



TRENDS & TOPICS

DETROIT SECTION - SPE INSPIRING PLASTICS PROFESSIONALS - "THE CHARTER CHAPTER"
VOLUME 66 NUMBER 02 - NOVEMBER 2023



**"WONDERS OF PLASTICS" NORTH ESSAY WINNER
LOUIS HUANG – THE JOURNEY OF PLASTICS**

SEE MORE ON PAGE 17



2022-2023 PRESIDENT'S MESSAGE

NEIL FUENMAYOR, LYONDELLBASELL, RETIRED



HELLO DETROIT SECTION MEMBERS,

It's hard to believe my term as SPE Detroit Section President went by fast - a little too fast being limited to only 1 year - but certainly filled with foundation building and re-building, getting to know new colleagues on the Board (meet some in this issue), and returning to a full planned schedule of successful events and activities. This leadership role, like others, is about collaborating and helping our teams put together plans to reach our goals, supporting and guiding as we move forward together in big and small steps. Challenging at times, yet always rewarding.

Of course, I am currently reminded of many good things, as the last months have been extremely busy, with a lot of valuable time working with your new president for the 2023-24 term, Rob Philp – who has been a joy to work with as an Officer supporting the membership and the Board. Rob most recently switched roles to President Elect from 1st Vice President in May, after a Board approved change involving Officers. Rob and I prepared for the transfer at the all-important June Board of Directors Meeting - the so-called annual "Planning Meeting" where we focused on the upcoming fiscal year term

You'll be getting to know Rob as I passed the SPE Detroit presidential gavel, briefcase, and football to him at that meeting. I'm excited that he brings fresh ideas, is supportive of our core elements, and will continue to build on recent new initiatives we've discussed and started, as we evolve. I hope you join me in welcoming Rob to the role and you enjoy working with him, as I have. I trust I've left him, the Officers and membership a stronger foundation to continue building our future with key Chair roles filled that were previously vacant for a while, planning and executing a busy schedule of events, and instilling reinforcement of our core values and processes. We certainly have a great Board team filled with veterans and enthusiastic newbies, to help fulfill our mission and continue accomplishing our goals.

I'm proud to highlight that since the start of 2023, our membership has grown by 20% to 660 members as of the end of October. We feel this growth is very impressive in today's complex and changing work environment, and was accomplished through hard work by many. It is also a result of new "SPE membership awareness drive" approaches we conducted this year leading up to, and during key conferences and at other events. We had significant monthly increases over historical

trends in March through May, and again during the months September and October, coinciding with SPE technical conference events where registration drive activities and an all-new SPE Detroit Section exhibit booth/info display concept was implemented. If you're a new member and just reading our Newsletter for the first time, I'd personally like to say, **"Thank You for joining us, and Welcome!"**

In this issue you'll be hearing more on the following recent and upcoming activities, and we are thankful for all members, the industry, students, and community at large who helped us with these Detroit Section initiatives:

- We had a successful **16th Annual Auto EPCON Technical Conference** on May 2, with over 250 registered attendees experiencing three keynote addresses and six technical tracks including sustainability, additive manufacturing, and two focusing on electrification in mobility with engineering resins and compounds. It was a great networking event for all attendees, sponsors, exhibitors, and speakers.
- During the months of April and May we judged our annual **Student Essay Contest** for Middle and High School Students from the metro-Detroit region once again. Participants are split based on their school location, and everyone received a participation gift card award. The top five essays in each group were ranked and awarded gift cards ranging from \$50 - \$500. Congratulations to all! Read more about it here on page 14.
- We would like to thank the folks at **Zero Tolerance LLC** in Clinton Township, MI for hosting our June 5th Technical Dinner Meeting. It was great to meet new folks there while learning about Zero Tolerance's innovative approach to design and manufacturing molds, as well as plastic part production. Complete details on page 22.
- We had a successful **Detroit Section Golf Outing** on June 20 at the Bay Pointe Golf Club in West Bloomfield, MI. We had one of the largest turnouts in many years with 27 foursomes joining us. We'd especially like to thank the companies and individuals who donated various completion and raffle prizes for the event. We even had a hole-in-one! See more about it on page 23.
- The **24th Annual SPE TPO Global Automotive Conference** was held Oct. 1 -4 in Troy, MI. It didn't disappoint in continuing to be the industry-leading, innovative event with several new features this year, including a fantastic keynote by Rivian, the Electric Adventure

EV manufacturer as well as two, interactive OEM-led Discussion Panels from General Motors and Rivian focused on sustainability. A newly created "On Demand" virtual participation was also implemented to allow more folks from all over the world to watch the technical content presentations, and learn about the latest in polyolefinic material developments and applications in mobility. We will be highlighting this conference in the next Newsletter issue, but in the meantime check out the event website (www.auto-TPO.com) for post event summary details and content, including photos. If you would like to help make our 25th Anniversary Conference in 2024 another great event, please let us know – we welcome the support and new ideas!

Finally, as always, a friendly reminder that in addition to email E-Blasts and social media, details for all of our upcoming events are listed on our website. We also provide links to some of the larger events - social, technical, and educational, as well as full details on our Student Scholarship process with application details. Many of these larger annual

events such as the Technical Conferences we organize also have their own websites, which can be easily accessed from our spedetroit.org website. New details are added as we work on them so check back often. I'm also happy to announce that very soon, our website will have an all-new look and interface. We're excited by the opportunity to finally do this major overhaul as we were forced to delay the upgrades the last few years.

All Detroit Section members are welcome to any of our Board meetings and of course encouraged to join us in our activities and conferences. We hope we continue to capture your interest and look forward to seeing you at one of these exciting events soon. If you want to help us achieve our goals and mission, support the industry, and interact with great folks while doing it – or perhaps have a great idea you'd like to see us try – please reach out to Karen Rhodes-Parker, any Board member, or me.

Yours truly,

Neil E. Fuenmayor

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2023-2024 PRESIDENT'S MESSAGE

ROB PHILP, BUSINESS DEVELOPMENT MANAGER, SIRMAX



DEAR FRIENDS AND COLLEAGUES,

I am writing this letter with great joy and gratitude to formally accept the position of President of the Society of Plastics Engineers Detroit Section. It is an honor to have been chosen by the esteemed members of the organization to serve in this influential role, and I am eager to contribute my skills and passion to further the goals and objectives of the Society.

I would like to express my deepest appreciation to the committee for considering my qualifications and entrusting me with such a significant responsibility. I am committed to upholding the values and mission of the Society of Plastics Engineers and ensuring the continuous growth and success of the Detroit Section.

As President, I recognize the importance of fostering collaboration, knowledge sharing, and networking opportunities within our local plastics community. I am dedicated to promoting a vibrant and inclusive environment that encourages the exchange of ideas, advancements in technology, and the professional development of our members.

In collaboration with the talented executive board and the dedicated members of SPE Detroit, I intend to implement a strategic vision that addresses the evolving needs of our industry. Together, we will focus on organizing engaging events, educational programs, and industry conferences that not only promote the achievements of our members but also inspire innovation and excellence within the plastics field as well as in the next generation of up-and-coming engineers and plastics professionals.

Furthermore, I am eager to explore partnerships and collaborations with other professional organizations, academic institutions, and industry leaders to strengthen the influence and impact of our Section. By fostering a strong network of professionals and promoting the exchange of knowledge, we will contribute to the growth and success of the plastics industry in our region.

I am committed to serving the SPE Detroit Section with the utmost dedication, integrity, and professionalism. I look forward to working alongside the talented individuals who make up our organization and contributing to its continued advancement.

Once again, I express my sincere gratitude for the opportunity to serve as the President of the SPE Detroit Section. I am excited to embark on this journey and work together towards a prosperous future for our industry and its professionals.

Thank you for your confidence in me. Please feel free to reach out to me at any time.

Yours sincerely,
Robert Philp
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GROUP

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TREASURER'S REPORT



TOM POWERS,
SPE DETROIT SECTION
TREASURER

AS OF JUNE 6, 2023, SPE DETROIT'S FINANCIAL PERFORMANCE WAS:

	BUDGET (Entire Fiscal Year)	ACTUAL (Fiscal Year-to-Date)
INCOME	\$ 237,000.00	\$ 523,807.15
EXPENSES	\$ 359,016.00	\$ 421,043.82

Fiscal Year: July 1, 2022 - June 30, 2023

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ANTEC® 2024 will include five program themes. We're looking for papers/ presentations focused on:

- » Polymeric Materials and Characterization
- » Applications of Plastics
- » Polymer Processing
- » AI in Digitalization
- » Circular Economy

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4SPE.ORG/ANTEC





2023 TPO



2023 PLANNING COMMITTEE

CONFERENCE CO-CHAIRS

Neil Fuenmayor, LyondellBasell (Retired)

Mike Balow, Auxin Consulting, LLC

Rob Philp, Sirmax

TECHNICAL PROGRAM CO-CHAIRS

Dr. Norm Kakarala, Inteva Products LLC (Retired)

Mike Balow, Auxin Consulting, LLC

Dave Helmer, General Motors

SPONSORSHIP CO-CHAIRS

Dr. Sassan Tarahomi, Alterra Holdings

Martin Popella, MP Squared, LLC

Karen Rhodes-Parker, SPE Detroit Section

SESSION CHAIRS

EXTERIOR TRIM & STRUCTURAL APPLICATIONS

Mark Pilette, Magna Exteriors (Retired)

Charlie Yang, LyondellBasell

Kevin DeGrood, Borealis Compounds

PROCESS DEVELOPMENTS, ADDITIVE TECHNOLOGIES

Matt Sprouse, Washington Penn
Plastics Co., Inc

Dr. Suresh Shah, SPE Fellow,
Plastics "Hall of Fame" Inductee

David Tucker, New Wave Manf.

SUSTAINABILITY

Mark Allen, Dow

Murali Reddy, CCC Plastics

Dr. Petya Yaneva, SABIC

POLYOLEFIN ELASTOMERS & VULCANIZATES

Dr. Bhavesh Shah, Lion Elastomers

Dr. Dave Patel, GuruTech Systems, Inc

Dr. Nadeem Bokhari, Sumitomo Chemical

MATERIALS DEVELOPMENT

Dr. Bin Sun, SABIC

Quentin Boll, LyondellBasell

Catherine Wilson, Ford Motor Company

PERFORMANCE ADDITIVES & COLORANTS

Dr. John Mara, Amfine Chemical Co

Heejung Kwon, Songwon

INNOVATIONS IN AUTOMOTIVE INTERIORS

Dr. Pravin Sitaram, Haartz Corporation

Austin Wagenhals, Ford Motor Company

Hoa Pham, Sonoco Products Company

SUNDAY TUTORIALS

Micheal Shoemaker, Borealis Compounds

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EXHIBITORS



STAFF SUPPORT

Karen Rhodes-Parker, SPE Detroit Section

CONFERENCE SECRETARY

Lyle Beadle, Advanced Innovation Solutions, Ltd.

TREASURER

David Okonski, MSU - SuRF

HOUSE

William Windscheif, Advanced Innovative Solutions, Ltd.

KEYNOTE SPEAKERS

Lyle Beadle, Advanced Innovation Solutions, Ltd.

Laura Sherada, Asahi Kasei Plastics

William Windscheif, Advanced Innovative Solutions, Ltd.

Neil Fuenmayor, LyondellBasell (Retired)
Rob Philp, Sirmax

OEM SUPPORT

Scott Aramian, Advanced Composites

Drew Geda, Hyundai-Kai America
Technical Center

Tom Pickett, General Motors

OPERATIONS

Rob Philp, Sirmax

Mark Allen, Dow

Richard Umemoto, Magna Exteriors

DAY OF CONFERENCE SUP- PORT

John Bonser, Formosa Plastics Group

Jill Houser, JPI Creative

CONFERENCE FEEDBACK

Richard Umemoto, Magna Exteriors

Karen Rhodes-Parker, SPE Detroit Section

TECHNICAL SESSION COORDINATION

Bill Coy, Mankiewicz Coatings, LLC

Robert Eller, Robert Eller Associates

PROCEEDINGS BOOK

Jill Houser, JPI Creative

Laura Sherada, Asahi Kasei Plastics

Dr. Norm Kakarala, Inteva Products, LLC
(Retired)

Neil Fuenmayor, LyondellBasell (Retired)

Karen Rhodes-Parker, SPE Detroit Section

COMMUNICATIONS

Beth Talaga, Dow (Retired)

Catherine Wilson, Ford Motor Company

Austin Wagenhals, Ford Motor Company

Keith Siopes, Sumika Polymers NA

Karen Rhodes-Parker, SPE Detroit Section

Jill Houser, JPI Creative

AUDIO/VIDEO

Rob Philp, Sirmax

Mark Allen, Dow

City Events Group

WEBSITE

Rob Philp, Sirmax

Rob Smuck, Big Water Media

Neil Fuenmayor, LyondellBasell (Retired)

MEMBERS

Paula Balhorn, Highland Plastics

Rhianon Simmons, Highland Plastics

James Hansil, Spartan Polymers

Mark Lapain, Advanced Composites



NOMINATIONS AND ELECTIONS

BOB PETRACH. SPE DETROIT SECTION SECRETARY



SPE Detroit Secretary, Bob Petrach, announced a change to the Executive Committee line up for 2023-2024 and the election results for the 2023-2026 Board of Directors election.

Fang Wang was scheduled to be President and Rob Philp was scheduled to be President Elect, but at the request of Ms. Wang, her presidency will be delayed by one year and Rob Philp stepped into the role of President on July 1, 2023.

Longtime Director Bill Windscheif stepped down from the Board in June. He and his wife, Martha, are moving to Texas to be closer to family. Exercising his authority as President, Neil Fuenmayor appointed Bernd Henkelmann, Automotive Business Development Manager, Radici Plastics USA Inc., to a one-year Board position which runs through June 30, 2024.

THE CURRENT EXECUTIVE SLATE IS AS FOLLOWS:

President – Rob Philp | President Elect – Fang Wang
1st Vice President – Dawn Cooper | 2nd Vice President – Mary Gilliam

FIVE DIRECTORS WERE ELECTED:

BOB PETRACH
SPE DETROIT SECTION
SECRETARY

Todd Hogan, P.E. Dow, Inc.

Todd Hogan is a Senior Development Scientist with Dow Inc. Todd joined the Plastics Processing and Fabrication R&D group in 1990. In 2004, he moved to Plastics Technical Service and Development for sheet extrusion and thermoforming. In 2010 Todd joined Dow's Specialty Films business to lead process development projects in support of new business opportunities. In 2014 Todd returned to Plastics Technical Service and Development with responsibilities for product and application development for blow molding, foams, sheet extrusion and thermoforming. He currently is the application technology leader for plastic pipe applications.

Prior to joining Dow, Todd received his bachelor's in mechanical engineering in 1990 and master's degree in mechanical engineering in 1995, both from GMI Engineering and Management Institute (now Kettering University) in Flint, Michigan.

Todd Hogan has been a member of SPE since joining the GMI student chapter in 1988. Todd has been actively involved in the Mid-Michigan and Detroit Sections of SPE over the last 35 years and served as President, Counciller, and Secretary and held positions on the Education Committee, Program Committee Chair, and Newsletter Chair. Todd was elected as an Honored Service Member of the SPE in 2004.



Armando Sardanopoli

Armando Sardanopoli has been a member of SPE since 1968. He was responsible for initiating the SPI TPU Committee while employed at BASF. He was active in this committee for over 10 years and served as chairman several times. Armando was an active member of the SPE TPE TIG for 20 years. During that time, he was the Chairman and the technical chair for several TPE TOPCONS. He also has been moderator at various TPE TOPCONS and ANTEC sessions. Armando has been instrumental in starting a Plastics Technology program at Schoolcraft College and continues to be active as an instructor and further developing this program.

Armando has been active in the SPE Detroit section for over 10 years and a Board member for 3 years. Armando worked for thirty-six years in various technical positions involved with the TPU industry. He worked for 15 years for the Chemical Division of the Upjohn Company. Two of these years he led the technical and product improvement end of the business while working in Europe.

Armando joined the newly formed BASF TPU business in 1986. He was head of all aspects related to technology development. During his 20 years with BASF the TPU business had grown from a sales volume of 250,000 pounds/year to over 17 million pounds per year. He retired in 2006 and had been consulting in the industry for several years. Armando is also an active member of the Taylor Michigan Rotary Club and has served as President and a Board member for over 15 years. He is also a Board member of the Taylor Schools Education Foundation and currently serves the President of this Foundation.





Keith Siopes

Keith Siopes has been serving the global automotive plastics industry, in various engineering, sales and marketing roles with an automotive OEM, with major resin suppliers and compounders, and as an independent consultant for 40 years. He's been a member of the Society of Plastics Engineers and has held various roles for several years.

Keith holds a B.S. Plastics Engineering and an M.S. Finance. He is a current SPE Detroit Board Member serving as an e-communications coordinator. He serves on the TPO Committee and supports the education committee by serving as a student essay reviewer and a judge for student project posters.



Christopher M. Surbrook

**New Business Development,
Midland Compounding & Consulting, Inc.**

Chris started in the plastics industry selling additives and other materials as the North American Business Manager for Mica-Tek division of Microfine Minerals Limited in 1995. In 1998, he co-founded All Plastics, Inc., a manufacturing company that produced special-effect colorants. In 2005, All Plastics, was acquired by Bordener Engineered Surfaces in Midland, Michigan. Chris served as Chief Scientific Officer at Bordener until 2008. In 2009, he joined Midland Compounding & Consulting as New Business Development where he develops sustainable engineered materials for the Automotive, Building & Construction, and Furniture Industries. He is also a director, and Past-President, for the Society of Plastics Engineers Recycling Division. He has published 6 technical papers and participates in technical collaborative studies with the PLASTICS Industry Association and Institute for Scrap Recycling Industry.

He joined the Detroit Section in 1997. After relocating to the Mid-Michigan Section, He served on that Board and participated in the merger with the Detroit Section. In 2014, He joined the Board of the SPE Sustainability Division (now the Recycling Division) and was Chair 2017-2019. He currently serves as the Membership Chair for the SPE Recycling Division.

Chris has contributed many technical papers and presentations on recycled materials and remains active within many plastics recycling industry organizations.



Richard Umemoto

**Global Product Line Business Manager,
Magna Exteriors**

Richard's work at Magna is focused on developing products to further the aerodynamic performance of a vehicle. He has worked in the Automotive industry for 15 years including his first 7 years with TechmerPM, a plastics masterbatch and compounding company, starting as a process engineer then later working his way into Sales and Business Development to grow its Automotive Tier 1/ 2 business.

For the last 7+ years, Richard has been with Magna Exteriors and spent 5 ½ years in Tokyo, Japan developing new business with the Japanese OEMs globally.

Last October 2022, he returned to Michigan as Global Product Line Business Manager and has been to date.

Richard graduated from Virginia Tech with a BS in Material Science and Engineering in 2009. Relevant Organizations:

- Society of Plastics Engineer (SPE) Detroit Section (2014-2017; 2022-Present)
- Automotive TPO Engineered Polyolefins Conference Committee (2014- 2017)
- Automotive TPO Conference Committee (2023-Present)
- Society of Plastics Engineer (SPE) Automotive Division (2013-2017; 2022-Present)
- EAV Conference 2023 - Registration site setup and upkeep
- Webmaster - Feb 2023



SPE DETROIT BOARD OF DIRECTORS PROFILES

LYLE BEADLE, SPE DETROIT DIRECTOR



LYLE BEADLE
SPE DETROIT
DIRECTOR

PERSONIFIED POSITIVE INSPIRATION – A JOURNEY OF GOALS & A MESSAGE FROM DR. GILLIAM

Dr. Mary Gilliam is a classic example of positive outcome motivated through inspiration and mentorship. Mary is currently a member of the SPE Detroit Section Board of Directors with the position of Second Vice President – on her way to the Presidency in the next 3 years. How did this happen, you might ask? Recognition of talent? Perhaps, but more likely a quest for knowledge to satisfy a personal passion. “I’ve always had a passion for Sustainability, and I’ve come to realize that plastics are and have been a ‘key’ to enabling Sustainability” she said during my interview with her over lunch at Panera one day in February.

But first, a highlight of the personal story that ignited her journey. She was number 4 in a family of 6 children, 3 boys and 3 girls (how’s that for equality?). Her Dad started out as a high school history teacher, instilling in her the love for learning. A key to the engine that fueled her education experience started with weekly family dinners where there was lots of discussion, and which served as a runway to develop critical thinking skills. “I love to learn” she said, and throughout her education, she found mentors that provided guidance. Mary’s high school chemistry and physics teacher, Dr. Mittler, provided mentorship that nurtured her interest in the technical sciences. Then, at University of Missouri after receiving her undergraduate degree, Dr. Hirotsugu “Koge” Yasuda (now deceased) and Dr. Qingsong Yu sharpened her focus during her time as a grad student. She received her PhD in Chemical Engineering in 2006 with a specialty in ‘Plasma Polymerization’. After her first job with Exatec (a joint venture with then General Electric Plastics and Bayer Corporation), she joined the faculty at Kettering University (formerly General Motors Institute –GMI) to help create a Chemical Engineering course of study. It was there at Kettering she met Reggie Bell in the department of Chemistry, and formed an alliance to weave Plastics into the curriculum.

Mary expressed that “it is so refreshing that young people today are passionate about social issues and the environment.” Her message to young people navigating their own educational adventure is: “Pursuing a STEM career is a great way to hone your passion into action by developing solutions to address global challenges.” Although conventional thought among young students is that ‘Plastics are bad’, she says that “they are an integral part of our society and if removed, it would result in devastating consequences related to healthcare, vehicle emissions, food safety, and more.” Mary urges these young students to become ‘Part of the solution’ in a STEM field. Why is she so interested in her association with SPE? I asked. She told me that her involvement with SPE, particularly our Detroit Section, “allows the experience of creating professional relationships and associations with people from different industries to collaborate and share knowledge that will align our efforts for advancing solutions specific to Plastics”.

Mary recently joined General Motors Research & Development in 2021 and her projects include advancing lightweight materials, including plastics, and manufacturing methods that offer more sustainable solutions. She represents a highly valued part of our SPE membership and we are lucky to have her in our midst.



A STORY ABOUT ANTEC, SPE INTERNATIONAL, GERMAN ENGINEERING AND A PASSION FOR SUCCESS!

Martin Popella is a gifted and passionate risk taker. His family education began by observing his father, a World War II refugee survivor, intuitively carve a technical career from scratch with Siemens Company in Rosenheim Germany. With Martin's aptitude for mathematics, persistence, and hard work, he became interested in the scientific disciplines and developed his own skill set for technology. "I wanted to be a 'Car Guy', so I started in electrical engineering, but lost interest in theoretical processes". 'Hands on' is a better description for the preferred flavor of work that Martin wanted to pursue.

His education in Plastics Technology started at University in Rosenheim. The department head (Dean) of Plastics Engineering had ties with UMass Lowell and was very involved and connected with SPE International in Central Europe. An opportunity surfaced for Martin to attend ANTEC in Dallas TX and had his first taste of applied plastics technology in America, SPE style. He liked it in the USA, and promised himself that ultimately, he would return, somehow.

Upon returning to Rosenheim, he bought into shared ownership of a bar, "in order to get some experience with running a business". Then, after thinking he had 'missed the boat' to continue his plastics education, on New Year's Eve 2001, he received a call from the Dean of the University who had become a mentor to Martin. There had been a last-minute cancellation for a trip to return to America and the spot was his if he wanted it; but he had to decide within the next 24 hours. He chose to take advantage of the opportunity, which led to an 18-month Internship with Faurecia in South Carolina. Faurecia's main customer was BMW in Greenville/Spartanburg SC. Faurecia was making door panels and instrument panels for BMW and a 'trial by fire' fueled Martin's passion for plastics technology within an automotive manufacturing environment.

Upon his return to Rosenheim Germany, Martin completed his thesis, sold his share of the bar business, earned his Diplome Engineer degree and garnered his first 'real' job with Magna International as an Advanced Manufacturing Engineer. He continued to utilize his contacts from his exposure to SPE both at ANTEC in America and in Europe. An SPE contact he had met earlier in Texas called him and offered a business opportunity with Kraus Maffei. He traveled the world and now finds himself back at the SPE starting point. Martin said, "I want to give back wherever I can through SPE," acknowledging his good fortune by mentoring students when the opportunity presents. He has met and admires Keith Young, who has inspired youth through the EcoTek Lab across the country. Martin's broad experience in the plastics industry has many people to be thankful for, including Paul Caprio, past President of Kraus Maffei. Martin has also been employed with Celanese (formerly Ticona) in Germany under the tutelage of Jeffrey Helms (Councilor SPE Automotive Division), another intersection with SPE.

Martin recently launched his own entrepreneurial enterprise, 'MP2 Squared', lives in northern Oakland County with his wife and children and is looking forward to "paying back his good fortune" that started and continued to inspire him from his SPE associations. Martin said, "I feel that I have a lot to offer here and I will enthusiastically pursue every opportunity to engage with and influence students to follow a STEM curricula and promote the 'Positive side of Plastics'". We as fellow board members of SPE Detroit Section wish him continued good fortune and success as he passes along his enthusiasm, passion, and knowledge to aspiring young Plastics Professionals.





2023 “WONDERS OF PLASTICS” SOUTH ESSAY CONTEST WINNERS

TOM MILLER, SR. ACCOUNT MANAGER, CHANNEL PRIME ALLIANCE



TOM MILLER
SPE DETROIT
EDUCATION
COMMITTEE

The Detroit SPE received 29 essays for the “South” essay contest this year. We received three middle school essays: two from Boulan Park Middle School in Troy and one from Meads Mill Middle School in Northville. We received 26 high school essays from: **Warren Mott** (14), **Renaissance** in Detroit (5), **Cass Tech** in Detroit (2), **Detroit Edison PSA** (1), **Salem HS** in Canton (1), **Adlai E Stevenson HS** in Sterling Heights(1), **Frederick Douglass Academy** in Detroit (1) & **Plymouth HS** (1).

We are pleased to announce the winners:

1ST PLACE: *Maheen Rahman – 10th Warren Mott High School*
THE PRACTICALITY OF PLASTIC TO PRESERVE LIFE

2ND PLACE: *Amier Cox – 12th Cass Tech High School*
PLASTIC: A MATERIAL WITH INFINITE POTENTIAL FOR GOOD

3RD PLACE: *Blair Qi – 7th Grade Boulan Park Middle School*
FROM RAGS TO RICHES—THE MODERN-DAY CINDERELLA STORY OF PLASTIC ART

4TH PLACE: *Travon Singleton – 11th Grade Warren Mott High School*
PLASTICS ARE THEY BAD?

5TH PLACE: *Reyana Chowdhury – 11th Grade Warren Mott High School*
THE BENEFITS OF PLASTIC IN HEALTHCARE

Winners will receive Visa gift cards in the amount of \$500, \$300, \$200, \$100 and \$50 respectively and \$5 Subway gift cards will be sent to the other 24 participants.

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1ST PLACE: Maheen Rahman – 10th Warren Mott High School

THE PRACTICALITY OF PLASTIC TO PRESERVE LIFE

Having the ability to create cost-efficient, rapid, and custom medical devices and implants specifically tailored to a patient's needs - sounds extraordinarily innovative toward improving the betterment of our lives, right? What has been allowing us to perform this very cutting-edge endeavor is the use of plastic in 3D printing revolutionizing the manufacturing industry. Allowing for faster, more efficient production of complex components and products. Plastic is the most common raw material for 3D building, its usefulness is beneficial when it comes to 3D printing medical devices with customization, speed, lightweight, strength, and cost efficiency.

When it comes to 3D printing it's vital that custom medical devices/implants are created to tailor to a patient's specific needs because no two people are alike. Implementing 3D printing technology and plastics' ability to be easily shaped and molded into any form allows us to cater to the nature of any human body. Remington Medical Inc, a company that manufactures and designs safe and disposable medical devices, states some of the benefits of 3D plastic printing, "it can be used to create accurate and detailed virtual models of human anatomy. Rather than performing invasive procedures on patients, doctors can study physical prototypes or models to diagnose conditions. Developed by medical device specialists using a 3D printer, models and prototypes are used to help physicians plan surgical procedures with reduced risk to patients." (Aycok). These useful characteristics of plastic have allowed us to create 3D-printed implants for ears, knee replacements, cranial replacements, jaw replacements, and so much more which are vital for individuals caught up in unique situations in need of unique body parts.

In addition to this broad customizability, using plastic to 3D print medical devices is so much faster than traditional manufacturing methods which are critical in emergency situations. Printing with plastic is considered to be faster than printing with other materials such as metal or ceramic, "Plastic 3D printing has generally shorter build time than metal 3D printing. Plastic 3D printers also utilize less energy, and the parts can be done in thicker layers. Since 3D printers that use metal materials require a high level of sophistication, the printing process can be time-consuming. Plastic also needs sophistication when it comes to making the desired 3D part. However, it is not the same level of scrutiny compared to metal." (Chen). It is more eco-friendly and time efficient to use plastic for 3D printing components making them an ideal choice for rapid prototyping and production. When compared, plastic materials are lightweight compared to metal or ceramic making for medical devices and implants that need to be implemented in the body or worn on the body. Lightweight materials reduce discomfort for the patient and reduce mobility. An example of the benefits plastics lightweight bring could be with chips, "Chips are becoming smaller but contain more functionality and sensitivity than ever. This revolution in miniaturization is important for medical implants and opens the door to small, lightweight devices that consume little energy and are comfortable for the patient. This makes them a valuable tool for doctors to offer treatment and provide more customized diagnosis." (Kumovis).

Another benefit to 3D printing with lightweight plastic material as opposed to any other materials is the amount of material that is used to construct a component is reduced thus leading to cost efficiency, "3D printing trial implants with polymers such as polyphenylsulfone (PPSU) can save medical device companies up to 50% on manufacturing compared with milled titanium." (Kumovis). 3D printers are fairly inexpensive and implementing plastic filaments is pretty cost-efficient, breaking it down to the 3D machine cost built specifically for metals and the cost per build hour with metals - this is much more expensive than utilizing a machine and materials specifically catered towards plastics.

Ultimately, using plastic for 3D printing medical devices and so much for the betterment of our society comes with lower production costs, eco-friendly, lightweight for mobility/ease, increased in designed freedom, and an abundance of other benefits as well. When it comes to innovation, especially within the medical field it is vital that we strive to use our resources to their fullest potential - this is exactly what is being done here with the use of plastics in 3D printing medical devices.

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2023 “WONDERS OF PLASTICS” NORTH ESSAY CONTEST WINNERS

TODD HOGAN, SENIOR DEVELOPMENT SCIENTIST, DOW



TODD HOGAN
SPE DETROIT
EDUCATION
COMMITTEE

The Detroit SPE received 52 essays for the “North” essay contest this year. We received 42 middle school essays: 40 from **Clare Middle School**, one from **Jefferson Middle School** in Midland, and one from **Handy Middle School** in Bay City. We received 10 high school essays: nine from **Freeland High School**, and one from **H.H Dow High School** in Midland.

We are pleased to announce the winners:

1ST PLACE: Louis Huang – 9th H.H. Dow High School
THE JOURNEY OF PLASTICS

2ND PLACE: Sarah Hazen – 8th Clare Middle School
The Advantage OF PLASTICS & THE SOLUTION TO POLLUTION

3RD PLACE: Morgan Ulick – 8th Clare Middle School
PLASTICS ESSAY

4TH PLACE: Kaitlin Zellinger – 8th Clare Middle School
KEEP IT FRESH: HOW PLASTICS ARE USED IN FOOD PACKAGING

5TH PLACE: Braedin McGlynn – 8th Clare Middle School
WHY PLASTICS ARE GOOD

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<ul style="list-style-type: none"> 1.5732 million t Modified Plastics 108,000 t Environment-friendly high-performance recycled plastics 98,500 t Complete Biodegradable Plastics 17,000 t Specialty Engineering Plastics 6506 t High Performance Carbon Fiber and Composite Materials 540060 t Light Hydrocarbon and Hydrogen Energy 2.689 billion pcs Medical and Healthcare Polymer Materials Products <small>Markets on this page rounded as of December 31, 2022</small>	<ol style="list-style-type: none"> 01 Full range of automotive modified plastics and composite product system 02 Integrated technical solution and joint development of forward design 03 All-round cooperation of global mainstream automobile manufacturing enterprises 04 Build the largest, strongest and safest supply chain of automotive materials in the world 	<p>1 Extreme Lightweight Solution Based on Continuous Fiber Reinforced Thermoplastic Composites</p> <p>The world's first continuous fiber reinforced thermoplastic composite automotive door substrate solution</p> <ul style="list-style-type: none"> Material: KingHy Ultra-thin: Thickness 0.6mm Ultra-light: Weight 0.7kg, 30% weight loss (compared to long fiberglass door substrate), 5kg weight loss (compared to metal) <p>On August 16, 2018, Ford's new Focus achieved its first mass production in the world.</p> <p>2 Electrified and Smart Electrical Vehicle Material Solutions</p> <ul style="list-style-type: none"> Wire slot Motor shell Thermal management system Controller housing Connector Charging gun plug Charging gun shell Battery pack assembly <p>3 Sustainable and Recycle PCR Material Grades for Automotive</p> <ul style="list-style-type: none"> Interior: PP, PP-TD, PP-GF, PC/ABS, ABS Exterior: PP-EPDM-TD, PP-TD, PP/PE, PP-E/P-TD, PA6-GF, PP-GF, PP-LGF Powertrain: PA6, PA6-GF, PA66, PA66-GF, PP-GF

1ST PLACE: Louis Huang – 9th H.H. Dow High School

THE JOURNEY OF PLASTICS

Ralph Lauren, the founder of the international multi-billion-dollar corporation of the same name, once said, “A lot of hard work is hidden behind nice things.” From automobiles and airplanes to electronics and furniture, plastics are extremely widespread and have a significant impact worldwide. Despite this, the large majority of people, especially younger generations, view plastics as a given and do not realize and appreciate the extensive effort and time it took to develop this world-changing invention. The journey that plastics underwent over two centuries was extensive and arduous, but it ultimately changed the world for the better.

The first plastics were created with the help of the game of billiards. During the 19th century, it was considered stylish for gentlemen to own a billiard table and a set of billiard balls made of ivory. Back then, hunters had already virtually eliminated the elephant herds of Africa and India, the primary source of ivory. In 1863, the ivory shortage had gotten so extreme that a New York billiard-ball manufacturer offered a \$10,000 prize to anyone who could create an effective substitute. The winners of the prize were John Wesley Hyatt, a young printer in New York, and his brother, Isaiah. Though they never actually received the money, they cemented their place in history by inventing celluloid, one of the world’s first plastics. In addition to being similar in appearance to ivory, celluloid became soft when heated so manufacturers could mold the celluloid into the specific shapes they wanted. Celluloid was made from combining two natural materials: cellulose nitrate and camphor. Breakthroughs regarding synthetic plastics would only come to fruition 40 years later in the United States of America.

In 1905, an American chemist named Leo Baekeland was experimenting with synthetic resins, artificially produced substances that could be converted into rigid polymers. Though originally born in Belgium, Baekeland moved to the United States, earning most of his money from founding and selling the company that invented “Velox,” a photographic paper that allowed enlargements to be printed via artificial light. With his newfound fortune, Baekeland purchased a house in New York and set up a home laboratory, conducting research inside it. Over the next two years, Baekeland attempted to create a meaningful product, but to no success. Fortunately for him, his luck would soon turn around, as in the summer of 1907, by reacting phenol with formaldehyde under extreme heat and pressure using machines Baekeland called “Bakelizers,” he successfully produced Bakelite, a hard and durable plastic that was both heat resistant and electrically non-conductive. Bakelite was the first fully synthetic plastic, meaning it did not consist of any molecules in nature. It also possessed high degrees of flexibility, taking almost any shape imaginable. After being released commercially, it experienced instant success, seeing use in every aspect of life. Electrical insulators, radio and telephone casings, kitchenware, jewelry, pipe stems, children’s toys, firearms, and washing-machine impellers all utilized Bakelite. Baekeland could not be happier with his enormous success, but little did he know what even greater impact plastics would have in the near future.

After World War I, chemistry experienced a golden age that led to an explosion of new plastics, such as polyvinyl chloride and polystyrene. Polyvinyl chloride, or PVC, was first discovered in 1872 by German chemist Eugen Baumann, when it appeared inside a flask of vinyl chloride that had been left on a shelf sheltered from sunlight for four weeks. Chemists tried and failed to process PVC because of its poor heat stability. PVC was left relatively ignored in the industry until 1926, when Waldo Semon and the B.F. Goodrich Company developed a method to modify PVC by blending it with various additives, finally making it usable. The use of PVC quickly spread, being most notable for its ubiquitous use in pipes - over 70% of them are made from PVC. On the other hand, polystyrene was first discovered in 1839 by Eduard Simon, an apothecary from Berlin. Striking similarities with PVC in terms of its challenges in processing, only many years later, in 1931, did polystyrene start to see industry usage. The company I. G. Farben began manufacturing polystyrene in 1931, but the most monumental development came in 1944, when Dow Chemical invented and patented Styrofoam, one of the most famous plastics that serves a wide variety of uses ranging from insulation and packaging to disposable plates and trays. Along with many other new plastics invented and mass-produced, this new wave of plastics added even more use cases and led to an unprecedented exponential growth in the popularity of plastics.

The journey of plastics has not even lasted 150 years, yet the drastic changes it brought upon the world are evident wherever one looks. Plastics have come a long way from celluloid to the wide range of polymers today, slowly replacing other materials in various applications, including piping, manufacturing, and many other fields. Demand for plastic is still steadily increasing, with the global plastic market expanding at an annual growth rate of 3.7% in the next decade. Even today, discoveries in plastics are happening rapidly, with research becoming more centered on issues such as biodegradable plastics, which are naturally-decomposing plastics that are more environmentally friendly than their traditional counterparts. At the current rate that the development of plastics is proceeding, who knows what new plastics will be discovered 50 years from now?

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UNIVERSITY OF MICHIGAN STUDENT CHAPTER NEWS

DANIEL PISARSKI, POWERTRAIN & VEHICLE MANUFACTURING, FORD



DANIEL PISARSKI
SPE DETROIT
MEMBER

I recently had the opportunity to speak with the University of Michigan student chapter of SPE during a luncheon hosted by the Michigan Materials Society. During the talk, I emphasized the various ways students can benefit from the organization in terms of professional development, networking, and outreach. I shared my experience volunteering as a student moderator at SPE AutoEPCON for seven years, which was a driving force for my interest in plastics within the automotive industry. For students engaged in research, I shared information about the poster conference at AutoEPCON and encouraged everyone to apply for the SPE Detroit Section Scholarship by sharing my own experiences with the application process. It was inspiring to see the enthusiasm of the students, as someone who was in their shoes just a few years ago.

In addition to highlighting opportunities for involvement, I also shared insights into how the automotive industry is using additive manufacturing to create sustainable solutions. With the help of new materials and processes, the industry is making significant strides towards reducing waste and increasing efficiency. Ford Motor Company is exploring the use of recycled materials in additive manufacturing, further promoting sustainability. It was exciting to discuss these advancements with the students and see their

interest in how responsible plastics engineering can contribute to a more sustainable future.



Overall, the visit to the University of Michigan student chapter was a great opportunity to engage with the next generation of material scientists and plastics engineers. It was encouraging to see the passion and excitement of these students, and I am confident that they will continue to make significant contributions to the industry. SPE is committed to supporting and fostering the development of these future leaders, and we look forward to seeing all that they will accomplish in the years to come.

2023 PLANNED EVENTS



For more information please contact Karen Rhodes-Parker at 248-244-8993 ext.3 or karen(at)spedetroit.com

DATE	EVENT	LOCATION
November 6, 2023	SPE Detroit Board Meeting	ACC - 5750 New King Dr. Ste 120, Troy
November 16, 2023	Technical Program	One Drop Brewing Company 130 Oakdellist, Oxford
December 6, 2023	Detroit Section Holiday Dinner	Royal Park Hotel, Rochester
January 8, 2024	SPE Detroit Board Meeting	ACC - 5750 New King Dr. Ste 120, Troy
February 5, 2024	Technical Dinner Meeting Porous Structure with Cellulose Fiber to Replace Thick Molded Plastic Parts	MSU Management Center, Troy
March 11, 2024	SPE Detroit Board Meeting	ACC - 5750 New King Dr. Ste 120, Troy
March 21, 2024	Technical Program Craft Beer Tour	TBD Southfield Metro Area
May 7, 2024	Auto EPCON	Detroit Marriott - Troy
May 13, 2024	SPE Detroit Board Meeting	ACC - 5750 New King Dr. Ste 120, Troy

2023 SPE CHAPTER & SPE HQ PLANNED EVENTS

In the spirit of collaboration to promote the good work of SPE chapters and SPE HQ we will be listing events and conferences which may be of interest to our members and friends.


DATE	EVENT	LOCATION
October 10-12, 2023	SPE FlexPackCon®	Montreal, QC
October 10-12, 2023	SPE Vinyltec	Akron, OH
October 23-25, 2023	2023 SPE Blow Molding Conference	Chicago, IL
October 24-26, 2023	SPE Thermoforming Conference	Cleveland, OH
November 8, 2023	SPE Auto Innovation Awards & Gala	Livonia, MI
March 4-7, 2024	ANTEC	St. Louis, MO
April 8-10, 2024	Plastics in EA Vehicles	Detroit Marriott – Troy
May 6-10, 2024	NPE	Orlando, FL

Some SPE Chapter newsletters which may be of interest:

[SPE Automotive Summer 2023 Newsletter](#)

[SPE Akron September 2023 Newsletter](#)

[SPE Composites Fall 2023 Newsletter](#)




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SPE CENTRAL INDIANA 2023 INDY TRACK DAY

MARTIN POPELLA, (MP)SQUARED LLC, SPE DETROIT EVENT CHAIR

I want to share my experience on Friday, May 19th with the SPE Central Indiana Chapter. They held their annual “Day at the Track” event at the Indianapolis Motor Speedway. There was a good turnout with 30+ people. In the morning we toured Kimball Electronics, which also sponsored part of the afternoon event along with Celanese. SPE rented a private VIP lounge for Fast Friday Practice prior to the Indy500 race. For \$195 per person, participants received pit and garage passes, lunch, snacks, and a full-service open bar. This was a great networking event and I hope to plan something unique like this for the SPE Detroit Section in the coming year.



Mario Andretti and Martin



Mario Andretti's garage



INTERSOCIETY REPORT

BOB PETRACH, SPE DETROIT SECTION SECRETARY



BOB PETRACH
SPE DETROIT SECTION
SECRETARY

Earlier this year, SPE Detroit sent a delegation to **ENGINEERING SOCIETY OF DETROIT (ESD) GOLD AWARDS CEREMONY** – Neil Fuenmayor, Fang Wang, and Bob Petrach – to represent Peter Grelle. Angela Grelle’s widow, and niece Jackie Smiatacz attended as well.

Normally, SPE Detroit would present our awards such as Outstanding Member or a Star Award at the Gold Awards along with other affiliate societies presenting their awards. When it was explained to ESD that SPE Detroit did not do any awards in 2022 due to Pete Grelle’s untimely passing, ESD immediately offered to rearrange the Gold Award program and allow us to do a tribute to Pete. We accepted that offer

and a tribute to Pete was given noting his contributions to SPE as well as his efforts on the education program at Schoolcraft College and participation in SAE AWIM and ESD Future Cities. The establishment of the **Peter Grelle Scholarship Award** was also highlighted.

ESD also paid tribute to **Sol P. Baltimore, ESD, Distinguished Service Award Honoree**, past Chair of the Affiliate Council, a friend and mentor to many of us. Mr. Baltimore passed away in 2022.

The **Gold Award** honoree was **Robert Bordley, PhD** who was nominated by INCOSE.



Robert Bordley, PhD Gold Award Honoree



SPE delegation at the ESD Gold Awards Ceremony



ZERO TOLERANCE TECHNICAL DINNER

On Monday, June 5, **Zero Tolerance, LLC** hosted an **SPE Technical Dinner** meeting. Zero Tolerance is a growing plastic injection mold machine shop located in Clinton Township, Michigan. They have invested in the highest performance machinery and tooling along with a staff that is always willing to go the extra mile to ensure the best quality of customer service.

Zero Tolerance succeeds in the production mold industry as a problem -solving organization with a focus on perfection through research, learning and innovation.

President, **Steve Michon**, was our host for an informative and interesting evening. Listen to Mr. Michon on [The Manufacturing Alliance Podcast](#).

Steve Michon and Bob Petrach



2023 SPE DETROIT GOLF OUTING

Bloomfield, was a success this year with 26 foursomes. A special thanks to the committee members: **Dawn Cooper, Karen Rhodes-Parker, Tom Miller, Scott Nakon, and Lyle Beadle.**

Matthew Hall, Amco Polymers was especially successful, hitting a hole-in-one on number 16!

Spartan Polymers was our special lunch sponsor and its foursome won. A special thanks to all of our sponsors: **Channel Prime, RCO Engineering/ Aero Space, Entec Polymers, McDunnough, Inc., MRC Polymers, Mitsui Plastics, BASF, TeknorApex, Polyplastics, iD Additives, Amco Polymers, and PETS.**

WE HOPE TO SEE EVERYONE AGAIN NEXT YEAR!

*Matthew Hall, Amco Polymers,
Celebrates his Hole-in-One!*



DETROIT SECTION
 SOCIETY OF PLASTICS ENGINEERS, INC.
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Education Fund	Sandra McClelland	Solvay – Retired	586.292.1794	smccllelland(at)spedetroit.org
Golf Outing	Dawn Cooper	General Polymers Thermoplastics Materials LLC	248.390.2499	dcooper1010(at)gmail.com
Historian	Bob Petrach	Safety Technology – Retired	248.703.5995	robertpetrach(at)aol.com
House/Programs	Martin Popella	(MP)squared LLC	248.520.5928	mpopella(at)mpsquared.net
Intersociety	Bob Petrach	Safety Technology – Retired	248.703.5995	robertpetrach(at)aol.com
Material Auction	Dawn Cooper	General Polymers Thermoplastics Materials LLC	248.390.2499	dcooper1010(at)gmail.com
Membership	Dr. Mahmoodul Haq	Michigan State University		haqmahmo(at)egr.msu.edu
Newsletter	Eve Vitale	SPE Foundation	810.814.6412	eve.vitale(at)series1one.com
e-Communications	Keith Siopes	EMS-Grivory North America Inc.	248.797.4607	keith.siopes(at)gmail.com
Nominations/Elections	Fang Wang, PhD	SGS	248.832.1597	dragonfly428(at)gmail.com
PlastiVan & Essay Contest	Tom Miller Todd Hogan	Channel Prime Alliance Dow	810.986.6131 989.636.5303	millertl(at)comcast.net tahogan(at)dow.com
Public Interest	Dawn Cooper	General Polymers Thermoplastics Materials LLC	248.390.2499	dcooper1010(at)gmail.com
Scholarships	Tom Miller	Channel Prime Alliance	810.986.6131	millertl(at)comcast.net
TPO Conference	Neil Fuenmayor Rob Philp	LyondellBasell – Retired Sirmax	734.929.8911 248.716.0657	fuenmayor.neil(at)gmail.com rphilp(at)sirmax.com
Webmaster	Rob Philp	Sirmax	248.716.0657	rphilp(at)sirmax.com

BOARD OF DIRECTORS

TERM ENDING 6/2024

Sandra McClelland
[smccllelland\(at\)spedetroit.org](mailto:smccllelland(at)spedetroit.org)

Adrian Merrington, PhD
[adrianmerrington\(at\)gmail.com](mailto:adrianmerrington(at)gmail.com)

Tom Miller
[millertl\(at\)comcast.net](mailto:millertl(at)comcast.net)

Tom Pickett
[tomjpickett\(at\)yahoo.com](mailto:tomjpickett(at)yahoo.com)

Keith Siopes
[keith.siopes\(at\)gmail.com](mailto:keith.siopes(at)gmail.com)

Eve Vitale
[Eve.vitale\(at\)series1one.com](mailto:Eve.vitale(at)series1one.com)

TERM ENDING 6/2025

Dr. Mahmoodul Haq
[haqmahmo\(at\)egr.msu.edu](mailto:haqmahmo(at)egr.msu.edu)

Martin Popella
[mpopella\(at\)mpsquared.net](mailto:mpopella(at)mpsquared.net)

Laura Shereda, PhD
[lshereda\(at\)akplastics.com](mailto:lshereda(at)akplastics.com)

Bernd Henkelmann
[bernd.henkelmann\(at\)radicigroup.com](mailto:bernd.henkelmann(at)radicigroup.com)

TERM ENDING 6/2026

Armando Sardanopoli
[sardanopoli-sec\(at\)live.com](mailto:sardanopoli-sec(at)live.com)

Todd Hogan
[tahogan\(at\)dow.com](mailto:tahogan(at)dow.com)

Keith Siopes
[keith.siopes\(at\)gmail.com](mailto:keith.siopes(at)gmail.com)

Christopher Surbrook
[csurbrook\(at\)midlandcompounding.com](mailto:csurbrook(at)midlandcompounding.com)

Richard Umemoto
[richard.umemoto\(at\)magna.com](mailto:richard.umemoto(at)magna.com)

ADMINISTRATIVE

Karen Rhodes-Parker
[karen\(at\)spedetroit.com](mailto:karen(at)spedetroit.com)
248.244.8993/
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The SPE Detroit Section – “Where It All Began!”

The Detroit Section (#001) is the birthplace of the Society of Plastics Engineers. Fred Conley, our Section’s first president was also the 1942 SPE President. We’re proud to be the charter chapter of this global organization. In 2013 we merged with the Mid-Michigan Section and we serve 63 of Michigan’s 83 counties and 600+ members.

The Detroit Section is proud of its 21 Fellows of the Society, 37 Honored Service Members and its five distinguished members: Fred Conley, 1942 SPE President; Henry Wojtaszek, 1979 SPE President; Greg R. Thom, 1986 SPE President; Dr. Brian G. Landes, 2019 SPE President; Irv E. Poston - one of only six Distinguished Members who were not President of the Society.

The Detroit Section’s Mission is to be active in educating, promoting, recognizing, and communicating technical accomplishments for all phases of plastics and plastic based-composite developments – particularly in the automotive industry.

Detroit SPE works tirelessly to deliver successful programs, gaining funds for our educational initiatives. In the last 20 years our contribution to plastics education has grown well over \$1,000,000.

SPE® TPO Global Automotive Engineered Polyolefins Conference The SPE® TPO Global Automotive Engineered Polyolefins Conference began in 1999 and has become the world’s leading automotive polyolefins forum, drawing 900 attendees from 20 countries on four continents. The conference provides the latest innovative developments in polyolefin materials, processes, and application technologies, as well as a growing range of TPEs and TPVs.

AutoEPCON First held in 2006, the Automotive Engineering Plastics Conference features technical presentations on the newest advances in materials technology, predictive engineering, process enhancements, and application developments for thermoplastic and thermoset engineering plastics for the automotive industry and includes plenary and keynote addresses from industry leaders.



SPE Detroit Section Scholarships To support the future of plastics, the Section consistently awards \$30,000-\$60,000+ in annual scholarships to local students. Our named scholarships range from \$4000 to \$6000: the Future Leaders Scholarship, the Women to Watch Scholarship, the Professor Reginald Bell Scholarship, and the Delta Polymers Scholarship.

SPE Foundation Scholarships The Detroit Section has funded four SPE Foundation Scholarships honoring Norm Kakarala, Thomas E. Powers, Robert G. Dailey, and Irv Poston

PlastiVan® SPE Detroit has consistently been the largest sponsor of PlastiVan® giving over \$500,000 to the program, and in 2020 contributing \$60K to the PlastiVideo™ program, earning co-branding rights to help change the perception of plastics one classroom at a time.

“Wonders of Plastic” Essay Contest With the Mid-Michigan Section merger, the SPE Detroit essay contest has grown to include northern and southern divisions. Middle and high school students compete for cash prizes by writing an essay on a plastics subject of their choice.

Christmas Toy Program The initial collaboration with American Plastic Toys, Inc. to manufacture toys for Toys for Tots led to a significant milestone in 2016 when after 18 years the 1,000,000th Toy was presented to a 3-year-old girl.

For additional information please contact:

Rob Philp

President

rphilp(at)sirmax.com

+1 (248) 716.0657