Vision

“A thriving culture of science, technology and innovation (STI) for a sustainable Kuwait”

Mission

“Stimulate and catalyze the advancement of STI for the benefit of society, research, and enterprise in Kuwait”
The Kuwait Foundation for the Advancement of Sciences (KFAS) is a private, non-profit organization, established by an Amiri Decree issued on December 12th, 1976.

The Foundation is governed by a Board of Directors and chaired by H.H. the Amir of the State of Kuwait.

KFAS acknowledges with appreciation the valuable continued support it receives from private shareholding companies to fund its operation. These companies are currently providing one percent of their annual net profit to KFAS as part of their corporate social responsibility.
Chairman of KFAS Board of Directors

H.H. The Amir Sheikh Sabah Al Ahmad Al Jaber Al Sabah

My greatest wish and aspiration is building Kuwaiti individuals and developing their capabilities in order to enable them to build and develop their homeland.
Wall of Achievements 2018

Building a Culture of Science

- 10.4M+ visitors to The Scientific Center since 2000
- 300K+ visitors to the aquarium
- 92,093 visitors to the iMax
- 560,743 visitors to KSAG, one of the first electronic libraries in Arabic
- Nearly 2M followers on The Advancement of Science Publishing and Distribution Company Facebook page

Activities with International Partnerships

- 135 private sector executives benefited from training programs held in cooperation with renowned institutions, such as Harvard University and the Hong Kong University of Science and Technology
- 33 teachers participated in the Distinguished Education Program and a workshop on curriculum development
- 3 received research fellowships at the London School of Economics

Research capacity building
Number of Research Projects Funded by KFAS in 2018

- Ongoing Projects 125
- Completed Projects 58
- New Projects 84

- KD 2.8M: The total funding amount for new research projects in 2018
- KD 14.2M: The Foundation’s total spending on research in 2018, including grants provided by the Research Department, amount spent on international programs, and funding research programs at the Dasman Diabetes Institute

Investing in the Private Sector’s Human Capital

- 19 seminars, workshops, studies and conferences were funded locally in 2018 for the private sector, at a total cost of KD 185K
- 2,750 private sector employees trained, at a total cost of KD 1.8M

Supporting Kuwaiti Inventors

- KFAS supports in the registration and commercialization of inventions through the Sabah Al-Ahmad Center for Giftedness and Creativity
- 11 inventions viable for commercialization
- 6 project inventions were funded by the Kuwait National Fund for Small and Medium
- 21 inventions patented
- 16 prototypes were developed and manufactured with various global companies and

Science, Innovation and Leadership Events
Hosted and Organized by KFAS

A speaker series aiming to promote the dissemination of STI

- 9 lectures by international speakers
- 1,810+ participants registered in 2018
- 48 participants from 14 countries gathered in Kuwait

KFAS participated in organizing the sixth Arab-American Forum, which was held in Kuwait in November 2018
The Foundation and its Centers continued achieving the goals set in the current strategy (2017-2021). Our achievements and successes are not limited to the number and type of initiatives that are implemented, but rather in that we are starting to realize the impact of those activities and their active role in diversifying the economy of Kuwait towards a knowledge-based economy. Our core programs are still focused on ensuring that science, technology and innovation play an important role in every aspect of the Kuwaiti society, including among the research community, youth, the private sectors and NGOs. We continued to invest in scientific research, develop human capital and employ modern and innovative technologies to present solutions to national challenges. With the support of our important strategic partnerships with local and international centers of excellence, we have continued to nurture and promote the advancement of the Foundation’s strategic goals to strengthen the national innovation ecosystem.

In 2018, we continued to invest in human capital development, training 2,750 employees in the private sector in 36 events. This increase is an indication of the private sector’s awareness of our efforts and initiatives to advance its capabilities through science, technology and innovation. The Innovation Challenge, in collaboration with the University of California, Los Angeles, continued to challenge private sector employees to foster their innovative ideas and creative capabilities to enhance their workplace. 35 participants from 10 of the shareholding companies completed the program. In relation to the promotion of scientific culture, we have exceeded our goals of supporting science, technology and innovation initiatives, such as science fairs and festivals.

As for the scientific community, we have continued to host lectures, seminars and conferences for exchanging knowledge in specific disciplines and improving the capabilities of researchers in them. We succeeded in holding the meeting of the Arab-German Youth Academy of Science and Humanities in Kuwait, with the presence of 48 young scientists from 14 countries, serving as a platform to increase and strengthen the collaboration between distinguished Arab and German researchers. KFAS hosted the sixth seminar for Arab-American Frontiers of Science, Engineering & Medicine in cooperation with the National Academy of Sciences, where scientists and researchers from the Arab world and the United States exchanged knowledge and discussed important issues in the field of artificial intelligence.

We continued to support research projects that focus on national priority sectors such as energy, water, environment and health. In 2018, the Dasman Diabetics Institute furthered the implementation of its research programs in cooperation with the Ministry of Health by providing an annual grant of 8.1 million Kuwaiti dinars. Through our Research Directorate, we received 186 funding requests for research projects, which amounts to 25% more than in the previous year. We continued to monitor and track the quality of the research funded through the number of publications and patent applications. In 2018, 34 scientific manuscripts were published, and three patents were filed. As for the private sector, we have encouraged research and development initiatives, and supported 12 new projects in various private sector companies.

The Foundation continued to provide and support the KFAS Links lecture series, hosting nine lectures by international experts focused on important topics related to technology and innovation, including blockchain applications. These events were widely attended with people from different sectors. We also received positive feedback from the attendees. Based on the response of the Central Bank of Kuwait, we commissioned two studies on innovation pertaining to the culture of the financial sector, as well as one on understanding the ecosystem for small and medium enterprises in Kuwait.

As for our Centers, most became independent non-profit companies and much emphasis on 2018 was on ensuring that the Centers continue to deliver on their strategies, and at the same time, find means to address their financial sustainability, without relying on the Foundation as a single source of funding. The Scientific Center was keen on finishing its new strategy and enhancing its scientific educational programs for students. In 2018, the Center welcomed over 900 thousand visitors, designed two camps, one in summer and one in winter, held the Space Month event and added two experimental exhibitions to its halls. As for the Dasman Diabetes Institute, it finalized its research strategy, focusing on basic, clinical and public health research, in addition to strengthening the research management system. The Institute continued to receive appreciation and praise from the International Scientific Advisory Board (ISAB) for the progress made in implementing its strategy in collaboration with local entities, such as the Ministry of Health. With regard to the Sabah Al-Ahmad Center for Giftedness and Creativity, the Center established science clubs in all governorates and made progress towards achieving its goal of opening the first talent academy for girls, which we look forward to opening soon. Through ASPD, we continued to provide our digital and printed publications. In 2018, we distributed about 30,000 books, setting a new record, with an increasing number of online viewers for Al Oloom Magazine, How It Works Magazine and AlTaqadom AlElmi Magazine, and our Facebook followers numbered nearly two million late this year.

Finally, KFAS Academy continued offering online courses for academic institutions in the region, including Kuwait University.

Director General’s Message

The Foundation organized its annual ceremony to honor the winners of its awards under the patronage and presence of His Highness the Amir of Kuwait, Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah, Chairman of KFAS’ Board of Directors, who honored the outstanding achievements of Arab and Kuwaiti researchers. The ceremony included awarding the Kuwait Prize to seven Arab researchers in four disciplines, as well as awarding the Scientific Production Prize to four Kuwaiti scientists in four different areas. In addition, the Anwar Al Nouri Prize was given to one awardee for the best doctoral thesis in educational sciences in the Arab world and the Abdul Rahman Al-Sumait Award for African Development in the field of health was awarded to two scientists.

As we continue our pursuit of our strategic goals, we also realize that our accomplishments and successes would not have been achieved without the unwavering support and guidance of the KFAS Board of Directors, which is led by the vision and honor of His Highness the Amir of Kuwait. We continue to be in much gratitude to the generous support provided by the shareholding companies in the private sector. We will continue to strive to achieve new heights in driving STI for the betterment of Kuwait and its people, and fulfilling our commitment to the next generation. It is our responsibility to continue to build and strengthen our society, encourage relevant government agencies to increase support for scientific research, and contribute to strengthening the knowledge-based economy for development and long-term sustainability of the country.

Dr. Adnan Shihab-Eldin
Director General
Introduction to KFAS

Since its inception nearly 43 years ago, the Kuwait Foundation continues to play a major role in enhancing research and development capabilities in Kuwait, and in promoting science, technology and innovation to address national priorities and achieve sustainability in the State of Kuwait.

The Amiri Decree establishing the Foundation was issued in 1976, based on the aspirations and hopes of the Kuwaiti private sector, represented by the Chamber of Commerce, to advance the society through science and technology. Thus, a non-profit entity was established with a unique governance and independence, with the vision of promoting and advocating for the role of science and technology to drive the future development and competitiveness of the country. The decree stipulated that His Highness, the Amir of the State of Kuwait, assumes the Chairmanship of the Board of Directors, in order for the Foundation to enjoy the support and blessing of the highest authority in the country, and that the Kuwait private sector shareholding companies fund the activities of KFAS based on a set percentage of their annual profits - currently at one percent. The Foundation is governed by a Board of Directors that is appointed by His Highness the Amir of Kuwait, who provide their expertise and experiences to KFAS management, and lead the Foundation’s strategic vision and long-term sustainability.

For almost 43 years, KFAS has played a central role in enhancing the role of STI by building national capabilities, opening channels of communication and scientific exchange, financing applied research aimed at solving urgent national problems and disseminating scientific culture. The Foundation has also established six specialized scientific centers, which are: Sabah Al-Ahmad Center for Giftedness and Creativity (SACGC), Jaber Al Ahmad Center for Nuclear Medicine and Molecular Imaging (JACNMMI), Dasman Diabetes Institute (DDI), KFAS Academy, The Scientific Center of Kuwait (TSCK) and The Advancement of Sciences Publishing and Distribution Company (ASPD).

Within the framework of its current strategy (2017-2021), KFAS plays a pioneering role by providing knowledge and support to transform the Kuwaiti economy from a rentier economy to a knowledge-based one. The Foundation’s activities include investing in the development of human resources that possess the knowledge necessary for economic development in the digital world, and funding studies and research aimed at providing innovative solutions for challenges with national priorities. The Foundation’s activities include investing in the development of human resources that possess the knowledge necessary for economic development in the digital world, and funding studies and research aimed at providing innovative solutions for challenges with national priorities.

The Foundation’s strategic goals focus on stimulating STI in a number of specific contexts. The first strategic thrust areas is concerned with the general audience and dissemination of scientific knowledge of interest to the general public, with an emphasis on youth. It also deals with finding innovative approaches to teaching and learning science and math through formal and informal educational platforms. There is also some focus on building the capacity of civil institutions based on scientific research, such as vocational and specialized societies. The second thrust areas is focused on improving and advancing the capabilities of research and development in Kuwait, by supporting and funding research grants to address national priorities. In addition, efforts are placed on improving the research capabilities of the scientific community and within scientific institutions. The third thrust area supports the growth and development of the private sector, through co-funding research projects and linking them with international centers of excellence for knowledge exchange in areas, such as technology. In addition, this thrust area provides various human capital development opportunities for the private sector, in collaboration with world renowned academic and research institutions worldwide. This includes all private sector companies, especially shareholders, as they’re a key partner in the Foundation’s activities.

The Foundation also has a number of programs, that support the core thrust areas, and drive evidence-based decision-making and public policies based on scientific evidence through the funding and commissioning of studies focused on various themes to advance the local economy.

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The Foundation continues to provide support to innovators and inventors who seek to register their patents and turn them into commercial activities through its subsidiary, the Sabah Al-Ahmad Center for Giftedness and Creativity. The Center supports and embraces the inventors, starting with the idea and ending with the marketing process, passing through providing them with advice in the various stages that they are going through, through numerous partnerships with the concerned authorities in the state.

The Foundation has invested its efforts to develop various programs, initiatives and centers to achieve its goals and serve the relevant segments of society through several modes, such as publishing scientific publications, sponsoring public events, financing research, financing scientific exchange, implementing research in its specialized centers, developing training programs for target segments, sponsoring strategic partnerships between knowledge providers and users and giving advice to stakeholders in their areas of work. In spite of this great diversity in programs and activities to deliver on its strategy, work and annual budget remain within the framework of stimulation and feasibility, as achieving real leaps at the level of the local economy requires the state to adopt general policies that set budgets and national capabilities at the scale necessary to achieve visible changes. The Foundation, in partnership with the relevant government agencies, seeks to reach the general policies that achieve the desired economy transformation.
Developing Human Capital Through Training and Internships

The Kuwait Foundation for the Advancement of Sciences continues its investment in the development of human capital in areas related to science, technology and innovation, to advance Kuwaiti society and build national competencies required by the national development process.

In 2018, KFAS contributed to the financing and organization of numerous activities, such as workshops, vocational training courses, public lectures, conferences and seminars, with the aim of developing the vocational and cognitive capabilities of the participants, as well as fostering their innovative ideas to solve practical challenges.

KFAS has invested in developing human capital through Sabah Al-Ahmad Center for Giftedness and Creativity, where 438 training opportunities were provided for teachers and education specialists, while 397 male and female students continue their educational and academic careers in accordance with the best practices in the center.

(See page 58)

Investing in Innovative Capabilities in the Private Sector

In 2018, KFAS funded 18 events in the fields of science, technology and innovation for the private sector, in addition to two technical and specialized studies.

19
STI Initiatives

2
Studies

The Foundation supports the important role of the private sector in driving socioeconomic development, and continued to motivate and develop the capabilities of the sector in the fields of STI, in line with KFAS’s strategy (2017-2021), which focused on furthering the capabilities of the sector through STI. In 2018, KFAS continued to encourage innovation-stimulating activities in the private sector and presented capacity-building initiatives to support the competitiveness of its employees within the Kuwaiti market.

The KFAS’s initiatives included programs that improved the competencies of the participants and enriched their skills and innovative capabilities, to enhance their work environments. To foster the development of thriving startups (small and medium-sized businesses), the Foundation supported young entrepreneurs by encouraging their innovative and creativity through STI.

Investing in Human Capital of the Private Sector

In 2018, KFAS funded 18 events in the fields of science, technology and innovation for the private sector, in addition to two technical and specialized studies.
To continue to invest in initiatives that drive and enhance the innovative capabilities, KFAS supported the Knowledge Economy Forum (KKEF) for the second time, hosted by the General Secretariat of the Supreme Council for Planning and Development. The Forum focused on discussions surrounding the experiences of governments with digitization, as well as the opportunities and challenges that may exist in the transformation of public policies in Kuwait into a digital knowledge economy. Enhancing the capacity building of institutions in the field of digitization was also part of the discussion.

Major local and international companies participated in the forum for two days, which also included the evaluation of the performance of institutions based on recommendations made during the first session of the forum.

In 2018, KFAS launched the fourth session of the Innovation Challenge Program in collaboration with the University of California, Los Angeles, to continue to provide a new group of participating teams with innovative thinking skills, tools and the knowledge to enhance their competencies, and elevate the competitiveness of their workplace.

The program provided the participants with an opportunity to enhance their skills in management and leadership through innovation, by learning from the experts at the University of California, Los Angeles, which provided the participants with information on innovation management, blue ocean strategies, strategies for understanding the masses in the marketing process, and approaches to dealing with human behavior to enhance business development. The program also included a series of trainings and visits to a group of prominent international companies, such as Disney and Gensler, a leading architecture firm and Riot Video Games, where the participants had the opportunity to draw inspiration from the latest global experiences in adapting innovation, through the meetings they had with the executives of those companies.

10 companies were selected from those that applied for the program: National Bank of Kuwait, Equate Petrochemicals, Agility Logistics, Kuwait Finance House, Boubayan Bank, Gulf Bank, Kuwait Asset Management (KAMCO), TABCo International Food Catering, Rasameel Structured Finance and Jadeite Group.

Among the most innovative projects that were developed as a result of the Innovation Challenge Program was the self-service program developed by the Commercial Bank of Kuwait team. The program, launched in all its branches, digitizes their banking transactions for their customers through an innovative approach, which includes opening a bank account and issuing a bank card.

Through these high standards designed program; we had a wonderful opportunity that gave us the skills to help us generate innovative ideas that qualify us to launch competitive projects in our business sector

Abdulaziz Al Refae, Project Manager. Future Communication

Companies Participated in Innovation Challenge 2018
2. The Open Enrollment Program to Develop the Capabilities of Workers in the Private Sector

The Open Enrollment program in 2018 continued to support participating companies and establish a culture of innovation among its employees by providing a series of training courses for vocational development. The Foundation, in collaboration with prominent international institutions, provided 13 high quality training programs, benefiting 251 participants with the knowledge that enable individuals to be more creative and innovative in problem solving.

Growing Demand on Open Enrollment

<table>
<thead>
<tr>
<th>Year</th>
<th>Applications Received</th>
<th>Participants Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>25</td>
<td>13</td>
</tr>
<tr>
<td>2015</td>
<td>267</td>
<td>103</td>
</tr>
<tr>
<td>2016</td>
<td>250</td>
<td>103</td>
</tr>
<tr>
<td>2017</td>
<td>267</td>
<td>103</td>
</tr>
<tr>
<td>2018</td>
<td>103</td>
<td>251</td>
</tr>
</tbody>
</table>

The Creative Leadership Course contributed to my development at the personal and professional levels. The benefits the course didn’t only identify new tools and means to help develop management, but also gave me the opportunity to meet officials facing similar challenges, and then contributed to expanding my network of professional relationships. The course clarified a lot of points that I was having trouble dealing with personally. So, I can say that I enjoyed the course a lot, and I will invite other officials of our company to attend it in the future. I look forward to participating in more of these courses in the future!

3. The Role of Strategic Partnerships in Human Capital Development in the Private Sector

The Foundation continues to expand its circle of international partnerships to expand the innovative capabilities, facilitate knowledge exchange and develop human capital in the private sector.

In 2018:

- 36 senior executives from Kuwait’s private sector attended the “Decision-Making Strategies Under Risk and Uncertainty” workshop at Harvard Kennedy School. Participants were exposed to strategies for recognizing changing, overcoming behavioral biases, and reducing the probability of unfavorable outcomes.
- 73 executives from KFAS’s contributing companies benefited from External Executive Education Programs, that the Foundation offered in collaboration with leading international universities in business administration, such as the Wharton School of Business, the Harvard Business School and the Oxford University’s Said Business School.
- 348 CEOs participated in the Local Executive Education Programs, launched by KFAS in 2018, providing capacity building on implementing innovative tools for enhancing managerial competencies. These prestigious local programs were implemented in collaboration with the University of California, Berkeley (UCB), the University of California, Los Angeles (UCLA), Babson College, INSEAD College and IE Business School.
- 26 participants attended the Digital Mindset Program in collaboration with the Hong Kong University of Science and Technology, during which they learned about the importance of digital marketing and were informed of the latest technological developments used in the field of artificial intelligence.
- KFAS supported a number of companies by providing their employees with grants for 38 local courses, in which 760 employees participated.
- 773 employees in the private sector benefited from courses, programs and short training workshops in cooperation with the Abdulaziz Hamad Al-Saqr Center for Development of the Kuwait Chamber of Commerce and Industry. These courses were offered with the aim of further developing the capabilities of the participants, and exposing them to the latest trends in various fields in relation to strengthening the national economy.
**Participants in the PDI program**

PDI gave me the opportunity to work with MassMutual Illinois as a Financial Planning Practice Manager, and this experience has broadened my horizons of the investment field and taught me to pursue comprehensive approaches to wealth management and financial advice. In addition to the various investment analysis skills I gained, the program gave me a valuable opportunity to learn communication skills and manage personal and professional relationships, because one of the basics of this job is dealing with different clients who have diverse financial needs.

Hassan Almousa, a participant in PDI 2018, Director of Practice at MassMutual/MetLife Everett Site

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**Investing in Research and Research Capabilities**

In 2018, the Foundation continued to provide research grants to support researchers from local academic and research institutions, as well as co-finance research projects targeting the needs of the private sector. KFAS concentrated its efforts on supporting research projects and programs targeting national priorities, aimed at developing innovative and viable solutions.

KFAS continued its central role in developing the opportunities and capabilities of local researchers and expanding their scientific and technological expertise, by launching local and international initiatives in collaboration with a number of prestigious international institutions. Focus was also given on collaborative research programs with prestigious regional and international institutions and using their innovative technological applications to address national needs.

In 2018, KFAS subsidiaries, the Dasman Diabetes Institute and the Jaber Al-Ahmad Center for Nuclear Medicine and Molecular Imaging, published 74 and 6 scientific manuscripts respectively. (See pages 53 and 56).

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**Research Support Statistics**

In 2018, KFAS funded a total of 267 research proposals, of which 84 were new projects, totaling KD 2.8 million, while the number of ongoing research projects reached 125 projects totaling KD 11.6 million. 58 projects were completed, totaling KD 2.7 million.

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**Growth in PDI Enrollment 2014 - 2018**

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Applicants</th>
<th>No. Accepted</th>
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</thead>
<tbody>
<tr>
<td>2014</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>2015</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>2016</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>2017</td>
<td>37</td>
<td>7</td>
</tr>
<tr>
<td>2018</td>
<td>23</td>
<td>14</td>
</tr>
</tbody>
</table>

**Total Number and Value of Grants for Ongoing Research Projects**

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Ongoing Projects</th>
<th>Ongoing Projects Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>73</td>
<td>4,861</td>
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<tr>
<td>2013</td>
<td>83</td>
<td>7,716</td>
</tr>
<tr>
<td>2014</td>
<td>87</td>
<td>8,576</td>
</tr>
<tr>
<td>2015</td>
<td>13,002</td>
<td>15,727</td>
</tr>
<tr>
<td>2016</td>
<td>121</td>
<td>18,435</td>
</tr>
<tr>
<td>2017</td>
<td>124</td>
<td>11,616</td>
</tr>
<tr>
<td>2018</td>
<td>125</td>
<td>150</td>
</tr>
</tbody>
</table>
Models of Collaborative Research Projects with International Institutes

- **Next Generation Brine Desalination and Management for Efficiency, Reliability, and Sustainability**
  **Prof. Bader Al-Anzi, Kuwait University in cooperation with MIT, USA**
  This project aims to make a plan to develop new solutions to the shallow and salinization problem of water in Kuwait and the Arabian Gulf, by focusing on the use of electrical technologies in desalination and saline water management, enhancing the efficiency of existing desalination plants, and using the technology of Pressure Retarded Osmosis (PRO) and Reverse Electrodialysis (RED), which are among the most promising technologies that rely on energy recovery by exploiting the difference in concentration between water currents. In addition to employing modern innovations to increase the reliability of the desalination plants, such as surface coating and microscopic separations (microfluidic).

- **Advanced Crystal Silicon Photovoltaic Cells**
  **Dr. Yasser Abdul Rahim, Kuwait University in cooperation with Imec Institute, Belgium**
  In its second phase, this research project aims to develop advanced and highly efficient technology in the field of solar PV cells at low manufacturing cost.
  So far, the project has resulted in the development of modern silicon-dependent solar cells with a 23% efficacy and competitive cost, knowledge transfer and capacity building, in addition to more than 30 scientific papers and two patents.

Models of Collaborative Research Projects with Local Authorities

- **Spaces of Living: Urban Reflections of Kuwaiti Society**
  **Researcher Sharifa AlShalfan, AGI General Contracting**
  This research project explored the lifestyle of Kuwaiti society by analyzing the material aspects of the house and the activities carried out by its members.

- **Evaluating the Effect of Natural and Accelerated Weathering on the Mechanical and Physical Properties of Pure Plastic Blends with Solid Plastic Waste**
  **Researcher Sultan Al-Salem, Kuwait Institute for Scientific Research in cooperation with Equate Petrochemicals**
  This research project focused on work related to engineering and evaluation of products resulting from solid plastic waste, assessing its properties and comparing it to the local market.

- **The Provision and Generation of Energy Using Photovoltaics in Co-operative Societies**
  **Researchers Ayman Al-Qattan and Yahya Al-Hadban, Kuwait Institute for Scientific Research in cooperation with the National Technology Enterprises Company (NTEC) and the Ministry of Electricity and Water**
  The researchers focused on implementing the energy audit project and the modernization of attached systems in buildings using technologies with optimal use of energy.
Flagship Programs Supported in 2018

• KFAS began the flagship project on Integrated Systems for Smart Buildings, in cooperation with the Kuwait Institute for Scientific Research and Baiti Synergy Showroom. The project aims to implement systems to control air conditioning, lighting and several other applications, including saving water and energy consumption in the Foundation’s building.

• The Foundation has submitted a proposal for a commissioning projects focused on radiation cooling, with selective surface technology for cooling buildings in Kuwait. This involves selective surface materials known as Radiation Cooling Material, to cool buildings day and night by long-term radiation exchange with outer space.

• KFAS signed a contract with the Kuwait Institute for Scientific Research to implement a flagship project on the performance of electric cars in the Kuwaiti environment, as well as building the first station for charging solar electric cars and define the elements and procedures necessary to convert Kuwait City into an environment ready for the use of electric cars.

• The Foundation signed a contract for a flagship project entitled Initial Human Experiments to Use the Degradable Balloon System in the Cement Injection of the Spine, headed by Dr. Abdulrazzaq Alobaid. The project is supervised by the GTIMD Catheter Solutions and Sabah Al-Ahmad Center for Giftedness and Creativity. This innovation is an advanced step in enhancing patient safety and reducing collateral damage when performing spine modifications, especially in outpatient settings.
2. Supporting Scientific Assignments and Postgraduate Students

For many years, KFAS has provided support for researchers to attend and participate in scientific missions, with the aim of fostering their competencies by presenting their research findings and scientific papers to their peers. Through this venue, the goal was also to enhance knowledge exchange between Kuwaiti researchers and their peers, including some support to students pursuing their graduate degrees at centers of excellence around the world.

KFAS provided financial support to 17 postgraduate students to continue their education and research.

- 3 postgraduate students received support through the Integrated Water Resources Management Program at the Arabian Gulf University in Bahrain.
- 6 outstanding students received partial support for PhD scholarships.
- 2 postgraduate studies received support.
- 3 post-doctoral research received support.
- 11 PhD students received support through research supplementary grants.

3. Fellowship and Academic Exchange Programs

KFAS provides opportunities for Kuwaiti researchers to participate in scholarship programs and spend a semester at a center of excellence at an international academic or research institution.

The academic fellowship program provides researchers with the opportunity to teach, give lectures or conduct research that address topics within their field of expertise. After the fellowship period ends and the researchers return to Kuwait, KFAS provides them with an opportunity to present their papers and share their experience in their institutions, through KFAS Links.

The 3-month Fellowship and Academic Exchange Program at LSE

<table>
<thead>
<tr>
<th>Name</th>
<th>Specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fahad Al-Sumait</td>
<td>Importance of Media in Kuwait and the Impact of Technological Development on the Next Stage</td>
</tr>
<tr>
<td>Dari Alhuwail</td>
<td>Health Information Systems Management in Government Hospitals</td>
</tr>
<tr>
<td>Sulaiman Alabduljader</td>
<td>The Impact of Global Initiatives on the Business Market</td>
</tr>
</tbody>
</table>

4. Embrace Vocational Practice Societies

KFAS has developed five communities of practice (CoPs) that include a network of specialists in specific fields, which are multidisciplinary groups, each consisting of individuals with common research and applied interests. By organizing open dialogue among them, these communities work together to discuss new ideas, and support platforms for knowledge exchange as well as discuss areas of mutual collaboration, all of which are essential pillars for establishing an effective innovation environment.

The CoPs established to date are:
1. Urban Development
2. Healthcare
3. Energy
4. Economic Sciences
5. Behavioral Sciences

Samples of the Postgraduate Students Support Program

<table>
<thead>
<tr>
<th>Name</th>
<th>Support Period</th>
<th>Specialization</th>
<th>University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Munira Al-Seraj</td>
<td>3 Months</td>
<td>Medicine Delivery</td>
<td>Albany College of Pharmacy and Health Sciences</td>
</tr>
<tr>
<td>Nagham Al-Fulaij</td>
<td>6 Months</td>
<td>Cellular and Molecular Biology (Neuroscience)</td>
<td>University of Hawaii</td>
</tr>
<tr>
<td>Dareen Almojil</td>
<td>12 Months</td>
<td>Molecular Biology</td>
<td>Albany College of Pharmacy and Health Sciences</td>
</tr>
</tbody>
</table>
The Kuwait Foundation for Scientific Advancement understands the value and importance in keeping up to date with the latest market trends in the private sector, aiming to enhance companies’ competitive and innovative abilities in various fields, used to improve their products and services. Hence, the Foundation participated in the financing of a number of projects in 2018. One of these was a research project focused on the use of high-density polyethylene pipes with nanocomposites for high-pressure pipe applications, in collaboration with EQUATE. Another study focused on addressing the leading causes of airborne diseases in poultry houses in Kuwait, in collaboration with the Kuwait United Poultry Company.

KFAS has been working on the development of the Kuwait Research Database, a national repository of resources and information for researchers in Kuwait. The database was designed to include information from local leading academic, research and government institutions, such as:

- Kuwait University
- Kuwait Banking Association
- Kuwait Institute for Scientific Research (KISR)
- Dasman Diabetes Institute
- Supreme Council for Planning and Development
- The Scientific Center
- Arab Planning Institute

In 2018, KFAS completed the website for the Database, which includes more than 550 profiles of researchers from Kuwait University and the Kuwait Institute for Scientific Research, along with approximately 1000 publications. The database is scheduled to be launched in 2020.

Business Development Success Stories

**Gulf Cable & Electrical Industries Co. K.S.C.P.: Determining a Proper Method to Disposal/Handling the Un-Usable Wastage Materials (Scarp) Generated During Cable Manufacturing and to Find the Possibility to Re-Cycle These Scraps.**

Gulf Cable and Electrical Industries Co. needed environmental solutions to disposal/handling unusable wastage materials generated during cable manufacturing, in order to effectively save time and enhance operational efficiency. KFAS provided introduced Gulf Cable & Electrical Industries to the German Fraunhofer Institute for Operations Engineering and Packaging, which helped the company understand the project requirements from a technical point of view.

**Lothan International for General Trading and Contracting: An Evaluation to Study the Development of a Soil Cleaning System to Remediate Hydrocarbon Contaminated Soil.**

Lothan International for General Trading and Contracting has conducted two research studies focused on measuring the effectiveness of soil reform strategies for remediating hydrocarbon contaminated soil, and on developing an innovative method for cleaning contaminated soil. The conclusion of these studies was the need for an experimental study to understand the optimal condition and to choose the best possible method to achieve the desired outcome within a specific timeframe.

Soil pollution poses a real threat to the environment in Kuwait, due to the wide range of activities surrounding oil exploration, production and transportation. Lothan used a water-based process for scrubbing soils by dissolving and suspending them in a wash solution and breaking them down into a smaller volume of soil through particle size and gravity separation, as well as attrition scrubbing.

Co-Funding Research and Development Projects for the Private Sector

12 requests received in 2018 to support R&D for companies

13% Increase in the number of projects implemented by companies in 2018, aimed at fostering a culture of R&D in the private sector
Through its partnership with many knowledge and expertise centers around the world, KFAS continues to support programs and initiatives aimed at developing the capabilities of researchers, policy makers, students and teachers, and advancing the national innovation ecosystem, in moving towards a knowledge-based economy.

- In collaboration with the University of California, Berkeley (UCB), 14 Kuwait University faculty members attended training programs at UCB, as a part of the UC Berkeley Teaching Excellence Program. The program aims to develop the skills and expertise of faculty members on modern teaching methods and provides an environment where they are able to exchange knowledge and experiences with other faculty members.

- 17 faculty members from the College of Architecture at Kuwait University benefited from a training workshop provided by the University of California, Berkeley on developing curricula and innovative teaching methods. The workshop’s goal was to develop methods in enhancing the capabilities and skills of students.

- KFAS sponsored 18 local researchers to attend international scientific events in Japan, France and the United Kingdom with the aim of introducing them to the latest developments in the fields of applied and social sciences, as well as allowing them to interact with their international peers to foster their competencies and networking opportunities.

- KFAS organized the activities of the annual meeting of the Arab-German Young Academy of Sciences and Humanities titled "Let’s Talk About Science", where 48 members of the Academy, along with seasoned and early career researchers from local academic and research institutions in Kuwait, attended as a means to strengthen collaborative research between the Arab World and Germany.

- 107 students in public and private schools, in collaboration with Arizona State University and the Ministry of Education, were trained as a part of the Chief Science Officer program.

- In cooperation with the American Association for the Advancement of Science, KFAS organized a workshop in which 30 people participated in order to build their research skills and knowledge.

- The GLOBE (Global Learning and Observations to Benefit the Environment) Program is a worldwide hands-on, science and education program focusing on the environment. The program is a result of the cooperation between National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA). In collaboration with GLOBE, a capacity building workshop was held to enhance the capabilities of science teachers in environmental research and enhancing the teaching processes of science teachers.

In the beginning of 2018, and in cooperation with the London School of Economics and Political Science (LSE), the first and second phases of a study entitled “Reviewing the Health System in the State of Kuwait” were completed. The first phase involved an overall assessment of the health sector in the country; and the second phase focused on developing a public health strategy for Kuwait. These two studies represent a preliminary diagnosis to help restructure the public health sector in Kuwait using an evidence based approach and best international practices and scientific evidence. They are based on integrated legislative and a technical assessment of medical practice in Kuwait. It is anticipated that the white paper on this legislation will be finalized in January 2019 and that the final rendition of the law will be completed in May 2019, coinciding with the completion of the Phase II report. These types of studies represent the type of methodology that can be followed for developing general policies and strategies aimed at enhancing, sustaining and achieving economic diversity.

In an effort to advance policymaking through STI, KFAS has been working with the General Secretariat of the Supreme Council for Planning and Development in supporting the Kuwait Public Policy Center. In 2018, a number of research studies were supported in the fields of health, energy and economics, to enhance strategic decision-making, in cooperation with international research institutions, such as the Organization for Economic Co-operation and Development (OECD), the London School of Economics and Political Science (LSE), and the Oxford Institute for Energy Studies (OIES). These studies were done in collaboration to build on the vast knowledge and international expertise of international researchers to drive solutions in national priority areas, such as health, urban development, optimal energy consumption and building a knowledge based economy.

KFAS, in cooperation with the Kuwait Banking Association (KBA), established the Gulf Center for Economics and Business Research in 2018, to support the local economy with studies and research that can help support and foster strategic planning and policy making to achieve diversity and sustainability in the local economy. This involves assessing new tools based on international standards to measure economic and commercial performance. The Center provides an opportunity for all contributing companies to obtain a free annual subscription to the Center that can provide them with economic studies and reports in their respective fields. It also allows the private sector in all Gulf countries to participate in regional economic surveys and studies to achieve greater regional integration and international competitiveness.

In 2017, KFAS prepared a white paper on national energy reform, that was to serve as a basis for developing a comprehensive strategy that addresses the issue of the energy sustainability, in collaboration with all relevant authorities on this central issue. After presenting the white paper to the Council of Ministers in 2018, KFAS participated in the High Energy Committee formed by the Council, headed by the Minister of Oil and Minister of Electricity and Water to activate the implementation of the energy security strategy in Kuwait. KFAS coordinates with the Kuwait Institute for Scientific Research, the Ministry of Electricity and Water and the Kuwait Petroleum Corporation on the implementation of the committee’s recommendations.
Advocating and Enabling a Scientific Culture

In 2018, KFAS continued its efforts to advocate a scientific culture within the Kuwaiti society, and foster initiatives that highlights the important role of science, innovation and creativity in advancing the individual and society as a whole.

Thanks to the strategic partnerships formed with local, regional and international entities, KFAS and its subsidiaries have achieved great successes in implementing collaborative initiatives to promote science, technology and innovation within various sectors, with an emphasis on the youth as the future leaders of innovation for the present and future of Kuwait.

The Scientific Center of Kuwait contributes to enhancing STI through educationally engaging platforms, where awareness on various scientific topics, such as environmental awareness, are promoted through a fun and interactive environment. The Advanced Scientific Publishing and Distribution Company also contributes to enhancing all aspects of the scientific and technological culture, through different publications, providing tools and resources for the youth to progress through knowledge and information for all age groups.

(See page 50)

Science, Innovation and Leadership Events - Hosted and Conducted by KFAS

KFAS has organized numerous seminars and lectures in various scientific disciplines, technology, innovation and leadership delivered by a group of distinguished experts and researchers. The goal is to provide a forum for knowledge exchange to support professional development in various sectors.

These activities focus on spreading awareness about the role of science, technology, innovation and culture and its importance within society, as well as encouraging leaders of the public and private sectors to implement initiatives that accelerate the development of their institutions and improve the efficiency of their businesses. These events witnessed a great turnout due to their importance in promoting science, technology and innovation knowledge to advance the society.

1. KFAS Links

After a successful launch and year of events, the KFAS Links lecture series continued in 2018 with nine lectures. Each lectures were given by international renowned speakers provided lectures on different topics surrounding STI. The knowledge provided through these seminar series provide the audience with knowledge on the topic, and an interactive platform for knowledge exchange and capacity building.

Prof. Dave Robertson
Wharton School of Business
January 9th, 2018
Registrants: 285

Prof. Peter Fisk
IE Business School
March 12th, 2018
Registrations: 233

Dr. Sami Mahroum
INSEAD College
May 9th, 2018
Registrations: 42

Dr. Julia Cage
Sciences Po
September 25th, 2018
Registrations: 71

Steven Walton
University of Los Angeles, California
October 9th, 2018
Registrations: 473

Ikhlaq Sidhu
University of California, Berkeley
November 5th, 2018
Registrations: 431

Prof. Sebastian Fixson
Babson College
Prof. Tucker Marion
Northeastern University
November 27th, 2018
Total No. of Registrations: 132
2. The Sixth Arab-American Frontiers of Science, Engineering and Medicine Symposium

With the participation of more than 100 researchers, engineers and mathematicians from Arab countries and the United States of America, the Kuwait Foundation for the Advancement of Sciences hosted the sixth Arab-American Frontiers Symposium. The symposium focused on catalyzing collaborative research among local and international entities, as well as to promote discussions and exchange of scientific expertise between early-career researchers and seasoned researchers in Arab countries and the USA.

3. “The Application of Blockchain Technology” Symposium

The Foundation held a symposium entitled “The Application of Blockchain Technology”, which was delivered by the publisher and entrepreneur specialized in this field Richard Kastelein. Because blockchain is becoming a technical transformation that will have a major impact on the world’s economies and in doing business, KFAS organized this symposium with an aim to create sufficient awareness of national competencies in this field, and to spread knowledge about this emerging technology.

During the symposium, a panel discussion was held between the participants and a number of entrepreneurs and local business experts. The panelists were: Mr. Anwar Al-Ghaith, Executive Director of the Technology & Banking Operations Sector at the Central Bank of Kuwait, Mr. Mohammed AlRashidi, founder and Chairman of the Executive Board of the Kuwaiti group (One Global), Mrs. Anwaar AlMahmeed, co-founding partner of East Chain and Mr. Khaled Bastaki, founder and General Manager of Exbit. Each panelist shared of their expertise and experiences with blockchain technology, and answered questions raised by the participants.
Conferences, Workshops and Activities – Funded by KFAS

In continuing its role for encouraging community members to enhance their knowledge in science, technology and innovation, KFAS funded a number of workshops and events in 2018, most prominent of which are:

- **The 7th Kuwait Competition for Science and Engineering:**
  The Science Club organizes this competition annually, in order to ignite students’ interests in science and technology and enhance their creativity.

- **Student Summer Training Program:**
  The Kuwait Institute for Scientific Research organizes this course to encourage high school students to get involved in scientific fields, through nine training programs chosen by the students according to the desire of each participant.

- **Physics Olympiad:**
  Five Kuwaiti students and two supervisors from the Ministry of Education participated in these Olympiads, held in Lisbon, Portugal.

- **The 33rd Engineering Design Exhibition:**
  The Engineering and Petroleum Department at Kuwait University organizes an annual exhibition where graduation projects from college students of all majors are presented. In 2018, the exhibition provided a professional opportunity for 334 participating students to gain a better understanding of the job market and provided them with opportunities to market their ideas by interacting with representatives from both the private and public sector.

- **“Increasing the Efficiency of Civil Society” Project:**
  KFAS contributes to enhancing the efficiency and professionalism of civil societies by organizing capacity building activities, which allows KFAS to achieve its goals in empowering and highlighting the role of civil society in the State of Kuwait.

### Number of Events Funded per Year

(Conferences, Workshops, Lectures, Symposiums, Scientific Competitions, Exhibitions and Scientific Festivals)

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Events</th>
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</thead>
<tbody>
<tr>
<td>2013</td>
<td>51</td>
</tr>
<tr>
<td>2014</td>
<td>52</td>
</tr>
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<td>2015</td>
<td>56</td>
</tr>
<tr>
<td>2016</td>
<td>93</td>
</tr>
<tr>
<td>2017</td>
<td>178</td>
</tr>
<tr>
<td>2018</td>
<td>202</td>
</tr>
</tbody>
</table>

KidZania Sciences Academy attracted 4,185 visitors in 2018

Engaging and Empowering the Next Generation in Science

1. **Science Academy at Kidzania**

In 2018, KFAS continued to attract visitors to the KidZania Sciences Academy by organizing “A World Underwater - Green World” event, where children had the opportunity to explore sea-life through a fun and interactive platform. The event promoted a culture of preserving the underwater environment and the creatures which inhabit it.

Activities at the Academy included 3D graphics, an interesting trip to the theatrical show (Sea World) and a fun test through giant water balls which challenged balance, as well as 8 scientific experiments focusing on three basic areas: biology, physics and chemistry.
2. Improving Students' Mathematical Skills and Enhancing Teachers' Competency

The GUST Center for Teaching, Learning & Research, which was established in collaboration with the Gulf University for Science and Technology, continued its activities in 2018 by focusing on improving students' skills in mathematics and the teachers’ capabilities in the educational process, by combining the existing resources in the classrooms and mathematics curriculum, with new teaching methods in schools.

The center presented a workshop entitled “Maths All Around Us”, to help children with learning disabilities in mathematics through using daily life concepts. Innovative teaching methods were used during the workshop, benefiting 20 students in the process.

In addition, the center held a training workshop for secondary school teachers in the Ministry of Education entitled “Science, Technology, Engineering and Mathematics Education” (STEM Education), in cooperation with the Gulf University for Science and Technology and the American University of Beirut (AUB). In 2018, 438 teachers received training in cooperation with international institutes, aimed to enhance the competence of teachers and to provide them with effective teaching methods and techniques.

3. Recognizing Outstanding High School Students

In the spirit of encouraging secondary school students, KFAS continued its annual tradition of honoring top high school graduates and celebrating their academic excellence in the scientific and arts sections. The Foundation’s goal is to honor the top ten students from the two disciplines as means to encourage them to continue their academic excellence. Students receive awards, the most prominent of which is a trip to a well-developed country to visit the country and its advancements.

In this context, KFAS organized a tour for these students in Malaysia for 7 days, during which visits were made to touristic sites and the most prominent scientific, industrial and cultural facilities there, including the Panasonic factory, the Pemata School for Gifted Students, the Royal Selangor Factory that manufactures pewter (Tin alloy) and the National Astronomical Dome.

In addition, KFAS presented each of them with a cash prize, a laptop and a free family subscription for one year to enter the Scientific Center.

The Kuwait Foundation for the Advancement of Sciences sponsors talented students and inventors through the Sabah Al-Ahmad Center for Giftedness and Creativity, which was established for the purpose of embracing them, and creating an appropriate environment for them to develop their abilities and advance their talents and inventions. (See page 58)
4. The Citizen Science Program in Cooperation with the Ministry of Education and Kuwait University

Citizen science is defined as the process of collecting and analyzing data related to the natural world by members of the general public, through collaborative projects with researchers and professional scientists. The Citizen Science program was initiated by KFAS as a means to enhance the engagement of the general public on issues that are related to science but that also stir their personal passions. These initiatives were also developed to encourage the capabilities of scientific research and technological development. The following have been launched.

NASA Globe

KFAS launched the NASA Globe Program in cooperation with National Aeronautics and Space Administration (NASA), National Oceanic and Atmospheric Administration (NOAA), the Ministry of Education and the American Embassy in Kuwait for the academic year 2018/2019. The program targets middle and high school students in 27 public schools, where the students collect information on the climate for NASA, enhancing their research and data collecting skills on environmental issues related to climate change and global warming.

Air Quality

A project was launched to monitor the air quality in Kuwait, in collaboration with Kuwait University. The goal was to raise awareness on the importance of air quality in relation to public health. Data on air quality was collected in homes, businesses, and public arenas through the use of air quality monitoring devices. As a result of the project’s success, the Environment Public Authority requested the distribution of a number of these devices to support air quality measurement efforts and the collection of scientific data.

Ambassadors of Nature

The Ambassadors of Nature initiative was launched to promote the use of modern technologies, such as drones, to improve the photography and videography skills of students as a means to collect data and produce scientific materials. The 39 middle and high school students, from 17 different public schools, were also taught how to deepen their understanding of the importance of preserving biodiversity and preserving nature. This training is run by the voluntary Environment Lens Team, a number of photographers and videographers specialized in capturing environmental and wildlife footage, in cooperation with the Ministry of Education.

5. Enriching the Arabic Scientific Content with Pioneering Publications

In 2018, KFAS participated in local and regional book fairs in an attempt to continue spread awareness about STI and promote a scientific culture among local and regional populations in Arabic. In the span of a year, the Foundation sold 10,684 books in total sales valued at 14,722 KD at the Cairo, Sharjah and Kuwait bookfairs.

6. Launch of “Banu Musa and the Science of Tricks” at Kuwait International Bookfair

In partnership with 1001 Invention, KFAS launched the children’s book “Banu Musa and the Science of Tricks” at the Kuwait International Book Fair. The book is focused on Bani Musa bin Shaker; three brothers who grew up in Baghdad in the 3rd century AH/9th century AD during the Islamic Golden Era. The book introduces readers to a number of secrets and principles of the science of tricks and presents a number of devices and machines designed by Banu Musa. The book encourages the reader to use their thinking and creativity skills to make the devices, as well as further understand the mechanisms behind how these devices work, fostering their passion for science, especially amongst young readers. An interactive platform at the exhibition, entitled “Banu Musa”, included a robotics workshops and fun shows.

7. Sharek Electronic Forum

This forum was launched by KFAS in 2018 to serve as an interactive and discussion-filled electronic platform for Mathematics, Science, English and Arabic language teachers in public schools. The forum is aimed at enhancing their networking capabilities and increase knowledge exchange through weekly episodes via live broadcast on various topics, in which teachers and specialists also shared their stories and experiences.
Celebrating the Achievements of Champions of Pioneering Research

As a part of its annual tradition, KFAS showcases and honors Arab and Kuwaiti researchers and scientists, who have achieved outstanding scientific results and contributed to the advancement of a particular scientific discipline through their research. Under the patronage of His Highness the Amir, Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah, KFAS hosted its annual awards for the following prizes: the Kuwait Prize, the Scientific Production Award, the Al-Sumait Prize for African Development and The Anwar Al Nouri Prize for the best PhD thesis in the Arab world.

8. Interactive Lessons Project (Menhajy)
KFAS has developed 2,858 interactive lessons based on the English, Mathematics and Science curricula for sixth and seventh graders, where 688 students and 62 public schools have benefited.

9. KSAG: A Distinguished Electronic Platform
In 2016, KFAS launched the Kuwait Scientific Advancement Gateway (KSAG), one of the first scientific electronic libraries in Arabic. It provides a portal for students, teachers, the research community and the general public to access educational content and useful information in the fields of science and technology, including documentaries and publications. KFAS’s publications have also been added to the content of KSAG, and as a result, the number of visitors to the portal have increased, indicating the Foundation’s success in spreading a scientific culture and the importance in providing tools and resources for STI in Arabic. The portal reached more than half a million visitors in 2018.

The portal provides access to about 120 books and more than 15,000 scientific articles

10. A New List of Scientific Books Issued By KFAS
Since its role is primarily to promote scientific culture among all segments of society, in 2018, the Foundation issued a set of books aimed at instilling passion for science in children through simplified scientific content with fun illustrations. These books, which provide scientific content in Arabic, allow children to role play as scientists by providing simulations of simple scientific experiments that can be conducted at home under the supervision of parents, as well as other recreational activities.

Among these books:
1. Robots
2. The Solar System
3. A New History of Life
(See page 63)
Celebrating the Achievements of the Champions of Pioneering Research

The prize was launched in 1988, upon the initiative of the late Amir of Kuwait, His Highness Sheikh Jaber Al-Ahmad Al-Jaber Al-Sabah, to recognize young, early career Kuwaiti researchers (below the age of 45) that have had achieved success in their research activities through a stellar publication record. The Prize is valued at 10,000 Kuwaiti dinars, in addition to a gold medal.

For Natural Sciences and Mathematics:

Dr. Tariq Mohammad Al-Rifai
- Associate Professor in the Department of Physics, College of Science, Kuwait University
- Published 17 research papers and participated in 12 international conferences

Dr. Khaled Jabr Hassan Al-Fadalah
- Associate Professor in the Mechanical Engineering Department, College of Engineering and Petroleum, Kuwait University
- Published 28 research and participated in 19 regional and global conferences

Dr. Salman Khalifa Al-Sabah
- Assistant Professor at the Kuwait University medical school, and Consultant of General Surgery at Amiri Hospital
- Published 47 papers and participated in 90 conferences worldwide

Prof. Abdullah Mohammed Abdullah Al-Hajri
- Professor and History Department-head, Faculty of Arts, Kuwait University
- Published 17 scientific papers, written three books and participated in five regional and global conferences

For Basic Sciences - Biological Sciences, it was equally shared by:

Prof. Dr. Hilal Lashuel (Republic of Yemen)
- Associate Professor of Neuroscience and Director of the Laboratory of Molecular and Chemical Biology of Neurodegeneration at the Brain Mind Institute, Lausanne, Switzerland
- Published 143 researches, which got cited 14,539 times, and rated 61 in the H-index metric

Prof. Dr. Mohamed Hassan Sayegh (Lebanese Republic)
- Professor of Organ Transplantation, Dean of the Faculty of Medicine and Vice President of the university’s Scientific Research Affairs at the American University of Beirut
- Published more than 300 papers, and two books on kidney disease and transplantation
- His research has been cited 29,311 times, and received an average score of 89 in the H-index metric

For Applied Sciences (Clean and Sustainable Energy Technology), it was equally shared by:

Prof. Dr. Zakya Hussein Kafafi (Arab Republic of Egypt)
- Professor in the Department of Electrical Engineering and Computer Science at Lehigh University, Pennsylvania, United States of America
- Published 244 scientific papers in refereed scientific journals, has 8 patents and wrote many chapters in books with international numbering (ISBN)
- Her research has been cited 13,153 times, and got an average of 62 in the H-index metric

Prof. Dr. Husam Niman AlShareef (State of Palestine)
- Professor in Material Science and Engineering at the Department of Physical Science and Engineering, King Abdullah University of Science and Technology, Saudi Arabia
- Published more than 337 research papers
- His research has been cited 10414 times, and got an average of 54 in the H-index metric

For Social and Humanitarian Sciences:

Prof. Dr. Abdullah Lutfi Alnawasi
- Professor of Journalism and Mass Communication at the College of Arts, Kuwait University
- Published 15 research papers and participated in 20 international conferences

For Engineering Sciences:

For Medical and Health Sciences:

For Arab and Islamic Scientific Heritage is announced every three years for researchers of all nationalities. The value of the award in each field is 40,000 Kuwaiti dinars, in addition to a gold medal.

With the aim of honoring the scientific achievements of Kuwaiti and Arab researchers and scientists, KFAS launched the Kuwait Prize in 1979. The Prize is awarded in five fields: four of which are announced annually: Basic Sciences and Applied Sciences, Economic and Social Sciences, Arts and Literature. Within each of these main categories, the specific scientific topic that is awarded each year varies from one year to the next. The Prize given in Arab and Islamic Scientific Heritage is announced every three years for researchers of all nationalities.

KFAS launched the Scientific Production Prize in 2000, to recognize young, early career Kuwaiti researchers who have had achieved success in their research activities through a stellar publication record. The Prize is valued at 10,000 Kuwaiti dinars, in addition to a gold medal.
Celebrating the Achievements of the Champions of Pioneering Research

Our Centers and Subsidiaries

For Economic and Social Sciences (Economics), it was equally shared by:

Prof. Dr. Imad Ahmed Moosa (Republic of Iraq)
- Professor of Finance and Economics at the Royal Institute of Technology, Melbourne, Australia
- Published over 225 research papers, authored several books and published chapters in books in both Arabic and English
- His research has been cited over 5645 times, and he got a score of 37 in the H-index metric

Prof. Dr. Badi Hani Baltagi (Lebanese Republic)
- Professor of Economics in the Department of Economics, and Senior Researcher at the Center for Policy Research at Syracuse University, United States of America
- Published more than 140 research papers, and authored 14 books published in scientific and academic institutions
- His research has been cited over 4,584 times, and received an average of 35 in the H-index metric

For Arts and Literature (Studies in the Arabic Language and its Literature):

Prof. Dr. Mohsen Jassim Al-Musawi (Republic of Iraq)
- Professor of Arabic Literature at Columbia University, United States of America
- Published more than 60 research in refereed scientific journals, and authored 24 books published by respected scientific and academic institutions, including four novels

Anwar Al Nouri Award for the Best PhD Thesis in the Arab World

KFAS manages the Anwar Al Nouri Award, which was launched in 2016 with support from the Anwar Al Nouri Philanthropic Trust. The Award was launched in recognition of the pivotal role of the late educator in advancing education in the State of Kuwait, as well as his instrumental role and relentless efforts towards the development of KFAS, as former member of its Board of Directors. The Prize aims to enhance the quality of research in various fields related to education in the Arab world, and recognize and acknowledge young distinguished Arab researchers, focused on improving and accelerating progress in education, with an emphasis on those that are involved in teaching and educational research in the Arab world. The Award is given every two years to those holding a PhD in the educational sciences from one of the universities of the Arab world, and is valued at $35,000 for first place, and $25,000 for second place.

Dr. Dalia Ahmed Mostafa (Arab Republic of Egypt)
- Researcher and independent translator
- Received the award for her 2015 thesis: "The Concept of Masculinity as Reflected in the Mother's Upbringing of Her Children in Egyptian Society: A Socio-anthropological Study"

Abdul Rahman Al-Sumait Award for African Development

In support of Africa and its development, His Highness the Amir of Kuwait Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah announced a new initiative during the third African Arab Summit hosted by the State of Kuwait in November 2013. The initiative, called for an annual award by the state of Kuwait named after the late Dr. Abdelrahman Al-Sumait, a Kuwaiti physician who dedicated his life to humanitarian and charity work in Africa in relation to health, education and food security. The annual Al-Sumait Prize honors individuals or institutions, who have through their work and research, have made significant advances in the fields of food security, health and education in Africa. The Award is valued at one million dollars and provided by the State of Kuwait.

KFAS is responsible for managing the Award under the supervision of an international Board of Trustees that includes Mr. Bill Gates, Co-chair of the Bill and Melinda Gates Foundation, Mr. Makhtar Diop, the World Bank’s Vice President for Infrastructure, Mr. Abdlatif Al-Hamad, Chairman and CEO of the Arab Fund for Economic and Social Development (AFESD), Mr. Tareq Salem Al-Mutawa, Executive Member of the Council of the Charitable Works Committee and Dr. Adnan Shihab Al-Din, Director General of the Kuwait Foundation for the Advancement of Sciences, in addition to a representative of one of the international organizations related to the award’s scope.

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Anwar Al Nouri Award for the Best PhD Thesis in the Arab World

KFAS manages the Anwar Al Nouri Award, which was launched in 2016 with support from the Anwar Al Nouri Philanthropic Trust. The Award was launched in recognition of the pivotal role of the late educator in advancing education in the State of Kuwait, as well as his instrumental role and relentless efforts towards the development of KFAS, as former member of its Board of Directors. The Prize aims to enhance the quality of research in various fields related to education in the Arab world, and recognize and acknowledge young distinguished Arab researchers, focused on improving and accelerating progress in education, with an emphasis on those that are involved in teaching and educational research in the Arab world. The Award is given every two years to those holding a PhD in the educational sciences from one of the universities of the Arab world, and is valued at $35,000 for first place, and $25,000 for second place.

Dr. Dalia Ahmed Mostafa (Arab Republic of Egypt)
- Researcher and independent translator
- Received the award for her 2015 thesis: "The Concept of Masculinity as Reflected in the Mother's Upbringing of Her Children in Egyptian Society: A Socio-anthropological Study"

Abdul Rahman Al-Sumait Award for African Development

In support of Africa and its development, His Highness the Amir of Kuwait Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah announced a new initiative during the third African Arab Summit hosted by the State of Kuwait in November 2013. The initiative, called for an annual award by the state of Kuwait named after the late Dr. Abdelrahman Al-Sumait, a Kuwaiti physician who dedicated his life to humanitarian and charity work in Africa in relation to health, education and food security. The annual Al-Sumait Prize honors individuals or institutions, who have through their work and research, have made significant advances in the fields of food security, health and education in Africa. The Award is valued at one million dollars and provided by the State of Kuwait.

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Raising the Efficiency of KFAS Centers and Subsidiaries

As a part of its mission to promote science, technology and innovation, and to address specific national challenges, KFAS has established, in the past 20 years, six centers dedicated to address a specific national need and priority. The centers were launched as incubators during their first period of establishment, and as they matured, were established and transformed to non-profit companies (subsidiaries). These subsidiaries have focused on delivering their mandates and strategy, which were developed in line with international standards. Five of the six centers became legally independent subsidiaries in 2018, with a well-established governance structure to support their development, implementation of their strategy and sustainability. KFAS subsidiaries and centers are:

- The Scientific Center of Kuwait (TSCK)
- Dasman Diabetes Institute (DDI)
- Sabah Al Ahmed Center for Giftedness and Creativity (SACGC)
- The Advancement of Science Publishing and Distribution Company (ASPD)
- KFAS Academy
- Jaber Al Ahmad Center for Nuclear Medicine and Molecular Imaging (JACNMMI)

The Scientific Center of Kuwait (TSCK)

Vision
To be recognized as a prominent, trusted and entertaining destination in the Middle East and North Africa for informal science education and environmental awareness for people of all ages.

Mission
To simplify science and promote environmental awareness in a fun-filled learning experience.

In 2018, the Center received over 495,000 visitors, of which 20% were students. A comprehensive one-on-one educational session was held with students during their field trips to the Center, which included curated classroom experiences with curriculum-based educational programs, enabling students to learn through a hands-on approach.

A revamped summer camp and winter camp program was also introduced in 2018, offering parents and their children a safe and fun learning environment during the winter and summer breaks, respectively. The program covered topics on space and marine biology.

Space Month 2018 was a successful activity in 2018, which involved a full solar system display hanging from the central court, with mock-stars running down the main hall with corresponding learning touchpoints underneath, as well as small booths for visitors to interact. A lecture was given by the young Emirati Alia Al-Mansoori, discussing her project underway on the International Space Station, and there was a telescope themed event, children’s workshops every weekend, as well as screening of the film Interstellar on the new IMAX with Laser screen.
Moreover, towards the latter part of 2018, The Scientific Center finalized plans and signed the contract for the new expansion project, in line with its new strategy. The expansion would increase its capacity and create new activities that further enrich the curriculum content for students, through innovative and new technological approaches.

In addition, in 2018, the Sketch Aquarium in the Mijbil Al-Mutawa Aquarium, and the Imagination Playground within Discovery Place came to fruition. The Sketch Aquarium offered children with an interactive projection activity where they were able to see and interact with their own drawings, making them come to life under the sea. The Imagination Playground introduced children to engineering concepts and activities that enhanced their creativity through building.

New independent experience that’s been introduced in 2018: drawing in an aquarium (Mijbil Almutawa)

Moreover, towards the latter part of 2018, The Scientific Center finalized plans and signed the contract for the new expansion project, in line with its new strategy. The expansion would increase its capacity and create new activities that further enrich the curriculum content for students, through innovative and new technological approaches.

Dasman Diabetes Institute (DDI): A Leading Research Institute

Vision
To be the leading institute of diabetes diseases in the MENA region and to be recognized internationally.

Mission
To address the diabetes epidemic in Kuwait through focused diabetes research, integrated prevention, training and education

Since its establishment in 2006, DDI strives to be at the forefront of diabetes research institutes in the Gulf region and the Middle East. Its mission is to prevent, control and reduce the effects of diabetes and related health complications in Kuwait, through effective research, training, education and public health programs, in order to improve the quality of life for the population.

The Institute adopted a new five-year strategy (2018-2022) in 2018, which provided a comprehensive approach to tackling the diabetes epidemic through research projects that provide a deeper understanding of the epidemic through basic and clinical research, with emphasis on clinical trials, as well as epidemiology and population health studies. Their new strategy also focuses on training and diabetes education, in collaboration with the Ministry of Health, with a focus on patient programs. The Institute, with the guidance and support of the International Scientific Advisory Board (ISAB), also enhanced and revamped their research management system to enhance its research operations. The ISAB continued to praise the progress and improvements made at the Institute, which was evident by the 74 scientific manuscripts published in international, peer-reviewed journals, on various factors surrounding the causes of diabetes and ways to prevent it, in addition to factors that may directly or indirectly contribute to the disease on a molecular and clinical level.

Children participating in the winter camp organized by The Scientific Center

To be the leading institute of diabetes diseases in the MENA region and to be recognized internationally.

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New independent experience that’s been introduced in 2018: drawing in an aquarium (Mijbil Almutawa)
The institute participated in 11 collaborative research projects with the following institutions:

- McGill University (Faculty of Medicine, the Health Center, the Research Institute and the Center for Simulation)
- Montreal Diabetes Research Center
- Sunnybrook Health Science Center
- Sunnybrook International Center
- University of Montreal Hospital Research Center
- University of Glasgow
- University of Glasgow

In 2018, the Medical Sector’s Clinical Laboratory received the College of Pathologists’ (CAP’s) Accreditation. This accreditation represents the laboratory’s dedication to comply to international standards and maintain accuracy in test results and diagnosis. The Sector registered 540 new patients in 2018 and 2,366 patients recruited as research subjects for various projects.

The Diagnostic Imaging Center (DIC) completed 3,483 scans, which involved a comprehensive range of MRI, CT, X-Ray, Ultrasound, Bone Mineral Density Test and Vascular Examinations.

The Operations Division continued to provide support for all of DDI’s sectors to ensure enhance effectiveness and efficiency. The sector has also collaborated with several companies and specialized institutions to achieve this goal, including:

- Liverpool John Moores University MOU
- Ministry of Health MOU
- Myca, the service provider for our EHR solution

The Institute also provided a summer training program for 25 Kuwaiti medical students and recent graduates, where they received first hand training to enhance their practical and applied experiences, along with mentoring and guidance.

The Institute also organized more than 14 medical and scientific events that included research and educational related conferences, seminars and lectures attended by 1275 researchers in the field of diabetes.

One of the Institute’s most prominent achievements in 2018 was establishing an Office for registering patents and establishing the Kuwait National Diabetes Registry in cooperation with the Ministry of Health. One of its regional accomplishments is the research sector receiving the Emirates International Genetics Disorders Prevention Award under the category of the research institution most innovative in the field of genetic research, which it received during the seventh International Conference on Genetic Disorders organized by the UAE Genetic Diseases Association.

In 2018, research published by DDI is 74 and ongoing projects in which the institute is participating both locally and internationally, including 59+ conferences, seminars, lectures and training courses organized by the Institute in 2018.

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Dr. Abdulmohsen Al-Terki obtained a patent for his research on the method of performing multiple oral and nasal surgical procedures in the head and neck region, providing a systematic procedure for the performance of multiple operations for correcting various ear, nose, and throat conditions that cause snoring and obstructive sleep apnea (OSA) in the patient. This method allows the surgeon to perform multiple operating procedures in the nose, mouth, and/or throat in a single operating session. The procedure is/are selected in accordance with a specific customized treatment plan that is developed by the surgeon for the individual patient, which other surgeons involved in snoring or OSA surgery can comprehend.
Jaber Al Ahmad Center for Nuclear Medicine and Molecular Imaging (JACNMMI)

Vision

Establishing a center that is reliable and credible for its excellence in the field of nuclear medicine, by providing high-quality medical services, and creating a unique academic environment that helps the conduction of advanced research in various scientific and medical fields, its education and raining.

Mission

To diagnose incurable diseases, explore therapeutic solutions and provide modern tools for 3D molecular imaging. All of this while also handling patients and providing support to researchers.

The Jaber Al Ahmad Center for Nuclear Medicine and Molecular Imaging (JACNMMI) was established in 2013 to use nuclear medicine and molecular imaging as a means to develop a nurtured environment for research, clinical trials and training as well as the development radioactive materials. The Center’s ambitions focused on strengthening health services in Kuwait, through progress made in medical services and provide a platform for education, training and scientific research.

The Center’s aspirations revolve around four basic objectives: providing excellent medical services in line with international standards, establishing an academic base for scientific research, providing educational and training opportunities at both local and regional levels and producing radioactive materials for clinical and research uses, in accordance with the best quality and safety standards.

Showcase: Patent Success

Clinical Services:

Since its opening, the center has received 4,278 patients. And in 2018 alone, 1,899 patients have undergone positron emission tomography, general medical imaging, cardiac stress tests and other medical examinations.

Use of radioactive gallium-68 for imaging of the prostate gland, nerve and bone tumors.

The first center in the region to use radioactive ammonia to perform ischemia tests using positron imaging.

The experimental use of F-18-PSMA-1007 in positronic imaging to detect prostate cancer. Kuwait is the third country in West Asia to produce and use this substance.

Medical and Academic Education:

The center was also accredited as an official institute that provides training courses in the field of radiation protection. The Center participated in the first Emirates International Conference for Nuclear Medicine Technology 2018 in Dubai, and its staff gave lectures on the applications of hybrid positron imaging.

A group of female students from the Public Authority for Applied Education and Training have been trained under the supervision of the Medical Physics Unit where lectures were given to enhance their knowledge and skills in theoretical and practical fields.

Scientific Research:

The Center has published 6 research papers in international scientific journals.

Radioactive Material Production:

The Center continues to produce radioactive materials that target specific diseases, and for utilization in scientific research.

Radioactive sodium fluoride (F18-NaF) was produced for bone examination, and F-18-PSMA-1007 was produced and is being used for the first time in Kuwait and the Middle East, according to the highest standards of useful manufacturing practices.

The modern Acid Zoledronic -Ga68 was used to examine bones, making Kuwait one of the first countries in the world to use it.

This substance helps prepare the patient to treat the spread of palliative bone cancer in advanced cases, by spreading in the body.

4,000+ patients have been admitted since the center opened
Sabah Al-Ahmad Center for Giftedness and Creativity (SACGC)

Vision
To convert the center into a globally distinguished institution that cares for gifted and talented Kuwaitis, invests in their innovations for developmental purposes, and takes them to global levels.

Mission
To contribute to building a Kuwaiti society that fosters giftedness and creativity.

Showcase: Patent Success
One of the most important achievements of SACGC in 2018 was the expansion of the “Academy for Gifted Students Joint School for Boys – Intermediate & Secondary”, which was officially inaugurated in 2017 in collaboration with the Ministry of Education. The academy provides gifted students with a productive environment to develop their talents, cognitive skills and scientific prowess. The center is also preparing to establish its first academy for talented girls.

In addition, SACGC also caters to the innovative and inventive individuals, furthering their ideas and inventions by registering their patents, and assessing their commercialization potential, as a means to enhance the innovation ecosystem.

KFAS established the Sabah Al-Ahmad Center for Giftedness and Creativity (SACGC) in May 2010 as an initiative of His Highness Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah, the Amir of the State of Kuwait. The Center’s mandate is to provide support for gifted students, finding means to enhance their learning and public educational experiences.

In addition, the Center also caters to the innovative and inventive individuals, furthering their ideas and inventions by registering their patents, and assessing their commercialization potential, as a means to enhance the innovation ecosystem.

In 2018, 438 chances of training were offered to teachers and education specialists in the following categories:

- 97 teachers and specialists received training by ITEEA to enable them to apply the new enriched curricula.
- 42 teachers and specialists received training with Debono Center, The British Council, and NASA Global to acquire educational methods on an international level.
- 100 teachers participated in training courses to enable them to apply the Electronic Assessment System.
- 199 teachers and Psychologists received training to enhance their competencies as mentors to the gifted students in social and cognitive aspects.

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The Special Enrichment Curricula from the International Technology and Engineering Educators Association (ITEEA) was applied and taught in these classes. The program also provides training for teachers (a unique development opportunity for teachers of gifted classes from public schools in Kuwait), as well as educational specialists from the Ministry of Education.

Increase in Number of Gifted Students

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Scientific Trip to NASA
A team from the center, which consisted of 21 talented young participants, took part in an educational activity focused on enhancing their knowledge and information on space science. They were trained by professional trainers in live locations such as the US Space Camp, the Intrepid Sea, Air and Space Museum, the National Air and Space Museum and the Kennedy Space Center. During the trip, the team also developed their skills in leadership, teamwork, self-development, creativity and problem solving. The camp was held in the US for 12 days.

Supporting Kuwaiti Inventors in Developing and Marketing Inventions
KFAS, through SACGC, supported individual inventors by protecting their inventions, by registering patents for their intellectual property, and supporting the manufacturing of prototypes, as well as assessing the potential commercialization of these prototypes into viable products.

Turning Patents into Prototypes
SACGC focused on improving digital technologies in Kuwait by establishing a Digital Technology Department, focused on capacity building and research. A landmark MoU was signed between the KFAS, Sabah Al-Ahmad Center for Giftedness and Creativity and Siemens, Siemens, to develop a Center for Training and Innovation in Kuwait.

Developing Digital Technology
SACGC continued to offer beneficiaries learning and training opportunities in different areas concentrating on technical industries, applied sciences, mathematics, technology & innovation and pottery arts. In 2018, 189 participated in training courses and workshops through 39 programs.

Technological Development Workshops
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In 1983, KFAS established the Advancement of Sciences Publishing and Distribution Company (ASPD) to disseminate scientific tools and resources, as well as to promote a scientific culture, by spreading STI knowledge and investing in human capital development. The company issues books, magazines and modern technological platforms, for both adults and children, as a means to advance the understanding and appreciation of science, especially towards the advancement of future generations and the development of their capabilities and skills. Much emphasis, in recent years, has been on expanding the utilization of electronic methods for disseminating scientific content. ASPD developed a website with Arabic scientific content to meet the needs of readers. It worked on building collaborations with a number of local and international institutions to add diversity to its tools of spreading knowledge, which included cooperation with MIT’s Sloan School of Management, to publish a magazine that includes the latest developments in the world of management.

In addition, the American Mayo Clinic Library provided Arabic readers with up to date medical information in Arabic published on ASPD’s website (aspdkw.com), as part of the cooperation between Mayo Clinic and ASPD.

The Company also launched the first Arab electronic magazine on artificial intelligence and its applications. In addition, the New York Book Review will be published weekly on the Al Oloom Magazine’s website.

One of the most important achievements of 2018, is that the ASPD’s Facebook page reached nearly two million followers.

KFAS continues to publish:
- How It Works magazine (howitworks.aspdkw.com)
- Al Oloom Magazine (ooloom.aspdkw.com)
- An Online books shopping portal (Kfas-kw.myshopify.com)
- The ASPD Facebook page (facebook.com/aspdkw)
- The ASPD website (aspdkw.com)
Among 2018’s achievements was the translation and printing of 12 books covering various topics in science, technology, engineering and mathematics, for different age groups (children and adolescents to adults). These books were distributed through local, regional and international exhibitions and through ASPD’s the electronic sales platform. The list includes the following books:

KFAS Academy

**Vision**
To become the pioneer of unconventional online education by reinventing self-learning experience.

**Mission**
Provide self-paced, career-oriented, high quality internationally recognized university-level and continuing professional education across the Arab world. Delivered primarily in an online mode with reliable and trusted assessment and quality control to enable large number of learners to attain higher education at an affordable cost.

KFAS Academy aims to become a leading platform for self-learning non-traditional online education. It provides university courses and high quality professional training courses at low costs in Kuwait and throughout the Arab world, through an electronic platform.

Its mission is to provide a career-oriented, high quality internationally recognized university-level professional education in all parts of the Arab world, to support the professional development and personal aspirations of the individuals. The higher education sector is the heart of academic activities, that’s why a strategic plan has been developed to enable university education management to achieve its desired goals.

In 2018, the academy launched two introductory courses, during the summer semester and first semesters, at both Kuwait University and Gulf University for Science and Technology. In light of its ongoing efforts, the academy is almost done with its “Biology 1” and “English for Undergraduate” courses.

The academy’s achievement in 2018 was to develop the “Mathematics 1” course for the Gulf University. It also began developing the second batch of courses that includes English, biology and physics for Kuwait University.

Since its establishment, the academy has formed a network of local, regional and global partners, to provide educational or training materials, or partners who benefit from the provided services. Among the most prominent of these partners are the Ministry of Education, Kuwait University, Gulf University for Science and Technology, the Petroleum Training Center (Kuwait Petroleum Corporation), the National Fund for Small and Medium Enterprises Development, Manpower and Government Restructuring Program and the Saudi company Doroob, in addition to the Bayt website and the University of Arizona, USA.
Supporting the Education of Syrian Refugees in Lebanon and Jordan

His Highness Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah (May God protect him), Chairman of Kuwait Foundation for the Advancement of Sciences, announced his initiative to support the education of Syrian refugees in February 2016.

At the time, KFAS responded to His Highness’s directions by signing a cooperation agreement with a number of international organizations and local non-governmental organizations in Lebanon and Jordan, which provide educational programs approved by the hosting governments, and who have stellar reputations in the successful implementation of educational programs. KFAS partnered with the Kuwait Fund for Arab Economic Development on construction projects in two host countries, aiming to build schools in densely populated areas that benefit both the Syrian refugees and the host country’s children whose conditions were affected negatively by the crisis. Cooperation with the Arab Fund for Economic and Social Development led to the commissioning of UNESCO to conduct a field study to measure the extent of illiteracy among Syrian children in Lebanon, and the effectiveness of the programs presented to them. For this purpose, KFAS provided financial support of $50 million to Syrian refugees to enhance their educational development.

Expenditure categories were identified as three basic areas: educational programs of all kinds, construction projects and initiatives that respond to a need not covered by the programs in the field. The educational programs served Syrian refugees in both Lebanon and Jordan in different age groups, between 15 and 24 years old, which includes accelerated and intensive courses, secondary education, vocational training, accelerated high school programs, language assistance programs, fundamentals of reading, writing and mathematics, life skills, professional training diploma, bachelor’s degrees, strengthening classes for high school and vocational training and job opportunities.

Educational programs targeting the younger age group (5-14-year-olds) were also supported, including primary education and early childhood education centers.

Although relief work is not a part of the KFAS’s programs, the scale of the catastrophe suffered by the people of Syria called for a response to support the education of Syrian refugees in Lebanon and Jordan, as a representative of the Kuwait private sector’s contribution.

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Financial Highlights

Policy for Investment and Spending and Financial Sustainability

KFAS’s revenues rely on two sources: the first is the contributions of Kuwaiti share-holding companies, and the second is the Foundation’s return on investment on its endowment.

The success that the Foundation through the realization of its strategies in financing research and projects, along with a sharp decline in contributions received from Kuwaiti companies, a decrease in annual profits from 5% to 1% since 2002, it has become necessary to increase the sources of revenue through capital investment in various investment assets both locally and internationally, while maintaining a great deal of reservation and reduction in risk, in order to generate the appropriate returns needed to provide liquidity for KFAS’s programs.

In spirit of dispersing investments on the long run, the Foundation has developed a strategic plan for its investments after consulting world-class specialists and completing a comprehensive study and plan on the topic. This plan entails allocating funds that would enable the KFAS’s gradual exit from the markets, in the event any financial circumstances, developments or variables, required it to do so.

In 2013, the Board of Directors approved the strategy of distributing the Foundation’s investments on the long run, reducing risk and maximizing returns, by owning an investment strategy that provides a balance between emerging bond and stock markets, alternative investments, hedge funds, private stocks, private debt and cash debt (local fixed deposits).

KFAS is keen on implementing its investment plan to benefit from the experiences of leading government investment institutions and selecting investment managers who adopt a conservative approach to investment, which would enable the Foundation to continue to succeed in its returns during the market’s ups and downs. This was done by building a conservative strategic asset management model through a well-diversified portfolio, providing low risk for high returns while maintaining more liquidity.

In order to protect the purchasing value of the Foundation’s assets from inflation, the KFAS Board of Directors specified the spending policy which dictates that spending would never exceed 5% of total assets.

Since its establishment 42 years ago, KFAS has spent nearly five hundred million dinars, where the average annual spending in the last ten years has reached 31 million dinars on all of its projects, programs, initiatives and centers to achieve the purposes for which it was established at the local, regional and international levels. KFAS has spent nearly 218 million dinars establishing its six centers: The Scientific Center of Kuwait, The Sabah Al-Ahmad Center for Giftedness and Creativity, Dasman Diabetes Institute, The Jaber Al-Ahmad Center for Nuclear Medicine and Molecular Imaging, KFAS Academy and the Advancement of Sciences Publishing and Distribution Co.

As KFAS seeks to achieve the independence and sustainability of its subsidiary centers, the Foundation has established non-profit companies wholly owned by KFAS holding company, to manage, organize and develop the work of these centers, as well as to provide them with a mechanism for revenue generation. This will enable the Centers to continue serving their mandates and strategy, while at the same time, be in line with the Foundation’s limited annual budget, within the ceiling of the aforementioned 5%, which currently stands at about 31.5 million dinars.
Financial Statements for the Year 2018

Cash Revenue

The annual contributions received from Kuwaiti shareholding companies for the year 2018 amounted to approximately 21 million dinars, around 70% of this year’s budget, and 74% of the average expenditure for the previous three years, while the cash returns from investments cover the remainder of the institution’s budget.

Expenses

The operating expenses of the Foundation’s departments and subsidiary centers amounted to approximately 23 million dinars, 75% of this year’s budget and 76% of the average expenditure for the previous three years, while administrative expenses represent the remaining percentage of the budget.

Budget Distribution

In 2018, 60% of the KFAS’s budget was allocated to its core programs, an average of 59% of the past three years, and 40% to its affiliated centers (The Scientific Center of Kuwait, Sabah Al Ahmed Center for Giftedness and Creativity, Dasman Diabetes Institute, Jaber Al Ahmad Center for Nuclear Medicine and Molecular Imaging), equivalent to 41% on average for the past three years.

<table>
<thead>
<tr>
<th>Type of Program</th>
<th>2017</th>
<th>2018</th>
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<tbody>
<tr>
<td>KFAS Administration</td>
<td>18,208,857</td>
<td>18,431,621</td>
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<tr>
<td>Jaber Al Ahmad Center for Nuclear Medicine and Molecular Imaging</td>
<td>969,677</td>
<td>880,122</td>
</tr>
<tr>
<td>Sabah Al Ahmad Center for Giftedness and Creativity</td>
<td>3,241,847</td>
<td>3,388,177</td>
</tr>
<tr>
<td>Dasman Diabetes Institute</td>
<td>7,757,834</td>
<td>8,126,178</td>
</tr>
<tr>
<td>Total</td>
<td>30,178,215</td>
<td>30,826,098</td>
</tr>
</tbody>
</table>

This in addition to the financial and administrative support that KFAS provides to its subsidiary centers, which has been restructured and transformed into separate non-profit companies (The Scientific Center of Kuwait, Sabah Al Ahmed Center for Giftedness and Creativity, Dasman Diabetes Institute, Jaber Al Ahmad Center for Nuclear Medicine and Molecular Imaging), where its goal is to manage, organize and develop the work of those centers.

Budget Allocation for 2019

- **KFAS**: %60
- **Dasman Diabetes Institute**: %26
- **SACGC**: %11
- **JACMI**: %3