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KUWAIT PRIZE 2023 – Cycle 42

Invitation for Nominations

The Kuwait Foundation for the Advancement of Sciences (KFAS) awards distinguished Kuwaiti and Arab scientists worldwide the Kuwait Prize for their significant and outstanding achievements in research since 1979. While the main areas in various scientific fields remain consistent, the scientific subfields under these areas vary annually. For the 2023 Kuwait Prize Cycle, KFAS invites universities, scientific and research institutions, and eligible individuals, to nominate Kuwaiti and Arab scientists for the Prize in the following scientific subfields:

Fundamental Sciences	Chemistry (including but not limited to): Organic & Inorganic Chemistry, Biochemistry, Analytical Chemistry & Medicinal Chemistry. Physical Chemistry, Theoretical Chemistry & Quantum Chemistry.
Applied Sciences:	Hydrology (including but not limited to): Hydrogeology, Remote Sensing to Water Resources, Ecohydrology, Hydrochemistry, Hydrometeorology, Hydromorphology, Water Quality Improvement & Aquatic Resources Management.
Economics and Social Sciences:	Psychology (including but not limited to): Social Psychology, Educational Psychology, Developmental Psychology, Clinical Psychology & Psychopathology, Experimental Psychology & Cyberpsychology.
Humanities, Arts and Literature:	Comparative & World Literatures (including but not limited to): Cultural & Literary Relations Across National Borders, History of World Literary Relations, Literature & other Disciplines such as the Fine Arts/Visual Arts, Sociology, Philosophy, as well as Studies in World Literatures.
Emerging Interdisciplinary Sciences	Artificial Intelligence & Robotics (including but not limited to): Expert Systems, Internet of Things, Industrial Internet of Things, Machine Learning, Data Analytics, Large Data Mining, Natural Languages Processing, Neural Networks, Fuzzy Logic, Automation & Cyber Security.

KFAS awards an annual Prize cash sum of K.D. 40,000 (Approx. \$135,000) for each subfield, along with a gold medal, a KFAS shield and a certificate of recognition.

Conditions and requirements:

- 1 - KFAS accepts nominations from universities, academic and research institutions, former laureates of the Kuwait Prize, and peers of the nominees. Nominations from political entities are not accepted.
- 2 - KFAS accepts self-nominations. Self-nominees must provide a statement outlining the basis for their eligibility for nomination and the significance of their research production.
- 3 - The nominee must be from an Arab nationality and have proof of Arabic origin, such as an Arabic birth certificate, a valid Arabic passport, or a relevant document. A copy of one of these documents must be included in the application file.
- 4 - The nominee must be a recognized specialist and researcher in the announced subfield or in a closely related field and must hold a PhD degree.
- 5 - KFAS will accept self-nominations. Nominees must provide a list of references, three academics/researchers and one scientific institution.
- 6 - The work submitted should be innovative, significant in the announced subfield, and published during the past twenty years. Submitted work include papers published or accepted for publication in refereed Journals, and books with ISBN or ISSN number (authored, translated, edited, and chapter in a book). MA or PhD theses and any publications extracted from them shall not be evaluated as part of the nominee's scientific work.
- 7 - Nominees are requested to complete the Prize Nomination Form and send it along with the submitted work electronically. The Nomination Form is obtained from KFAS website www.kfas.org/kuwaitprize2023 The Nomination Form for the subfields in Fundamental Sciences and Applied Sciences should be submitted in English.
- 8 - The Nomination Form along with scientific publications and achievements completed within the past twenty years should be sent in PDF format, through the cloud storage services sites such as (Google Drive–Dropbox–OneDrive) via Prize email: kuwaitprize@kfas.org.kw
- 9 - KFAS decisions concerning The Kuwait Prize are final and objections are not accepted.
- 10 - Nominations must be submitted no later than **Friday, 30th June 2023**.

For further information and inquiries, please contact the Prize Office on the e-mail: kuwaitprize@kfas.org.kw



مؤسسة الكويت للتقدم العلمي
Kuwait Foundation for the Advancement of Sciences

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KFAS Prizes

Kuwait recently had the privilege of welcoming a group of prominent Arab scientists who won the Kuwait Prize, which they celebrated along with the winners of the Jaber Al-Ahmad Award for Young Researchers for the years 2020 and 2021.

In 1979, the Kuwait Prize (also known as the Arab Nobel) was established with the mission of recognizing the distinguished scientific accomplishments of Arab scientists on an international scale. This prize is awarded to five categories, four of which are offered each year; these include basic sciences, applied sciences, economic and social sciences, and arts and literature. The fifth category, devoted to Arab and Islamic scientific heritage, is only given out every three years.

At the initiative of the late Emir Sheikh Jaber Al-Ahmad Al-Jaber Al-Sabah (may he rest in peace), the Foundation started the Scientific Production Award (now the Jaber Al-Ahmad

Award for Young Researchers) in 1988. This was to motivate commendable Kuwaiti researchers holding doctoral degrees in various branches of scientific production, and to promote productive aspiration among experts. These awards are granted each year in six scientific fields; and are extremely important as they recognize the success of young researchers and honor those who have devoted many years to scientific investigation and research.

Scientific awards draw attention to scientific discoveries and research, creating a level of public enthusiasm for science that is rarely accomplished through scientific research and publication alone. Such awards emphasize the need to allow scientists a major role in the ongoing discussion about science and decision-making process based on logical and evidence-based reasoning.

This issue of Al-Taqaddum Al-Ilmi magazine showcases the scientific careers of the Foundation's prizewinners in appreciation of their accomplishments. It is meant to set an example for young researchers and motivate them to excel on the global level. We hope that these interviews and highlights will increase public awareness and encourage public involvement in their fields of science.

Highlighting the role of science and scientists in developing the tools and technologies that shape our daily lives, and in promoting the knowledge-based economy, will help increase society's appreciation for the need for continued public funding of science. Such awards also help ingrain scientific culture in our society and will have an impact on creating positive attitudes towards technology and its advancements, as well as build trust in scientists and scientific results.

Executive Editor

Dr. Layla Al-Musawi

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Ali Taher

The World-Leading Scientist Creating New Hope for Thalassemia Patients



With a truly impressive research record, Dr. Ali Taher is ranked in the top 0.1% of scholars worldwide studying anemia. Born in Lebanon, he received his bachelor's and Medical Doctor qualifications at the American University of Beirut in 1982 and 1986 respectively. He then completed his internal medicine training and hematology and oncology fellowships

in Lebanon and later the UK, at the Royal Free Hospital – where his clinical and research interest in thalassemia started. He then received his doctorate from Leiden University in the Netherlands in 2012.

Taher's research interests ultimately led him back to the American University of Beirut, where he is now a Tenured Professor of Medicine within the Hematology and Oncology Division at the Department of Internal Medicine, Associate Vice President for Medical Advancement and Communications, and Director of the Naef K. Basile Cancer Institute.

Over the years, Taher has been instrumental in developing state of the art programs for the management and prevention of thalassemia; an inherited blood disorder that results in lower-than-normal levels of the protein hemoglobin within red blood cells. Hemoglobin is essential for transporting oxygen around our bodies. Thalassemia is thus characterized by anemia, the need of regular lifelong transfusion therapy and subsequent iron overload development. Being anemic, these patients will suffer from extreme fatigue, shortness of breath, heart palpitations, and weakness. Thalassemia is a common health condition in the Middle

By Emma Stenhouse

East, Asia, Africa, and Mediterranean countries including Italy, Turkey and Greece.

A true believer in collaborative science, Taher has contributed a vast amount of knowledge to the study of this disease, helping to improve the quality of life of people with thalassemia. Over the last year alone, he has contributed to the publication of 30 papers in a wide range of world-leading publications with a total publication record nearing 500.

As a result of his impressive research record, Taher is not only ranked in the top 0.1% of scholars worldwide studying anemia but is also among the top researchers in the world publishing in the field of thalassemia and iron chelation therapy and has been ranked in the world's top two percent of researchers in his field, and in the top 100 of the world's most productive authors in Hematology. He is also in the top five of the most published authors in the Arab world, calculated from 2012 to present.

His research currently focuses on novel therapies designed to decrease the number of transfusions required by patients, while also helping to increase levels of hemoglobin in the blood. One of his recent articles, published in October 2022, evaluates the efficacy and safety of an oral medication for adult patients with non-transfusion – dependent – thalassemia or – thalassemia. Another explores the development of a Thalassemia International Prognostic Scoring System designed to differentiate

– thalassemia patients into three different risk categories.

In October 2022, Taher was awarded the prestigious Kuwait Prize 2021 from the Kuwait Foundation for the Advancement of Sciences (KFAS) for his research work on – thalassemia, in the field of Applied Sciences – Applied Medical Sciences. The recipient of multiple awards and honors throughout his career, Taher mentions that those from the Middle East hold particular significance to him. “To receive an award from Kuwait is a prestigious and meaningful moment in my career,” he said. “Awards such as this help to move ourselves toward establishing a central position within global research efforts.”

In addition to KFAS, Taher is grateful to all of the patients who took part in his research and worked with him and his team to help deliver results, as well as Professors Victor Hoffbrand and Maria Dominica Cappellini, who both supported his journey from the start. “They took a chance on a physician from a country with limited resources, and encouraged me to think big,” he said. He also extends his thanks to the American University of Beirut Medical Center.

As one of Taher's main passions is mentoring the next generation of academics, it comes as no surprise that he is also keen to mention the students that he works with. “I believe that the most important thing is to prime the minds of our younger generations” he said. “Through mentoring, I am privileged to empower students, my future colleagues, to

cultivate their passions and move our research forward at the same time.”

Taher is an example of how collaboration throughout the scientific community can promote our understanding of specific conditions. He has created a number of local and regional groups and associations that promote partnership across countries. “Science has no geographic boundaries and that shows that we can think big; beyond national and regional frontiers,” he said.

These partnerships, particularly those between the Middle East and Italy, have led to an increased understanding of non-transfusion dependent thalassemia (NTDT) and had a significant impact on management guidelines published by the Thalassemia International Federation (TIF).

As Taher continues his research into treatment strategies to help those with thalassemia; scientists, students, and patients can all be grateful for his exceptional depth of knowledge, and his willingness to share his expertise so generously.

For more:



Ramzi Baalbaki

Understanding Humans and their Societies Using Linguistics



in the field of Humanities, Arts, and Literature – Linguistics. Baalbaki is a Professor of Arabic at the American University of Beirut but even students of Arabic elsewhere will know his name as the co-author of the famous English-Arabic dictionary, *Al-Mawrid*.

Baalbaki's love for the Arabic language started early. His father, Mounir Baalbaki, was one of the most influential translators of Arabic of his time. Among the books he translated from English were many important works of history, religion, and politics as well as world literature. The author Taha Hussein, who was nominated for the Nobel Prize in Literature twenty-one times, called Mounir Baalbaki "Shaykh al-Mutarjimin al-Arab" (The foremost Arab translator). "I remember that as of the age of 10 or so, my father used to take me on walks and recite to me lines of Arabic poetry and alert me to the beauty of Arabic and its ability to express the finest shades of meaning," said Baalbaki, who also learned from his father to spend long hours at work every single day.

If you ask Ramzi Baalbaki why we study linguistics, he doesn't have to think long. "Linguistics is vital to understanding humans and their societies. It has to do with life, with communication, and how people deal with one another," said Baalbaki, who won the Kuwait Prize for 2021 from the Kuwait Foundation for the Advancement of Sciences (KFAS),

Baalbaki himself focused on doing research in two major areas of Arabic linguistic study, namely, the Arabic grammatical theory and the Arabic lexicographical tradition. He

studied at the American University of Beirut before obtaining a doctorate from the University of London in the United Kingdom. He has published 10 authored books on Arabic Grammatical Theory and Arabic lexicography as well as six critical editions and studies of classical Arabic texts, four edited volumes, and more than eighty single-authored articles, which appeared in some of the most prestigious journals in the field. In 2010, Baalbaki won the King Faisal International Prize for his contribution to the study of Arabic grammar. He was only the third Lebanese person to be awarded this prize since its inception in 1979.

The renowned Al-Mawrid dictionary was started by Baalbaki's father. "He worked on it for fifteen years but passed away before completing it, so I took it upon myself," he said. It took him six more years before, what is now known as, the most comprehensive English-Arabic dictionary was published. Its more than 2,100 pages

include thousands of updated entries for modern Arabic, such as technical terms in technology, communications, and medicine.

But Baalbaki was also instrumental in proving that Arabic linguistic studies and its two main branches, namely grammar and authoring dictionaries, are authentically rooted in the Arabic-Islamic culture itself. It used to be thought that the study of grammar and the idea of dictionaries were brought in through foreign influences, possibly from the Greeks or the Syrians. Baalbaki helped show that this wasn't true. "The early classical Arabic sources link the beginning of the grammatical activity to the efforts at understanding and properly interpreting the text of the holy Quran," he said. "The sources report several anecdotes that demonstrate that early grammatical activity began in response to errors that were made in reciting the Quran. In other words, the grammarians were keen on protecting the Quranic text from linguistic corruption."

To this day, grammar is related to Islamic law, the Quran, and the traditions of the Prophet, according to Baalbaki. "For example, a judge who is ignorant of grammar cannot render a correct verdict related to divorce. The judge should distinguish between a man who divorces his wife by saying: anti taliq taliq taliq (three times) and one who does so by saying anti taliq wa-taliq wa-taliq (by using the conjunction waw, meaning 'and')," he said. "In the first case, the divorce was pronounced once but emphasized by

The early classical Arabic sources link the beginning of the grammatical activity to the efforts at understanding and properly interpreting the text of the holy Quran. The sources report several anecdotes that demonstrate that early grammatical activity began in response to errors that were made in reciting the Quran

the repetition. But the second statement means that the divorce took place three times. Any judge who doesn't understand such grammatical issues is bound to make faulty verdicts, which can affect people's lives."

The interconnectedness of language and society is one reason why linguistics is such an important field of study in Baalbaki's eyes. "As an interdisciplinary field, it is hardly matched by any other field in humanities and social sciences. Sociolinguistics focuses on the relationship between language and identity and things like gender issues related to language," he said. "Other branches of linguistics are psycholinguistics, historical linguistics, dialectology, and more

I remember that as of the age of 10 or so, my father used to take me on walks and recite to me lines of Arabic poetry and alert me to the beauty of Arabic and its ability to express the finest shades of meaning

recently, neurolinguistics and computational linguistics.”

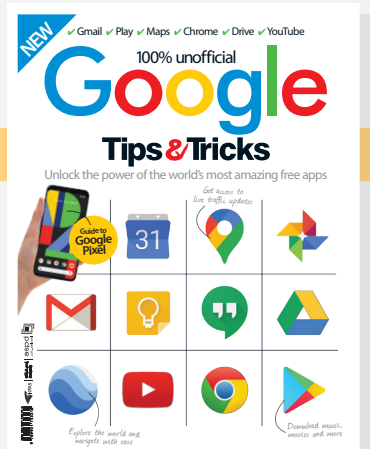
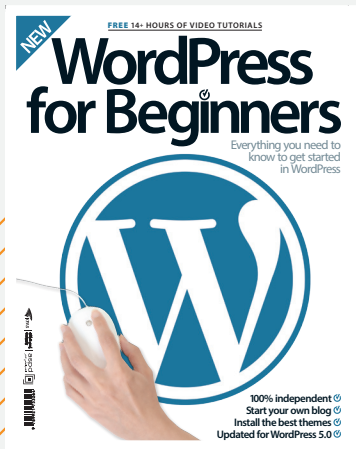
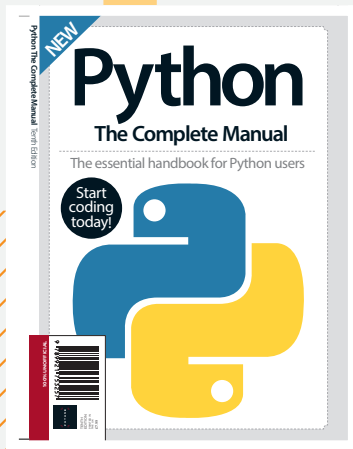
At 71 years of age, Baalbaki isn't ready to slow down just yet. In 2011, he proposed a historical dictionary for the Arabic language to the Arab Center for Research and Policy Studies in Doha, Qatar. It's an ambitious project that has been tried – and has failed – several times since the 1930s. But under Baalbaki's leadership, some 300 university professors, linguists, and scholars from Jordan, the United Arab Emirates, Tunisia, Algeria, Saudi Arabia, Syria, Iraq, Palestine, Qatar, Kuwait, Lebanon, Egypt, Morocco, Mauritania, Yemen, and other countries have now started to track every Arabic word from its earliest occurrence in inscriptions and texts. The first entries of the historical dictionary were published online in 2018. Baalbaki estimates that the entire project might take at least 15 years before it will be completed. This doesn't faze him. “The passion for my research and my students is what keeps one going in life,” he said.

He appreciates how important KFAS' Kuwait Prize is to the field. Established to support scientific research, innovation, and creativity and given annually to distinguished Arab scientists who have made outstanding achievements and contributions, the award “is recognized as one of the most prestigious prizes in the Arab world,” said Baabaki. “Undoubtedly, it has given Arab scholars an added incentive to produce and disseminate knowledge.”

The award is recognized as one of the most prestigious prizes in the Arab world. Undoubtedly, it has given Arab scholars an added incentive to produce and disseminate knowledge

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Fouad Abd-El-Khalick

Exploring the Nature of Science



Science education typically follows a rigid pattern. Students are provided with small facts and general principles, or simple theorems that explain the nature of our world. As students age, they progress into minor experimentation that unlocks new facts and principles or enter a science-related field that takes their understanding to new heights.

However, there is a critical element missing from this pedagogy — a concept that Fouad Abd-El-Khalick refers to as the nature of science.

“The nature of science is looking beyond the knowledge and beyond the process,” said Abd-El-Khalick, the

dean of the School of Education at University of North Carolina at Chapel Hill. “What we really need to be teaching in schools is how we develop scientific knowledge, the core values and characteristics of science learning, and why scientists do what they do; particularly why we should trust them.”

Abd-El-Khalick has been investigating the metacognition of science for more than twenty years. Growing up in Lebanon and attending American University of Beirut, he took an early interest in the modality of science education and traveled to the University of Oregon to complete his doctorate. Abd-El-Khalick wanted more opportunities to explore his field in greater detail, and in 2000, he permanently moved to the United States to pursue research through grant funding.

It wasn't long before he received recognition for his work. To date, Abd-El-Khalick has received dozens of awards from institutions all over the country and is recognized as one of the world's top researchers for metacognition in the field of science. His proudest achievements include the JRST Award, the NARST Distinguished Contributions to Science Education through Research

By Meagan Shelly

award, and the 2021 Kuwait Prize from the Kuwait Foundation for the Advancement of Sciences (KFAS) for career accomplishments in the field of Economic and Social Sciences — Educational Sciences.

Abd-El-Khalick finds the Kuwait Prize from KFAS to be a visionary award that brings much needed attention to researchers on the technical side of science education. “I’m glad that KFAS is working with others to bring these stories to the forefront,” he said. “I am very proud of this award, and of my heritage. It’s wonderful to continue to engage with my country and have some impact both here and there.”

It’s best to think of Abd-El-Khalick’s research as the substructure of science. He does not focus on the products of science, which introduce students to theories, principles, or ideas. Instead, he focuses on the nature of science — teaching students how to develop scientific knowledge in the first place. Abd-El-Khalick believes the nature of science is not taught to students in K — 12 or early college classes and he aims to create a more complete understanding of science as learners progress through school.

“We just don’t teach the nature of science as a concept,” Abd-El-Khalick said. “We get everyone to memorize facts in order to reach some kind of knowledge, but neglect to show the whole host of things required to create a scientific idea.”

Take COVID-19, for example. “No single person could learn all the science necessary to make informed judgements

about the pandemic,” he said. “Virology and epidemiology are all very complex, and the general population is not going to understand all these factors at once. If we just had a rounded education in the sciences, even for non-majors, we would have seen a very different response to the pandemic.”

Abd-El-Khalick points to poor education on the nature of science as one of the biggest factors impacting the 2020 pandemic response.

“It was easy for people to dismiss scientific claims, since many people did not understand which sources they should trust to make decisions,” he said. “The devastating part is that hundreds of thousands of lives could have been saved if people had trusted the nature of science.”

It’s clear that something needs to change in our current scientific pedagogy. Unfortunately, shifting the way science is taught in schools will be an uphill battle.

“We now know how current education gets people to think about scientific knowledge,” Abd-El-Khalick said. “It’s just not commonly practiced.”

What’s keeping teachers from weaving the nature of science into the classroom? Historical vacillation.

“The U.S. realized it wasn’t scientifically competitive after Sputnik, so we built and prepared for more scientists in the 1960s,” Abd-El-Khalick said. “However, we are now preparing graduates to function in a world that is increasingly technologically and scientifically laden. Somehow, we have been vacillating between periods of

scientific preparation and periods of creating smart consumers of science; and never both.”

The world is slowly awakening to the importance of scientific pedagogy. However, progress is slow. Many classrooms still teach the process or products of science rather than its nature, and heavily rely on language, facts, and theories to educate learners. Unfortunately, this still misses the mark.

“Science is way more complicated than just the scientific method,” Abd-El-Khalick said. “It doesn’t start with an observation. It starts with an idea or theory — which is exactly what the nature of science teaches.”

Abd-El-Khalick is determined to see the nature of science reach classrooms in the U.S. and beyond. He plans to continue researching the metacognition of science in more effective modalities, and help students leave school with a robust understanding of how to think about science and make better decisions about the world in which we live.

“It is so unbelievably important to teach the nature of science,” he said. “It aims to produce trust in science based on educating students about how science works rather than just the facts and hypothesis. And these days, we need that more than ever.”

For more:



Nabil G. Seidah

A Career of Discovery



Nabil G. Seidah knew from a young age that he wanted to pursue a career in medical research. “I was always interested in medicine,” he said. “Since I was 4 years old, I wanted to do something to help patients.”

Now in the twilight of his career, Seidah has spent decades on the frontline of cutting-edge neurobiology and biophysics research with significant implications for treating dozens of diseases. In 2021, the Kuwait Foundation

for the Advancement of Sciences (KFAS) awarded him the Kuwait Prize in the field of Applied Sciences – Applied Medical Sciences.

Growing up in Egypt, Seidah said his family medical history influenced his desire to work with patients and solve complex medical problems. “I had a grandmother who was schizophrenic, and I have a lot of cancer in my family,” he said. As a result, Seidah developed specific interests in studying neural regulation and the formation of cancerous tumors.

He earned a Bachelor of Science degree at Cairo University in 1969 before moving to the United States, where he studied at Georgetown University. Seidah completed his Ph.D. in neurobiology at Georgetown in 1973.

The following year, he accepted a position at the Montreal Clinical Research Institute (IRCM). When Seidah arrived at IRCM in 1974, his research focus shifted. “I began working on biophysics,” he said. “I was trying to understand how the structure of various proteins that regulate neuronal functions work.” He has been director of the Biochemical Neuroendocrinology Laboratory at IRCM since 1983.

The working environment at IRCM suits Seidah, who said he enjoys

By Marianne Dhenin

collaborating and working in a clinical research environment. These are hallmarks of IRCM, where some of Seidah's closest colleagues are medical doctors. "I bring the fundamental knowledge of the disease, and the doctors bring the patients," he said. "Together, we make a team."

Through these collaborations, Seidah and his colleagues further their understanding of various diseases, develop drug and treatment options, and run clinical trials. "The objective is to solve problems and to understand the mechanisms behind the disease," Seidah said.

This environment has also inspired him to develop creative solutions. "Being in a clinical research institute forced me to really think out of the box and not just think in simple terms," he said. Opportunities to see patients treated on the institute's first floor, not far from his office, serve as a reminder of the importance of his work and a constant source of motivation.

Seidah's determination to help patients and further his field of research has brought him great success; he has published dozens of papers, mentored more than 150 students and trainees, and helped further medical understanding and develop treatments for several diseases.

One of his earliest successes was the co-discovery of the human beta-Endorphin in 1976. Then in 1990, after more than a decade of effort, Seidah had a breakthrough that would guide the rest of his career; he began to unravel the mystery of the convertases, a new family

of proteolytic enzymes. He has now discovered seven of the nine convertases identified so far.

These enzymes are involved in countless diseases, including Alzheimer's, atherosclerosis, AIDS, cancer, heart disease, and diabetes. Seidah said he has since worked on a vast range of issues because he allows his findings to lead him from one project to the next. "I let the enzymes direct me," he said.

Two of his first solo discoveries, enzymes PCSK1 and PCSK2, help regulate some of the hormones involved in schizophrenia. Understanding these enzymes alone is not enough to provide robust solutions to those with schizophrenia, like Seidah's late grandmother. But he said identifying the enzymes "has enhanced our understanding," and they will be critical to developing new treatments in the future.

One of Seidah's most high-profile discoveries is the enzyme PCSK9, which he identified for the first time in 2003. The enzyme is linked to cases of familial hypercholesterolemia or high cholesterol, which increases the risk of heart disease, heart attack, and stroke. Researching the role of PCSK9 in patients with high cholesterol has led to new drugs to treat the issue, with the potential to improve the lives of millions worldwide.

Research on another enzyme in the family, PC3, even has applications to the COVID-19 pandemic. "It turns out that it is a major player in activating the SARS-COV2 virus," said Seidah. "These

nine enzymes play so many roles."

During his career, Seidah has been honored with several awards recognizing his pathbreaking discoveries and commitments to research and patient care. He said the Kuwait Prize is among the awards that mean the most to him. Each year, KFAS awards the Kuwait Prize to scientists of Arab descent working in various fields to honor their lifetime achievements. "Because I am from Egypt, the prize coming from an Arab country is very rewarding," he said. "I have prizes from the United States, Canada, and France, but this is the first from the Arab world."

Seidah said he hopes the recognition will lead to new opportunities to collaborate with scientists in Kuwait and elsewhere in the region. "It could be a great opportunity for the Arab world to get together and put our ideas together," he said. In the meantime, Seidah continues to research, lecture, mentor, and publish — with no signs of slowing down.

"I'm enjoying it," he said. "I enjoy the sense of discovery, the excitement, the feeling of doing something nobody has done before."

Omar Abdel-Sabour

Fundamental Understanding of Charge Carrier Dynamics



Omar Farghaly Abdel-Sabour, a pioneer in the fields of diagnostics and security with a focus on research geared toward revolutionizing these industries, is the 2021 winner of the Kuwait Foundation for the Advancement of Sciences (KFAS) Kuwait Prize for Basic Sciences Physics.

Highly revered as an expert in science and engineering, Abdel-Sabour is currently a Materials Science and

Engineering Professor in the Department of Physical Science and Engineering at King Abdullah University of Science and Technology. His groundbreaking scientific research focuses on a basic understanding of the dynamics of diverse groups of solar cell systems based on materials and structures as varied as semiconductors, quantum dots, polymers, and perovskites.

Abdel-Sabour is the principal investigator of the ultrafast laser spectroscopy and four-dimensional (4D) electron imaging laboratory at KAUST. He earned a doctorate in Physical and Theoretical Chemistry from Humboldt University in Berlin, Germany in 2006. Before joining KAUST in December 2012, Abdel-Sabour was a senior research associate with Professor Zewail (Nobel Prize in Chemistry 1999) at the California Institute of Technology (Caltech), where he worked on developing new ultrafast laser spectroscopic and time-resolved electron imaging techniques.

His research activities focus on developing highly efficient solar cells, photocatalytic reactions, light-emitting diodes, X-ray imaging scintillators, and photodetectors with

By Ivy Lockett

the aid of ultrafast laser spectroscopy, 4D electron imaging, and computational materials. Thus, he has established himself as a world leader in 4D electron microscopy, as well as an internationally-recognized scientist in surface and interfacial charge carrier dynamics. In addition, he has pioneered the development of surface and interface characterization techniques that have opened new avenues for the materials and optoelectronic communities.

As a highly influential researcher in the scientific community, he has over 300 articles published in international peer-reviewed journals. In addition, many of these papers (over 36) are currently highly cited in an array of documents and publications across the globe. In fact, over the years, he has accumulated more than 28,000 citations, as well as an 80 h-index.

Likewise, in 2019, 2020, 2021, and 2022, Abdel-Sabour was recognized as a Highly Cited Researcher by the Web of Science. In addition, in January 2020, he joined the Editorial Advisory Board of the Journal of Physical Chemistry Letters (American Chemical Society) – one of the leading journals in the field of Physical Chemistry. He was also named a Fellow of the Royal Society of Chemistry in February 2021.

In making many significant contributions to related research worldwide, Abdel-Sabour became a candidate for the KFAS Kuwait Prize. Categorically, KFAS chose to recognize the efforts of some of

Abdel-Sabour's most recent research, which is geared toward developing a fundamental understanding of charge carrier dynamics in a variety of semiconductor systems, including quantum dots, X-ray scintillation materials, polymers, and perovskite solar cells using state-of-the-art ultrafast laser spectroscopy and four-dimensional electron microscopy.

More specifically, his current research has real-world implications for developing high-performance X-ray imaging scintillators for medical diagnostics and security sectors and highly efficient, low-cost, and stable perovskite solar cells. His forward-thinking research stands to contribute significantly to the advancement of X-ray imaging scintillators for medical diagnostics and security sectors, as well as the establishment of highly efficient, low cost and stable perovskite solar cells.

Although Abdel-Sabour is undoubtedly very knowledgeable on condensed matter physics, through the process of his own research, he continues to make new discoveries that help alter his perspective and breathe new life into his research and career goals. For instance, his research on the dynamics of diverse groups of solar cell systems helped reshape his basic understanding of the charge carrier dynamics of solar cell materials.

It led to a very novel research direction for him and his team, where the fabrication of high-performance and low-cost X-ray scintillators for real-world applications, including

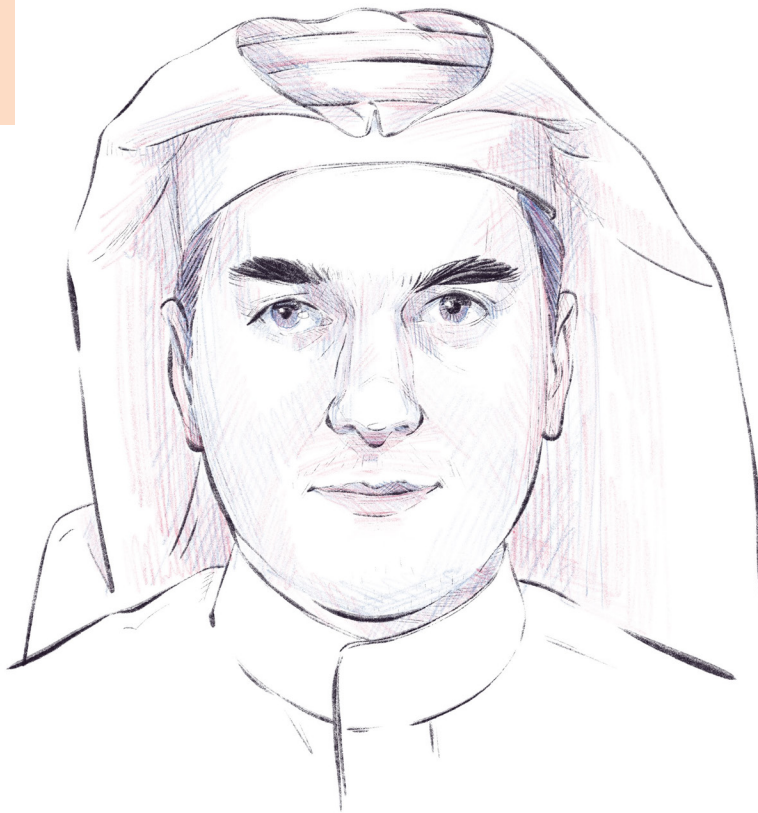
medical radiography, the food industry, and security inspections, took shape. His work in this sector is now a benchmark for fabricating efficient organic and inorganic X-ray imaging scintillators with ultralow detection limits and outstanding spatial X-ray imaging resolution.

Along with the help of his research team, in the coming years, Abdel-Sabour plans to continue his work around new materials discovery for high-performance X-ray imaging scintillators for modern society. Simply put, his team aims to see its X-ray imaging screens or X-ray sensors in the market for medical imaging and security screening. He is highly optimistic about where these findings can lead and wholeheartedly believes that this is an exciting and interesting time for advancing this applied research.

Abdel-Sabour asserts that being recognized in such a manner with the Kuwait Prize from KFAS has added extra vigor and motivates him to continue pushing boundaries with his applied research on X-ray imaging and solar cells. It has also shown him that his contributions can make tangible differences in the world. Winning this prize is yet another milestone in what will continue to be a fruitful career for Abdel-Sabour helping to further the field of condensed matter research.

Osman M. Bakr

Using Perovskite Solar Cells to Improve Medical Diagnostics



simple and easy chemistry, and helps us make imaging of X-rays affordable and protect the patient from risks like that of cancer because we don't need to administer high doses of radiation," said Osman M. Bakr, a professor of materials engineering and science at the Department of Physical Sciences and Engineering at King Abdullah University of Science and Technology (KAUST) in Saudi Arabia. "The big picture is for perovskite solar cells to facilitate the lives of people around the world who cannot access proper medical diagnostics," said Bakr, who has coauthored 155 peer-reviewed papers and been cited numerous times in the most respected scientific journals, leaves great promise for healthcare.

Some materials carry such obscure names it prevents non-scientists from understanding their importance in everyday life. One such example is the perovskite, the yellow, brown, or black mineral that looks like a diamond. Perovskites are used to make solar cells, which are electronic devices that derive energy from the sun and convert it into usable electricity. "These materials can be made at low temperatures using

Born in the Kingdom of Saudi Arabia in 1981 to an engineer father, Bakr learned from a very young age the importance of education, science, and high ambition. Upon finishing high school, he went to the U.S. to study material science and engineering at the Massachusetts Institute of Technology (MIT), where his father had also studied. In 2003, he embarked onto his doctorate in applied physics at Harvard University. The journey from MIT to Harvard was short: "I just

By Stav Dimitropoulos

took the subway and two stops down the road I exited,” he said. True, studying at two Ivy League universities equips you with a powerful and broad knowledge of materials physics, materials chemistry, and access to stellar mentors and lab work—all these helped Bakr grasp the importance of materials to civilization and humanity. But it also forges your personality.

“I was used to being a really good student in Saudi Arabia. At MIT though, I was sitting in a class where everyone was an exceptional student, and I was just a regular student,” Bakr said. Interestingly, he described the experience as comforting, if not liberating, or outright motivating. “I realized that even if sometimes you can’t get a perfect grade, you are still an achiever,” he said. At the same time, the importance of having people around you that could push you to a whole new level was an eye-opener. “You started reaching a level you had not realized existed,” he said. “Being at MIT is like drinking water from a firehose. If you manage to survive, it’s great. You become stronger.”

Harvard was smaller, but more interdisciplinary, according to Bakr. “You could select the courses you want and work with anyone you want, so I tailored my education,” he said. Interdisciplinarity is all the rage today—and for a reason. Bakr shared his dormitory with a student in German literature, a student doing his graduate degree in architecture, and another one specializing in public health. This exposure to people from all walks of

life and specialties afforded him a perspective of the world he might have missed hanging around engineers only and immersed him in the bigger issues of society. “I understood I could use the innate curiosity, analytical thinking, and problem-solving skills I had as a scientist to deal with problems belonging to social sciences; look at how researchers are using AI to analyze language and address public health issues,” Bakr said. “It’s a good example of how society’s problems can be addressed using solutions first seen in science and engineering.”

That said, living in the U.S. in the early aughts was not all rainbows and sunshine. From an all-boys school in Saudi Arabia, Bakr was transplanted into an environment with all sorts of diversity. Even the weather was different. He arrived in Cambridge, Massachusetts a year before 9/11. After that day, Bakr felt he had to run the extra mile to make sure people felt comfortable with him instead of lumping him with whatever stereotype they had in their head. Fast forward 21 years, and 20,954 Saudi students study on scholarship in the U.S. Back then, there were only a handful though. “It was not very common to encounter someone from Saudi Arabia at the graduate level. 9/11 aside, people were also genuinely curious as they didn’t know much about us,” Bakr said.

He speaks fondly of Saudi Arabia and the generous and supportive scholarship programs it provides. His own academic trajectory was supported by a government scholarship. “Even

I understood I could use the innate curiosity, analytical thinking, and problem-solving skills I had as a scientist to deal with problems belonging to social sciences; look at how researchers are using AI to analyze language and address public health issues

before KAUST was built, they [the Saudi government] set up the King Abdullah Scholar Award, a competition sponsoring ten graduate students from around the world to continue their research efforts,” Bakr said. “Mid-way in my doctorate, I applied and won the award,” And he decided to give back to his country by choosing to stay and conduct his research in it—research that has already blazed a trail.

Metal nanoparticles are these practically invisible, tiny, and metallic particles with a metal core and organic shell that are today known to possess remarkable electronic, optical, and chemical properties. “How do they form? What will happen if we put them inside the body? If we subject them to light, how will they react? These are common questions people asked back then,” Bakr said. “We spent years trying to prove they even existed.”

Yet today we are reaping the fruit of the pioneering work of scientists like him that were perceptive enough to engage in a curiosity experiment ahead of the pack. Drug delivery or biomedical imaging are just two examples of how metal nanoparticles have aided humanity. “A lot of the tricks and things I learned from metal nanoparticles, I started applying them to growing and crystallizing hybrid perovskites circa 2013,” Bakr said. Having this edge from his previous research, he started perfecting the perovskites’ growth so that they could become solid crystal solar cells. Soon, he saw that perovskite solar cells could absorb X-rays and convert them into visible light. “You can imagine how meaningful this is for medical diagnostics and patients,” he said. “No need to expose the patient to high radiation and these materials are much more affordable.”

In October 2022, Bakr, together with Omar Mohammed, also a professor at KAUST, won the Kuwait Foundation for the Advancement of Sciences (KFAS) Kuwait Prize 2021 in the field of Basic Sciences – Physics, recognition of their outstanding research into perovskite materials in solar energy applications and high-energy radiation sensors. “It’s one of the biggest prizes any scientist can win. A great honor,” Bakr said.

He is hopeful their achievement will shine light on the rising field of perovskite research and draw in both young scientists and the industry. “It’s not easy to get access to really good X-ray machines [essential to good healthcare] because these machines

are very expensive. If we make perovskite solar cells mainstream, people will have affordable access to X-ray diagnostics without high radiation,” Bakr said. “You won’t have to be rich. You won’t even have to be in the First World to access this kind of technology.”

Ahmad Allafi

Studying Food to Promote Nutrition, Safety, and Healthy Living



Ahmad Allafi spends a lot of time thinking about something most of us take for granted: food safety. But as a professor of food science and nutrition at Kuwait University, food safety is one of Allafi's passions. This year, his commitment to the field paid off in

a big way as he was awarded the Kuwait Foundation for the Advancement of Sciences (KFAS) Jaber Al-Ahmad Prize for Young Researchers, in the field of Biological Sciences.

Allafi's path to success in the field of nutrition and food sciences has been a winding one. He earned a bachelor's in chemical engineering with a minor in mathematics at the University of Missouri in the United States in 2000. After graduation, he returned to Kuwait to work as an engineer at Kuwait National Petroleum Company. He also earned a master's in chemical engineering at Kuwait University in 2003.

While working as an engineer in Kuwait, Allafi began to develop new interests that would put him on a different career path and take him back to the United States for further education. This time he settled in Columbus, Ohio, where he studied for his Ph.D. in food science and nutrition at Ohio State University from 2005 to 2008.

While the leap from chemical engineering to food sciences might seem like a big one, Allafi said it makes a lot of sense. "I believe that engineering

By Marianne Dhenin

is the base of every science,” he said.

His background in chemical engineering strengthened his doctoral research and facilitated the next step on his career path. “Once I had become a chemical engineer, I’d studied a lot of chemistry, biology, and other material that helped me succeed in food science and nutrition,” he said.

When asked why he decided to make a career change, Allafi said, “it’s all about helping people.” Working in nutrition and food science presents many opportunities to change lives, from researching and promoting healthy lifestyles to ensuring food safety and quality.

“Making others’ lives easier — this is happiness to me,” said Allafi. “A career in food science or nutrition is ideal for those seeking to improve people’s lifestyles.”

During his doctorate, Allafi researched synthetic food packaging with significant implications for nutrition, food safety, consumer protection, and public health. He said the pillars of nutrition, safety, and healthy living inform all his work.

After finishing his doctorate, he returned to Kuwait again, where he has since worked in teaching and administration at Kuwait University. He teaches courses about food regulation, food packaging, human nutrition, and more in the food science and nutrition department.

His position as a professor also allows him to continue the research he started as a doctoral student, exploring the use of nylon nanocomposite

particles in food packaging. Using inorganic nanoparticles in food packaging is a promising new frontier in food science. This packaging can preserve, protect, and maintain food quality for much longer.

In Allafi’s most recent project, he tested the thermal properties of nylon nanoparticle-based food wraps and whether the films are permeable to oxygen, carbon dioxide, or water vapor. In simpler terms, Allafi said the project tested “the formulation of the packaging itself, how the package behaves, food processing steps, and if there are any health effects to using these packages.”

The goal is to prolong shelf life as much as possible while ensuring the new packaging has no detrimental effects on people or the planet. “This is the trick,” Allafi said. “We need to maximize shelf life without hurting the environment or humans.”

Working on a project like this requires diligence and laser-sharp focus. But Allafi is up to the task. Even at such a young age, his go-getter attitude has already earned him many grants, publications, and accolades.

Many of his publications concern healthy lifestyle promotion and food quality. He has been published in prestigious journals, including the *Annals of Biology*, the *Journal of Food Science and Technology International*, and *Frontiers in Public Health*.

Allafi’s latest achievement is being awarded the Jaber Al-Ahmad Prize for Young Researchers, which recognizes Kuwaitis under the age of 45 with doctorates in various fields for their

publication record and future research potential. Allafi said he is thankful to the Amir of Kuwait, the Crown Prince of Kuwait, and KFAS for offering awards like this to recognize and inspire scientific achievement.

For Allafi, the recognition has made him proud of his work and motivated him to continue his research intensity and pursue new projects in food science. “It’s some sort of ignition for me,” he said. “I feel very happy that I have been recognized for what I have done, and it drives me to do more in this field. I hope I can accomplish more in the coming years.”

Allafi has plenty of project ideas to choose from and, as a young researcher, a long career ahead of him to make interventions in the field. Next, he would like to work on foods advertised and sold for their supposed health benefits. He said a typical example is jars of honey sold to relieve stress.

How can consumers trust that these products are pure? How can they know whether there are unmarked additives in these products? Allafi has an idea. “I would like to work in food adulteration and methods of catching these adulterations,” he said. He wants to develop home testing methods “that anybody can use in the near future for food analysis.”

With an already illustrious career behind him and new wind in his sails thanks to the Jaber al-Ahmad Prize for Young Researchers, there’s no limit to what Allafi might accomplish next.

Hesham Almujaed

A Lifelong Career and Passion Toward Accounting



fluent grasp of accountancy can reveal not just the transactions on a ledger, but the story of the historical events behind those numbers.

“Accounting is the language of business,” Almujaed said. “If you can study or calculate something, you can predict it in the future and you can learn from this journey.”

Almujaed received the Jaber Al-Ahmad Prize for Young Researchers in the field of Administrative and Economic Sciences from the Kuwait Foundation for the Advancement of Sciences (KFAS) in recognition of his deep body of work (spanning three books and over twenty published papers) on subjects ranging from predictability of share prices for Gulf corporate council banks and methods of share valuation in the Kuwaiti Stock Market, to the value relevance of accounting measures. But in his early years, he did not at all foresee making a name for himself in the data-rich world of academic research.

“After I graduated from Kuwait University, I wasn’t really thinking about continuing my studies,” he said. “My plan was to go for auditing firms like KPMG [one of the Big Four accounting organizations].” But after accepting an

While teaching his accounting classes at the Public Authority for Applied Education and Training’s College of Business Studies, Hesham Almujaed hopes to provide his students with the tools to understand the stock market and how to read and analyze their own business. Almujaed stated that a

By Jonathan Feakins

offer to utilize his accounting skills at Expert Department -Kuwait's Ministry of Justice, he saw how accounting (from corporate to forensic) could serve as a tool to help judges solve complicated problems. And after four years, he wanted to learn more.

By 2003, Almujaed had his master's in accountancy from New Mexico State University, USA - and by 2011, he had his doctorate in accounting and finance from United Kingdom's University of Dundee. The professor chose to pursue his doctorate in Dundee in no small part because it provided a good home for his family and young children, the eldest of whom has since started pharmacy school. Almujaed expresses nothing but deep appreciation and humility for how his family has supported his years of work - especially his wife, who herself obtained her master's in clinical pharmacy from University of London. "She's also very clever," Almujaed said, smiling.

As it turned out, Almujaed had embarked upon his fledgling research career at a particularly fertile time for Kuwaiti accountancy: the Central Bank of Kuwait recently issued its first corporate governance code in 2012, followed by the institution of a Capital Markets Authority for companies listed on Kuwait Boursa in 2016. But his investigations have also happened to coincide with, and illuminate, recent decades of Kuwaiti vitality: the country now exhibits one of the highest-performing bourses among Arab countries and is listed as an emerging market by Morgan Stanley, an American multinational investment

management and financial services company.

Back when he began high school in the early-1990s, Almujaed had originally elected to study mathematics. But he credits his high school accounting teacher, Adel Shuhab, with re-directing his path toward the science of accounting. That one influential teacher has had more impact than he ever anticipated - not only by setting Almujaed on the path to receive his doctorate, but also because he has gone on to have taught and trained countless students of his own over the last twenty years. Almujaed's teaching duties have been a noble calling that doubles as a central part of his work.

"Kuwait is a small country," Almujaed said. "If you go to a shopping mall, you see your students. You go to the bank; you see your students. I worked as an advisor to the Ministry of Commerce, and I think I had thirteen [former] students working with me."

Moving forward in his investigations, Almujaed is especially excited to continue his recent research into what conditions enable Certified Public Accountant (CPA) candidates to succeed in their Kuwaiti examinations. Data collection in Kuwait, however - compared to data sets available from North American and European vendors - can still present significant challenges, which has sometimes required Almujaed to gather necessary data from annual and corporate governance reports by hand. But Almujaed does also think that, with greater access to reliable, quality data (and perhaps more university assistants

to process that data), he and his peers could plumb new depths of research and inquiry.

The Kuwait Foundation for the Advancement of Sciences (KFAS) provided financial support for Almujaed's doctoral research, and he considers the honor of receiving the Jaber Al-Ahmad Prize as a crowning moment of his career. He is proud to have won this recognition through his years of diligent, high-quality research, in a profession that holds such meaning for him and the many students who have studied under him. And for a career to which he has devoted his life since he was a teenager, such a prestigious award feels like a long time coming.

Even his own kids were looking to win this prize.

Abdullah Alazemi

Digging for Gold: Uncovering Ancient Mathematical Challenges Using Modern Techniques



that's exactly what Abdullah Alazemi is achieving.

As the Head of the Mathematics Department and Associate Professor at the College of Science at Kuwait University, Alazemi gained his bachelor's at Kuwait University in 2000. He was granted a scholarship from Kuwait University and travelled to America to complete both his master's and doctorate at Colorado State University in 2004 and 2007, respectively. His doctorate covered the classification of discrete structures — combinatorial objects, including graphs and linear spaces. Within the last few years, he has produced nearly 30 different research papers covering topics at the intersection of pure and applied mathematics. From main eigenvalues of chain graphs to the classification of triangle-free symmetric 223 configurations, his research has had a significant impact on mathematician's understanding of these advanced concepts.

Alazemi has now been awarded the Kuwait Foundation for the Advancement of Sciences (KFAS) Jaber Al-Ahmad Prize for Young Researchers for 2021, in the field of Natural Sciences and Mathematics, in recognition of his

Bringing the ancient mathematical study of geometry back to the modern world requires a different perspective — merging traditional mathematical theories with computational science to shed new light on old problems. And

By Emma Stenhouse

Receiving this award was a surprise and an honor. Often, pure mathematics is easier to overlook than other more applied subjects, mainly because it's harder to see the connection to the real world. I am very happy that I can highlight a relatively unusual subject in this way

contributions to research in Kuwait. Established in 1988, The Prize for Young Researchers was founded by His Highness the late Amir of the State of Kuwait Sheikh Jaber-Al-Ahmad-Jaber Al-Sabah, with the goal of recognising the accomplishments of younger generations of Kuwaiti scientists and researchers.

"Receiving this award was a surprise and an honor," said Alazemi. "Often, pure mathematics is easier to overlook than other more applied subjects, mainly because it's harder to see the connection to the real world. I am very happy that I can highlight a relatively unusual subject in this way."

Alazemi works across both pure and applied mathematics and has always particularly enjoyed working with combinatorial objects. The study of geometry can be traced back over 5,000 years, and while it might be easy to assume that by now, we would

know everything there is to know, that's not actually the case. "We're now able to study things from a different angle, and with a different understanding," said Alazemi. Mathematicians have been studying combinatorial objects for around 300 years, the practice fell out of favor until around 25 years ago. But with new investigative techniques and tools comes the opportunity to improve our understanding.

"It's not possible to study larger objects by hand, but now we can use algorithms from computer science combined with the theory of mathematics," Alazemi said. "But it's challenging to find someone who can complete both the mathematical theory, and the application with computer science."

To achieve this, Alazemi works closely with a number of other mathematicians and researchers, most recently Milica Andeli and Anton Betten, both Associate Professors within the Department of Mathematics at Kuwait University.

"Mathematical papers and research are particularly challenging to produce because the proof of how we achieved our results is as important — if not more — than the result itself," he said. "Once we've found a problem, we have to show how and why the result is true. And this result needs to be true forever, and for whatever scenario."

One question that is always on Alazemi's mind is whether there is a combinatorial object with an infinite family of objects. "To research this,

we take one object from classical geometry, then engineer and deconstruct the object before using the axioms that the object already has to start rebuilding it," he said. "We're told that the same object should, in theory, be produced again. But often, another object also appears."

Then, he needs to ask himself if this is a coincidence, "And of course, nothing in mathematics is truly coincidental," Alazemi said. "That means the procedure we use to rebuild one object can also be used to build another. In this way, we can discover objects that no one has seen before. In a way, it's like digging for gold." While the results of these investigations can be extremely exciting, on its own it doesn't satisfy the principles of mathematical research. What's more important is how the result was reached and if it can be replicated.

Mathematicians also need to confirm that no one else has discovered

It's not possible to study larger objects by hand, but now we can use algorithms from computer science combined with the theory of mathematics. But it's challenging to find someone who can complete both the mathematical theory, and the application with computer science

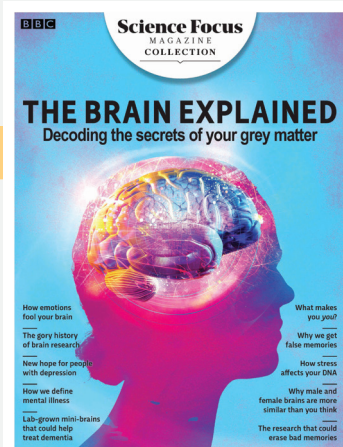
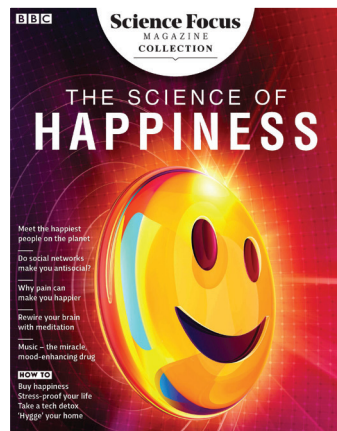
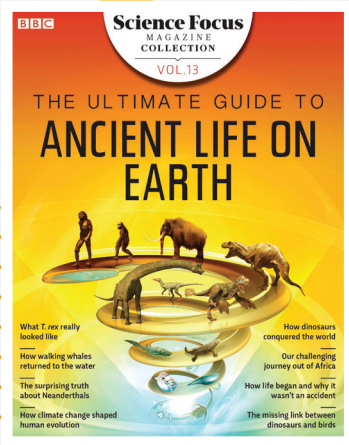
this object before them. “This is where international collaboration is particularly important in the field of Applied Mathematics,” said Alazemi. That’s because if mathematicians don’t share their discoveries, you’ll get excited about your research, only to have someone tell you the same result was discovered by someone else 10 years ago.

Staying up to date with what other mathematicians are working on is essential, and to that end Alazemi will be attending conferences in Turkey, Korea, Europe, and the United States over the next few years. This is combined with collaborations with a wide range of other institutions across India, Iran, the United States, Germany, and more.

Alazemi’s current research project is entitled ‘Classification of Combinatorial Objects’ and involves creating a database and classification tree so that any mathematician or researcher can easily check to see if something they’re researching has already been discovered previously or not. He is also coming to the end of his four-year long Head of Department position, after which he looks forward to dedicating more time to his family, students, and of course, his research. This means that the KFAS award comes at the perfect time. His main research interests are spectral graph theory, (linear) algebra, and combinatorial objects, so we can surely expect more publications across these fields in the coming years.

“While our mathematical research means a lot to the scientific world, they aren’t always applicable to the outside world. I am so pleased to receive

this award, and I didn’t see it coming at all,” said Alazemi. “I would like to extend my sincere thanks to everyone involved in awarding this prize, from KFAS, to the judging committees, to the friends and colleagues who encouraged me to apply.”



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Meshari Al-Mousa

Rekindles Arabic Rhetoric with his Research on its Modern Applications



Meshari Al-Mousa is on a mission to expand the understanding of Arabic Rhetoric and linguistic devices beyond the boundaries of classical literature. His research contributions are proof of his commitment to show the current, relatable, and practical applications of the field. This becomes especially valuable for the purpose of captivating his students' interests in a widely misunderstood subject.

Al-Mousa received his doctorate from the United States at the University of Indiana's leading Middle Eastern Studies and Arabic Rhetoric program. During his time there, most of his research was focused on classical Arabic literature. As a doctoral candidate, he submitted two research papers to the world-renowned Middle East Studies Association conference. Yet, Al-Mousa credits his time there for the broadening of his interests, "Perhaps my studies at Indiana University unveiled a new horizons for me by learning about rhetoric from another perspective, such as the rhetoric of communication, which includes all kinds of linguistic messages," said Al-Mousa.

His passion for Arabic Rhetoric and teaching, led him to be more creative in pursuit of modern and alternative applications. As an avid researcher, he has authored numerous research papers and books investigating the applications of Modern Rhetoric. He explains that "modern rhetoric is not limited to the study of the literature of poets and writers, but extends to the study of commercials, political speeches, social media posts, and every text aimed at influencing the recipient."

By Lulwa Alaftan

Alongside his research efforts, Al-Mousa has also been devoted to his role as an educator. Now serving as professor in the Arabic Language department at Kuwait University, he is fulfilling his life-long passion to teach something he has been engrossed in from a very young age.

"My passion for this field began when I was 14 and read a poem by the poet Al-Shafi'i," he said. "I was very captivated by it and went to the bookstore and bought his diwan." While he finds immense joy in teaching, Al-Mousa admits it can be challenging to maintain his students' interest as they "often know little about rhetoric except for the old classical idea that rhetoric is the study of similes, metaphors, and other rhetorical devices." He argues that there is value in surpassing the classical literary definition of rhetoric for the benefit of closely studying the ways in which language plays a central role in widespread influence strategies.

While the field of Modern Rhetoric is relatively new and not fully defined, Al-Mousa's resume, complete with a long list of accomplishments, reflects its multifaceted potential. "Classical Rhetoric is the eloquence of the prose and poetry, and it was pioneered by ancient poet Al-sakkaki, it is a largely rigid rhetoric," said Al-Mousa. Alternatively, the modern field concerns itself with the analysis of text, speech, images, and film.

Additionally, it proposes that an understanding of linguistic devices can assist in creating and delivering persuasive messages, as well as

developing a better awareness; as consumers of the influences we are exposed to daily. "Modern rhetoric is not limited to poetic text, but extends to include all types of text," he said. "I would not be exaggerating if I said that rhetoric is capable of studying all kinds of texts." This makes Modern Rhetoric incredibly integral to the fields of advertisements, politics, popular culture, speech writing, and more. This potential caused Al-Mousa to dedicate himself to the exploration and education of all the valuable applications of rhetorical strategies.

Al-Mousa's study of the everyday applications of Modern Rhetoric, and its influence on recipients, facilitates his role as a teacher. "I appeal to [the students] in eloquence by relating the lessons to our lived reality," he said. "I give them many examples taken from our daily lives such as advertisements or political speeches, and we try to discuss those examples together in the classroom." Al-Mousa provides the interesting example of one of his published research papers titled, "Arguments and Representations in the Digital Discourse of the Saudi Ministry of Health in the Face of the Spread of the Covid-19 Pandemic," which was aimed at monitoring the rhetorical strategies utilized by the official spokesperson to "convince people to abandon societal habits and social expressions such as handshaking."

For his inspired contributions to the field of Modern Arabic Rhetoric, Al-Mousa has earned the

Jaber Al-Ahmad Prize for Young Researchers in the field of Social Sciences and Humanities. He has dreamt of winning the award since he was a child, "I was always excited to read the announcement of the winners of this award, and I aspired to be among them one day." He expressed his gratitude to the Kuwait Foundation for the Advancement of Sciences (KFAS) for awarding him one the highest honors a researcher hopes to receive in the State of Kuwait.

Soon, Al-Mousa will start working on a new study on "rhetoric of audience, a modern scientific field of rhetoric," continuing his endeavor to expand and broaden the scope of this field.



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صدر حديثاً