



ARAB TOXICOLOGISTS ASSOCIATION

FALL 2024 NEWSLETTER

In This Issue

- President's Message
- 2024-2025 Executive Board
- ATA Awards
- An Interview with ATA President, Dr. Maha Almazroua
- Scientific piece by Dr. Mohamed Ghorab
- New Members Spotlight
- Deadlines, Reminders, gallery, and more!

President's Message

Dear Esteemed Colleagues and Members of the Arab Toxicologists Association (ATA),

It is with great pleasure and honor that I serve as the President of the Arab Toxicologists Association (ATA). As a Special Interest Group within the Society of Toxicology (SOT), the ATA serves all those interested in toxicology from around the globe, with a particular focus on the Arab regions. Our association stands as a beacon of scientific excellence and collaboration in the field of toxicology. We are committed to advancing our understanding of toxicology, fostering innovation, and promoting the highest standards of practice and research. Through our collective efforts, we can make significant strides in various areas of toxicology, contributing to the health and safety of communities in the Arab World and worldwide.

I would like to extend our heartfelt gratitude to SOT for their unwavering support and partnership. Their resources, network, and guidance have been instrumental to our success and growth as an association.

Looking to the future, we are dedicated to opening new horizons for upcoming graduates and scientists. The ATA is committed to empowering the next generation of toxicologists through mentorship, training, and opportunities for professional development. We believe in the importance of nurturing young talent and providing them with the tools they need to excel in their careers. Additionally, we are devoted to the education and empowerment of communities. By raising awareness about toxicology and its impact on public health, we aim to make a positive difference in people's lives. Our outreach initiatives strive to inform and educate, ensuring that communities are better equipped to understand and manage the risks associated with toxic substances.

As we move forward, I encourage each of you to continue engaging with the ATA, participating in our initiatives, and sharing your knowledge and experiences. Together, we can push the boundaries of what is possible in toxicology and make a lasting impact on our field.

Thank you for your unwavering support and commitment to the Arab Toxicologists Association. I look forward to our continued journey of growth and discovery.

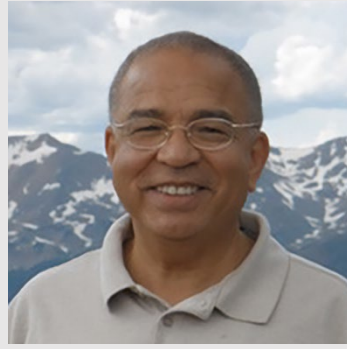
Warm regards,
Dr. Maha Almazroua
President 2024–2025
Arab Toxicologists Association (ATA)

ATA Executive Board 2024-2025



President

Maha Almazroua, PhD



Vice President

*Abdel-Razak M. Kadry,
DVM, PhD, DABT*



Vice President-Elect

*Hadil Al-Muhisen, MSc,
PhD*



Secretary/Treasurer

*Wafaa Ayad, MD, PhD,
DABT, ERT*



Past President & Councilor

*Saif Abdullah Alharthy,
MSc, PhD, NEBOSH*



Councilor

Wafa Harrouk, PhD



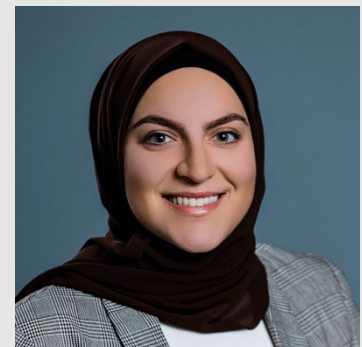
Councilor

*Ola Wasel, MPH, MS,
PhD*



Postdoctoral Representative

*Saeed Alqahtani, MSc,
PhD*



Graduate Student Representative

Saamera Awali, BS

ATA Awards

APPLY FOR 2025 ATA AWARDS!



ATA SOT
Arab Toxicologists
Association
Est. 2019



**Society of Toxicology – Arab Toxicologists
Association Awards**

Are you of Arab origin?
Are you an SOT and ATA member?

2025 AWARDS



ATA
AWARD

**Graduate Student Best
Abstract Award**

Winners will receive a plaque for
outstanding scientific research in the
toxicological sciences

**Distinguished Scientific
Presentation Award**

Postdoctoral fellows will receive a plaque award as
recognition and celebration of their contribution to
the toxicological sciences that embody the ATA-SIG
mission

Best Publication Award

Winners will receive a plaque for
outstanding scientific research in the
toxicological sciences

Outstanding Professional Award

A young investigator whose work exemplifies the
mission of ATA-SIG will be given a plaque and a
recognition certificate

DR. BURHAN GHANAYEM

Outstanding Graduate Research Award

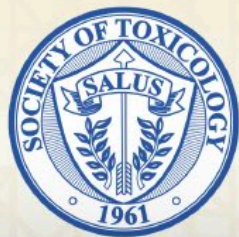
This award recognizes and celebrates a graduate student's success
in carrying out high-quality research in Toxicological Sciences.
The recipient of the award will receive \$500 and a plaque

Deadline for applications: January 8, 2025



To Apply, use the barcode to direct you for submitting
your complete application.
For questions, contact the ATA representative by email:
sot.ata.awards@gmail.com

For all details and conditions, please visit:
<https://www.toxicology.org/groups/sig/ata/awards.asp>



SOCIETY OF TOXICOLOGY
SALUS
1961

ATA 2024 Awardees



Congratulations to the 2024 ATA Awardees

Graduate Student Best Abstract Award



Christina Awada
New York University



**Dowlette-Mary Alam El
Din**
Johns Hopkins University



Sarah-Marie Alam El Din
*Johns Hopkins School of
Public Health*

Dr. Burhan Ghanayem Outstanding Graduate Research Award



Veronia Basaly
Rutgers University

Interview with Dr. Maha Almazroua, ATA President

First, as the president of the Arab Toxicologists Association (ATA), can you share a bit about your scientific journey, the positions you have held, and your contributions to the fields of toxicology and pharmacy?

My journey started at King Saud University when I have got my BSc in Pharmaceutical Sciences, followed by an MSc in Toxicology & Forensic Sciences from the Forensic Medicine College at JUST, and two professional diplomas in Quality Management, International Health Institution Accreditation, and Hospital Administration from The American College RA. In addition, I have an MSc degree in applied Research & DBA from SBS and recently I'm certified as a healthcare innovation professional.

Currently, I'm serve as the Director of the Regional Forensic Toxicology Centre in Eastern Region, MOH. In this role, I've had many achievements. I am the founder of the Maha Smart Kit, the brain behind The National Platform OTARR (Online Toxicology Authenticated Request & Results), as well as the 1st National Toxicology Database in Saudi Arabia's Ministry of Health. Additionally, I have led DPCC to be the first place at MENA to be CAP Accredited in forensic and clinical services.



In the field of scientific research, I have published more than 24 papers, and developed and conducted numerous studies that have influenced the modification of the sanctions regime in the Kingdom of Saudi Arabia and the enactment of numerous laws governing drug testing policies and awareness strategies. Additionally, I delivered a series of awareness programs, lectures, and workshops in collaboration with many ministries and universities.

In addition, I was a Member of the Executive Office of the Arab Gulf States' Council of Ministers of Health until 2017, and participated as an Expert on the Preparatory Committee for the National Anti-Narcotics Committee, where I prepared and reviewed many studies for MOI, and was a member of the LED management guidelines group at WHO until 2022.



I have held leadership positions on numerous scientific committees. I currently serve as the Executive Director of Eastern Province branch of the Saudi Pharmaceutical Society (SPS), and the General Secretary and Board Member of the Saudi Toxicology Society (STS). Additionally, I am a member of the Scientific Board of the Arab Society for Forensic Sciences and Forensic Medicine (ASFSEFM), and now the President of ATA within the Society of Toxicology, as well as the Chairwoman of the annual international KSAPT Conference and the annual Arab

Toxicology Competition.

What inspired you to pursue a career in toxicology, and how has your journey shaped your leadership within the ATA?

My interest in toxicology began with a fascination for how chemicals interact with biological systems, particularly concerning human health and safety in critical settings. My career in emergency and forensic toxicology has demonstrated the vital role our field plays in protecting public health—from rapid emergency response to evidence-based policy development. This journey has reinforced the importance of advocacy and collaboration, especially in high-stakes situations. As President of ATA, I am dedicated to bringing together toxicology professionals across the Arab region to address both local and global toxicological challenges, strengthening our collective impact on public health policy and safety.



With your leadership across various organizations, including the Saudi Toxicology Society and the WHO's LED Management Guidelines Group, how do these roles influence your vision for ATA?

My involvement in national and international organizations has influenced my approach to leadership within the ATA. Recognizing the power of shared knowledge and collaboration in driving advancements, I am committed to building stronger networks for Arab toxicologists. By leveraging these experiences, I want to bring a global perspective to ATA's initiatives, focusing on education, policy advocacy, and resource sharing to address toxicology challenges unique to our region.

We have heard about the electronic integrated system for all toxicology centers in Saudia Arabia, called OTARR system. Could you tell us about the development of OTARR and its role in advancing toxicology in Saudi Arabia?



OTARR was created to respond to an urgent need for a reliable toxicology database that supports Saudi Arabia's healthcare demands, especially in handling poisoning emergencies. The *Online Toxicology Authenticated Request and Result* system, OTARR provides immediate, secure, and authenticated toxicological data. Initially launched at the Dammam Poison Control Center, it quickly became the first central electronic toxicology database in Saudia Arabia.

OTARR now became essential for medicolegal cases and emergency response, helping clinicians make informed decisions rapidly. OTARR's recognition has been rewarding, especially when it received the E-achievement Award for e-Government transactions at the 2nd National Conference for Electronic Transactions. Competing with leading government and semi-government agencies, this award acknowledged OTARR's role in narrowing the digital gap within the healthcare sector. I'm grateful to see OTARR making a tangible impact, setting new standards in toxicology management, and contributing to faster and more reliable emergency responses.



Can you tell us about the Maha Smart Kit? What inspired its creation, and how does it contribute to toxicological analysis?

Maintaining a complete and secure chain of custody is a well-known challenge in toxicological analysis. The Maha Smart Kit was developed to address this need by ensuring the physical integrity of samples and establishing a seamless link between the sample and the donor. I wanted to develop a practical solution that prevents sample adulteration or mixing and able to secure data in an electronic manner. The Maha Smart Kit as a highly secure sample container equipped with a tight locking mechanism and RFID technology, and it can guarantee secure, complete and electronic chain of custody.

What are the main goals of the Arab Toxicologists Association under your presidency?

ATA's mission is to advance toxicological sciences across the Arab world by promoting research, education, and policy development. For my term, I am focusing on three main objectives: enhancing collaboration between Arab toxicologists and international experts, increasing educational resources and training for young professionals, and advocating for regulatory standards that protect public health across our regions. I believe these goals will not only elevate our members but also contribute to the global toxicology community.

What challenges are currently facing toxicologists in the Arab region, and how is ATA addressing them?

One significant challenge is the lack of unified regulatory standards, which creates inconsistencies in public health protection across different countries. Another challenge is limited funding and resources for toxicology research and education. ATA is actively working on addressing these challenges by collaborating with regulatory bodies to advocate for standardized policies and providing scholarships, training workshops, and resources to young researchers and students in the region.

How does ATA collaborate with the Society of Toxicology (SOT), and what benefits does this relationship bring to your members?

As a Special Interest Group, ATA enjoys access to a vast network of professionals, resources, and learning opportunities. We frequently collaborate on educational programs, symposia, and conferences, which allows our members to gain insights from a global perspective and stay updated on the latest advances in toxicology. This partnership is invaluable in helping us to advance our field within the Arab region while staying connected to international standards and developments.

What do you consider the most pressing toxicological concern in the Arab world today, and how should professionals in the field address it?

One of the most urgent toxicological issues we face is the impact of environmental toxins—air and water pollution, pesticide use, and industrial waste—on public health. Toxicologists in the region must work closely with policymakers to create enforceable environmental regulations and actively participate in public awareness initiatives. ATA is striving to be a bridge between science and policy, ensuring that our research translates into meaningful improvements in environmental health.

What initiatives has ATA introduced to support early-career toxicologists and students?



Supporting the next generation of toxicologists is one of ATA's top priorities. We've introduced initiatives such as mentorship programs, networking events, and grants for research. Additionally, we organize educational webinars and workshops tailored for early-career professionals, providing practical insights and skills essential for their advancement.



ATA actively participates in international conferences, including the Knowledge, Skills, and Ability in Toxicology and Pharmacy (KSAPT) conference held in Saudi Arabia. At KSAPT we offer various student activities such as workshops, competitions and webinars besides student sessions within the main conference program.

Through these initiatives, we hope to inspire and equip young toxicologists to take on leadership roles in the field.

In your view, with the rise of drug abuse, especially methamphetamine worldwide and in the MENA region, what steps are needed to enhance toxicological research and monitoring? How can toxicologists address public health challenges specific to the Arab region?

The rise of drug abuse, especially with methamphetamine ('Shabu'), necessitates a robust response in the MENA region, a multifaceted approach is essential. The scarcity of toxicological research and data on drug-related deaths complicates our efforts. To tackle this, we need to establish centralized comprehensive databases and early warning systems to effectively monitor drug trends and fatalities. Enhancing poison control centers to focus on New Psychoactive Substances (NPS) is also crucial for conducting research on their toxicity and effects. Additionally, increasing funding for toxicological research and collaborating with universities will help address local challenges. Enhancing laboratory capacity through upgraded facilities and training personnel is crucial for accurate drug analysis. Public awareness campaigns targeting youth and vulnerable populations will educate communities about the dangers of methamphetamine. Engaging stakeholders from healthcare, law enforcement, and NGOs can foster a coordinated response.



The ATA is dedicated to fostering dialogue and collaboration to address these challenges, ultimately improving public health across MENA.

What is your vision for the future of the ATA and its impact on the field of toxicology?

My vision for ATA is to establish it as a key hub for toxicological research and policy in the Arab world. I envision an organization that not only connects professionals across borders but also becomes a trusted partner for governments and institutions seeking guidance on toxicology issues. I am hopeful that by building a strong, united front of experts, ATA will not only elevate the field in our region but also contribute significantly to global toxicology initiatives.



How has your experience in academia and research influenced your goals for ATA?

Academia has taught me the value of rigorous research and the importance of collaboration in advancing knowledge. These experiences have driven me to make education and research support a central focus for ATA. I want our association to be known for producing valuable, actionable research that can impact public health policy and practice. This means creating more opportunities for research funding, encouraging publication, and building partnerships with academic institutions around the world.

Scientific Piece

By Dr. Mohamed Ghorab



Advancing Regulatory Toxicology with the Threshold of Toxicological Concern (TTC) Approach:

A case study with an inert ingredient used in pesticide products.

Introduction:

Toxicology is undergoing a significant transformation as traditional methodologies give way to modern, integrative approaches designed to meet the ethical, scientific, and regulatory challenges of the 21st century. At the forefront of this shift are New Approach Methodologies (NAMs), a broad suite of innovative tools and strategies that aim to refine, reduce, and ultimately replace animal testing. Defined as any methodology, technology, or combination of tools that provides hazard and risk information without animal use, NAMs represent a paradigm shift in chemical safety assessments.

NAMs leverage advancements in computational modeling, *in vitro* high-throughput screening, and *in silico* data integration to predict chemical toxicity with unprecedented precision. Regulatory agencies globally, including the United States Environmental Protection Agency (US EPA), the European Chemicals Agency (ECHA), and the Organization for Economic Co-operation and Development (OECD), are championing NAMs as essential to modernizing chemical risk assessments. The Threshold of Toxicological Concern (TTC) approach, one of the most promising NAMs, aligns seamlessly with these goals, offering an efficient, scientifically grounded alternative to animal testing.

These methodologies collectively aim to enhance the scientific rigor of toxicology, reduce reliance on animal testing, and improve human and environmental safety outcomes. The study of TTC within the context of α -terpineol, an inert pesticide ingredient, exemplifies how NAMs can be operationalized for regulatory purposes.

The TTC approach stands out among NAMs for its unique ability to address regulatory challenges

posed by data-limited chemicals. It operates on the principle that chemical exposure thresholds, derived from structural features and toxicity datasets, can reliably predict safety without requiring exhaustive animal studies. Our study's application of TTC to α -terpineol underscores its utility in evaluating inert pesticide ingredients.

α -Terpineol, classified under Cramer Class I, exemplifies a chemical with a low toxicity profile and high suitability for TTC-based assessments. The study compares conventional animal-based hazard assessments with the TTC approach, demonstrating the latter's efficiency in establishing no-risk thresholds for low-exposure scenarios.

Case Study Overview: TTC Application in Regulatory Toxicology

The study conducted by Ghorab et al. evaluates the feasibility of using TTC as an alternative to animal testing for regulatory risk assessments. The focus is on α -terpineol, an inert ingredient commonly used as a fragrance in pesticide formulations. Two separate petitions submitted to the EPA—a pre-harvest crop application at 5% concentration and an antimicrobial use at 100 ppm—provided a unique opportunity to compare traditional animal-based risk assessments with the TTC approach.

Chemical Characterization and Suitability for TTC

α -Terpineol is a naturally occurring monoterpenoid alcohol classified under Cramer Class I, indicating low toxicity potential. Structural and physicochemical properties assessed through the OECD QSAR Toolbox confirmed its suitability for TTC-based evaluation. Key exclusion criteria were also met: α -terpineol is not an inorganic substance, protein, nanomaterial, steroid, or high-potency toxin, and it has no alerts for mutagenicity or carcinogenicity.

Risk Assessment Methodologies

Two approaches were employed:

1. Traditional Animal Data-Based

Assessments: Acute oral and dermal toxicity studies, skin irritation assessments, and repeated-dose toxicity studies provided no-observed-adverse-effect levels (NOAELs). The data indicated low toxicity, with no endpoints of concern identified.

2. **TTC-Based Assessments:** The 5th percentile no-observed-effect level (NOEL) for Cramer Class I chemicals (3 mg/kg/day) served as the point of departure (POD). This value was applied to calculate chronic population-adjusted doses (cPADs) for dietary, dermal, and inhalation exposures.

Key Findings: Concordance Between TTC and Traditional Methods

Hazard Assessment

Both traditional and TTC-based approaches concluded that α -terpineol poses negligible risks at the proposed use concentrations. For pre-harvest applications, the absence of toxicological endpoints in animal data obviated the need for PODs, resulting in qualitative risk assessments. The TTC method, relying on conservative thresholds, corroborated these findings, reinforcing its utility in low-toxicity scenarios.

Dietary Risk Assessment

For antimicrobial uses, dietary exposure modeling with the Dietary Exposure Evaluation Model (DEEM-FCID) revealed no risks of concern. TTC-derived cPADs demonstrated conservative yet protective thresholds, with %cPAD values well below 100% for all populations except children aged 1–2 years under hypothetical high-concentration scenarios. This conservatism highlights TTC's safety-centric design.

Comparative Analysis

The study emphasizes the conservatism of TTC, particularly for vulnerable subpopulations. While animal-based assessments identified no risks even at higher concentrations, TTC's stringent thresholds ensured precautionary safety margins. Such conservatism underscores TTC's role in prioritizing public health without over-reliance on resource-intensive animal testing.

Implications for Regulatory Science

Efficiency and Resource Optimization

The TTC approach streamlines regulatory processes, reducing the time and costs associated with traditional methods. Its application to α -terpineol demonstrates the feasibility of integrating TTC into routine risk assessments for inert ingredients.

Ethical Considerations

TTC aligns with global mandates to reduce animal testing, addressing societal and regulatory pressures for humane scientific practices. By leveraging existing datasets, TTC minimizes the need for new animal studies, embodying the principles of the 3Rs (Replacement, Reduction, Refinement).

Challenges and Future Directions

Despite its advantages, the TTC approach is not universally applicable. Key limitations include:

1. **Chemical Scope:** TTC is confined to chemicals represented in the Cramer classes. Expanding its applicability to inorganic substances, nanomaterials, and endocrine disruptors requires further research.
2. **Data Robustness:** The accuracy of TTC thresholds depends on the quality and comprehensiveness of historical datasets. Efforts to expand and refine these datasets are essential.
3. **Regulatory Acceptance:** Harmonizing TTC applications across global regulatory frameworks is crucial for widespread adoption.
4. **Advanced Computational Tools:** Incorporating machine learning and AI-driven models can improve the precision and adaptability of TTC thresholds.

Conclusion: TTC as a Pillar of Modern Toxicology

The study of α -terpineol exemplifies the transformative potential of the Threshold of Toxicological Concern (TTC) approach within the context of New Approach Methodologies (NAMs). By providing a scientifically robust and ethically sound alternative to animal testing, TTC aligns with the evolving demands of regulatory toxicology.

As regulatory agencies embrace TTC and other NAMs, the field is poised to achieve unprecedented levels of efficiency, precision, and societal acceptance. The integration of TTC into routine risk assessments for low-exposure, low-toxicity chemicals represent a critical step toward a future where innovation and ethics converge seamlessly.

The findings of Ghorab et al. reaffirm that TTC is not merely a theoretical construct but a practical, impactful tool for safeguarding human and environmental health. By continuing to refine and

Link to article:
<https://www.sciencedirect.com/science/article/pii/S0045653524020198?via%3Dihub>

expand its applications, TTC will undoubtedly shape the next frontier of chemical safety science.

As NAMs continue to evolve, the TTC approach will play an increasingly pivotal role in shaping regulatory frameworks. By leveraging advancements in computational toxicology, integrating emerging datasets, and fostering global collaboration, TTC can become a cornerstone of modern toxicology. This editorial celebrates the progress made and calls for continued investment in NAMs to realize a future where science, ethics, and public safety converge seamlessly.

New Members Spotlight

It is our pleasure to welcome new members of the ATA. As an ATA member, you have opportunities to collaborate and connect with your fellow members at the regional and national level



You can find out more on the ATA SOT [website](#), including information on meetings, awards, newsletters, and more!

WELCOME NEW MEMBERS

Deadlines, Reminders, and More!

Name	Affiliation
Mohammad Alam	College of Pharmacy-Jazan
Dowlette-Mary Alam El Din	Johns Hopkins University
Sarah-Marie Alam El Din	Johns Hopkins Bloomberg School of Public Health, United States
Hassan Alkhadrawi	West Virginia University
Adbulaziz Alshammari	Qassim University, Saudi Arabia
Esraa Gabal	Purdue University
Sunny Ghuneim	University of Kentucky
Sinai Mohamed	University of Baghdad, Iraq
Fouad Mohammad	College of Veterinary Medicine, University of Mosul
Cheryl Marker	Novartis, Switzerland
Afaf Nadaf	Mu'tah University, Jordan
Mohamed Salah	Baylor University, United States
Susan Tantawi	Akcella Consulting, Canada
Marwa Zein Alabidden	Mozan, Lebanon



Upcoming Reminders and Deadlines:

- SOT Annual Meeting → March 16–March 20, 2025
 - Register for the meeting [here](#)
 - Early-bird deadline is January 24, 2025
 - General deadline is February 21, 2025
- ATA Awards Deadlines → January 8, 2025
 - Apply for awards [here](#)



Important Upcoming Events:

- Mark your calendars to attend and support ATA members' work and events at the annual meeting. Highlights include:
 - ATA Reception: Location and time TBD—stay tuned and check your email, we want your opinion!
- Other Features:
 - Society for Risk Analysis Sixth World Congress on Risk: Emerging and Systemic Risks → April 23–25, 2025 in Marrakech, Morocco

Get Involved! Join the ATA

Any member of the Society of Toxicology of any ethnic background who shares the same common

interests as the ATA-SIG may become a member of the ATA upon payment of the required dues

- Network with fellow Arab-origin toxicologists and toxicologists round the globe
- Get involved and participate in ATA [activities](#)
- Apply for exclusive awards recognizing scientific and professional excellence

To become a member of the ATA, follow this link



<https://www.toxicology.org/groups/sig/ata/join-us.asp>

For more information, please reach out to ATA officers
SOT.ATA.officers@gmail.com

Donations



Support the ATA

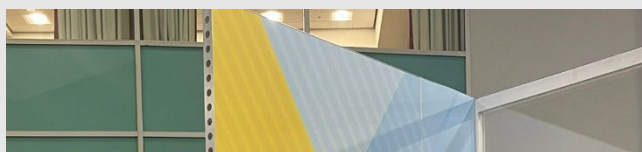
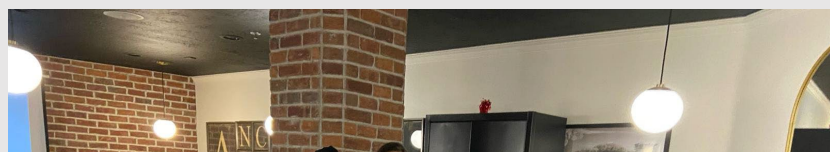
Help support the ATA's efforts in bringing the Arab Toxicologist Community together. Your donation will help fund ATA awards, gatherings, and events, which will allow members to broaden their network and gain valuable interpersonal skills and opportunities to enhance their career. With your support, we can help the next generation of Arab Toxicologists succeed and thrive!



[Donation link here](#)



SOT 2024, Salt Lake City, UT Gallery





KSAPT 2024, Gallery



