Chinese American Chemical Society - EAST chapter

East-CACS

Newsletter

Issue #2 (2023)

Content

2023 Events and Activities

1. 2023 EAST-CACS Annual Symposium: Chemistry and Medicine for Modern Life

It is with great enthusiasm that we report on the success of the 2023 Annual Symposium of the Chinese American Chemical Society – East Chapter. After four years of virtual events, we were thrilled to bring this highly anticipated gathering back to an in-person setting. The symposium took place at the Busch Campus of Rutgers University on June 17, 2023, and it was a resounding success.

This year's symposium was centered around the theme "Chemistry and Medicine for Modern Life," highlighting the pivotal roles that chemistry and medicine play in enhancing our quality of life. Discussions and presentations encompassed a wide range of topics, from the development of life-saving drugs and therapies to the creation of sustainable and environmentally-friendly chemical processes.

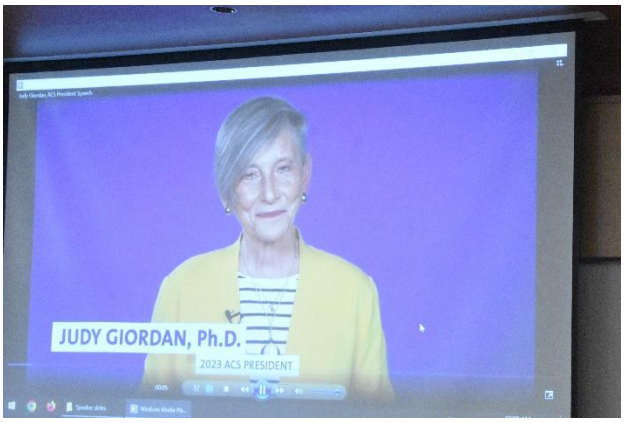
Highlights of the Symposium

The event featured enlightening talks from leading experts in the fields of Green Chemistry, Synthetic Biology, Pharmaceutical Research and Development, Intellectual Property, and Regulatory Affairs. Attendees had the chance to participate in a career workshop and engaging panel discussions, explore job postings, present their own research in the poster session, and compete for prestigious awards. A vendor show and exciting prize drawings added to the vibrancy of the event.

The symposium served as a valuable platform for attendees to engage with their peers, learn about the latest advancements in the fields of chemistry and medicine, and connect with potential collaborators and employers. It was a dynamic environment for knowledge exchange and networking. To ensure our attendees remained energized and focused throughout the day, we provided complimentary breakfast, lunch, and coffee.

The symposium commenced with opening remarks from **Xiaozhou Zhang**, Ph.D., who serves as the President of the CACS East Chapter for 2023. Dr. Zhang's address set the tone for the day, conveying a sense of excitement and anticipation for the knowledge-sharing and collaboration that would define the event. As the leader of the chapter, Dr. Zhang's insights were particularly inspiring, underlining the significance of the occasion.

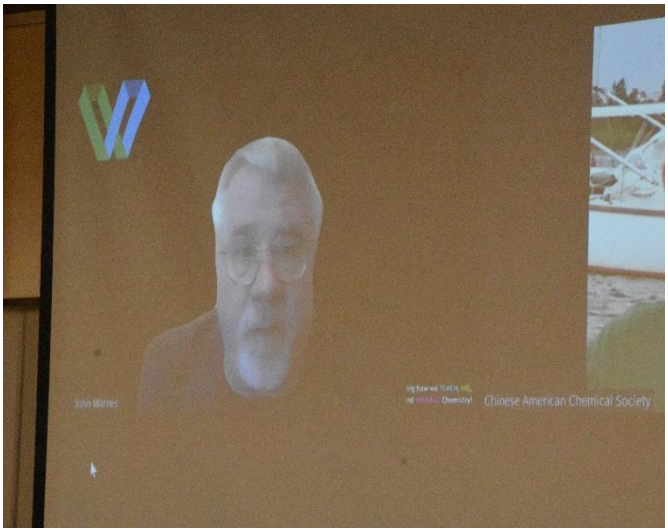
Following the opening remarks, the attendees had the honor of listening to a welcoming speech by **Longqin Hu**, Ph.D., a Professor and Chair of Medicinal Chemistry at Rutgers University. Dr. Hu's speech added a scholarly perspective to the symposium, highlighting the role of academia in advancing the fields of chemistry and medicine. Her presence and words of welcome enriched the symposium's academic ambiance.



One of the distinguished highlights of the opening session was a "Congratulating Speech via Video" from Dr. **Judy Giordan**, the President of the American Chemical Society (ACS). Her address, delivered remotely, emphasized the significance of the event within the broader context of the chemical community. Dr. Giordan's presence served to underscore the symposium's relevance and impact on the field of chemistry.

The morning session featured a distinguished keynote speaker, **John Warner**, celebrated for his groundbreaking contributions to green chemistry. His presentation, titled "Green Chemistry, the Sustainability Pendulum, and the Circular Economy," left a lasting impact.

With over 300 patents, Warner's transformative inventions have influenced industries and inspired new companies, from ALS therapy to hair color restoration. His co-founding role in green chemistry is influential. Dr. Warner drew a compelling parallel between the materials economy and chemistry, likening it to a pendulum. He quantifiably assessed sustainability by examining the overlap between these two realms. Dr. Warner elaborated on embedded cycles essential to sustainability, including use/reuse,



assembly/disassembly, materials metabolism, regeneration, and ecosystem stability. His ability to bridge theory with real-world applications was remarkable. Warner provided examples from both human-built and natural worlds, illustrating the potential of green chemistry for a sustainable future. In conclusion, Warner's keynote set the tone for a day of innovation, emphasizing the role of chemistry in the circular economy and the importance of sustainability. His extensive experience and contributions underscored the significance of his insights in shaping a more sustainable world.

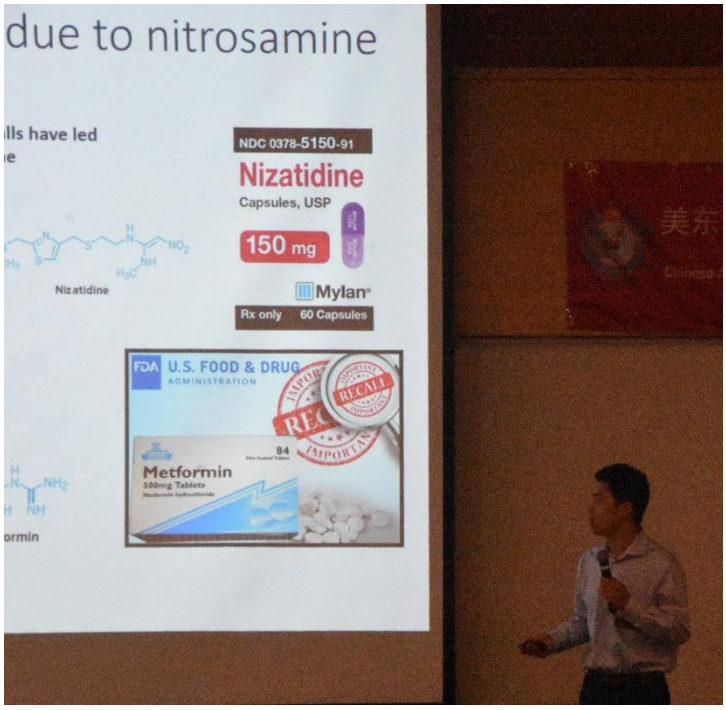
The second speaker in morning session is Dr. **Yajun Yan**, a distinguished bioengineer, shed light on groundbreaking research in the field, underscoring the significance of microbial systems in advancing green manufacturing and the innovative strategies he employs to achieve these goals.

Dr. Yan's innovative work has also translated into 16 patents, some of which have been licensed to leading companies, fostering the creation of two startup ventures. Dr. Yan's seminar addressed the potential of microbial systems in green manufacturing. He emphasized the need to broaden the range of synthesized products and enhance biosynthetic efficiency. His work explores repurposing enzymes for microbial synthesis of specialty chemicals and establishing a modifiable carbon metabolism coordination system for carbon-efficient production.

Dr. **Zhixiong Xue**, a Senior Principal Scientist and Technical Fellow at International Flavors & Fragrances Inc., delivered a thought-provoking presentation titled "Construction of Cell Factory via Metabolic Engineering – Designer microorganism for the production of valuable organic chemicals." With a rich academic background in Organic Chemistry and a Ph.D. in Biochemistry and Enzymology, Dr. Xue's expertise in functional genomics, molecular biology, and genetic engineering of microorganisms shone through.

During his presentation, he emphasized the advances in molecular biology and genetics that

enable efficient modification of microorganism metabolism for the sustainable production of valuable organic molecules. He discussed key enabling technologies, strategies for constructing cell factories, and the associated challenges. Dr. Xue illustrated these concepts through a compelling example of metabolic engineering in *Yarrowia lipolytica*, yielding omega-3 fatty acids as a sustainable source for vital nutritional supplements. Dr. Xue's extensive 27-year career with DuPont and IFF, notably his contributions to advanced biofuel and omega-3 fatty acid production, exemplifies his remarkable expertise in engineering microbes for chemical production. His presentation provided valuable insights into the future of sustainable chemical industry practices.



The last speaker in morning session is Dr. **Hao Chen**, Ph.D., Professor, Department of Chemistry and Environment Science, New Jersey Institute of Technology. Due to a personal issue, Dr. Hao Chen was unable to present, and his student, **Timothy Yaroshuk**, took the stage to discuss "Ensuring Patient Safety: Unveiling the Hidden Dangers - Drug Impurities."

The presentation focused on the detection and quantification of carcinogenic N-nitrosamines in drugs, particularly in the sartan family, which had led to numerous recalls. Existing methods for N-nitrosamine quantitation rely on standards and are only suitable for simple N-nitrosamines. To address this issue, Dr. Chen's group developed an innovative absolute quantitation strategy using coulometric mass spectrometry (CMS) without the need for standards. The process involved converting N-nitrosamines into electrochemically active hydrazine and quantifying them using CMS. The method was validated with excellent accuracy for simple N-nitrosamines.

Timothy Yaroshuk also discussed the utility of CMS for quantifying other drug impurities, including HCP proteins from therapeutic monoclonal antibodies, without standards. Dr. Hao Chen's impressive research background and contributions in mass spectrometry for bioanalysis and instrument development were evident, making this presentation a valuable addition to the symposium.

Mark Tang, a seasoned expert in the healthcare and biotech industry, provided valuable insights during the afternoon session. His talk, "Thoughts on Financing Options for Healthcare Biotech Startups and Established Companies," addressed the challenges faced by biotech companies in securing capital for research and development.

Mark discussed the recent downturn in the public market and its impact on biotech companies, emphasizing the need for alternative financing options. He covered strategies like cutting burn rates, strategic licensing, royalty financing, private equity, PIPES, debt, and more. These strategies are essential for both global and Chinese biotech companies. Mark also delved into the rise of SPACs and the criteria for an ideal fit between a target and a SPAC, shedding light on the financial, scientific, and managerial characteristics most appealing to SPAC sponsors and investors.Mark Tang's extensive experience and comprehensive overview of biotech financing provided attendees with crucial insights into the evolving landscape of healthcare funding.

The following speaker is **Linda Zhao**, an experienced pharma executive. She shared her insights in the presentation "From a Pharma Researcher to a Pharma BD." Her talk highlighted the vital role of Business Development (BD) professionals in the pharmaceutical and biotech industry. These experts are responsible for establishing collaborations, in-licensing and out-licensing, co-development, and more. Linda emphasized the blend of hard and soft skills required for proficient BD work, underlining the significance of life sciences and medical sciences expertise. With over a decade in global pharma BD and alliance management and a background in R&D, Linda provided valuable guidance to audience on transitioning from a scientist to a successful BD professional.

Dr. **Jin Zhu**, the last speaker of the day, delivered a thought-provoking presentation titled "Battle Between Generic Company and Brand-name Company." Dr. Zhu is an experienced patent attorney with strong scientific background, who is a valuable asset for clients seeking intellectual property guidance. In this talk, Jin delved into the intricate struggle between brand name pharmaceutical companies and their generic counterparts. This ongoing battle has far-reaching consequences for the healthcare industry and patient access to affordable medications.

Jin's presentation provided valuable insights into the economic, legal, and societal factors that shape the pharmaceutical competition landscape. By understanding the complexities of this dynamic, we can work towards a more equitable and accessible healthcare system for all. With a background in chemistry and drug discovery, Jin Zhu's expertise added a unique perspective to the discussion, offering a comprehensive view of this critical issue. Attendees gained a deeper understanding of the challenges and opportunities in these areas, making his talk a highlight of the symposium.

The next underlined session of the symposium is "Career Development Panel Discussion", featuring four distinguished panelists who shared their personal stories, insights, and opinions. The diverse backgrounds of the panelists added depth to the discussion.

- **Dujuan Lu**, EC member of E-CACS, a Scientist from SDS, provided valuable insights into the industry, offering a scientist's perspective on career growth and challenges.

- **Joe Chen**, a lawyer from Fox Rothschild LLP, brought a legal viewpoint to the conversation, shedding light on the intersections of law and the pharmaceutical sector.

- **Linda Zhao**, a BD professional and a speaker in the afternoon session, shared her journey from a researcher to a pharma BD, offering inspiration for those looking to transition their careers.

- **Yanbin Pan**, EC member of E-CACS, CEO of BirdoTech, provided a leadership perspective, discussing the path to becoming a CEO in the healthcare industry.

The panelists answered audience questions, providing guidance and mentorship. Their collective expertise enriched the symposium by addressing the various career paths and opportunities within the pharmaceutical and healthcare sectors.

The last session of the day is Closing Remarks by **Yuan Cheng**, Ph.D., who serves as the President-Elect of the CACS East Chapter 2023. Dr. Cheng's speech reflected on the key takeaways and highlights of the event. He acknowledged the efforts of the organizing committee, speakers, and participants in making the symposium a success. Dr. Cheng expressed his optimism for the future of the chemical and pharmaceutical industries, emphasizing the importance of collaboration, innovation, and sustainability. He encouraged attendees to stay engaged with the CACS East Chapter and to continue their contributions to the field.

In a showcase of academic excellence, the symposium featured eight engaging posters presented by esteemed academia professors and students. These vibrant discussions during the coffee break sessions allowed the audience to delve into the intricacies of their work. The Executive Committee had the challenging task of evaluating these presentations and has proudly recognized their outstanding contributions:

Gold: Vijay Subramanian from New Jersey Medical School

Silver: Shuang Chen from Stevens Institute of Technology

Bronze:

- Priya Marella from NYU Langone Health
- Mingjing Sun from Kean University
- Yiling Wang from Rutgers University
- Jingyu Sun from Stevens Institute of Technology
- Siyun Yang from Kean University

These awards celebrate their dedication to advancing scientific knowledge and innovation. Congratulations to all the awardees!

The symposium was a resounding success, bringing together approximately 130 enthusiastic attendees, including 8 distinguished speakers who shared their insights. The support of 16 sponsors and vendors greatly enriched the event, with 10 vendors participating in the engaging vendor show. Eight poster presentations by academia professors and students showcased their remarkable work. Additionally, the career workshop and job postings provided valuable opportunities for professional development and networking. This symposium demonstrated the vibrant spirit of the scientific community and the potential for future collaboration and innovation.

Overall, on behalf of the organizing committee, we express our gratitude to everyone who contributed to the success of the symposium. We couldn't have done it without the participation of our members, guest speakers, sponsors, and volunteers. Your dedication and support are greatly appreciated.

We look forward to continuing to provide such engaging opportunities to our community in the future. With each symposium, we aim to further the exchange of ideas, innovation, and collaboration in the fields of chemistry and medicine.

2. 2023 E-CACS SUMMER BBQ PICNIC AND YOUTH SCIENCE FAIR: A Blend of Science and Delight

The Chinese American Chemical Society - East Chapter (E-CACS) recently hosted a spectacular Summer BBQ Picnic, coupled with a captivating Youth Science Fair, all set against the backdrop of community camaraderie. This event, held at Donaldson Park on August 5th, was a resounding success, bringing together E-CACS members, friends, and families for a day filled with food, science, and fun.

The highlight of the picnic was undoubtedly the renowned Zibo BBQ, which tantalized taste buds with its traditional Chinese barbecue delights. Attendees were treated to a culinary journey of aromatic and flavorful dishes, immersing them in the rich heritage of Chinese cuisine.

Running parallel to the BBQ, the Youth Science Fair explored the theme, "Cool the Earth with Fire." Here, young minds showcased their scientific prowess by delving into the science of biochar and its potential to combat climate change. The fair not only sparked curiosity but also inspired the audience with innovative ideas and insights into environmental sustainability.

The fair showcased the brilliance of our young talents through several well-prepared poster presentations, where they eloquently explained complex scientific concepts with impressive clarity and confidence. One of the highlights of the day was the captivating demonstration of biochar production with a DIY kiln. It was amazing to witness how our young scientists tackled environmental challenges through innovative solutions. To add even more excitement to the event, we organized a thrilling drawing contest with biochar, fostering creativity and imagination among the participants.

None of this would have been possible without the relentless efforts of our dedicated organizers, Daniel Zhang (Bridgewater-Raritan High School), Sherry Wang (Rutgers Preparatory School), Claire Cheng (Livingston High School), and Jessica Cowling (ExxonMobil), who worked tirelessly to ensure a smooth and unforgettable experience for everyone involved.

We are deeply grateful to our esteemed scientific advisors, Mingwen(Kevin) Wang, Yuan Cheng, and Tony (Wenzhao) Wu, and Xiaozhou (John) Zhang whose guidance and mentorship played a pivotal role in shaping the minds of our young scientists. Finally, a big shout-out to our generous sponsors - ACS Scientific, Inc., BirdoTech, ExxonMobil, and Fox Rothschild LLP - for their unwavering support in making this event a grand success.

The Summer BBQ Picnic and Youth Science Fair exemplified the essence of the E-CACS community—a blend of scientific curiosity, culinary delight, and meaningful connections. It was a day that celebrated both the intellect and the palate, while fostering a sense of togetherness among members, friends, and families. This successful event underscored E-CACS's commitment to promoting science and building lasting bonds within the community.

3. CACS Young Scientist Award 2023: Celebrating the Brightest Young Scientific Minds

We are delighted to share the exceptional accomplishments of the next generation of scientific leaders. Through rigorous evaluation and careful consideration, we are thrilled to present the winners of this year's Young Scientist Award and an honorable mention.

Purpose and Background:

The CACS Young Scientist Award is a prestigious accolade dedicated to promoting chemistry and other STEM (Science, Technology, Engineering, and Mathematics) areas as a career choice among young Chinese Americans in the greater Tri-State area. This award serves as a testament to our commitment to encouraging young talents in the field of science. We aim to inspire the brightest minds to explore and excel in scientific disciplines.

Meet the Awardees:

🎖️ Award Winners:

- Eliana Zhang, East Brunswick High School
- Lelun Li, Livingston High School
- Raymond Cai, Holmdel High School
- Sheryl Liu, Livingston High School

🎖️ Honorable Mention:

- Rebecca Zhang, Biotechnology High School

These young scientists exemplify the spirit of curiosity, innovation, and dedication to their respective fields. They are the future of scientific excellence, and we are proud to recognize their remarkable achievements.

Encouragement for Future Participation:

We would like to extend our heartfelt gratitude to all the participants for their hard work and valuable contributions. We also express our sincere appreciation to our esteemed panel of judges for their expertise and impartial evaluation.

To all young talents who aspire to explore the wonders of science, we encourage you to consider the CACS Young Scientist Award in future events. It's a platform where your dedication and innovative ideas can shine, just like our exceptional awardees this year.

Join us in congratulating the Young Scientist Award winners and our Honorable Mention for their outstanding accomplishments. Let's come together to celebrate the bright future of science that they so brilliantly represent!

Upcoming Events

Webinar with Professor William Banholzer: Unlocking Sustainable Solutions for Energy and Materials

We are delighted to announce an upcoming webinar that promises to be both insightful and engaging. Professor William Banholzer from University of Wisconsin-Madison, former CTO of Dow and VP of GE, will be presenting a webinar titled "Perspectives on Separating Possible vs. Practical Sustainable Solutions for Energy and Materials."

Date: 11/09/2023

Time: 07:30-9:00 PM (ET)

Abstract:

The world aspires for sources of energy and chemical feedstocks that are 100% sustainable in adequate amounts to support a high standard of living for all. Current energies policies intending to accelerate the transition to renewable source will restrict supply and inevitably drive up, not only the price of energy, but food and a most other goods. Energy can be challenging to grasp. KWh and BTU's are less familiar than units of mass or volume. This combined with a desire for quick solutions can result in overly optimistic predictions. Even worse, some proposals often neglect fundamental engineering limitations and the rational for why high energy density fuels dominate our current systems. Energy is a regulated, commercial enterprise which must produce a return for investors. Yet the popular literature is full of statements such as "electricity will be free". Engineers are critical in debunking the rhetoric. Which new pathways and technologies will emerge to transform the energy infrastructure? While many technologies are possible, far fewer are practical. This talk will review several examples including carbon capture using NaOH, biofuels, and green hydrogen/ammonia where fundamental engineering or financial considerations were ignored to illustrate how mass and energy balances can be used as a compass to guide society. It will also review how sustainability can have competing priorities complicating optimum solutions.

Registration:

To register for this enlightening event, simply scan the QR code in the flyer, and reserve your spot. This is a fantastic opportunity to learn from a distinguished expert and connect with like-minded individuals.

CACS-EAST
2023 WEBINAR SERIES

Perspectives on Separating Possible vs. Practical Sustainable Solutions for Energy and Materials

GUEST SPEAKER

William Banholzer, PhD

University of Wisconsin-Madison

- Professor of Practice
- Honorary Fellow, Chemistry Department
- Sr. Advisor, Wisconsin Energy Institute
- Former CTO of Dow Chemical
- Former VP of GE

DATE
11/09/2023

TIME
7:30-9:00pm ET

Register Now!

Scan for abstarct, speaker bio, and registration link

Announcements

1. Celebrating Dujuan Lu: A Rising Star Award Winner

We are delighted to extend our warmest congratulations to Dujuan Lu, a distinguished member of both SGS and the Chinese American Chemical Society - East Chapter. Dujuan has been recognized as the awardee for the esteemed Rising Star Award by the National Chinese American Chemical Society.

This accolade is a testament to Dujuan's unwavering commitment and exceptional contributions to the field of chemistry. Her dedication and achievements have not only set a shining example but have also made a significant impact within the scientific community.

Dujuan's tireless efforts and outstanding work have rightfully earned her this prestigious award, and we are thrilled to see her receive this well-deserved honor. We look forward to witnessing her continued success and contributions in the world of chemistry.

Once again, hearty congratulations to Dujuan Lu on this remarkable achievement!

2. Volunteer Recruitment: Join E-CACS and Make a Difference!

E-CACS is thrilled to announce our volunteer recruitment drive, and we're looking for passionate individuals who want to get involved and make a difference in our community. As our organization grows, we need your help to continue our mission of fostering connections, promoting scientific excellence, and supporting young talents.

Why Volunteer with E-CACS?

Diverse Departments: You can choose from various departments, including Business Development, Outreach, Communication, Internal Affairs, and Finance, where you can apply your skills and passion.

- Business Development: Help us explore new opportunities, partnerships, and sponsorships to support our mission.
- Outreach: Engage with the community and promote the values and initiatives of E-CACS through events and outreach programs.
- Communication: Join the team responsible for our website, social media, newsletters, and communication efforts, keeping our community informed and connected.
- Internal Affairs: Contribute to the organization's internal management and help ensure the smooth operation of E-CACS.
- Finance: Assist in financial matters and budgeting to help us allocate resources effectively.

How to Get Involved?

To express your interest in volunteering, contact us via email at xizhe.zhao@gmail.com or yuancheng981@gmail.com. We'll provide you with more information and details on how you can become part of our dynamic team.

Join us in shaping the future of the E-CACS community and contributing to exciting initiatives that support science and innovation. Together, we can achieve great things!

3. Become a member: Join Us at East CACS!

Are you passionate about chemistry, chemical engineering, or related fields? Do you want to connect with like-minded professionals, access career guidance, and stay updated on industry trends? Look no further! East CACS invites you to join our vibrant community.

Why Become a Member?

- Networking: Connect with industry professionals and expand your network.
- Career Support: Get guidance and counseling to advance your career.
- Recognition: Receive recognition for your achievements in the field.
- Professional Development: Access opportunities for growth and development.
- Stay Informed: Attend events and conferences to stay updated on industry trends and research.

Ready to take the next step? Explore our website at https://eastcacs.org to learn more about our objectives and activities. If you're excited about what we have to offer, we encourage you to register for membership at https://eastcacs.org/membership.

Membership is open to professionals, students, and corporations who support our mission. Join us at East CACS and be part of our ever-growing community. We look forward to welcoming you!

Closing Remarks

We hope that this newsletter has provided you with valuable information about E-CACS's latest developments and upcoming events. We encourage you to visit our website, register for membership, and get involved in our activities. With a new chapter name and a dynamic executive committee, E-CACS is poised to make a significant impact on the scientific community. We look forward to seeing you at our events and working together to advance chemistry and its applications.

Chinese American Chemical Society - EAST chapter

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