



NORTHWESTERN
PENNSYLVANIA

Since 1945

Spring 2020 Newsletter

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PRESIDENT'S MESSAGE



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I want to thank our members for their support and aid as we navigate through these tough times of the COVID-19 pandemic. It has been a scary time for our country, but we have definitely seen the important role the plastics industry plays in our day-to-day safety through a medical crisis. Unfortunately, we have had to cancel some of our planned Spring events, but our members have been focused on aiding the essential industries in their manufacturing efforts to supply the needs of the medical , personal protective equipment, packaging, and trucking, among other industries.

Unfortunately, we have had to postpone our spring events including a tour of Tech Tank and our social at Riverside Brewing. We are still planning our annual golf outing to be held this August, so if you would like to volunteer to help or have donations, we would love to hear from you. I would like to remind everyone that the golf outing provides our section with the funds to function all year long, so we put forth a lot of effort to make sure it is always a success. This work allows us to engage the next generation of plastics engineers by providing scholarships, funding student involvement at ANTEC, and funding events by the student section. We also use these funds for our member technical events, plant tours, holiday party, and networking socials.

We hope that this newsletter will help shed some light on the ways our section's plastics engineering community has helped our nation through the health pandemic. We are missing the in-person networking opportunities we had planned, but hope to see everyone soon!

Annie Gohn, NWPA SPE Section President

MEMBER SPOTLIGHT



Matt Jaworski

Senior Subject Matter Expert Autodesk

Dr. Matt Jaworski, man of music, many degrees, and material simulation. Matt is a Senior Subject Matter Expert at Autodesk, which means he helps customers to use their products and travels to their facilities to help them out, of course that is when we're not in a global pandemic.

For Matt it took about 13 years to get his doctorate. "They don't just give it to you. You actually have to work for it." When he started getting his doctorate things were simple, but then he and his wife started having kids and moved away from UMass Lowell, where he was getting his degree. It complicated the process.

Matt started with Autodesk back when they were still Moldflow in 2000 as a technical support engineer. Within a year he was promoted to running the entire North American support staff. He initially took the position because it allowed him to end his day in time to get to UMass Lowell for night classes toward his masters degree. After 6 years he decided he needed to take a break since "nobody calls to say the products are working great". His next jump was to Global Training Services Manager. However, at the same time Autodesk was in the process of acquiring Moldflow. All training was going to be handled by the Autodesk team so there wasn't exactly a position for him anymore. He decided to join one of the Autodesk resellers. The reseller business is a fickle beast and within a year he was back at Autodesk. This time around he has been there since 2011.

As an SPE member, he's had an even longer stint. He started off back in his student days (around 1995). He has always been interested in the plant tours and even to this day it's still his favorite SPE activity. Even though he sees a lot of plants due to the nature of his work, when he's offered a plant tour during a customer visit it's a very cultivated visit that only shows what the customer is interested in resolving or having Autodesk look at. However, when it is a plant tour open to anyone in the plastics community, there's an element of pride that really makes the tours more enjoyable.



SUCCESSFUL EVENTS



Holiday Party

Fox and Hound

December 12, 2019

**Featuring Student
Scholarship Awards**



Max Lu, Sophomore



Bobbi Doubet, Junior



Steven Vecchi, Senior



Hannah Duncan, Sophomore



Brady Kindle, Junior



Dylan Rogers, Senior



Elizabeth Gill, Sophomore



Jacob Hartmann,
Member Scholarship

POSTPONED EVENTS



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Spring Plant Tour



Spring Social



BOARD OF DIRECTORS

Title	Name	Company	Email
President	Annie Gohn	Penn State Erie	amm6125@psu.edu
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2020 Golf Outing



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SAVE THE DATE!

NWPA SPE GOLF OUTING

Thursday August 13, 2020

Peek'nPeak Golf Resort

Time: 10am Registration, 11am Shot Gun Start, Grilled Lunch,
Refreshments, Contests, Prizes, Raffles, Buffet Dinner

Cost: \$150 Per Person, \$600 Foursome, \$100 Sponsor

Sponsors and Donations requested

Registration opens June 2020.

This event is still planned for 8-13-20, and a notification will be sent if that must change.

NWPA SPE Sponsorship



“Thank You!” to our Gold Sponsor

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Newsletter and Website Advertising Information

BRONZE SPONSOR

Newsletter:
1/4 Page Color Ad
3-7/8" x 4-3/4"
Webpage:
Logo on Sponsor Page
Rotating Ad
\$250

SILVER SPONSOR

Newsletter:
1/2 Page Color Ad
7-3/4 x 4-3/4"
Webpage:
Logo on Sponsor Page
Rotating Ad
\$500

GOLD SPONSOR

Newsletter:
Full Page Color Ad
7-3/4" x 10-1/4"
Webpage:
Logo on Home Page
Full Banner Ad
\$1,000

Advertising Guidelines

- Advertising pricing includes promotions for 1 full calendar year.
- The NWPA SPE Newsletter will be developed twice per year.
- Limited print copies will be available at SPE Events. Digital copies will be posted on the section website.
- Acceptable file formats include PDF (*preferred*), .tif, and JPG. Files must be at least 300 dpi resolution.

Contact Michelle Hartman at maw179@psu.edu for more information

NWPA SPE COVID-19 RESPONSE



Shortly after COVID-19 hit our region, many NWPA plastics companies shifted gears in order to contribute to the global health pandemic. NWPA SPE sent an email to our members to inquire about how our local manufacturers were fighting the pandemic. Here, you will find some highlight stories from our members about how they shifted manufacturing and regular business activities to help accommodate the need for more personal protective equipment (PPE) and medical supplies. We want to thank all of our members and local companies who are contributing to the COVID-19 pandemic.

-NWPA SPE Board of Directors

Through collaboration, engineers from Penn State Behrend, Case Western Reserve, and Nottingham Spirk, have worked to design face shields for the medical industry. The universities also partnered with local plastics companies to complete the supply chain of these masks, including Port Erie Plastics, who built the mold and is molding frames, and Munot Plastics, who is stamping the clear face shields. Bliley Technologies is managing all order fulfillment and distribution logistics. The team is first focusing on medical communities in Northern Ohio and Northwestern PA. All part designs, material suggestions, assembly instructions, and sterilization techniques are available on their website for community use

during this global health pandemic. Further details can be found at their website: whitelabelfaceshields.com. The face mask design is also featured on the cover page.



 **NOTTINGHAM SPIRK**



PennState
Behrend



NWPA SPE COVID-19 RESPONSE



Solvay Specialty Polymers is supporting the healthcare industry with their high performance plastics by supplying medical-grade polymers such as PSU, PESU, and PPSU for the production of transparent and sterilizable patient contact components (connectors, vessels, chambers, etc.) and PEEK, PARA, and PPA for structural components and housings in

medical goods such as ventilators, CPAP machines, patient monitoring systems, and infusion pumps. They have also been producing transparent sheet and film for PPE such as face shields and intubation chambers and melt spinnable PVDF for reusable N95 masks. Their large network has allowed them to quickly prototype products before production, use additive manufacturing, and manufacture and assemble in a clean room.



Ventilator Connectors
Radel® PPSU and Udel® PSU

Humidifier & PEEP Chambers
Radel® PPSU and Udel® PSU



Shell Polymers

The Pennsylvania Chemicals Project teamed with Shell's contractors to donate two pallets full of surplus supplies to two major medical facilities in the Greater Pittsburgh region. The supplies included desperately needed masks, goggles, gloves, foot covers and other items requested by the University of Pittsburgh Medical Center and Heritage Valley Health Systems.

Shell is also modifying their normal production in their Pernis, Netherlands and Sarnia, Canada plants to produce isopropyl alcohol (IPA) to supply the need for additional soaps and sanitizers.

NWPA SPE COVID-19 RESPONSE



Plastek, of Erie, PA has accomplished great things in a short time. During the first week of April, tooling, molding, engineering and vendor partner teams worked together with a sense of urgency, to collaborate for the good of the people during this Covid-19 pandemic. As we all too soon learned that the supply and demand for PPE masks and face shields was extremely out of proportion, and there was a dire need for a solution, we took to the drawing board to see how we could step in. We worked with Norwalt Design, a partner supplier of ours who was in the process of printing the headbands using a “open source” 3D model. Plastek’s R&D Engineer, Tim Dzurik, and Penn Erie Tool Division GM, Tom Hartline, and Tool Maker Shawn Durfee, reviewed the process and determined that with our technology and 60+ years of experience, we could easily make a simple, single cavity, cold runner mold to manufacture the headband part.

As our manufacturing divisions have continued running as normal, all materials, tools, and labor needed for the project were readily available for a successful outcome. The project took off, with the mold design completed in 3 hours, the mold build was completed in just 1.5 days. Spectrum Molding Manager Justin Denham, and Assistant Molding Manager, Logan Bower and their team in the shop, got the mold set in the press on the manufacturing floor by the end of that same day. They expedited prototype sampling and testing was performed, showing us expectations to run 2,500 pieces a day. In addition to the headband, piece 1 of 3 to complete the face shield PPE, Plastek is also producing an elastic strap as a sizing component. For piece 3, Plastek’s partnership continued with Norwalt Design, for their supply of the clear transparency shield.



Project Manager Mike, Glotzbach says, “It’s incredibly heartwarming to see the amount of energy and determination that everyone has been able to pull together to get a potential lifesaving project up and running so quickly.” From the mold design and build on April 1st to testing April 3rd, our first round of production was distributed on April 10th. The Plastek Group is honored to put in the time, knowing we can provide a means of resource to this need. We are optimistic for the good and the difference that these donations will make in the coming days. As we all continue to support one another and come together as a community to beat the season we are in, The Plastek Group will continue to evaluate its capabilities to do our part. As of April 22nd we are now producing about 5,000 per day and have donated more than 14,000 face shields to frontline workers in need from Erie, PA to Michigan, to Ohio. We want to share our capabilities with the heroes of today’s America. We will continue to keep this project running in production, after our donations have been made, and we will continue to pray for better times.

NWPA SPE COVID-19 RESPONSE

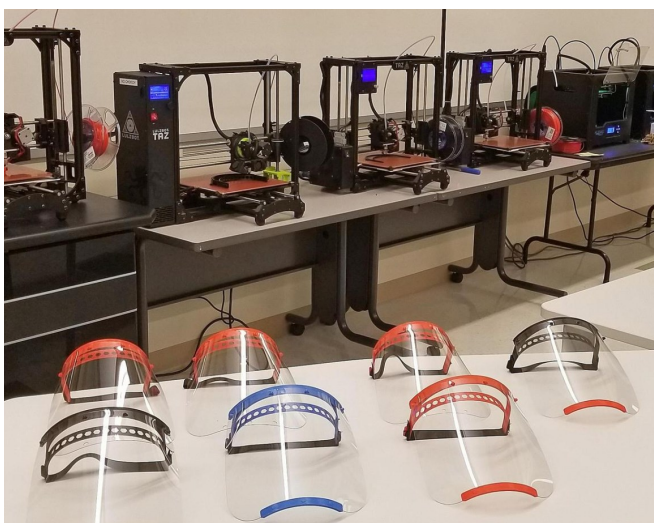


The Northwestern Pennsylvania National Tooling and Machining Association reached out to the NWPA SPE section to connect local efforts producing sanitizer with a bottle and closure manufacturer in the region. Our SPE Section was able to sent out their inquiry to local manufacturers to hopefully provide a connection to meet their manufacturing needs.

Viking Plastics is precision molding a part for the Ford/GE ventilator program to assist the medical community. They received a purchase order on Good Friday after only 2 days of discussions, and were able to deliver the mold in just 1 week and initiated production immediately to support builds at the Ford Rawsonville plant. Product development occurred as the mold was being built. The part is an extremely tight tolerance micro molded component for the ventilator. Ford/GE Healthcare plan to build 50,000 ventilators in the next 100 days.



Gannon University engineering faculty have been working with local hospitals to design and 3D print a face mask design early in Erie's COVID-19 response. Their 3D printing efforts can produce up to 300 masks within a few days.



The University's Morosky College of Health Professions and Sciences also donated 425 face masks, 93 goggles, 60 mask and shield combinations, 72 N95 masks, 36 cases of gloves, 728 pairs of surgical gloves, and 196 isolation gowns to the following hospitals: Erie's UPMC Hamot, Saint Vincent Hospital, Emergycare, and a physician's clinic in Spartansburg where a Gannon faculty member works.

\$SCHOLARSHIP\$



Member Scholarship

The Northwestern Pennsylvania Section of SPE is pleased to offer the 2020 NWPA SPE **MEMBER** SCHOLARSHIP. This scholarship is intended to reward outstanding high school students with a one-time monetary donation up to \$1000 to be used to further their education. This Award is available only to NWPA SPE members with children who are currently high school seniors. If you, or a local SPE member you know, has a high school senior who is planning to attend college, technical school or a trade school in the fall we encourage you to apply. The student may be planning to study in any field, plastics or otherwise, so we encourage you to apply. NWPA SPE member benefits are many and varied, so we are glad to offer this opportunity to our members. One Member scholarship will be awarded for 2020-21 and E-membership is not valid for this award.

Application deadline is July 31, 2020. Applications are available on-line at www.nwpa.4spe.org.

Section Scholarship

NWPA SPE is pleased to announce the NWPA SPE **SECTION** SCHOLARSHIP. We started offering this scholarship last year as a way to recognize high school students from our three county service areas who plan to attend college. This scholarship is intended for current high school seniors planning to study plastics or polymers at any accredited 4-year college. Any high school, charter school or home school senior *from our region of Erie, Crawford and Warren Counties* entering any plastics related field of study at an accredited 4 -year school is eligible. This scholarship is \$500 and we plan to award one in each of our three county service areas of Erie, Crawford and Warren County, PA.

We all know that plastics are ubiquitous and there are many fields of study related to plastics. If your senior plans to attend college and can explain how they are planning for a career in plastics then they should apply for this scholarship. They do not need to be an SPE member, just plan for a career in plastics.

Application deadline is July 31, 2020. Applications are available on-line at www.nwpa.4spe.org.

ANTEC IS ON! Virtually, anyway.

And attendance has been off the charts. Does this mean that SPE will include some form of Virtual attendance at future ANTECs? When it is all over, we will see what they say.

Other ways to enjoy your SPE membership benefits are by watching these one-hour long Webinars that SPE provides as a free service to its members. Here is what is coming up.

Plastic Failures Associated with Metal Fasteners Thursday, May 14 11:00 (EDT)

The need to secure plastic components is prevalent in the manufacture of assemblies in many industries. Joining plastic components to other plastic parts or metal parts often involves the use of mechanical fasteners, such as screws, inserts, or rivets. The joining of plastic parts is inherently more complicated than assembling two metal components because of the fundamental differences in physical properties, including strength, chemical resistance and susceptibility to creep and stress relaxation. Case Studies will be presented to illustrate failures associated with the interaction between plastic components and metal fasteners. The presented cases will illustrate how the failure analysis process was used to identify the failure mechanism as well as the primary factors responsible for the failures. The cases depict representative failures involving varied designs and service conditions.

Impact Failure of Plastics Thursday, June 11 11:00 AM (EDT)

While in service, plastic materials are subjected to many different types of mechanical stress. One common type of stress that is typically severe on plastics is rapid impact loading. The rate at which loading is applied, otherwise known as the strain rate, is a very important factor in the performance of a plastic component. Impact, together with snap fit assembly, and rapid pressurization are the most common forms of rapid loading or high strain rate mechanisms. The response of plastics to impact and the ability of a plastic part to withstand the stress through absorption of the applied energy is dependent on many aspects, including the material, design, processing and the service conditions. Impact loads are among the most challenging stresses that plastic component designers and manufacturers must deal with. In many cases impact stress is not adequately accounted for. In many cases this leads to unnecessary premature or unexpected failure.

3D Printing Webinar Powered by HP Thursday, June 25 11:00 AM (EDT)

HP Multi Jet Fusion 3D Printing technology is the subject of this webinar and HP will cover some advances they have made in the 3D world. The HP vision is to make life better for everyone, everywhere — every person, every organization, and every community around the globe.

STUDENT SECTION

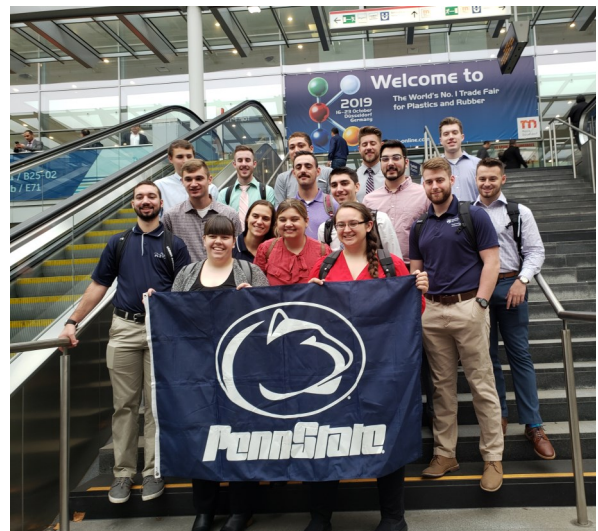


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The highlight of the fall semester included our senior trip to Germany. Here we attended the K Show. What a great opportunity to see some of the cutting edge technology and materials coming out. In addition we toured Arburg's manufacturing facility, visited with European college students at Rosenheim's Plastics Program. Then we also were able to fit in a few cultural trips—to the Mercedes museum and Cologne Cathedral.



Neuschwanstein Castle was one of the highlights of the trip as we enjoyed a personalized private tour and a day in the beautiful Bavarian town of Fussen.



Canceled is the name of the game for this half of the Spring semester. The trip to ANTEC is gone, as well as the Fasenmyer Conference—the end of semester opportunity to show off your senior research project to friends, family, sponsors and local industry. Not to mention the Career Fair and the Fall Senior trip overseas, both of which are older than we are. And if you are an on-campus living student you are still waiting for the go-ahead to come back and get your 'stuff' and move out. Not all the Student Chapter students are suffering through a half a semester of remote learning and on-line everything. At least not at school. Many of them have taken internships at companies near and far, but all say that they are having to remote work as well. The good and the bad of being out on Co-Op this semester includes not having to remote class, but having to remote work. The teachers and the students are looking forward to being back on campus.

PLASTCar PENN STATE BEHREND



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The PLET department and the PLET 483 class wants to first thank all of the students, faculty, local participants, and the North Western Society of Plastics Engineers for their participation in this wonderful event! It was a great experience for everybody that was involved!

The PLASTCar Competition is rooted within the PLET 483 class that seniors and juniors within the major can enroll in. The class revolves around designing a plastic toy car from scratch. Using Computer Animated Design (CAD) software's available to the students within the PLET 483 students are required to constantly make progress on their toy car model. Throughout the semester the students consistently worked through multiple design revolutions and small-scale prototyping until their cars were completed. At the end of the design lifecycle the toy cars were manufactured using addi-

tive manufacturing using Ultimaker 3D printers donated to the program by the Society of Plastics Engineers Foundation. The students then decorated their vehicles, added wheels, and raced them on a race track manufactured within our Plastics Engineering lab.

The event was a fantastic time! Local elementary students came into the lab to help with race day. The Behrend faculty members involved as well as the students educated the elementary students of the design process, how they were made, and the fun behind the entire process. Valuable skills and memorable interactions with the kids is what makes this entire class and event special.

We want to thank all of the local companies and NWPA SPE for their contributions into the event. Without you, this event could not have been possible! We eagerly wait for this year's PLASTCar event and look forward to making more memories for all involved!

-PLET 483 Student Class



CALL FOR BOARD OF DIRECTOR MEMBERS



NWPA SPE is now accepting all nominations and self-nominations for the 2020-2021 Board of Directors.

Deadline to nominate is June 1, 2020.

The Board of Directors is comprised of four executive officers and a number of chair positions as well as several general members. They are charged with the oversight and direction of the NWPA SPE Section12. A brief description of the positions is listed below.

President

Vice President (Chair-Elect)

Past President

Treasurer – financial director

Councilor – liaison between NWPA SPE Section12 and National SPE, attend Council meetings & report.

Secretary – records Section’s meeting minutes, verifies all voting, and issues statements from both the executive board and the Board of Directors.

Golf Outing Chair – directs aspects of the Section’s annual golf outing.

Social Networking Chair – responsible for the social communications of the Section.

Special Events Chair – responsible for all aspects of special events held by the Section.

Technical Program Chair – establish and suggest a list of possible programs for the year.

Membership Chair – responsible for communication with members, maintaining membership roster and working to advance membership and benefits.

Advertising Chair – establish, recruit and place advertising.

General Board Member/Director – this general member is the perfect starting point for someone who wants to be more involved with the Chapter but might have concerns about leading a committee. General members provide input to specific committees and/or to the Board as a whole. Attend BOD meetings.

Committee work is addressed outside the Board meetings and the amount of work associated with each committee varies greatly. There are usually five Board meetings annually, with each committee reporting back, so you can expect a time commitment of attendance at those meetings, in addition to any committee work, if you choose. We need our members to help us lead this Section.

NWPA SPE is a volunteer organization and cannot fully function without the input of its membership. Please consider nominating a member, or yourself, to join the Board and accepting a nomination made for you. Email Lucy at lad115@psu.edu if you can join us in the leadership of this section.

We need our members!