



Arab Toxicologists Association of the Society of Toxicology



President's Message

Dear ATA Members:

It is my great honor to serve as a president of the Arab Toxicologists Association (ATA). In 2019, ATA has been established after years of sustained hard work and networking and since then growingly played important role in refining and shaping the future of Arab toxicologists in Arabia and world-wide regions. In the years ahead, the role of ATA will become more important, as the global growth engine continues to the need of better understanding of Toxicology. Also, ATA will provide varied materials to enhance everybody's perception of what is going on in the Arab countries. As a special interest group in the Society of Toxicology, we need to work closer together to develop the next generation of Toxicology leaders for the Arab regions. ATA is not only a representative of Toxicology with Arabic origin, but also it connects to all non-Arabic toxicologists who worked and studied the different toxicological aspects related to Arabic areas. Our big goal is to grow networking of Arab toxicologists all over the globe and provide necessary resources to improve their work ethics and knowledge. By taking this opportunity, I want to request that you consider applying to the ATA membership, if you are not member already. Your membership and support go a long way to propel this association to the next level to meet the ATA's mission and vision.

Finally, in addition to expressing gratitude to our members to their participation in our program, and the formal and informal networking that all of us find invaluable, I wanted to thank all SOT Headquarter staff for their support and counsel during establishing ATA and I look forward to work together to grow and publicize the ATA globally



Hasan Falah Kashef Alghetaa, PhD,
ATA President 2020-2021

ATA 2020-2021 Officers



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Interdisciplinary Faculty of Toxicology (IFT)



The Story of Arab Toxicologists Association

Words that come from the depth of one's heart can empower someone's capability to change others' lives. I, Hadil Al Muhsen, an international student pursuing my PhD degree in Toxicology at Texas A&M University (TAMU). I am thankful for the opportunities and encouragements provided by the Toxicology program to engage in a variety of events during my graduate studies.

My best experience was establishing the Arab Toxicologists Association (ATA) as a special interest group (SIG) at the Society of Toxicology (SOT). It is amazing how nature works toward your goals and gives you the chance to use these opportunities. In 2018, I attended the annual meeting of SOT as a master student in the toxicology program to present my 1st graduate research. Attending such a great meeting inspired me to be a leader and contributor in the field of Toxicology.

During attending the poster sessions, I recognized some of posters from Arab countries. To me, it was a new discovery of what issues the Arab world have since it was difficult to find resources especially in toxicological issues. Herein, I run into Dr. Salah Soliman, a professor of Pesticide Chemistry and Toxicology at Alexandria University, who told me that he attended the SOT every year and almost never saw a Saudi Toxicologist woman at this meeting. His words motivated me to change the current status and bring more of Arab toxicologists together to communicate and cooperate in the field of pharmacology and toxicology.

Coincidentally, I also met Dr. Ziad Naufal during the reception hosted by the Toxicology department at TAMU. We had a brief conversation and discovered that we shared the same interest to start a SIG which eventually became the Arab Toxicologists Association (ATA). His brief conversation and promising support were highly encouraged and empowered me to bring ATA to life.

The First meeting of the principal & co-founders for establishing the Arab Toxicology Association (ATA)

Naturally I had no experience how to establish such an interest group association within SOT, but thanks to those who encouraged and helped me to bring ATA to life and to start contributing to the field from the other half of the world. In 2019 SOT meeting, I was able to contact some Arab toxicologists such as Hassan Alghetaa, Amira Mohammedm

Nabila Mohamed, Saif Alharthy, Abdullah Alnuqaydan, Wurood Neamah, Ola Wasel, and Ahmed Abdelmoneim who I met during the SOT 58th annual meeting and arrange for a brief assembly meeting to be our first start to achieve the goal that had been a dream. I was supersized and grateful to all supporters from Arab toxicologists around the world who I met for the first time at SOT 58th annual meeting. I used the SOT directory to reach out and send the proposal of a SIG to toxicologists through email for their support to get the 50 members needed for SOT approval.

Not only that SOT directory was helpful, but also the networks from each member who joined the ATA. This would not happen without the taken chance of these two brief conversations I had and the help of other members with their networks. Thanks to the efforts and supports that have been provided from all in order to accomplish this mission and create Arab Toxicologists Association. I would like to thank SOT for their guidance and approval to be part of the SOT family. Also, I am so grateful to those who promoted the idea from the start and their encouragement, support and help including the leaders in the Toxicology program Dr. Ivan Rusyn and Natalie Johnson, PhD, and my advisor Tracy Clement PhD, as well as Ashely Black from SOT who served as a coordinator of SIG at the time.



Through a working dinner during the 2019 SOT Annual Meeting and ToxExpo, the founding members of ATA (and guests) established the group's mission, goals, and other elements in order to formally establish the ATA Special Interest Group.



**Hanan N Ghantous,
PhD, DABT**

Congratulations Hadil on a job well done, Finally we have an Arab Toxicology Association (ATA). I have been a member of SOT since 1989. I and a number of other Arabic Toxicologists tried over the years to create such a SIG and could never make it for probably not having enough members to create a SIG, or maybe we just did not work hard enough like you did. Again Congrats to you and all the others who helped create ATA and I am proud to say I am a member now after all these years.



Nabila Saber, PhD

What we had dreamed about
is real now



**Saif,
PhD Candidate**

A journey of a thousand miles
begins with a single step

The Ghanayem Interview



**An Interview with
Dr. Ghanayem by
Hanan Ghantous, PhD,
DABT**

**“Big accomplishments start
small and can grow big”**

Dr. Ghanayem

Biography of Dr. Ghanayem

Dr. Ghanayem has a Degree in Pharmacy from the College of Pharmacy, Cairo University (1975) and MS from Texas College of Osteopathic Medicine, University of N. Texas (1979) with a major in Pharmacology and Toxicology, and a Ph.D. from the University of Texas Medical Branch in Galveston Texas (1983). Dr. Ghanayem joined the National Institutes of Health (NIH), National Institute of Environmental Health Sciences (NIEHS), National Toxicology Program, RTP, NC in 1983 as a postdoctoral fellow and advanced through the ranks to become a Senior Principal Investigator and Chief of the Metabolism and Exposure Markers Section, Laboratory of Pharmacology, NIH), NIEHS, RTP, NC, USA. Concurrently with his position at NIEHS, Dr. Ghanayem held an adjunct professorship appointment at Meharry Medical College, Nashville, TN. Dr. Ghanayem's interest in environmental and occupational health has provided new insights into many other areas including the assessment of human risks to environmental pollutants as well as the effects of diet, age, gender, diseases such as obesity and diabetes, and life style on the biological activity of pollutants and drugs. During his career, Dr. Ghanayem mentored many students as well as postdoctoral fellows. Dr. Ghanayem has authored more than 100 peer-reviewed research papers, book chapters, and NIH reports. He has served on editorial boards and as a reviewer for numerous scientific journals. Dr. Ghanayem was the recipient of many awards including the 1999 Distinguished Alumnus Award from the University of Texas Medical Branch, Galveston, Texas, USA. After more than 27 years of service at the NIH, Dr. Ghanayem decided to retire early. He is now enjoying his early retirement with more travel, light consulting, and political activism in promoting Palestinian human rights and connecting the struggle of minorities and Palestinians. Dr. Ghanayem was born in Palestine, is married and the father of 3 children and 3 grandchildren.

When and why did you come to the USA and how did you make that decision? Honestly, I never planned to come to the US. After I graduated from Cairo University in 1975, I wanted to go back to occupied Palestine and be a pharmacist. Sadly, the situation under the occupation was very bad, my uncle in Kuwait suggested I join him in Kuwait and seek a job. In Kuwait, I worked in a private pharmacy and 3 months later I became a Pharmacist with the Ministry of Health. I did not enjoy my work as a pharmacist, I wanted a more challenging job. After about one year, the US embassy in Kuwait advertised that the US is having a shortage of pharmacists and opened the door to pharmacists to apply for immigration. I never took it seriously, but I applied, and to my surprise my application was approved in about 3 months. To keep my return option to Kuwait open, I took an emergency leave for 2 weeks. I left Kuwait to NY in 1977 and an hour after landing, I was handed a Green Card. The rest was history. I encountered many difficulties, but one thing was clear, I didn't want to be a pharmacist. I was interested in graduate school, so I took the TOEFL and GRE exams and was most fortunate that I applied and got accepted for a master program in Pharmacology at the University of North Texas. The chairman of the department (Dr. Elroy Cantrell) was a great man and he was just the mentor I needed at that difficult time of my life. He treated me with passion and respect and he was instrumental in encouraging me to continue in the program. His research was in toxicology and I decided to do work in his lab because I respected him and felt more secure with him. After I got my MS in Pharmacology/Toxicology, I applied for the PhD program at the University of Texas Medical Branch in Galveston (1979).

An Interview with Dr. Ghanayem by Hanan Ghantous, PhD, DABT

How did you get your job at NIH/NIEHS, was this your first job? While I was a student, I worked multiple jobs unrelated to science. Among the many jobs, I worked as a night/weekend receptionist at a hotel. But the most interesting of the odd jobs I held was a part time animal care technician at the same lab I was doing my dissertation research. I made sure the lab animals got food and water, changed the bedding, washed the cages, etc. That was a job from heaven, it enabled me to pay the bills and support my young and growing family and I was able to do most of the work during my off hours while in the lab. In my last year, I submitted an abstract to SOT describing some of my research and was selected to give a platform presentation. I gave my presentation that was well received. Next day I was approached and interviewed by Dr. Skip Matthews from NIEHS who liked my presentation and research, and offered me a 2-year postdoctoral opportunity in his lab at NIEHS. I was pleasantly surprised but I told him I will give him an answer in 2 weeks. I then accepted the position after encouragement from my Professors in Galveston without even visiting NIEHS or NC. I rented an apartment on the phone and moved to NC. I advanced through the ranks and worked at NIEHS close to 27 years. I retired from NIEHS 10 years ago because I had other interests I wanted to pursue and all worked for the better. But honestly, my experience and knowledge as a Toxicologist/scientist was essential in my success in my retirement adventures as a business man.

Explain your career as a toxicologist. Looking back at my career, I was very fortunate. My career came to me and I had little hesitation. At NIEHS, a combination of hard work and luck put my career on a fast track. My research in the area of metabolic activation of environmental chemicals and the mechanisms of chemical induced toxicity and carcinogenicity was highly visible and was acknowledged both at NIEHS and outside. I advanced through the ranks to become tenure, which is rare for postdoctoral fellows to advance to tenureship at NIEHS. I had great research accomplishments and was in the right place at the right time. They needed my expertise and I was willing to stay. NIEHS is an amazing place to work and grow scientifically.

What are the difficulties you faced as a student or/and as an employee?

As someone who unexpectedly emigrated from the Arab World to the US with little experience or preparation, the challenges were many and huge. Financial, cultural, linguistic, etc. But nothing was insurmountable. One thing that helped me tremendously was, I had no alternative after I left Kuwait and lost my job, failure was not an option (البحر من وراعكم والعدو امامكم), one challenge that was tough and I never anticipated, was that many people in the scientific community and outside dealt with me with skepticism and doubted my abilities. Even after decades at the NIEHS, I found myself to always be in need to prove myself and my abilities over and over again. In a way, this worked well for me, it made me to always function with strength, determination, and high ethical standards.

What advice you give toxicology students, postdocs or early career toxicologist from Arabic descend? I am certain that the challenges nowadays are not as they used to be decades ago. I advise all youngsters who are pursuing careers in science to always be vigilant. Big accomplishments start small and can grow big. Step to the plate prepared and function with full determination, high integrity, and honor. And always be proud of who you are and where you came from. Most people will respect and appreciate the proud and honest. And don't hesitate to reach out to other more senior Arab American scientists. Networking and helping one another is a normal practice. I am pleased that Arab American scientists are networking to benefit each other's. I fully support the efforts of Arab American Toxicologists to build a presence in the US and hopefully to help their home countries.

Arabic Countries Facts Corner

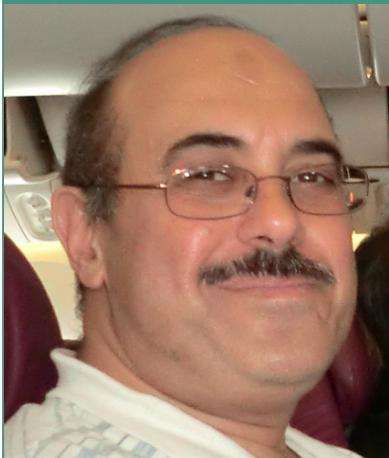
- A variety of countries make up the Arabic world including Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, and Yemen.
- The Arabic language uses the same punctuation marks as English, but some of them are inverted or reversed
- The term "Mocha" is derived from the city of Mocha in Yemen, where coffee production was commercialized by the year 1400.
- Three of the seven wonders of the ancient world are in Arabic countries: the Great Pyramid of Giza, the Hanging Gardens of Babylon, and the Lighthouse of Alexandria

(Idaho State University Journal, Middle East Facts, 2018)

What is Corona Virus?

Nabil Al-Humadi, PhD

(Pharmacologist/Toxicologist)



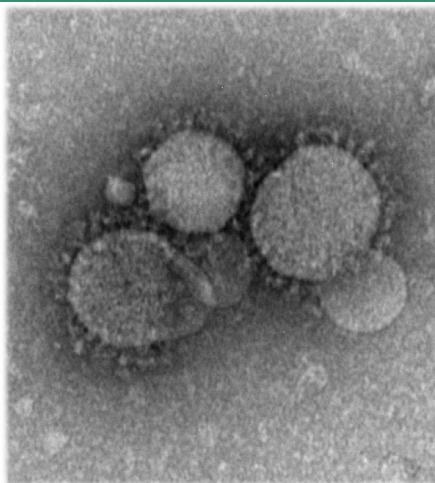
In November 2019, the world was surprised by the news of Severe Acute Respiratory Syndrome-Coronavirus-2 (SARS-CoV-2) infections in Wuhan province in China. In a short period of time, this virus started migrating from China to the rest of the world. Scientists around the world started scrambling to find a vaccine and/or therapeutic agents to fight this virus. Corona viruses (CoVs) are a large family of viruses that cause respiratory and intestinal infections in animals and humans (1). There are four genera of the corona viruses: alphacoronavirus, betacoronavirus, gammacoronavirus, and deltacoronavirus. Alphacoronavirus and betacoronavirus are commonly associated with respiratory illness in humans and gastroenteritis in animals (2).

Until the outbreaks of severe acute respiratory syndrome CoV (SARS-CoV) (3), middle east respiratory syndrome CoV (MERS-CoV), and more recently SARS-CoV, CoVs were not typically considered to be highly pathogenic in humans.

Corona is a single-stranded RNA virus and its size range from 65-125 nanometers. Its genome ranges from 25 to 32 kilobases. Coronaviral genome encodes 4 major structural proteins (all required to produce a structurally complete viral particle) (4):

- 1- Spike (S) protein: Binding
- 2- Nucleocapsid (N) protein: RNA synthesis
- 3- Membrane(M) protein: Organization/assembly
- 4- Envelope (E) protein: Organization/assembly

Figure of corona virus under the electron microscope (5)



Symptoms of corona virus infection include; fever, cough, myalgia/arthralgia, headache, and diarrhea.

Number of confirmed COVID-19 cases by date report and WHO region from 30 December 2019 through 13 October 2020 are (8):

Americas: 18,004,043

South-East Asia: 8,053,218

Europe: 7,108.781

Eastern Mediterranean: 2,639,723

Africa: 1,237,088

Western Pacific: 660,559

Currently, there are 170 vaccine in developmental stages. Ten of them are in clinical trials (stage I, II, or III). No specific dates predicted for any vaccine approval. Dr. Fauci suggested the acceptance of a vaccine even at 50% efficacy. However, all scientists are hoping for 70% or more efficacy for a reasonable outcome.

References:

1. Master PSaP, S. Coronaviridae. 2013.
2. Cui J, Li F, Shi ZL. Origin and evolution of pathogenic coronaviruses. *Nat Rev Microbiol* 2019; 17(3):181-192.
3. Zhong NS, Zheng BJ, Li YM, Poon, Xie ZH, Chan KH, et al. Epidemiology and cause of severe acute respiratory syndrome (SARS) in Guangdong, People's Republic of China, in February, 2003. *Lancet (London, England)* 2003; 362(9393):1353-1358.
4. <https://commons.wikimedia.org/w/index.php?curid=2644769>
5. <https://www.cdc.gov/coronavirus/mers/photos.html>
6. Cong2017. *Viruses* 9(182).doi:10.3390/v9070182
7. Song2019. *Viruses* 11,.59;doi:10.3390/v11010059
8. <https://covid19.who.int/>

Infect a wide variety of mammals and birds (6):

- 1- Alpha and beta: Infect mammals like flying bats and beluga whales
- 2- Gamma and delta: Infect birds like sparrow and ostriches

Illness is usually respiratory or enteric. There are seven human coronaviruses (HCoVs) (7):

- 1- Common HCoVs (lower pathogenicity)
 - a- HCoV-229E (alpha)
 - b- HCoV-NL63 (alpha)
 - c- HCoV-OC43 (beta)
 - d- HCoV-HKU1 (beta)
- 2- Other HCoVs (higher pathogenicity)
 - a- SARS-CoV-1 (beta)
 - b- MERS-CoV (beta)
 - c- SARS-CoV-2 (beta)

The illness COVID-19 is caused by SARS-CoV-2 which is more like SARS-CoV-1 than MERS-CoV. Incubation period for all three of them is 4-6 days.

ATA Breaking News & Achievements

Training, Workshops and Seminars

Coming soon!
A webinar sponsored
by AACT and ATA on
Nonclinical Antiviral
Drug and Vaccine
Development

ACT eLearning Series: Special Topics in Toxicology

https://www.actox.org/meetCourses/eduWebinars_eLearning.asp

ToxChat Podcasts

<https://www.actox.org/meetCourses/podcasts.asp>

SOT FDA Colloquium: “New Plant-Based Foods and Proteins from Novel Sources”

December 3, 2020, 9:00 – 12:30

SOT and the US Food and Drug Administration Center for Food Safety and Applied Nutrition (US FDA/CFSAN) cordially invite you to join us for our colloquium “New Plant-Based Foods and Proteins from Novel Sources”.

Tox Forum Meeting on Cancer Bioassay

December 7–10, 2020

<https://toxforum.site-ym.com/page/Workshop>

Publications

- Bourdi, M., Rudloff, U., Patnaik, S., Marugan, J. and Terse, P.S., 2020. Safety assessment of metarrestin in dogs: A clinical candidate targeting a subnuclear structure unique to metastatic cancer cells. *Regulatory Toxicology and Pharmacology*, 116, p.104716.
- Mohammed, A., Alghetaa, H., Sultan, M., Singh, N.P., Nagarkatti, P. and Nagarkatti, M., 2020. Administration of Δ9-Tetrahydrocannabinol (THC) Post-Staphylococcal Enterotoxin B Exposure Protects Mice From Acute Respiratory Distress Syndrome and Toxicity. *Frontiers in Pharmacology*, 11, p.893.
- Mohammed, A., Alghetaa, H.K., Zhou, J., Chatterjee, S., Nagarkatti, P. and Nagarkatti, M., 2020. Protective effects of Δ9-tetrahydrocannabinol against enterotoxin-induced acute respiratory distress syndrome are mediated by modulation of microbiota. *British Journal of Pharmacology*, 177(22), pp.5078-5095.
- Mohammed, A., FK Alghetaa, H., Miranda, K., Wilson, K., P Singh, N., Cai, G., Putluri, N., Nagarkatti, P. and Nagarkatti, M., 2020. Δ9-Tetrahydrocannabinol Prevents Mortality from Acute Respiratory Distress Syndrome through the Induction of Apoptosis in Immune Cells, Leading to Cytokine Storm Suppression. *International journal of molecular sciences*, 21(17), p.6244.

ATA Awards Announcement

Arab Toxicologists Association SIG Best Publication

Arab Toxicologists Association SIG Distinguished Scientific Presentation

Award Arab Toxicologists Association SIG Graduate Student Best Abstract Award

Arab Toxicologists Association SIG Outstanding Professional Award

Awards Deadline
January 8th

For more information,
please visit:

<https://www.toxicology.org/awards/sot/awards.aspx?CG=Arab%20Toxicologists%20Association%20Special%20Interest%20Group>

Important Dates

Abstract deadline extended to December 1st and the acceptance notification will be received no later than Jan 8th for the SOT annual meeting that will be virtually held on March 12th – 26th 2021.

ATA awards submission is extended to January 8th due to COVID-19 pandemic. The program online planner will be announced soon on the SOT website. Virtual meeting registration fees and related details also are available on the SOT website.

ATA Announcements

- SO T-ATA newsletter will be distributed to our membership at SOT and will be available for public in SO T-ATA website. If you would like to participate in the ATA newsletter with short news, career development information, scientific articles, etc., please contact Saif Alharthy, PhD. (Saif.Alharthy14@stjohns.edu)
- SOT-ATA is welcoming and opening for everyone in the field of Toxicology or any other related scientific fields to participate in ATA webinars or workshops proposals during the year of 2021.

ATA Membership

Toxicologists or professionals in related fields can join ATA at any time during the year by applying in the following link <https://www.toxicology.org/groups/sig/ATA/join-us.asp> . for more information on becoming a member in SOT and ATA, please contact SOT headquarter sothq@toxicology.org

Financial Support

ATA is a new special interest group in SOT that was founded in 2019. ATA's committees and members started with huge ambition to keep ATA going and being successful. Therefore, ATA appreciates any donation and support to encourage scientists in all levels, and initiate scientific activities in Toxicology. Funding sponsor and donors will be recognized in the future events and on ATA website. For donation to ATA, please fill out the financial support form in the link below and follow the instructions to send the support through fax or SOT mail address. Please contact Dr. Nabilah Saber (nabilasaber@yahoo.com) and Dr. Hasan Alghetaa (Hasan.alghetaa@uscmed.sc.edu) for any questions or if you wish to create endowments funds in recognition of a contributor scientist in such a field.

<https://www.toxicology.org/groups/sig/ATA/docs/SOT-Component-Group-Donation-Form-Template-final.pdf>

NEWSLETTER

2020

Volume 1, issue 1



ATA 2020-2021 Officers



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