but I don't use complicated math or write out chemical reactions at work. What I do use is my ability to solve tough issues that need an answer quickly. I work with people who have different jobs and different educational backgrounds than I do, and I try to understand their thinking to come up with a solution. At the end of the day I truly love what I work on - I think airplanes are amazing. I'll let you in on a secret if you haven't figured it out already. I really learned my engineering skills from being on a Science Olympiad Team, and you've already learned them too. I loved Science Olympiad and it's been such an impact on my life over these past 20 years.

Lin Wozniwski

It is now my pleasure to introduce Sarah Liu. Sarah is an alumna of Science Olympiad competition. She is going to talk with you about her experiences in Science Olympiad as a competitor and how it helped her as she went through college.

Sarah Liu

I'm Sarah Liu. I'm a Science Olympiad alum, having competed at Carmel High School in Indiana from 2012 to 2016. Forensics was one of the first events I competed in and one of the events that drew me to Science Olympiad in the first place. It was actually my first event at my first tournament that I ever competed in, and Lin was the Event Supervisor there. I will admit that I was quite scared of her that first time around, but over the years I've been able to get past that and realize that she is actually pretty cool and that there was so much to forensic science that I absolutely needed to explore more. And what do you know, it culminated with being a state champion and a national medalist in the event by the end of my time competing.

Beyond that though, Science Olympiad was one of the biggest influences of my high school life with my additional passion for the chemistry and molecular biology related events, even influencing what I wanted to study in college, which was bioengineering. And thus when I graduated high school, I knew I wanted to stay as involved as possible to give back to something that has given me so much. I also started a minor in forensic sciences while I was there, and



although I unfortunately could not finish it by circumstance due to conflicts with my major's classes, I still appreciate the time that I spent in the classes I did take, as I got to learn even more about how much more vast the world of forensic science and forensic analysis was beyond my Science Olympiad days. It was incredibly cool and they are definitely at the top of my favorite classes that I took in college. They also helped me continue to evolve my own personal outlook on event supervising for forensics, since I've done that often as an alum, and it helped me explore different styles of supervising, test writing, and shaping the expectations for my competitors.

Continuing to be involved has led me to make friends with nearly countless other alums and competitors around the country, and a good amount of those I met upon my entry into Division D, eventually those became some of my best and closest friends to this day. I actually had a really rough time in college due to the combinations of various not-so-great circumstances and personal struggles, and it's definitely been a long time coming in recovery in the state of my mental health even to this day, but my involvement as an alum always served as a really nice enjoyable pick-me-up from what pain I would have been feeling at the time. Every single time I got to meet up with and see close friends that I've made through Science Olympiad, it was always something that would actually make me very happy. Whether it was just purely from being in the presence of good company, because of all the laughter shared throughout our short times together, or because of the feel-good moments arising from getting to see what Science Olympiad competitors today can do and how much competition strategies have evolved, it was a bright spot that kept me going in the darkest of times. Sure I had to make quite a few sacrifices in other aspects of my life to be able to be as involved as possible since the often long hours of test writing and traveling involved can definitely take a toll on anyone, but for me it was always worth it because I realized how much friendship meant to me and how much spending time with friends that could always make me smile, laugh, or both, positively influenced my overall well-being. It is critical to establish a good balance between your social life, your academic life, and your personal health, but I definitely learned to never underestimate how valuable friendship can be, not only to your social life but to your personal health.

Lin Wozniowski

Participation in Science Olympiad is one of the things that admission counselors look for on applications for college. Students who have learned the time management skills necessary to compete have already mastered one of the biggest sources of college good grades. Science Olympiad promotes students being responsible for their own learning, and this is one of the skills necessary to do well in college. I hope you have enjoyed this STEM Session, please check out all that MY SO has to offer.

