The 57th General Assembly of TÜBA was held online on 26 December 2020. During the General Assembly, 5 TÜBA Council Members and 28 New TÜBA Members were elected.

As a result of the voting with the participation of 134 Academy members; Prof. Dr. Mehmet Emin Aydın, Prof. Dr. Fatih Gültekin, Prof. Dr. Kadriye Arzum Erdem Gürsan, Prof. Dr. Ertuğrul Kiş and Prof. Dr. Bekir Salih were elected as TÜBA Council Member.

According to recommendation of the Academy Members, TÜBA International Academy Award winner Prof. Dr. Adrian Bejan, Nanjing University Faculty Member Prof. Dr. Shuanggen Jin was named as TÜBA Honorary Member.

Prof. Dr. Erdal Arıkan from Bilkent University, TÜBA International Academy Award winner and Prof. Dr. Hüseyin Arslan from Istanbul University, TÜBA International Academy Award winner and Prof. Dr. Cenk Ayata from Massachusetts General Hospital, Prof. Dr. Pınar Bilgin from Bilkent University, Prof. Dr. Mehmet Bulut from İstanbul Sabahattin Zaim University, Prof. Dr. Hilmi Volkan Demir from Bilkent University, Prof. Dr. Bilge Demirköz from METU, Prof. Dr. Oktay Duman TOBB University, Prof. Dr. İlhami Gülçin from Atatürk University, Prof. Dr. Kadir Mutlu Hayran from Hacettepe University, Prof. Dr. Muhsin Kar from Niğde Omer Halisdemir, Prof. Dr. Tanju Karanfil from Clemson University, Prof. Dr. Halit Keskin from Yıldız Teknik University, Prof. Dr. Atif Koca from Koç University, Prof. Dr. İsmail Koyuncu from İstanbul Technical University, Prof. Dr. Hamza Kurt from TOBB University, Prof. Dr. Mahmut Özacar from Sakarya University, Prof. Dr. Mehmet Akif Öztürk from Gazi University, Prof. Dr. Hakan Parlıkınar from İnönü University, Prof. Dr. Mustafa Soylık from Erciyes University, Prof. Dr. Ekrem Tatoğlu from Ibn Haldun University and Prof. Dr. Mustafa Tüzen from Gaziosmanpaşa University were elected as TÜBA Principle Member.

According to recommendation of the Academy Members, TÜBA International Academy Award winner Prof. Dr. Aziz Sancar to the TÜBA members shared the message sent by TÜBA Member Prof. Aziz Sancar to be read at the General Assembly in his conference titled “COVID-19 and International Cooperation”. “Dear TÜBA President and Academy Members; Thank you very much for your interest and appreciation in me. Turkey and the biggest Turkish world is grateful to you because of the contributions each of you makes in your field for the development of science in our country. I hope Turkey will take its deserved place in the world of science in 2023, thanks to you and young scientists trained by you. I wish you continued success, congratulate your new year, and present my love and greetings.”

TÜBA Full Member Prof. Tayfun Özçelik pointed out that “The world has entered into an unprecedented scientific cooperation for the solution of all problems.”

TÜBA Full Member Prof. Tayfun Özçelik pointed out that “The world has entered into unprecedented scientific cooperation for the solution of all problems. Being together, albeit online, is a happy experience in this period where the global pandemic is accelerating. We have once again seen that science is the most important tool in overcoming the challenges facing humanity today. We need to emphasize the importance of science, art, and philanthropy that inspire us all and make us hope for the future at a time when the coronavirus makes its profound effects. The ongoing pandemic has shown us how our living conditions can undergo a sudden and fundamental change. At the same time, it has reminded us that science is the only solution to the serious problems we face. It has shown that a fundamental understanding of coronavirus biology is the only way to succeed in the global fight against COVID-19 disease.” Prof. Özçelik has concluded his conference by explaining the latest scientific developments on the COVID-19 pandemic.
“TÜBA 2020 Awards” Found Their Owners

The 2020 TÜBA International Academy, GEBİP and TESEP Awards were presented to their owners under the auspices of the Presidency of Recep Tayyip Erdoğan at the ceremony held in the Presidential Complex on 28 January 2021.

2020 TÜBA-GEBİP Awards were introduced; in natural sciences: to Assoc. Prof. Serdar Akbayrak, Assoc.Prof. Yasar Akdogan, Dr. Cihat Makey, Dr. Korhan Ozkan and Assoc.Prof. Rifat Onur Umucalilar; in the field of engineering sciences: to Dr. Abdullah Aksu, Assoc. Prof. Kamil Boratay Alici, Prof. Dr. Ahmet Can Altunüşünç, Prof. Dr. Necip Atar, Dr. Ayşeğül Doğan, Assoc.Prof. Ozan Erdinç, Assoc.Prof. Ayşen Kantürk Figen, Prof. Dr. Yusuf Kaynak, Dr. Savaş Taşğolu and Dr. Hüseyin Cumhur Tekin; in the field of Pole studies: to Specialist. Dr. Gunes Guner, Assoc.Prof. Zerrin Sezgin Bayindir, Assoc.Prof. Fatma Sezer Şenol Deniz, Assoc.Prof. Mustafa Öğuz Afacan, Dr. Muhammet Zahit Atçıl, Dr. Eliza Gheorge, Assoc.Prof. Hulusi Kafalıgonul, Dr. Mert Moral, Dr. Betül Ozbay, Assoc. Dr. Ahmet Sensoy, Dr. İhsan Efe Tokdemir, Prof. Dr. Mehmet Gökhan Hakici, Prof. Dr. Didem Özçimen, Assoc.Prof. Burcu Özsoy and Prof. Dr. Cengiz Yıldırım.

2020 TÜBA-TESEP Awards was introduced to Dr. Alp Can’s for his work called “A to Z in Life Sciences: Microscopy”, to Assoc. Prof. Ersin Erdoğan’s for his work called “Definite Judgment Effect of Arbitrator’s Decisions”, to Prof. Dr. Altay Tayfun Özcivan’s for his work called “Caspian Khaganate and the World Around”, to Research Assistant Kübra Fettahoglu for her work “Observatory Observatory (1868 – 1722)”, to Dr. Omer Gezer’s for his work called “Castle and Soldier: Ottoman Military Power in the Habsburg Army (1699 – 1715)” to Assoc. Prof. Evren Küçük’s was introduced “Diplomacy in War: Adana - Yenice Secret Talks (30-31 January 1943)” and Fatma Betül Altıntaş’s for her work “Methods of Historical Criticism: The Problem of Its Application to Criticism and Islamic Rumors”. In addition, TÜBA Full Member Prof. Dr. Hilmi Volkan Demir received the 2020 TÜBİTAK Science Award in the field of engineering sciences.

Important Publication from TÜBA: The Anatomy of the Global Outbreak: The Future of Human and Society

TÜBA has published a book titled “The Anatomy of the Global Outbreak: The Future of Human and Society”, which sheds light on the impact of the pandemic in every aspect of our lives under the editorship of TÜBA Academy President Prof. Dr. Müzaffer Şeker, Ministry of Health Coronavirus Scientific Advisory Board Member Prof. Dr. Ali Özer and Ankara Yıldırım Beyazıt University Faculty Member Dr. Cem Korkut.

There are predictions for the post-epidemic period on from health to education, from information technologies to political science, from economy to international relations, from trade to philosophy, from artificial intelligence studies to sociological analysis, from environment and agriculture to space and polar studies in the book.
3rd General Assembly of ISC was Held via Videoconference

3rd General Assembly of International Science Council (ISC). It was held on September 10, 2020 using the videoconference method with the participation of Prof. Dr. Muzaffer Şeker, President of TÜBA

ISC’s annual regular meeting was started with the speech of Prof. Dr. Jürg Pfister, President of ISC Europe President with 53 participants from 27 countries. During the meeting information about the activity of the ISC in 2020 was conveyed and date and Venue for general assembly in 2021 determined. While the management revisions to be made after 2021 were discussed, the activity report of the previous year was also presented and discussed.

In the second half of the meeting titled “Scientific Publishing”, ISC’s 2019-2021 action plan on the subject was shared. Management group members; The article entitled “Scientific publication using scientific data serves the interests of science”, prepared by a working group including Geoffrey Boulton from the Royal Society, Luke Drury from the Royal Irish Academy and Anna Mauranen of the Council of Finnish was distributed to the representatives of the participating countries and decided to review the article in the next month during online meeting. The results of the surveys will be announced and the action plan designed in this direction will be discussed at the meeting, where recommendations will be made on processes designed to create a positive change in scientific publication systems.

"Reflections on the Pandemic in the Future of the World” Published by TÜBA

The COVID-19 pandemic has transformed the whole world and continues to transform. The effects of the pandemic have the nature to affect humanity in many ways. Education, health, economy, trade, international relations, political science, the future of institutions, human psychology, sociological transformations, ethical issues are the areas where the effects of the pandemic are felt. In addition, food safety, environment, space and polar studies show that there will be new developments in the new period. Moreover, the entertainment, media and sports sectors have also started to transform after the effect of the pandemic with the technological developments.

The reflections on the pandemic are handled in a multidimensional way as mentioned in the book titled as “Reflections on the Pandemic in the Future of the World”. The parts/articles in the book include predictions about the transformations expected to occur in the post-pandemic period. The book has been published by TUBA and edited by TÜBA President Prof. Muzaffer Şeker, Coronavirus Scientific Advisory Board and TÜBA Associate Member Prof. Ali Özer and Ankara Yıldırım Beyazıt University Faculty Member Dr. Cem Korkut It is one of the works that deal with the subject in the broadest scope.
ALLEA 2021
General Assembly

All European Academies (ALLEA), of which TÜBA is also a member, held the General Assembly online on May 6, 2021. TÜBA was represented by the Academy’s Full Member for International Relations and METU Faculty Member Prof. Ahmet Nuri Yurdusev in the General Assembly. Prof. Antonia Loprieno was re-elected President of ALLEA as a result of the voting at the meeting.

The General Assembly started with the scientific symposium titled “Across Boundaries in Sciences” on May 5, 2021. The agenda of the meeting held on 6 May was on ALLEA’s annual report, the financial program and the activities for 2021. The sessions were held on some topics such as “Sustainability of the Science System, Open Science, Protection of Integrity and Ethics in Scientific Research and Strategic Crisis Management in the EU” in the program.

The Workshop “Genghis Khan and His Legacy” was Held

The workshop titled “Genghis Khan and His Legacy” was held on September 15, 2020 with the cooperation of TÜBA, the Mongolian Embassy in Ankara and Alanya Alaaddin Keykubat University (ALKU). The workshop was also broadcasted live on TÜBA’s YouTube channel.

When His Excellency Bold Ravdan, Mongolia’s Ambassador in Ankara visited TÜBA, both sides talked about science, diplomacy within the framework of scientific cooperation between Turkey and Mongolia and agreed to work about Genghis Khan commonly. First step realized by TÜBA during opening a call to the scientists who work about Mongolia and Genghis Khan and organized a webinar meeting. Aim of this meeting was to list and compile existing documents and cultural artifacts about Genghis Khan and the history of Mongolia under the coordination of TÜBA. The workshop on “Genghis Khan and His Legacy” was organized as last scientific meeting was followed with interest through online publication.

Prof. Dr. Muzaffer Şeker, President of TÜBA; “Besides reading the history chronologically; We must also make in-depth analyzes in geographical, cultural and political terms.”

Prof. Dr. Muzaffer Şeker President of TÜBA said during opening speech of the workshop: “As an academy, we think that history and geography and many social sciences should be among the basic sciences. We seriously need historical knowledge in the light of scientific data by filtering history in terms of transferring our history to young generations, not repeating mistakes, taking lessons from past experiences and renewing the success of humankind in the field of civilization and culture. In addition to reading the history chronologically; We must also make in-depth analyzes in geographical, cultural and political terms. About 20 scientists were held presentations in four sessions during workshop and details of Genghis Khan, the Mongols and the remaining great heritage were discussed. We all saw once again that as the children of a country that has settled down in many geographies, our treasure and heritage are quite great”.

AASSA & PAS “Pandemic Preparedness: Science and Countermeasures” Workshop

The Association of Academies and Societies of Sciences in Asia (AASSA) and Pakistan Academy of Science (PAS) organized a workshop titled “Pandemic Preparedness: Science and Countermeasures”. It was held on April 27, 2021 with the participation of Muzaffer Şeker.

Workshop is organized with joining of Academy of Sciences Malaysia (ASM), National Academy of Young Scientists (NAYS), Korean Academy of Science and Technology (KAST), InterAcademy Partnership (IAP). Prof. Khalid Mahmood Khan, President of PAS and Prof. Yoo Hang Kim, President of AASSA have made opening speech of workshop. Prof. Dato Dr. Khairul Anuar Bin Abdullah, AASSA’s President- Elect gave information about AASSA’s future action plans.

Prof. Dr. Muzaffer Şeker held his presentation titled “The Role of Science Academies in terms of Cooperation in Pandemics” on session titled “Sustainable Development Goals and Pandemics”. He stated that TÜBA focused on workshops and publications on the subject during the Covid-19 process and collaborated with different institutions and organizations. He emphasized that the pandemic crisis, vaccine wars, societies and states are a test for humanity in general. Indicating that it is not surprising for human beings to experience all these, Prof. Şeker continued his words as follows: “The degradation of the ecological balance caused the decrease in biological diversity and the unbalanced distribution of resources. Our disconnection from natural life as a result of industrialization and urbanization has narrowed our production areas. This situation, as a result of commercial concerns, revealed different production and stocking methods and production techniques that threaten the health of humans and other living things. The status, income or class differences of people have completely disappeared, the whole world has been equalized in the face of the pandemic. TÜBA as Turkey’s national academy, has made several investigations and announcements from the beginning of the global epidemic. TÜBA members took part in the Science Board of Turkey Coronavirus and in many different projects related to fight with Covidien-19. TÜBA principally works with multidisciplinary and thematic methods and published many works under different subject headings and encouraged them to be published. Misinformation on social media and similar channels negatively affected the fight against the COVID-19 Pandemic. During this period of information pollution about Covid-19, TÜBA conducted studies to convey accurate information through scientists. At this point, TÜBA contributed to reliable data flow through scientific reports, books and information sharing through social media accounts.

Prof. Şeker gave detail information about TÜBA’s publications, reports etc. and his Works. Prof. Şeker continued his words by emphasizing the importance of data security; He stated that data sharing, reliable data provision and information security are on the agenda as a difficult subject in the field of science, and that the proposals submitted to get rid of COVID-19 should be reliable, feasible, objective and in line with human values.

On the other hand, in the Workshop following presentations were held; Prof. Dr. Anjana Singh from Nepal about “Impact of COVID-19 Pandemic on Women in Nepal: A Glimpse”, Dr. Muhammad Ali “COVID-19 Pandemic and other co-Epidemics: A Challenge for the Overburdened Healthcare System in Developing Countries”, Prof. Dr. Mushtaq Ahmad “Alternative Therapies for Pandemic Diseases using Herbal Drinks”, Prof. Dr. Farkhanda Manzoor Dugal “Development of an Assessment Method for Investigating the Impact of Climate of Lahore on Confirmed Cases of COVID-19”.

TÜBA Circular Economy Symposium was held as an online program under the guidance of TÜBA Sustainable Development, Finance, and Environment Working Group and cooperation with Istanbul Sabahattin Zaim University and SDSN Turkey and supports from Istanbul Medeniyet University and Ankara Yıldırım Beyazıt University on 19-20 February 2021.

The Sustainable Development Goals put into practice within the framework of the United Nations, in other words, the Global Goals is one of the initiatives to eliminate poverty in the world, protect the planet and ensure that all people live in peace and prosperity. In this context, the concept of sustainable development has become one of the primary goals of the states with the United Nations (UN). The goals summarized as follows “end poverty and hunger, raise healthy individuals, provide a qualified education, ensure that every people on earth has access to clean water and healthy conditions, provide accessible and clean energy, contribute to economic recovery by creating decent employment areas, develop industry, innovation, and infrastructure, take steps for reducing inequalities, create sustainable cities and living spaces, ensure responsible consumption and production, combat environmental problems such as climate change, found prosperity and peace, and establish partnership and cooperation around them” are closely related to each other.

For the year 2021, the theme of the Symposium that is jointly organized by Istanbul Sabahattin Zaim University, UN SDSN Turkey, Ankara Yildirim Beyazit University, Istanbul Medeniyet University, and TÜBA Sustainable Development, Finance and Environment Working Group is determined as Circular Economy. Every waste generated in the circular economy is re-evaluated and raw material costs are reduced. This is to ensure a more environmental-friendlier and sustainable economic ecosystem through the efficient recovery of resources. Multidimensional discussion of the concept of “circular economy” within the context of sustainable development, finance and environment is targeted.

TÜBA President Prof. Dr. Muzaffer Şeker underlined certain points in his opening speech; “Humanity and countries have faced many challenges, especially since the beginning of the 21st century. Wars, conflicts, forced migrations, global warming, and finally, the pandemic we are still going through it have taught human beings a lot. First of all, it should be emphasized that the level of prosperity reached by societies today is the common heritage of all civilizations. For this reason, all countries have to struggle together with the problems facing the world. In this context, “Sustainable Development Goals (SDG)” determined by the United Nations is important in terms of spreading prosperity to the whole world. These goals, which include many agendas from fighting poverty and hunger, from healthy and quality living, from qualified education to clean energy, from responsible production and consumption to the protection of the environment, aim to ensure that people live in peace and prosperity. Turkish Academy of Sciences (TÜBA) – Sustainable Development, Finance, and Environment Working Group starts its studies with a holistic and multidisciplinary approach, with the “Circular Economy Symposium”, in which countries will seek answers...
to the problems they will experience in areas such as economy, finance, and environment. I wish the activities of our working group to be beneficial and productive for our country and all humanity.”

The first session of the Symposium started with the Public Policies in Circular Economy with the moderation of Prof. Mehmet Bulut, Rector of the Istanbul Sabahattin Zaim University. Firstly, The Minister of Industry and Technology of Turkey Mustafa Varank gave a speech on the activities and current prominent situation of Turkey’s science and technology environment in terms of Circular Economy. After his speech, the Minister of Agriculture and Forestry of Turkey Dr. Bekir Pakdemirli has a presentation on the environmental and sustainable policies of Turkey. Vice Ministry of Family, Labor and Social Services of Turkey Mehmet Selim Bağlı made a speech on circular economy practices in terms of employment and social policies as the next speaker. Prof. Dr. Jeffrey D. Sachs, Director of United Nation Sustainable Development Solutions Network (UN SDSN) & Columbia University academic member, talked about UN Sustainable Development Goals in the Post-COVID-19 Period in the last session of Friday on February 18.

**Themes of the Symposium**
Circular Economy in the context of the UN Sustainable Development Goals

**Circular Economy Applications in the World**
- Public Policies in Circular Economy
- Circular Economy Investments
- Circular Economy by Sector
- Circular Economy and Environment
- Circular Economy and Employment
- Circular Economy and Finance
- Circular Economy and Agriculture

**Organization Committee of the Symposium**
- Prof. Muzaffer Şeker - Turkish Academy of Sciences
- Prof. Mehmet Bulut - Istanbul Sabahattin Zaim University
- Prof. İbrahim Aydınli - Ankara Yıldırım Beyazıt University
- Prof. İzzet Öztürk - Istanbul Teknik University
- Prof. Muhsin Kar - Nigde Omer Halisdemir University
- Prof. Bayram Zafer Erdoğan - Anadolu University
- Assoc Prof. Fatih Cemil Özbüğday - Ankara Yıldırım Beyazıt University
- Assoc Prof. Burhan Uluyl - Istanbul Sabahattin Zaim University
- Assoc Prof. Benazüde Bensaid - Istanbul Sabahattin Zaim University
- Assoc Prof. Cem Korkut - Ankara Yıldırım Beyazıt University
- Dr. Tamer Atabarut - UN SDSN Turkey

**Symposium Scientific Secretary**
- Assoc. Prof. Cem Korkut - Ankara Yıldırım Beyazıt University
- Res. Asst. Nurgül Sevinç - Istanbul Sabahattin Zaim University

**A Protocol on the Translation of ‘Science and Technic in Islam’**

Along with organization of Kirikkale University as the coordinator institution of the 2019 Prof. Dr. Fuat Sezgin Year, TÜBA, History of Islamic Science Research Foundation (İBTAV) and Kyrgyzstan-Turkey Manas University have signed the protocol on the translation of Science and Technic in Islam into Kyrgyz and Russian on July 3, 2020. The book was written by the late TÜBA Honorary Member Prof. Dr. Fuat Sezgin and previously published by TÜBA in Turkish.

The first volume (introduction) of the Science and Technic in Islam will be translated. The other 4 volumes are already available in Turkish, English, German, French, and Arabic. The protocol was signed by TÜBA President Prof. Dr. Muzaffer Şeker, İBTAV Chairman Mecit Cetinkaya, Kyrgyzstan-Turkey Manas University Rector Prof. Dr. Sebahattin Balci, and Kirikkale University Rector Prof. Dr. Ersan Aslan.
TÜBA COVID–19 Global Outbreak Report on Judicial Changes and Interactions has been Published

This report has been published in Turkish in June. Determination of the Legal Problems due to COVID–19 Outbreak and Solution Proposals at National and International Level is the topic of this report and prepared by benefitting from the open sources evaluating the national and international developments during the COVID–19 Pandemic.

Prof. Dr. İzzet Özgeç (TÜBA Full Member and Ankara Hacı Bayram Veli University, Faculty of Law Faculty Member), Prof. Dr. Halil Akkanat (Rector of the Turkish-German University), Prof. Dr. Hayrettin Caglar (Ankara Hacı Bayram Veli University, Faculty of Law), Prof. Dr. Haluk Hadi Sumer (Selcuk University, Faculty of Law) and Prof. Dr. Muhammet Özekes (Dokuz Eylül University, Faculty of Law) took place in the editorial board of the report. The Copy Editors of the report for the English version are Assoc. Prof. Dr. Ferna İpek Kayalı (Istanbul Medeniyet University, Faculty of Law) and Asst. Prof. Dr. Murat Tumay (Istanbul Medeniyet University, Faculty of Law). In addition, around 100 academicians from law faculties of Universities of Turkey contributed to the report. Contributing institutions and academics are given at the end of the report.

In the first part of the report, The Problems Caused or to be Caused by COVID–19 Outbreak in the Fields of Constitutional Law, Administrative Law, Penal Law, Tax Law, and International Law and the Solution Proposed for Such Problems is taken place.


In the third part, Effects of COVID–19 Outbreak on Commercial Law is reviewed in terms of Occurring Problems just after COVID–19 Pandemic.

In the fourth part, The Problems and Proposed Solutions for the Problems Caused by COVID–19 Global Outbreak with Respect to Labor and Social Security Law are taken place.

In the fifth part, The Problems and Proposed Solutions for the Problems Caused by COVID–19 Global Outbreak concerning Civil Procedure and Enforcement and Bankruptcy Law are discussed.

Ten More Books Published in the TÜBA TIBKM Project


TÜBA President Prof. Dr. Muzaffer Şeker said that it is ensured that new generations get to know Turkish scientists thanks to the TİBKM project, who are the important values of the past, because these books are of great importance in the history of Turkish thought, in Arabic, Persian and different Turkish dialects, were translated into today’s Turkish and delivered to the 21st-century readers. According to him, we have a rich scientific and cultural heritage as a nation, a significant part of which is waiting to be brought to light and evaluated, and making this heritage more visible and usable is of great importance for our present and future scientific performance and goals.
SARS Coronavirus-2 (Covid-19): Prophylaxis and Vaccine Technologies

Prof. Dr. Tuba Çiğdem Oğuzoğlu
Ankara Üniversitesi Veteriner Fakültesi Academic Staff
TÜBA GEBİP Member

As of April 2020, 115 vaccine projects have been initiated worldwide, including 7 vaccines 7 drugs projects under the leadership of TÜBİTAK, Ministry of Industry and Technology and TUSEB in our country, for the fight against pandemic SARS Coronavirus-2 (Covid-19) infection that influences the world (Amanat and Krammer, 2020). Nowadays (June, 2020), no vaccine has completed its clinical trials; however, 5 of them are in Phase I-II trial in humans, and 7 of them are in Phase I trials. In this article; What is the vaccine? Besides to essential criteria in vaccine production, information about the vaccines and technologies used in their production have been reviewed against SARS Coronavirus-2/Covid-19 infection.

Vaccination is the most effective achievement of medical science to protect susceptible individuals and target population from infections. As a general definition; a protein-rich material that stimulates the immune response following the delivery of an antigen to a host organism, is called a “vaccine”. In the fight against pandemic infections caused by microorganisms (such as Influenza, Smallpox, Polio or Measles); vaccine has generally formed a preference for preventive purposes (prophylaxis) rather than therapeutic purposes (curative) (Ryu, 2017). So even if the host organism meets with infectious agent: specific antibodies that are warriors acquired by immunization stimulated by vaccination, blocks the infectiousness of these microorganisms, as an essential principle. From this point on; through the neutralization of viral epitopes with vaccine candidates for Covid-19 infection, it is aimed to prevent pathological changes that may occur because of the infection in the organism.

Present data on the immunity of people in all countries where the SARS-CoV-2 infection is observed, indicates that the majority of the population is currently immunologically naive and therefore unprotected. For example, we see that the ratio of confirmed cases to the living population in our country is 0.17 % (140.000 / 83 million). This result shows the fact that a large part of the population has never encounter with the virus. This situation is the result of inability to stop the circulation of the virus due to the lack of a useful and effective vaccine. Keeping natural infection under control and limiting virus circulation effectively, can be achieved through herd/population immunity. Herd immunity, which means vaccination of the whole population by natural infection, will require many victims and it will take several years for Covid-19 infection (Hengel and Kamradt, 2020). Also, due to studies showing that disease-specific antibodies can be detected at low concentrations in people have had mild disease (Tan et al., 2020),
Coronaviruses are enveloped, positive polarity RNA viruses. SARS-CoV-2/ Covid-19 is a 29.9 kilobase Beta-Coronavirus. The viral genome, like the other family members, contains four essential proteins important for infectious ability: Glycoprotein spike (S), nucleocapsid (N), matrix (M) and small envelope (E) proteins (Zhu et al., 2020). These said proteins of the viral genome can be used in recombinant vaccine preparation. The virus-like particles (VLP), which do not include whole viral genome, are subjected to different functional experiments to control their antigenicity after being cloned in the vector, transfected into sensitive cell lines and purified. VLPs that are proven to be functional and highly immunogenic, must be checked for harmlessness and efficacy in animal models. After these controls, successful vaccine candidates may be ready for phase experiments (Zayed, 2020).

It is important to follow the general stages in the development of a vaccine within the framework set by the World Health Organization (WHO) and the Center for Disease Control and Prevention (CDC). The general stages of a vaccine development cycle are:

- Discovery phase
- Pre-clinical stage (animal experiments)
- Clinical development (3 Phase)
- Legal review and approval (1 Phase)
- Production
- Quality control

During Phase I, small groups receive the trial vaccine. In Phase II, the clinical trial is expanded and vaccines are given to individuals with similar characteristics (such as age and physical health) as in targeted groups for the new vaccine. In Phase III, the vaccine is given to thousands of people and tested for efficacy and safety. After the vaccines are approved for mentioned stages and licensed, it will be subject to ongoing official studies, called Phase IV. A checklist is available (See: WHO. Annex 4-New Vaccine Introduction Checklist and New Vaccine Introduction Activity List and Timeline) for all these stages to take place in a schedule of time as long as 12 to 24 months (FIGURE 2).

**Phase I**

For this first step of the vaccine trial, two groups are created from the target population: Trial and Control groups. From the trial group, each subject will be assigned randomly to receive a new vaccine or a “control” treatment. In the control group: a resident vaccine (which may be for protection against a different pathogen) or a cocktail containing a placebo or an adjuvant can be used.

Blood samples are taken regularly from vaccine or placebo subjects, antibody production is tested and data on their health outcomes (such as disease caused by the targeted infection or other infections) is collected. These data get summarized statistically to use it estimate the protective efficacy of the vaccine. Then, following the trial protocol, the statistical significance of the differences observed in the results between the vaccinated group and the control groups is questioned. The side effects of the vaccine are also noted, then these results are used to decide whether the vaccine will be licensed or not.

**Phase II**

The transition to the second stage is possible if the immunogenic and toxic-based results are positive after the first stage and long-term monitoring of healthy volunteers. In the second stage, trials are carried out with a larger target population of the vaccine to identify reactions and test different programs in a more extensive and more diverse group of people (Bloom and Lambert, 2003).

**Phase III**

Similarly, third stage trials continue to monitor toxicity, immunogenicity and the presence of various side effects, on a larger scale. The vaccine must be proven safe and effective in natural disease conditions before it is released for approval and later general production.

**Phase IV**

Fourth stage trials are a stage that constantly collects information about the side effects and long-term immunity of vaccine use after commercialization of the vaccine.

**Vaccine Efficacy – Potenz**

Vaccine efficacy is usually measured...
in controlled clinical trials by random selection before licensing, where the difference in incidence of disease between vaccinated and unvaccinated participants can be assessed as a result of the direct effect of the vaccine (Orenstein et al., 1985; Weinberg & Szilagyi, 2010). The strength of live and inactivated vaccines is monitored at intervals after immunization. Here, factors such as shelf life and storage conditions of the vaccine gain importance, in addition to dose, method of application and frequency of administration.

For example, according to the eighth report of the WHO Rabies Committee of Experts for Rabies infection recommends that inactivated veterinary vaccines with a potential of less than 1.0 IU per dose as measured by the NIH test should not be licensed or released, unless experimental studies have demonstrated a sufficient immunity. Protection of the vaccine has been determined as at least one year in the species to be used.

Vaccine efficacy does not rely solely on the ability to induce virus-neutralizing antibodies in target species. In this context, the control of protective immunity is required, which is done by experimental administration of “heterologous strains” called “challenge strain” that is different from the vaccine strain. This way, it is aimed to determine the capacity of virus-specific neutralizing antibodies produced by vaccination to protect individuals from natural infection. However, in human infections, these stages may not be performed on human subjects.

Whether a protective immunity will occur against SARS-CoV-2 following natural infections and the duration of this immunity is not known yet. Previous data on SARS-CoV-1 and MERS-CoV shows that short-term immunity has occurred (Liu et al., 2006; Li et al., 2008; Tang et al., 2011). For this reason, SARS-CoV-2 vaccine candidates to be produced should give rise a better, stable and long-lasting immunity, provide complete protection and an effective immune response to infection-susceptible people and all age groups without causing any hypersensitivity reactions.

In a new study with promising results on monkeys, no pronounced side effects were observed after vaccination with inactivated SARS-CoV-2, and a protective immune response was reported (Gao et al., 2020).

Vaccines using recombinant viruses such as virus-like particles-VLP, mRNA, DNA, and artificial APC (specific antigen-presenting dendritic cell) are next-generation techniques and these production technologies do not have comparable vaccine experiments yet. It can be expected that these new platforms that use different strategies for vaccine development will have complex stages of development compared to old and well-known techniques.

Comparison of possible results of vaccines developed for pandemic SARS-CoV-2 with vaccines of SARS-CoV-1 and MERS infections may not be very suitable because these infectious viruses have different antigenic nature. However, if a situation assessment is made with the current studies, a limited number of SARS-CoV-1 vaccines have not had the opportunity to be administered to a larger population, as the number of cases was low and the effects of the virus remained limited. The results of Phase I clinical studies with an inactive virus vaccine and DNA vaccine against a Spike (S) gene showed that these vaccines are safe and produce neutralizing antibody titers (Lin et al., 2007; Martin et al., 2008). Although most of these vaccines give positive results in animal models, live vaccines have been out of use due to complications such as lung damage in the mouse models or liver damage in ferrets (Boiles et al., 2011; Liu et al., 2019). Studies about SARS-Coronavirus-1 and MERS revealed that the S protein of the virus is an ideal antigenic structure for the vaccines candidates. SARS-CoV-2 was described molecularly as soon as possible and its genomic sequence was revealed rapidly by Chinese researchers (Wu et al., 2020; Zhou et al., 2020; Zhu et al., 2020). Also, it has been reported...
that S protein on the surface of SARS-CoV-2 binds to ACE2 receptors in host cells, initiating infection and inducing neutralizing antibody formation. In this context, SARS-CoV-2 infection can be neutralized with antibodies specific for S protein (Lan et al. 2020; Wrapp et al. 2020). Thanks to all this information, the target antigen region that can be used in vaccine production has been determined.

Monoclonal antibodies isolated against SARS-CoV-1, such as CR3022, have cross-reacted with the receptor-binding domain of SARS-CoV-2 (ter Meulen et al. 2006; Tian et al. 2020), this suggests that SARS-CoV-1 vaccines can provide cross-protection. However, since these vaccines had not gone beyond Phase I studies and get licensed, currently there is no vaccine available to use that can confirm this hypothesis.

Vaccines targeting the S protein of MERS-CoV are in pre-clinical and clinical development stages as in modified Ankara virus and Adenovirus vectors and DNA-based vaccines (CEPI) (Koch et al., 2020; Folegatti et al., 2020). However, MERS-CoV vaccines are unlikely to induce strong cross-neutralizing antibodies to SARS-CoV-2, which is responsible for pandemic infection, due to the long phylogenetic distance between these two viruses (Amanat and Krammer, 2020).

These days that we feel the devastating effects of Covid-19 infection all over the world, the question of why the clinical studies related to vaccine production take so long is being questioned by society. Before developing a vaccine, it is necessary to test it in suitable animal models to see if the prepared antigen is protective. Many vaccine candidates who have started phase trials, progress without performing the animal experimental stages, whence the animal model suitable for this infection could not be selected. Development of animal models for the SARS-CoV-2 can be difficult. While the virus does not cause infection in mice, it causes only mild infections in transgenic animals expressing human ACE2 (Bao et al., 2020). If necessary, problems at this stage can be overcome with in vitro neutralization tests. However, to perform the toxicity tests of vaccines, also an animal model is needed. These experiments should be carried out in places with GLP (Good Laboratory Practices) and GMP (Good Manufacturing Practices) features. Therefore, it is vital to prepare the infrastructures in advance, in case of need. For instance, vaccines based on new technologies, such as mRNA, this capacity needs to be built, and this often takes time.

As a result, SARS-CoV-2 vaccine is urgently needed to protect against pandemic infection. Natural infection is not an option for herd immunity. Vaccine candidates should be carefully tested and in the case of developing a vaccine with the highest protective effect, the most harmless technology and without any side effects, infrastructure preparations must be completed in advance for high volume production. International multidisciplinary studies should be supported in these days that a global problem is hand.
References


Who is Prof. Dr. Tuba Çiğdem Oğuzoğlu?

She graduated from Ankara University Veterinary Faculty in 1994. In the same year, she was deployed as a research assistant in the Department of Virology. In 1999, she was appointed at the Stiftung Tierärztliche Hochschule Hannover, Institut für Virologie in Germany to study her PhD education. After completing her doctorate in 2002, she returned to her position at Ankara University, Faculty of Veterinary Medicine, Department of Virology.

Prof. Oğuzoğlu, whom studies includes clinical viral diagnosis, virus isolation and molecular characterization of viruses from animal origin, production of viral recombinant proteins and monoclonal antibodies, vaccine evruption/ challenge, has more than 50 SCI journal articles and more than 70 national and international oral presentations (more than 1000 citations, h index=19). Prof. Dr. Tuba Oğuzoğlu, who owns 2010 TÜBA-CETİBİP Award, is still working in Ankara University, Faculty of Veterinary Medicine, Department of Virology.
A First Realized Under the Leadership of TÜBA Member 
Prof. Demirköz: Radiation Meter Completed Its Mission in Space

Developed for the first time in Turkey by Turkish researchers working at METU - Research and Application Center for Space and Accelerator Technologies, the Radiation Meter has completed its mission in two space journeys with the Sonda Rocket 0.1 launched by ROKETSAN from Sinop Test Center under the leadership of TÜBA Associate Member and METU Faculty Member Prof. Bilge Demirköz.

One of the critical equipment in Turkey’s space travel has been nationalized with the Radiation Meter, which was developed by a team of 7 people within the scope of the university-industry cooperation with ROKETSAN. Emphasizing that the measurement of radiation resistance tests of critical materials with domestic systems has a critical importance for space technologies, Prof. Demirköz said: “We have successfully completed the first phase of our project and are now able to perform some of the radiation tests with METU-SDH. We have successfully completed the first phase of our project and are now able to perform some of the radiation tests with METU-SDH. We are currently conducting radiation tests of original components and equipment produced by many organizations with this infrastructure. For example, we recently conducted radiation tests of solar cells developed for space in cooperation with Gazi University and TÜBİTAK Marmara Research Center.”

Demirköz reminded that in line with Turke’s 2023 space goals, the Sonda Rocket, which has solid and liquid propellant propulsion systems developed by ROKETSAN, launched by the Republic of Turkey Defense Industry Presidency (SSB) with the MUFS Project, was sent to space from the Sinop Test Center. Demirköz emphasized that this success enabled Turkey to enter the space league.


TÜBA has prepared the “Immunity, Nutrition and Lifestyle Report” and shared it with the public, in order to inform the society, in the light of scientific data, on the relationship between the immune system, nutrition and lifestyle, which has become even more important due to the global pandemic COVID-19.

In the report prepared by the TÜBA-Food and Nutrition Working Group, an overview of the immune system, the effects of macro and micronutrients on the immune system, the relations between phytochemicals, prebiotics and probiotics and immunity, nutrition models, alcohol and tobacco use, sleep, exercise, psychological The links of stress and environmental factors with the immune system are discussed in detail in a scientific framework.

Prof Dr. Muzaffer Şeker emphasized in relation to the COVID-19 global epidemic, which Turkey and the world have been struggling with for a year that the relationship between immunity, nutrition and lifestyle is an important agenda, and he; “Balanced and adequate nutrition, quality sleep, exercise and protection from stress are the basic elements for strengthening the immune system in order to be protected from the COVID-19 epidemic. At this point, the epidemic once again shows us the importance of balanced nutrition and the sustainability of the food industry. It has also been reported that micronutrients such as vitamins and minerals, which are expressed as latent hunger, increase resistance to diseases and play an important role in the regulation of immune response by positively affecting the inflammatory response. For example, it has also been proven that well-controlled vitamin D and zinc status in individuals contributes significantly to the success of COVID-19 treatment. Today, while societies have easier access to foodstuffs, it is difficult to stay away from production and consumption techniques that will cause health problems. It is important for individuals and societies to take care of their health, knowing that the human body’s access to clean and safe food is the basis of healthy societies. In this framework, the “Immunity, Nutrition and Lifestyle Report”, which we think will contribute to the society, has been prepared by our TÜBA-Food and Nutrition Working Group with a multidisciplinary perspective.” said.
TÜBA Summer School on 2021 International Law, Diplomacy and Cooperation Canceled

The Union of National Academies of Sciences of the Turkic World was established on June 29, 2015, on the initiative of the International Turkic Academy under the decision of the Council of Ministers of Education held in Baku on November 24, 2014. The first meeting of the Union of National Academies of Sciences of the Turkic World was held in Astana with the participation of heads of Academies of Sciences of Azerbaijan, Kazakhstan, Kyrgyzstan, Turkey, International Turkic Academy, Bashkortostan, and Tatarstan.

TÜBA organized a summer school on “International Law, Diplomacy and Cooperation” to increase the recognition and operability of the Union of National Academies of Sciences of the Turkic World. The first TÜBA summer school on “International Law, Diplomacy and Cooperation” was held in Istanbul between 17 and 21 July 2017. Participants from the various levels of post-graduate education of countries of the Union, Turkish and Relative community countries have been accepted to the summer school. The summer school, which was last held in 2019, could not be organized in 2020 due to the Covid-19 Pandemic. Due to the continuing risks in terms of the health and safety of the participants, the 2021 TÜBA Summer School postponed to the new year.

We would like to thank all participants who have shown interest in the summer school. We hope that the pandemic will end as soon as possible. We will come together with new participants of the school in Turkey face to face.

TÜBA Released “Turkey Science Report”

Turkey Science Report, prepared by University of Chicago Prof. Dr. Ufuk Akçigít and Dr. Elif Özcan-Tok and published by TÜBA, has the distinction of being the most comprehensive publication ever made in this field. The report presents important data on the past, present and future of universities and academics in Turkey.

Prof. Akçigít and Dr. Özcan-Tok: “The report aims to take a detailed picture of the academic and scientific environment in Turkey, to make international comparisons, to reveal its deficiencies and to develop solutions in this direction.”

Underlining the importance of understanding where we are first in order to produce the right policies to support the field of science, the scientists said: “The failing parties must be identified, and these points must be intervened with the right policies in order for Turkey to be among the leading countries in producing science and technology.” In addition, they stated that after understanding our position in the world, they focused on three main topics: universities, researchers and publications in order to examine the development of the scientific environment in Turkey and to identify the deficiencies.

Expressing that innovation has two main pillars, namely basic scientific research and applied research, Prof. Akçigít and Dr. Özcan-Tok stated that applied research is mostly carried out by companies, while basic scientific research is carried out by universities and state-supported research institutions. They also added: “The situation of universities is overshadowed by the lack of data while innovation analysis and policy discussions in Turkey focus mostly on companies. In the report, using very rich academic publication data, a detailed analysis of universities and academicians in Turkey is made, problems are identified, and solutions are tried to be presented.”

They pointed out that the main purpose of the report is to take a detailed picture of all aspects of the academic and scientific environment in Turkey in the light of data, to make international comparisons, to reveal its deficiencies and to develop solutions in this direction.
Book titled “Information Technologies and Communication: Individual and Community Safety”

“Information Technologies and Communications: Individual and Community Safety”, which consists of determinations, predictions and analyses written by many scientists and experts in their fields, prepared after the workshop titled “Information Technology and Communication: Internet and Its Social Effects” held at Boğaziçi University under the leadership of the TÜBA-Information Technologies and Communication Working Group.

TÜBA President Prof. Dr. Muzaffer Şeker said in a statement; the change and transformation in information technologies are handled by scientists from a comprehensive and multidisciplinary perspective in the book, which was prepared within the scope of TÜBA’s task of “making investigations and consulting for the purpose of determining scientific issues and scientific priorities.” In this concept, many scientists such as Prof. Dr. Nabi Avcı, Prof. Dr. Necdet Ünüvar, Prof. Dr. Ercan Öztемel, Prof. Dr. Edibe Sözen, Prof. Dr. Huseyin Seker, Prof. Dr. Huseyin Arslan, Prof. Dr. Mehmed Özkan, Ali Saydam Mehmed Özkan and Ali Saydam have contributed to the report called “Information Technologies and Communication: Individual and Community Safety”. I think that the book, which includes suggestions for tax and legal regulations related to social media, which has increased uncontrolled disinformative content and harmed social peace by producing negative perceptions, will also be a guide for decision makers.”

Prof. Şeker emphasized; while evolving from the information society to the super-intelligent society of the 21st century, the studies dealing with certain issues related to the internet, which is the most influential factor of this change, are still not at a sufficient level for Turkey. He said; problem is that emerged during this transformation process were experienced more or less by everyone and stated that the measures to be taken as a result of this awareness were placed on the agenda of the individual and decision makers as an important topic. Referring to the rapid spread of internet use regardless of age, new definitions of security have emerged. Şeker stated that there is a need for new regulations and measures on privacy and individual security.

Dr. Huseyin Arslan, Istanbul Medipol University Faculty Member; “Past, Present and Future of Information Technologies”, Prof. Dr. Türkay Dereli, Rector of İskenderun Technical University; “Artificial Intelligence and Humanity”, Prof. Dr. Ercan Öztемel, Marmara University Faculty Member; “Artificial Intelligence and the Future of Humanity”, Prof. Dr. Bülent Kent, Ankara Social Sciences University Faculty of Law Dean; “Legal Regulations of Social Networks in German Law and Suggestions for Turkey”, Dr. Fatih Kaplanhan Instructor; “Digitalization, Tax and Sovereignty Problem”

Dr. Aylin Tütğün-Unal Uskudar University Member and Prof. Dr. VeySEL Bozkurt, Istanbul University Faculty Member; “Factors Influencing the Symptoms of Social Media Addiction”, Cem Karakaya, Head of the Cybercrime Department of the Munich Criminal Police Department; “Firewall and Its Vulnerabilities”, Prof. Dr. Ömer Çaha, Istanbul Sabahattin Zaim University Faculty Member; “New Media and Changing Social Movements”, Assoc. Prof. Mehmet Emin Babacan, Ibn Haldun University Faculty Member; “Social Movements Dying in the Shadow of Technology”, Assoc. Dr. Yasin Bulduklu İzmir Katip Celebi University Faculty Member and TÜBA President Prof. Dr. Muzaffer Şeker, TÜBA Presidency; “New Media and Changing Social Values”, Prof. Dr. Celal Türer, Ankara University Faculty Member; “Ethics and Information Technologies”, Mürsel Doğruş from TÜBA and Cem Korkut, Ankara Yıldırım Beyazıt University Faculty Member; “The Integration of Cryptocurrencies into the Financial System in the Light of Developments in Information Technologies” contributed to the book, which includes 19 studies from 21 scientists and also the Report titled “Technology Addiction Research Report” prepared by the TÜBİTAK BİLGEM Software Technologies Research Institute.
Webinar “Natural Gas Workshop and Panel” from TÜBA

“Natural Gas Workshop and Panel” programmed as two days by TÜBA Energy Working Group on 8-9 October 2020 was held on zoom and shared live on the YouTube channel for anyone interested to follow.

Managers of relevant institutions, energy experts and external stakeholders, including TÜBA Members, more than 30 scientists took place in webinar panel. During the panel such themes were discussed; “The Role of Energy in Turkey’s Economic Security”, “Natural Gas Policy in the world and Turkey, Strategies Technical Dimensions of Natural Gas Investments”, Future Projections and Suggestions” “TANAP Pipeline Control and Electronic Security Systems” and answered questions.

“Energy stays at the top of the agenda of TÜBA with the nationalization of our country’s industrial and technology production and the move to domestic production.”

Prof. Dr. Muzaffer Şeker, President of TÜBA said; “TÜBA Energy Working Group reports are published by Turkey’s energy has long been working on alternatives. TÜBA Working Group on Energy Working Group, energy field in Turkey’s needed scientific and produces knowledge by working on technological issues, science and technology developing, producing strategies, policies and roadmaps finds remove solutions to problems. “In this context, the working group acts with the vision of creating an effective and competent corporate structure that will contribute to our country’s energy independence, scientific and technological development and determination of strategic energy priorities. Turkey’s priorities determine the priorities of the working group. With this vision, TÜBA Energy Working Group carried out special studies on all energy alternatives in order to take independent steps in the diversification of energy resources that concern the economic relations and future of our country, which is on its main agenda. In addition to all these reports, with many scientific meetings and workshops, energy is at the top of the agenda of TÜBA with the nationalization of our country’s industrial and technology production and the move to domestic production. “

TÜBA Report on Natural Gas Published

The Natural Gas Workshop Report prepared by the TÜBA-Energy Working Group has been published.

TÜBA President Prof. Muzaffer Şeker stated that the topics and speakers of the TÜBA Natural Gas Workshop were determined with a multi-disciplinary and scientific approach by the Academy Full Member and also the TÜBA-Energy Working Group Executive Prof. Dr. İbrahim Dinçer. He also underlined that this report, which has consisted of various aspects of subjects, would make significant contributions to the preparation of strategic plans and the consideration of short, medium, and long-term roadmaps of Turkey. This report was prepared with the long-term meticulous effort of the Energy Working Group for preparing a source for future research.
A Research scholarship title “Turkish Studies” from Vienna University for commemorating of Andreas Tietze from Vienna University

University of Vienna, Department of Near Eastern Studies programmed a research scholarship titled “Turkish Studies” on behalf of famous Turkologist Prof. Dr. Andreas Tietze, TÜBA Member to commemorate Andreas Tietze’s life and work. The fellowship aims to ensure that Tietze’s name is always associated with the outstanding research conducted by promising academics at the Department of Near Eastern Studies at the University of Vienna.

TÜBA's contribution to science diplomacy
Prof. Dr. Muzaffer Şeker President of TÜBA said: “Prof. Andreas Tietze has very large contribution to the Turkey Turkish and also provided an important work to the Turcology world titled “Historical and etymological Turkey Turkish Lugati”. He recalled that TÜBA published his grand work in 10 Volumes. He also said: "I find very important in terms of science diplomacy that Vienna University provided the “Andreas Tietze Turkish Studies Memorial Scholarship”. All these activities once reveal us how great a scientist he is, even after Tietze’s death."

As a world-renowned Austrian Turcologist, Prof. Andreas Tietze was born in Vienna and also educated in Vienna, but he started his career at Istanbul University, where he took refuge in the Hitler regime from 1938 to 1958. Since 1958, he started at the University of California, Los Angeles, where he was a professor. After the long years he spent in Turkey and the United States in 1973 as professor Turcology returned to the University of Vienna. He worked as a faculty member at the Department of Near Eastern Studies until his retirement in 1984.

He has published books and articles on many subjects ranging from lexicology and etymology to history and folk dance. In addition, he received many awards for his important contributions to the field of Turkish studies.

The scholarship “Andreas Tietze Turkish Studies Memorial Scholarship” planned annually basis and is open to advanced doctoral candidates and postdoctoral / early stage researchers working on a specific subject in Turkish studies. Priority will be given to areas that will contribute to the current research of the department, such as environmental history, technology history, digital humanities, consumption history, tourism history and cultural heritage.

To the scholarship holder: During the research project, a workspace with access to internet and library will be provided. Within the scope of the scholarship, which can be used for 1-3 months, a total financial support of up to 1,500 Euros will be provided to cover the cost of living in Vienna.

For more information: https://orientalistik.univie.ac.at/forschung/fellowships/andreas-tietze-memorial-fellowship/

Professor Who is Andreas Tietze?
He was born on April 26, 1914 in Vienna. His father and mother were prominent art historians in Austria. He graduated high school in 1932. He continued to the University of Vienna between 1932-37. He studied Eastern European history, Balkan history and economic history, as well as Slavic linguistics and learned Middle Eastern languages. He meet with Robert Anhegger with who he will have close friendship for many years in Turkey in 1936. Between the years 1935-1936, he made short trips to Turkey. He succeeded in the history doctorate exam at the University of Vienna on July 19, 1937. After completing his doctoral exams he migrated to and settled in Istanbul Turkey.

When Nazi Germany occupied Austria in March 1938, Tietze’s mother and father had to flee to the United States and their siblings to Switzerland, because the family was Jewish origin. Andreas Tietze stayed in Turkey. Between 1938-52, he taught German and English at Istanbul University. During his free hours, he read the Ottoman manuscripts in Istanbul libraries and made copies of some of them. He was in the group that prepared the new edition by reviewing the English-Turkish Redhouse Dictionary. He published a series called has “Istanbul Writings” (16 books between 1943-46) with Prof. Robert Anhegger and Prof. Dr. Walter Ruben who were two of scientist escaped from the Nazis from German and took refuge in Turkey.

In Istanbul, he meet Dr. Adnan Adivar who was the President of the International Society of Oriental Studies and also the editor of the Turkish-Islamic Encyclopedia and Prof. Hellmut Ritter who was professor of Arabic and Persian at Istanbul University and editor of Orient magazine, he collaborated with them scientifically in the Forties and Fifties.

He wrote scientific articles for Yücel magazine in 1947 and 1950 and translated political-philosophical essays into Turkish.

He married Süheyla Uyar in 1952. They had three daughters and one son. In 1952-53, he worked as an assistant professor of Turkish research at the University of Illinois (USA). He collaborated with Roman philologists Henry and Renée Kahane.

In 1953-58, He continued to teach German and English at Istanbul University. Starting in 1955, he began to review the Turkish-English Redhouse Dictionary and prepare his new edition with his helpers.

In 1958, he was invited to the University of California (Los Angeles, UCLA), Middle East and African Languages as a professor of Turkish. During this duty, which lasted until 1973, he taught Turkish, Ottoman and Ottoman literature. It became one of the main representatives of the US Turcology, Barbara Flemming, Heath, W. Lowry, Donald Quataert, Talat Tekin, Gönül Alpay-Tekin were educated by Tietze at the University of California.

Between 1971-1972, while he worked as gguess professor in Turkish Studies at the University of Vienna at the Orientalist Institute (Orientalistic an der Universität Wien), Ilber Ortaylı also attended the courses of Andreas Tietze.

Between 1973 and 1984, he worked as a professor at the Orientalistic Institute of the University of Vienna, as well as the editor of the magazine Wiener Zeitschrift für die Kunde des Morgenlandes. In 1970s, Ingeborg (Thalhammer) Baldauf, Claudia Römer, Gabriele (Rasuly) -Paceczek and Ernst Petritsch were become his students in Vienna.

Between 1975-2003, he co-edited Turkologischer Anzeiger with his annual Turkology bibliography together with Gyorgy Hazai (After 1997, Barbara Kellner-Heinkele also joide as editor).

He retired from the University of Vienna in the summer of 1984. Until 1997, he continued to teach as retired (emeritus) professor.
Press Statement on Covid-19 Vaccine from Leopoldina

Joint press release entitled “Recommendations for fair and regulated access to the COVID-19 vaccine” by the German Standing Committee on Vaccination (STIKO), the German Ethics Council and the German Academy of Sciences Leopoldina (German National Academy of Sciences Leopoldina) published.

Standing Committee on Vaccination (STIKO) & German Ethics Council & German National Academy of Sciences Leopoldina

Recommendations for Fair and Regulated Access to A COVID-19 Vaccine

Joint position paper of the Standing Committee on Vaccination (STIKO), the German Ethics Council and the German National Academy of Sciences Leopoldina on ethical, legal and practical framework conditions.

The first COVID-19 vaccines could be authorised as early as the start of 2021. However, in all likelihood, there will not be sufficient vaccine doses in the beginning for all the people willing to undergo vaccination. This is why prioritisation will be necessary. In the position paper published today, medical-epidemiological aspects of infection prevention are presented alongside ethical, legal and practical considerations. On this basis, the authors develop a framework for action for the initial prioritisation of vaccination measures against COVID-19.

Prioritisation helps with decisions on who should receive which vaccine first. However, prioritisation should not be based on medical-epidemiological findings alone. It is rather the case that ethical and legal considerations should play a decisive role, too.

According to the experts, decisive results on the characteristics of the vaccines from the ongoing clinical trials (phase 3) are not yet available. Consequently, a detailed recommendation by STIKO concerning priority groups for vaccination is still not possible at the present time. However, the ethical and legal principles according to which prioritisation is to be undertaken have already been established. In addition to self-determination, they are non-maleficence and protection of integrity, justice, fundamental equality of rights, solidarity and urgency.

These ethical and legal principles are reflected in concrete vaccination goals: prevention of severe courses of COVID-19 (hospitalisation) and deaths; protection of persons with an especially high work-related risk of exposure to SARS-CoV-2 (occupational indication); prevention of transmission and protection in environments with a high proportion of vulnerable individuals and in those with a high outbreak potential; maintenance of essential state functions and public life.

The paper points out that the distribution of the initially scarce vaccines touches on relevant ethical values and values pertaining to basic rights, and therefore necessitates clear legal regulation. Furthermore, vaccine distribution is to be organised in such a way as to ensure that the vaccination goals are achieved. This requires suitable new structures. Uniform, transparent distribution is needed that inspires confidence and ensures acceptance. This argues in favour of a vaccination strategy that relies not on individual general practitioners but on vaccination centres mandated by the state.

In principle, informed, voluntary consent is required for vaccination. Therefore, prioritisation criteria must be presented to the population in a comprehensible way. Furthermore, the authors of this position paper also rule out undifferentiated, general compulsory vaccination.

Experts are of the opinion that a self-determined decision about vaccination is dependent on ongoing, transparent information and education of the population regarding both the efficacy of vaccination and the associated risks. In order to identify and minimise vaccination risks at an early stage, the timely nationwide recording of all vaccinations and an evaluation of adverse events must be established in parallel to vaccination. To this end, the authors call for the product-based recording of COVID-19 vaccinations in a central database, also for the purpose of exactly determining vaccination coverage rates.

The position paper is available online at:
www.stiko.de
www.ethikrat.org
www.leopoldina.org/en
TÜBA Symposium on Endocrine Disruptors and Health Effects

TÜBA-Food and Nutrition Working Group continues its activities to ensure that the society has a healthy and balanced diet, to protect it from chronic diseases and to reach the most accurate information on these issues. In this context, TÜBA Symposium on Endocrine Disruptors and Health Effects was held on 23 June 2021.

TÜBA President Prof. Dr. Muzaffer Şeker said that the topics discussed in the TÜBA Covid-19 Evaluation Report will be evaluated detailed in this online Symposium, and he also stated that the events experienced in the last two years with the global epidemic show the vital importance of the relationship between healthy nutrition and food safety.

We need to aware of that the importance of healthy nutrition and natural life and the risks of environmental pollution, the reflections of global climate changes on our social life, the preservation of the ecological balance of nature, and the imbalances in nature in terms of biodiversity are all problems that we produce. The risk that the capitalist system’s construction based on more production and consumption will negatively affect the health of future generations is increasing. He said that the mucilage and sea snot (mucilage) problem that we have been struggling with lately is actually a reflection of a similar picture.

The Overview of Endocrine Disruptors, Effects of Endocrine Disruptors on Health, Effects of Endocrine Disruptors on Health, Strategies, and Recommendations for Reducing Exposure of Endocrine Disruptors were the titles of the symposium’s sessions.

“METU Prof. Dr. Mustafa N. Parlar Education and Research Foundation Award” to the TÜBA Young Academy Members

TÜBA-GEBİP Award winners; Prof. Dr. Ahmet Can Altuğ, Assoc. Dr. Mustafa Oğuz Afaçan, Assoc. Dr. Murat Bağlık, Assoc. Dr. Emine Ülkü Sağantı Çukur, Assoc. Dr. Batur Ercan, Assoc. Dr. Mehmet Gonen, Assoc. Dr. Sinem Onaran, Assoc. Dr. Mustafa Serdar Önses, Assoc. Dr. Gulistan Mese Özçivici, Assoc. Dr. Burak Ulgut, Assoc. Dr. Mustafa Yucel, Assist. Prof. Dr. Member Ferdi Karadağ, Dr. Instructor Member Elif Nur Firat Karalar and Dr. Instructor Prof. Savaş Taşoğlu were granted the METU Prof. Dr. Mustafa N. Parlar Education and Research Foundation Award.

The Research Encouragement Awards also was given to young researchers under 40 who contribute to the development of science with their research or help solve the country’s problems in their fields. Karadeniz Technical University Member Prof. Dr. Ahmet Can Altuğ, Sabancı University Member Assoc. Dr. Mustafa Oğuz, İzmir Institute of Technology Member Assoc. Dr. Murat Bağlık, Bilkent University Member Assoc. Dr. Emine Ülkü Saritas Çukur, METU Member Assoc. Prof. Dr. Batur Ercan, Koç University Member Assoc. Dr. Mehmet Gonen, Hacettepe University member Assoc. Dr. Sinem Onaran, Erciyes University member Assoc. Dr. Mustafa Serdar Önses, İzmir Institute of Technology Member Assoc. Dr. Gulistan Mese Özçivici, Bilkent University member Assoc. Dr. Burak Ulgut, METU Member Assoc. Dr. Mustafa Yucel, Bilkent University Member Assist. Prof. Dr. Member Ferdi Karadas, Koç University Member Assist. Prof. Dr. Elif Nur Firat Karalar won the award. Koç University Member Assist. Prof. Dr. Savaş Taşoğlu was also deemed worthy of the Technology Incentive Award.
S-20 Summit International Workshop and Final Meeting Held

S-20 Summit International Workshop

S-20 organization meetings are held as part of the G-20 leaders summit. The S-20 Summit International Workshop was held on 10-11 August 2020 using the video conference method due to the COVID-19 global outbreak.

TÜBA President Prof. Dr. Muzaffer Şeker participated in the meetings with TÜBA Members as before. The proposals put forward so far were finalized and concluded. The first day of the meeting started with S-20 President Dr. Anas AlFaris’ opening speech, followed by the President of the S-20 Organization and the President of King Abdullah University of Science and Technology (KAUST) Professor Tony Chan’s keynote speeches. The first day of the meeting, which continued on the four topics (Future of Health, Circular Economy, Digital Revolution, and Connecting the Dots), were determined by the Saudi Arabia S-20 team. The ongoing speech and headlines were given by Dr. Amal Fatani, Dr. Aws Alshasan, Dr. Youssef Al-Yousef, Dr. Tareq Al-Naffouri, and Dr. Ali Arneshari.

TÜBA Full Member Prof. Dr. Fahrettin Keleştemur and TÜBA Associate Member Prof. Dr. Ali Özer took part in the session of the “Future of Health”, TÜBA Associate Members Prof. Dr. Ekrem Tatoglu and Prof. Dr. Mehmet Bulut in the session of the “Circular Economy”, TÜBA Associate Member Prof. Dr. Haci Ali Mantar and 2017 TÜBA International Academy Award winner Prof. Dr. Hüseyin Arslan in the session of the “Digital Revolution”, and Prof. Dr. Muzaffer Şeker and TÜBA Council Member Prof. Dr. Ahmet Cevat Acar in the session of “Connecting Dots”.

TÜBA President Prof Şeker said in his preliminary assessment at the Workshop on August 11: “I would like to express my gratitude to the Saudi Arabian team and other academy representatives for their intense efforts to help the final communiqué of the S-20 (Science-20) to be presented to the leaders of the G-20 countries in the difficult times of COVID-19 pandemic. We hope that the final communiqué will promote and support world peace by contributing to the benefit and development of humanity and we express our gratitude for the efforts made in this regard. In the field of science, data sharing, secure data provision, and information security are on the agenda as a difficult issue. You know that data is valuable. However, the misuse of data should also be prevented. Reliability, interpretation, and use of data are necessary with a multi-disciplinary perspective due to their historical, financial, cultural, and demographic differences in terms of different scientific disciplines. Besides, countries differ in terms of human and natural resources. It is imperative that all the proposed recommendations should be reliable, applicable, and objective for the whole world. These recommendations must be transparent, scientific, academic, and in line with humanitarian values. In this context, we would like to state that the draft proposal text needs to be consolidated and reviewed yet again.”

S-20 Final Meeting Held

As a part of G-20 Leaders Summit, S-20 Final Meeting was held on 26 September using the video conference.

The meeting was started with the opening speeches of Prof. Anas AlFaris, S-20 Chairman and Prof. Dr. Tony Chan, President of the S-20 Organization and President of King Abdullah University of Science and Technology (KAUST) and many ministers. In the ongoing session, Prof. Dr. Peter Doherty, Nobel Laureate talked about “Future of Health”. Dr. Naoko Ishii General Manager of Global Environment Facility General Manager held his speech about “Circular Economy”. Mr Houlin Zhao, General Secretary of the International Telecommunication Union talked about “Digital Revolution”. Last speech titled “Foresight” held by Prof. Dr. Munther Dahleh, Director of Institute for Data Systems and Society.

Prof. Dr Muzaffer Şeker reported “As scientists, we must act with the awareness of guiding humanity”. Prof. Dr Muzaffer Şeker talked at the third session with participation of representatives of academies from 22 countries participated. He said: “We are going through extraordinary times in all over the world. We hope that you are keeping well in these unsettled times. Producing a common text/declaration in this process is very difficult. I express my gratitude to the Saudi Arabian team.

The topics chosen for the S-20 this year had important content regarding the future of our world. I consider the emphasis on common values of humanity, moral principles, and common interest of the world important in this context. Consideration of these issues by all leaders have importance for a livable and sustainable world.

As TÜBA, addition to our previous working groups, we have established two new working groups titled as “Information Technologies and Communication; Sustainable Environment and Finance” with the parallel aims of S-20. These working groups have plans for scientific meetings and publications in the following days.

The current level of development of our world is the common heritage of all humanity. Scientific collaborations are needed for a bright future. Sharing knowledge and experience is necessary to achieve the common ideal of humanity. Fighting future epidemics effectively, using resources efficiently, reaching a sustainable environment, and reaching inclusive health services to everyone can be possible with a value-based approach.

I would like to express my gratitude to healthcare professionals who are showing outstanding efforts all over the world during the COVID-19 pandemic. We are also glad to determination of theme as “Social Sciences” for 2021 by Italy.”

The final session of the final meeting ended with Saudi Arabia’s handover to Italy, which will host the next S20 meeting.
Executive Summary

The primary conclusion of the 2020 Science 20 (S20), representing the National Academies of Science of G20 nations, is that issues of planet and people must be viewed holistically and with full appreciation of their complexity and interconnectedness. This lesson was learned from a systematic examination of emerging critical global transitions in health, environment, and technology, punctuated by a real-time example of a globally disruptive event, the COVID-19 pandemic. This viral pandemic laid bare the health, economic, social, and educational vulnerabilities of societies and exposed the lack of foresight that resulted in ill-equipped responses on multiple fronts.

The world’s leading economies, represented by the G20 countries, must have the foresight to alleviate the system-level economic and social disruptions that will be brought by the next pandemic and other future Critical Transitions. As such the G20 Academies of Sciences recommend the following actions:

1. Advance existing pandemic preparedness towards an internationally collaborative framework to monitor and respond rapidly to emerging diseases and handle future pandemics.
2. Promote advanced therapy and precision medicine research to enhance personalized care, with a view to concurrently improve technology, cost, and accessibility.
3. Deploy policies and interventions to address the challenges arising from demographic shifts.
4. Develop an integrated and efficient closed-loop systems approach to natural resource extraction, distribution, consumption, disposal, and recycling.
5. Promote circular design of materials and energy systems through advancing the 3Rs (Reduce, Reuse, Recycle) plus Renewables aimed at net zero carbon emission.
6. Bridge the emerging digital divide to ensure that all people on the planet have access and capability to use digital technologies and the internet, while ensuring privacy, resilience, and security of digital networks and devices.
7. Improve the sustainability of the digital infrastructure, including end-user devices, and improve opportunities for smart city technologies to contribute towards a cleaner environment.
8. Adopt a multi-disciplinary approach to plan for a human-centric, digitally enabled society of the future, in which the digital infrastructure is fully embedded in the entire social, educational, political, business, and cultural landscape.
9. Support foresight research that is based on robust science, repeatable methods, and open sharing, and incorporates recent advances in complex systems analysis.
10. Establish a platform upon which to implement and foster international collaboration and to build trust in foresight research and activities.
Critical Transitions: Abrupt Shifts in the State of Ecosystems

In 2008, the world experienced a global financial crisis, a critical transition that warranted the G20 discussions to be elevated to include G20 leaders\(^2\). Twelve years later, we are faced with another critical transition of far-reaching impact in COVID-19. These transitions are abrupt shifts in the state of our ecosystems\(^2\) and become critical when they have global or far reaching impacts. The global impacts of these Critical Transitions could be negative and avoidable, negative and unavoidable, or positive and desired. Several Critical Transitions have been identified across health, environment, and digital sectors, and are now occurring at an unprecedented pace and magnitude. The world’s leading economies, represented by the G20 countries, must have the capacity to alleviate system-level economic and societal disruptions that can happen during and from such Critical Transitions. The science and engineering community must help governments identify impending risks and opportunities, but they must also provide evidence-based advice to policymakers to explore the “solution space” for addressing these risks or optimizing the opportunities.

COVID-19 is the latest in a long line of infectious disease outbreaks that have increased both in frequency and diversity over the past several decades, a period coinciding with population doubling, urbanization, globalization, and climate change\(^3\). Repeated outbreaks and prolonged pandemics will probably become more common in the future and will demand sustained and data-driven foresight research. Holistic approaches, such as ‘One Health’, must be contextually understood as complementary to the basic provision of access to healthcare and to broad support for the United Nations Sustainable Development Goals (SDGs). Another health and socio-economic related Critical Transition is due to the significant demographic shifts many countries are facing due to changing birth rates, aging populations, migration, and urbanization. Aging represents a significant demographic shift affecting many developed nations. The potential implications include increased vulnerability to infectious diseases, rising healthcare expenditures, and increased demands for healthcare services for the elderly including mental health. Furthermore, the way healthcare is practiced is going through a transition. Conventional therapeutic approaches face several challenges, mainly related to their lack of specificity and associated toxicity. Multiple approaches have recently emerged to overcome these limitations such as multi-omics technology, tailored cellular therapy, specific immunotherapy, gene therapy, and nanomedicine. However, inadequacy of talent, institutions, regulations, and funding have hampered progress in these areas. While the COVID-19 pandemic has accelerated the application of telehealth and other digital health applications, it has also revealed serious gaps in digital infrastructures and digital literacy especially among vulnerable populations. This is further exacerbated by the lack of uniform regulatory and legislative structures as well as the absence of real-time data sharing mechanisms that also maintain data privacy and security.

The disruptions caused by the COVID-19 pandemic seem to have temporarily slowed many environmental impacts caused by human activity. Yet, we continue to damage the environment by following the traditional linear economic model based on ‘take-make-consume-throw away’ practices. This has created a situation where we are using our natural resources unsustainably and generating enormous waste. The traditional linear economic model and associated downsides could be mitigated through a circular economy that is based on ‘reduce, reuse, repair, refurbish, and recycle’, while maintaining focus on economic development that includes green jobs. However, technological challenges and insufficient incentives for upscaling and adoption have been barriers to the swift transition to circular economic designs. Moving towards a more circular economy would seamlessly complement existing global climate and environmental efforts to deliver opportunities including reduced pressures on the environment, enhanced security of the supply of raw materials, and increased numbers of jobs. These will further contribute to the attainment of multiple SDGs. Increasing greenhouse gas emissions are driving a critical transition of climate change and consequent damage to land and marine ecosystems, which in turn pose threats to human health and lives. Efforts to reduce emissions and enable carbon circularity will support global commitments for responsible development while also reducing environmental pressures from hyper growth and urbanization. Limited awareness of available approaches and of opportunities to reduce emissions and to adopt carbon circularity continues along with a lack of economic and regulatory incentives to drive change. The need for such change is central to attaining SDGs related to making cities resilient and sustainable, combating climate change and its impacts, and conserving oceans and marine resources.

The COVID-19 pandemic has underscored the divide in our society between those who have capability and access to digital technology, especially the internet and services enabled by it, and those with limited or no access. The present pandemic has further reinforced the notion that internet accessibility must be considered a basic or fundamental right of every citizen. Furthermore, the existing telecom infrastructure is vulnerable to disruptions by Critical Transitions such as climatic disasters, cyberattacks, and pandemics.
Despite the strong need for resilience, most nations are economically and politically constrained from investing in the network redundancy that provides resilience. These vulnerabilities in connectivity and data are shaking trust in digital technology. This mistrust has been compounded recently by the emergence of deep fakes, misinformation, and fake news. We are witnessing a changing societal landscape across multiple domains. Digital technology is disrupting traditional industries and giving rise to novel ones. In turn, this disruption is changing the professional landscape via job elimination and outsourcing and is particularly affecting vulnerable groups including women. Geopolitical factors, involuntary human migration, and climate change are resulting in increased urbanization. By 2050, two-thirds of the world’s population are expected to live in urban areas, causing a heavy load on cities’ operations and resources. While smart city technologies could offset this, we are not able to harness their full potential due to the lack of interoperability between competing proprietary technologies. Furthermore, global digital infrastructure and the associated billions of end-user devices consume vast amounts of energy and significantly contribute to global greenhouse gas emissions. More needs to be done in helping to reduce energy consumption and e-waste.

Foresight: Connecting the Dots

The current pandemic crisis has highlighted that Critical Transitions can have far-reaching impacts across the globe and that global challenges transcend societal, economic, political, and technological domains. The growing complexity and interconnectedness of systems make it increasingly difficult for policymakers to understand the impact of their decisions as they navigate the Critical Transitions we will face. The pathway to better government, policy, and action should be built on a whole-system approach.

“Foresight is a purposeful process of developing knowledge about the future of a given unit or system of actors, which is aimed at action in the form of public or private policy making, strategizing and planning⁴.” Yet, the on-going COVID-19 pandemic clearly shows that pandemic foresight was and still is a challenge requiring the convergence of medical, public health, socio-economic, and complementary disciplines. Up to this point in history, exercises for navigating the future have largely been conducted by policy analysts in think tanks, corporations, multilateral organizations, and governments. Science has been an ad hoc resource for most foresight studies. However, profound global challenges and Critical Transitions require insightful leadership and vision to transform these traditional foresight exercises through evidence-based foresight research.

Foresight research would propel the science and engineering community into a needed central role to develop deeper, more accurate, and more comprehensive foresight methods to drive effective policymaking. There is a need for foresight research that can connect the dots, allowing the assessment of the impact and unintended consequences of decision options and leading to visionary actions at an international level.

International cooperation and collaboration are needed for better foresight research. The pandemic has provided the central incentive to break silos for healthcare professionals, engineers, scientists, policy and decision-makers, and leaders worldwide. In fact, given the wide disparities among developed and developing nations in terms of research capabilities and financing, international collaboration on foresight scientific research, innovation, and funding is needed. International collaboration on foresight research naturally flows from the growing interconnectedness of the world and resonates with SDG 17, ‘Revitalizing the global partnership for sustainable development’. Advancing foresight research and international collaboration in foresight activities holds the promise of fulfilling the potential of our best minds to avoid and mitigate future suffering and achieve greater health, stability, and prosperity.

The G20 Academies of Sciences seek to:

1. Advance existing pandemic preparedness towards an internationally collaborative framework to monitor and respond rapidly to emerging diseases and handle future pandemics.

   Establish an international research agenda to study the superposition of pandemic scenarios on existing health conditions, lifestyles, health impacts from environmental changes such as climate change, and social interactions using contemporary research methods. Such research will build on and work with existing global efforts to strengthen the response to a pandemic or similar health emergencies. The impact and feedback from social and behavioral research, mental health, and frontline-community interactions must be considered. To enable the application of foresight, data must be collected, shared, and analyzed, with results transparently communicated in a manner that ensures peer review, continuous knowledge sharing, data assimilation, and continuous quality improvement.
2. **Promote advanced therapies and precision medicine research to enhance personalized care, with a view to concurrently improve technology, cost, and accessibility.**

   Enhance the development of techniques such as multi-omics technology, tailored cellular therapy, specific immunotherapy, gene therapy, and nanomedicine to complement the traditional healthcare industry. Promote vertical integration of multidisciplinary basic, translational, clinical, and ethical outcomes research, cutting across silo-based activities and taking into account the need for facilitating trans-national mobility and accessibility of scientists and clinicians through better exchange policies. Patients must be empowered to actively participate and collaborate in health research programs. The agenda must also incorporate development of low-cost and high-precision digital health solutions, leveraging predictive models to profoundly understand pathogenesis, identify new drug targets, and develop more personalized diagnostic and therapeutic modalities. Investments in research and training programs are needed to enhance human capital to support the development of and access to innovative diagnostics and therapeutics including vaccines.

3. **Deploy policies and interventions to address the challenges arising from demographic shifts.**

   Account for global demographic, ethnic, and socioeconomic differences in health-related data analyses to allow more accurate data interpretation and decision-making, especially among vulnerable populations and systems with growing inequities. Similarly, conduct a comparative analysis of epidemic data collected from different countries using an agreed framework and appropriate samples in population surveys to provide added value. Among older adults, mental health issues resulting from social isolation, as well as other challenges related to higher risk of contracting diseases, limited digital literacy, and inadequate access to testing and treatment must be addressed.

4. **Develop an integrated and efficient closed-loop systems approach to natural resource extraction, distribution, consumption, disposal, and recycling.**

   Establish the required legal and economic structure to promote large-scale acceptance and application of closed-loop systems and use of recycled and recovered products by businesses and consumers. Steps to encourage the development and adoption of closed-loop systems, especially among key sectors such as mining, manufacturing, construction, services, agriculture, and urban dwellings, should be undertaken. This will in turn stimulate research, development, and use of innovative waste reduction technologies. The design of circular economy systems should create new jobs and encourage community participation at the local level to reduce the use of virgin materials and to promote responsible consumption. Develop educational materials and programs on the circular economy to be included at all educational levels to raise awareness and open career paths to innovation, startups, and jobs in all aspects of the circular economy. Leveraging advanced digital technologies such as IoT, AI, big data, and blockchain will improve the efficiency, resilience, and circularity of natural resource use as well as enhance synergies of circularity in energy, water, materials, and food. Progress towards circularity and waste minimization must use standardized circular economy indicators to support establishment of targets for transitioning towards the circular economy.

5. **Promote circular design of materials and energy systems through advancing the 3Rs (Reduce, Reuse, Recycle) plus Renewables aimed at net zero carbon emission.**

   Promote renewable energy along with affordable and sustainable energy systems including storage, through market-based approaches and awareness programs, that will reduce societal dependence on fossil fuels. Conduct techno-economic feasibility studies and lifecycle assessment to determine the optimal mix of alternative energy technologies coupled with 3R related technologies in integrated societal systems that will best meet carbon neutrality goals. Assessment and promotion of emerging Carbon Capture, Utilization, and Storage (CCUS) technologies such as Bio-Energy Carbon Capture and Storage (BECCS), and conversion of CO₂ into products, including tests at test-bed sites, will be required to clarify their upscaling and implementation opportunities. Encouraging forest and marine ecology recovery and restoration as methods for carbon sequestration will simultaneously help restore biodiversity.
6. Bridge the emerging digital divide to ensure that all people on the planet have access and capability to use digital technologies and the internet, while ensuring privacy, resilience, and security of digital networks and devices.

Develop strategies to encourage funding of the digital infrastructure and development of communications technologies and devices suited for deployment and use in poor communities and remote locations with limited infrastructure. Inclusive education and literacy programs are required for all to ensure digital education opportunities, especially among women, minority groups and disadvantaged communities. Leverage the scientific community in digital infrastructure planning to upgrade current systems for improved resilience and increased network traffic demands. Dedicate more resources to promote data science for the public good, research and development for robust and resilient AI algorithms, stronger cryptographic protocols, and expanded regulations to prevent threats from random failures and malicious cyber-attacks.

7. Improve the sustainability of the digital infrastructure, including end-user devices, and improve opportunities for smart city technologies to contribute towards a cleaner environment.

Accelerate initiatives aimed at reducing the environmental impact of digital technologies, including designing for energy efficiency, developing less intensive computational methods, and using renewable energy sources in place of non-renewables. Develop standardized tools and frameworks to maximize efficacy in the use of digital technologies and maximize their useful lifetime to reduce e-waste. Design smart cities and smart communities to be inclusive, optimize resource sharing, embrace interoperability, and reduce the emission of greenhouse gases and other pollutants. Promote collaboration and knowledge-sharing of best practices and experiences among policymakers, industry, community stakeholders, and the scientific community. Enhance public awareness of the environmental impact associated with use of digital technologies.

8. Adopt a multi-disciplinary approach to plan for a human-centric, digitally enabled society of the future, in which the digital infrastructure is fully embedded in the entire social, educational, political, business, and cultural landscape.

Strengthen focus on multidisciplinary education and research, interlinking science and engineering, social sciences, the humanities, and ethics, and enhancing the quality of digital education for all. Initiate a broad scientific and public discourse related to the societal and health impacts of digital technologies and engage in public education based on scientific evidence. Support the development of technologies and human-managed processes that allow for rapid detection and blocking of deep fakes, fake news, and disinformation, and empower users to identify and handle false and misleading information. Increase investment in research and development of trustworthy and explainable AI in high-stakes domains such as finance and healthcare and develop methodologies and protocols for the incorporation of ethical behavior into robots and related autonomous technologies.

9. Support foresight research that is based on robust science, repeatable methods, and open sharing, and incorporates recent advances in complex systems analysis.

Transform foresight research given recent major advances in network and complexity science, AI, machine learning, big data analytics, and advanced computing (e.g. quantum computing). Ensure that foresight research is based on robust science and repeatable methods that are openly shared. Such research would involve the intersection, interaction, and/or combination of scientific and engineering methods, technologies, trends and drivers, as well as the contexts in which these are embedded. Such enhancement would strengthen the reliability of foresight research and would promote trust in the use of and outcomes from these applications.
10. Establish a platform upon which to implement and foster international collaboration and to build trust in foresight research and activities.

Encourage international organizations (such as the UN) to establish a global clearinghouse and knowledge-sharing platform, as well as a global scientific advisory body to strengthen scientific foresight research, to foster international collaboration and collective exchange of foresight reports, data, best practices, and information on foresight initiatives conducted around the world. This will complement and leverage existing (mostly) regional foresight efforts by encouraging international dialogue on the need for foresight research and capabilities to understand the complexity and interconnectivity of global systems. Challenges that are global in nature often involve different pathways in different regional, national, or local contexts, and effective intervention options are also likely to vary according to context. International cooperation must foster acceptance and tolerance of various cultures and social norms. Global cooperation offers a rich collaborative space for developing appropriate methods that use cutting-edge developments in network and complexity sciences, AI, and big data with the goal of promoting foresight research. Such efforts should also help to develop protocols, technologies, and regulations to ease data sharing, both locally and cross-border, to allow open access to data among relevant stakeholders. These efforts should also help to prioritize programs that heighten the awareness of foresight to the broader society and policymakers and to establish strategies for communicating different futures to diverse audiences.

References

1 https://g20.org/en/about/Pages/whatis.aspx

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TÜBA Report on Climate Change and Public Health in Turkey Published

The report consists of 5 chapters respectively; Introduction, Studies on Climate Change and Public Health, Climate Change and Its Impacts on Public Health, Compliance and Mitigation Policies, and Results and Recommendations. In the editorial board of the report, TÜBA President Prof. Dr. Muzaffer Şeker, TÜBA Members Prof. Dr. Ismail Kayuncu, and Prof. Dr. İzzet Öztürk took place. In addition to the editors, prominent academicians and experts from related fields (Prof. Dr. Hasan Hüseyin Eker, Prof. Dr. Ali Özer, Prof. Dr. Mehmet Emin Aydın, Prof. Dr. Ali Deniz, and Assoc. Prof. Fatih Kara) have given opinions to this report.

According to the report; “Sustainable development, which aims to make it possible to meet the needs of future generations along with the needs of today’s generations, took its place on the world agenda in the late 20th century. One of the 17 Sustainable Development Goals of UN is to combat climate change and its impact. The increase in greenhouse gases in the atmosphere is expected to cause regional and global changes in climate and climate-related variables such as temperature, precipitation, air, and soil moisture. Moreover the significant temperature increase observed in the global climate, according to the projections made with advanced climate models, an increase in global surface temperatures is expected between 2-4.5 celsius in the period 1990-2100. Depending on the increase in global surface temperatures, the change of hydrological cycle, melting of land and sea glaciers, narrowing of glacial areas, especially in polar regions, rising sea levels, shifting climate belts, changing dynamic processes in the atmosphere, heat waves are more severe and frequent. In some regions, excessive precipitation and floods and in some regions droughts are more severe and frequent, and drought epidemics and pests due to high temperatures may occur.”

Therefore as TÜBA President Prof. Dr. Muzaffer ŞEKER said in the preamble; “It is necessary to underline with the awareness that climate change, environmental problems, and public areas are interconnected. Public health problems are related to so many different multidisciplinary aspects but mostly considered climate change, environmental issues, and economic situations. The purpose of such reports, which is valuable for human beings, is to leave a livable world to future generations. It should not be forgotten that we have only one world that we can protect and live on.”

TÜBA Local History of the National Struggle Project started with the Workshop on Local Perspectives of The National Struggle

"The Local History of the National Struggle" Project was commenced with the “Local Perspectives of the National Struggle Workshop” at Fatih Sultan Mehmet Vakif University (FSMVU) in Istanbul on 7-8 June 2021 by TÜBA. TÜBA aims to create a roadmap for the preparation of the “1918-1923 The Local Histories of Turkish National Struggle Project”. The workshop was held in the Mevlevi Lodge of FSMVU in the Topkapi Campus face-to-face and online format. The method, scope, and context of the project regarding the Local Narratives of the National Struggle were discussed during the two-day Workshop, where pluralist participation from seven regions of Turkey was ensured.

The final evaluation report will also share with interested scientists and people as a guide for the future of the project.
New Questions, Methods, and Sources in Islamic Astronomy: Some Observations on F. Jamil Ragep’s Scholarship

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1. Introduction
F. Jamil Ragep is one of the eminent historians of Islamic astronomy, one who has received the 2019 International Academy Prize in Social Sciences and Humanities given by the Turkish Academy of Sciences (TÜBA). At the outset, I would like to express that his scholarship is based upon a rigorous theoretical approach, and on critical and close engagement with rich primary sources, which enables it to make original contributions to history of Islamic science studies. Moreover, his institutional and collaborative efforts for the development of the field should also be noted. I am honored to be one of Professor Ragep’s students during my graduate study at McGill, and I would like to reflect on some of his contributions to the field. It goes without saying that this essay is too short to cover the works that he has produced since the 1980s. Therefore, I will be selective and focus on a few subjects to point out the importance of his scholarship in the development of the historiography of Islamic science over the last few decades. But before that, it would be appropriate to give a brief biography.

2. A Biography of F. Jamil Ragep
F. Jamil Ragep obtained his BA in Anthropology and MA in Middle Eastern Studies and Anthropology at the University of Michigan. Thereafter, he received his PhD in History of Science at Harvard University in 1982. His supervisor was Abdelhamid I. Sabra, one of the leading historians of Islamic science in the twentieth century. After holding postdoctoral positions at Harvard, Brown, and Cornell Universities, Professor Ragep served as Assistant Professor, Associate Professor, and Full Professor in the Department of the History of Science at the University of Oklahoma, which is a respected program in the field in North America. In 2006, he was invited as Full Professor to the Institute of Islamic Studies at McGill University, which is the first institute of its kind in North America. Professor Ragep held this position until his retirement in 2020. The Government of Canada has a special program called the “Canada Research Chairs Program” to attract leading scholars in different fields to Canadian universities, and Professor Ragep served as the Canada Research Chair in the History of Science in Islamic Societies for more than a decade. To the best of my knowledge, this position was the only chair in North America devoted to the history of sciences in Islamic societies. For a while, Professor Ragep also served as the Director of the Institute of Islamic Studies at McGill. He taught and delivered lectures in many respected universities and institutions all around the world, and his research was supported by such distinguished institutions as the Government of Quebec, Max Planck Institute for the History of Science in Berlin, National Science Foundation (USA), and American Research Institute in Turkey. Besides this, he served as the President of the Commission on History of Science & Technology in Islamic Societies, which is a working group under the International Union for the History and Philosophy of Science, Professor Ragep wrote or edited seven books, and published a number of articles, book chapters, encyclopedic entries, and book reviews.

3. Some Remarks on F. Jamil Ragep’s Contributions to the Field
It has long been assumed that scientific enterprises in Islamic societies declined after the twelfth century, as they lost their creativity and dynamism. However, this understanding of Islamic science has been challenged by a number of studies that have been produced over the last few decades. This has been an important opportunity for the field to adopt new insights into historical materials, and to reach remarkable results that were not realized before.

Since F. Jamil Ragep started to contribute to the field in the 1980s, he has been one of the pioneering figures who questioned the decline-oriented understanding of the history of Islamic science.1 In order to overcome its shortcomings and to propose rich and fruitful insights regarding scientific experiences of Islamic societies, Professor Ragep’s research agenda has been shaped in two directions: 1) He has prepared critical editions and prepared translations of scientific texts which had

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1. It is worth noting one of his essays that challenge the decline-oriented understanding of the history of Islamic science. F. Jamil Ragep, “When did Islamic Science Die (and Who Cares)?” Newsletter of the British Society for the History of Science 85 (Feb. 2008): 1-3.
not been studied before. Thanks to this effort, new primary sources have become available to historians of science. 2) He has examined historical sources with a theoretical perspective, which would, in turn, lay the foundations for new research questions in the field. To put it differently, like his predecessors such as Abdelhamid Sabra, Edward Kennedy, and David Pingree, Professor Ragep has stressed the importance of critical and close engagement with historical sources, along with that of analysing them in their historical and scientific contexts. Let me exemplify my points below.

3.1. Theoretical Astronomy in the Madrasa Context

In his dissertation, which would later be published as a book, F. Jamil Ragep scrutinizes al-Tadhkira fi al-hay’a, one of the most popular works in theoretical astronomy in Islamic societies, written by Naṣīr al-Dīn al-Ṭūsī (d. 672/1274), an outstanding scholar of the thirteenth century. Professor Ragep’s study involves a critical edition, translation, and detailed analysis of the Tadhkira. Notably, that Professor Ragep worked on a text written after the twelfth century, which has been assumed as the turning point in the so-called decline period, is a strong indication of his effort to overcome the decline-oriented perspective. This work is still one of the most important contributions in the field. As he remarks, the mathematical and astronomical sciences were studied in the madrasa setting, among other settings, and therefore the institutionalization of education, especially during the Seljuk period, deserves to be researched. In his studies on ‘ilm al-hay’a (theoretical astronomy), Professor Ragep highlights the richness and diversity of the texts on scientific cosmology, written throughout centuries and across a vast territory in the Islamic world. Furthermore, he is one of those who have demonstrated that scientific cosmology, which was considered part of theoretical astronomy, could find itself in a non-trivial place in the madrasa context, and therefore the interactions of science and other disciplines that were taught in the madrasa deserve further research.

3.2. Revisionist Ptolemaic Astronomy in Islam & the Copernican Revolution

Among the remarkable contributions made by F. Jamil Ragep are his studies that examine the influence of Islamic astronomy on medieval and early modern European astronomers including Copernicus (d. 1543). In the 1950s, Edward Kennedy, one of the most important historians of Islamic science in his time, demonstrated that the Copernican planetary models have significant resemblances with those of the Damascene astronomer named Ibn al-Shāṭir (d. 777/1375). This important discovery gave a new impetus to studies on Islamic astronomy, and research on the complexities of the relationship between Copernicus and Islamic astronomers has intensified. F. Jamil Ragep has been one of the historians working on this subject, investigating how Islamic astronomers attempted to revise Ptolemaic astronomy. He also researched how those astronomers were received in Latin European science. 3 In this respect, the recently published articles he has authored or co-authored are notable. They express that although Ibn Shaṭir’s models are geocentric, they bear characteristics that make them appropriate to be transformed into the heliocentric models. In other words, his models have a “heliocentric bias.” 4 Along with mathematical and technical analyses of astronomical models, in order to understand the development of theoretical astronomy on the eve of the Copernican period, Professor Ragep puts special emphasis on philosophical discussions that were carried out by Islamic scholars in the fifteenth century. 5 Moreover, the recently published book he has co-edited makes the argument that Copernican astronomy should be understood in its multicultural and historical contexts. 6

3.3. Astronomy as a Subject of Study in Islamic Intellectual History

Another important aspect of F. Jamil Ragep’s scholarship is that his research adopts an interdisciplinary approach, and that he is engaged with some of the important questions in Islamic intellectual history. To give an example, by closely examining discussions on the earth’s rotation, with reference to Naṣīr al-Dīn al-Ṭūsī, Qūṣṭ al-Dīn al-Shīrāzī, ‘Ali al-Qūṣṭāji, and Copernicus, Professor Ragep remarks the importance of studying how understanding the relationship between Aristotelian natural philosophy, and astronomy developed over the course of Islamic history. 7 One of the most remarkable contributions he has made in this direction is his article that deals with how Qūṣṭāji understood astronomical principles in his well-known kalām (philosophical theology) work entitled Sharḥ al-Taṭrīd. Qūṣṭāji defends the idea that Aristotelian natural philosophy is not needed to establish astronomical principles, and that mathematics and observations are sufficient for this. 8 The relationship between astronomy and natural philosophy was a major issue since the ancient Greek period, and Professor Ragep is engaged with this subject as regards to Islamic astronomy.

3.4. Digital Humanities in the Service of Islamic Science: The Islamic Scientific Manuscripts Initiative (ISMI)

Over the last decade, there has been an increasing interest in using digital tools and methods in social studies and humanities. This field is known as digital humanities. This discipline not only

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provides us with interdisciplinary insights into our subjects, but also uncovers details that have not been observed before. There is no doubt that this development is a valuable opportunity for the field. When Digital Humanities was at its infancy, F. Jamil Ragep and Sally Ragep embarked on preparing an advanced digital catalog of all available Islamic scientific texts. This idea would later turn into an international project hosted by McGill University (F. Jamil Ragep and Sally Ragep) and Max Planck Institute for the History of Science, Berlin (Lorraine Daston), under the title “Islamic Scientific Manuscripts Initiative (ISMI)” (https://ismi.mpiwg-berlin.mpg.de). Several respected scholars and institutions were also involved in this project in its later stages. While the catalog is available to users on the aforementioned website, it will be further developed with new data and methods of analysis. This project manifests another significant aspect of Professor Ragep’s scholarship. Along with giving importance to close examination of scientific texts – editing, translating, and analyzing scientific texts – he aims to enrich Islamic science studies with new technological methods and tools, and with analysis of big data. This motivation manifests itself in one of his co-authored articles entitled “The Islamic Scientific Manuscript Initiative (ISMI): Towards a Sociology of the Exact Sciences in Islam.”

3.5. Institutionalization of Studies on Science in Pre-modern and Modern Muslim Societies
F. Jamil Ragep has also been involved in the establishment and development of the institutions devoted to studies on science in pre-modern and modern Islamic societies. He has served as the president of the Commission on History of Science & Technology in Islamic Societies, which is affiliated with the International Union for the History and Philosophy of Science, between 2005-2009. Secondly, in order to establish a platform in which science in Islamic societies is studied from modern and historical perspectives, Professor Ragep co-established the McGill Centre for Islam and Science. The interdisciplinary characteristic of this centre can be understood from the fact that the other co-founders are professors in the disciplines of Biology (Ehab Abouelheit) and Education (Anila Asghar). Among other activities, it has so far organized panels, symposia, and reading groups on various subjects including science education in Islamic history and the theory of evolution in Muslim societies.

4. Conclusion: A Few Remarks on the Future of the Field
As mentioned in the beginning, this essay has not attempted to undertake a comprehensive evaluation of F. Jamil Ragep’s contribution to the field, but has only attempted to provide a brief framework for his research subjects and methods. Over the few decades, there has been an increased interest in studies on the history of science in Islamic societies, in both Turkey and the rest of the world. While this is quite promising for the future of the field, one needs to reflect on how this interest could be transformed into high-level and long-term scholarship. I think Professor Ragep’s approach to the history of Islamic science has important clues as to what is needed for the flourishing of this field. Professor Ragep puts special emphasis on closely analysing historical texts in order to engage with central questions of the field. Along with his individual contributions, one can observe this understanding in his collaborative projects. In conclusion, prioritizing an understanding that questions the decline paradigm and encourages new insights and questions, Professor Ragep’s scholarship is a shining beacon for those who would like to venture far into this territory.

Appendix- Selected Publications of F. Jamil Ragep

A large number of TÜBA Members took place in the list of the most influential scientists in the world. The list has a composite indicator scientific impact index, which consists of variables such as the number of scientific articles, the number of citations, and the order of authors, by the team of scientists from the USA and the Netherlands and it includes 22 science departments and 176 sub-disciplines.

195 scientists have entered for the list from Turkey. The following professors between them are the member of TÜBA: Göknar Hotamisligil, Omar M.Yaghi, Aziz Sancar, İbrahim Dinçer, Zülfüqar A. Bhutta, Niyazi Serdar Sarıçiftçi, Ekmel Özbay, Mustafa Tüzen, İlhami Gülçin, Jackie Y.Ying, Arif Hepbaşlı, Aral Okay, Özcivan Erel, Ali Mostafazadeh, Kamil Kaygusuz, Öğuz Okay, Mustafa Verşan Kök, Cemal Eリング, Gazi Yaşargil, Adil Denizli, Mahmut Özçar, Umran S. İnan, Ömer Kıcıcuk, Salim Çırıcı, Erhan Bışkin, Ziya Öniş, Öğuz Kerim Başkür, Öğuz Kerim Başkür, İlyak Ergonan Orhan, Saim Özkaz, Fahrettin Keletemur, Reşat Apak, Mehmet Doğan, A. Murat Tekalp, Kadriye Arzum Erdem Gürsan, Üner Tan, Özür Bekarolu, A. Nihat Berker, Metin Balç and Metin Arık.

Besides, International TÜBA Academy Award winners Prof. Dr. Adrian Bejan, Prof. Dr. Fatih M. Uçkun, Prof. Dr. Cenk Ayata, and Prof. Dr. Hüseyin Arslan was also shown among the most influential scientists.

Following TÜBA Young Academy Member Professors were also ranked amongst the most influential scientist; Sabri Ank, Erdin Bozkurt, Murat Uysal, Idil Arslan - Alaton, Zeynep Aycan, Sinan Gezici, Z. Özlem Keskin Özkaya, Özgür B. Akan, Vural Gökmen, Seda Keskin Avci, Mehmet Atilla Taşdelen, Okan Bülent Yıldız, Vehbi Çağrı Gungör, Mehmet Zahmakıran and Durmuş Ali Demir.

**TÜBA Members on the List of the Most Influential Scientists of the World**

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**2020 Presidential Culture and Art Grand Awards**

given the people who made significant contributions to Turkish culture and art life, Turkey’s culture and employees to the exaltation of art, with original works or services given to people or organizations showing outstanding ability. This year, Mehmet Çebi, Necmeddin Okyay, Sadettin Ökten, İsmail Kara, İbrahim Tenekeci, Derviş Zaim ve Özdemir Erdoğan were taken the awards.

While collector Mehmet Çebi was awarded, Necmeddin Okyay taken the “fidelity” award, Sadettin Ökten the “cultural history” award, İsmail Kara the “social sciences” award, İbrahim Tenekeci “literature” award, Derviş Zaim “cinema” award and Özdemir Erdoğan “music”.

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**Prof. Dr. İsmail Kara, Full Member of TÜBA took Presidential Award on Culture and Art Grand**

Prof. Dr. İsmail Kara, TÜBA Full Member was awarded by “2020 Presidential Culture and Art Grand Awards”.

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**TÜBA Full Member Prof. Dr. M. Verşan Kök Reappointed as METU Rector**

TÜBA Full Member Prof. Dr. Mustafa Verşan Kök, who has been working as the Rector of METU since 2016, was reappointed as of August 14, 2020.

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**One More “First” from Prof. Fikrettin Şahin TÜBA Full Member and His Team**

Prof. Fikrettin Şahin, TÜBA Full Member, Head of Yeditepe University Genetics and Bioengineering Department Head with his team including Prof. Erhan Ayşan and Dr. Emrah Nikereli Lecturer Members realised parathyroid hormone biosimilar production for the first time in Turkey as a result of 5 million USD investment and two years of intense work.
Prof. K. Arzum Erdem Gürsan, TÜBA Full Member received “Higher Education Award”

Prof. Dr. Kadriye Arzum Erdem Gürsan Academy Full Member of TÜBA was deemed worthy of the “YÖK 2020 Outstanding Achievement Award” for her advisory work of thesis called “Development of Electrochemical Sensors for Biosensing”.

Prof. Dr. Muzaffer Şeker, President of TÜBA also took part at Opening Ceremony of 2020-2021 Academic Year held at the Presidential Complex with the participation of President Recep Tayyip Erdoğan on October 15, 2020. During the ceremony, Prof. Dr. Kadriye Arzum Erdem Gürsan, TÜBA Full Member, as thesis advisor and Ece Eksin as thesis owner called “Development of Electrochemical Sensors for Biosensing” received an award.

TÜBA Full Member Prof. Dr. Ismail Koyuncu was assigned to ITU Rector

Istanbul Technical University (ITU) Faculty Member Prof. Dr. Ismail Koyuncu was continuing his work as a TÜBA Associate Member and the Director of the National Membrane Technologies (MEMTEK) Application and Research Center since 2014. Prof. Koyuncu has appointed as the Rector of ITU as of 14 August 2020.

“Eschenbach Best Paper Award” from ASEM to TÜBA Members

TÜBA Associate Members Prof. Dr. Ali Ekber Akgün and Prof. Dr. Halit Keskin published the article titled “The Relationship Among Organizational Symbols, Firm Absorptive Capacity, and Product Innovativeness” with his team. They won the “2020 Eschenbach Best Paper Award” given by the American Society for Engineering Management - ASEM.

TÜBA Full Member Prof. Ilkay Erdogan Elected as a Member of the Islamic World Academy of Sciences

Full Member of the Academy and Dean of Gazi University Faculty of Pharmacy Prof. Dr. Ilkay Erdoğan Orhan was elected as a member of the Islamic World Academy of Sciences.

The Islamic World Academy of Sciences was founded in Jordan in 1986. It is the scientific advisory body of the Organization of Islamic Cooperation. The prestigious scientists from Islamic countries are accepted as members of the Islamic World Academy of Sciences.

Science and Incentive Awards from TÜSEB to TÜBA Members

“Aziz Sancar Science Award” given in name of Prof. Dr. Aziz Sancar, Nobel Prize winner and Academy Honorary Member by Turkey Institutes of Health Presidency (TÜSEB) was given to Prof. Dr. While Taner Demirer, TÜBA Principle member. TÜBA Young Academy members Dr. Abdullah Ercüment Çiçek from Bilkent University and Assoc. Professor Mehmet Gonen from Koç University were awarded by Incentive Award.

President Recep Tayyip Erdoğan attended the Awards Ceremony of Aziz Sancar Science, Service and Encouragement and congratulated Prof. Dr. Taner Demirer, TÜBA Full Member. In addition, President Erdoğan congratulated also in his speech, the winner of TÜSEB Incentive Awards winners from İzmir Biomedicine Genome Centre. Arif Ergin Çetin and Dr. Abdullah Ercüment Çiçek, TÜBA Young Academy Members and Assoc. Professor Mehmet Gonen and TÜSEB Service Award winner, Fatma Koçak, owner of a pharmacy company.

2020 Science Awards from TÜBİTAK to TÜBA Members

The winners of the 2020 “TÜBİTAK Science, Special, Service and Incentive Awards” have been announced. TÜBA and TÜBA Young Academy members won 9 out of 18 awards, including 4 Science Awards, 1 Special Award and 13 Incentive Awards.

TÜBA Member Prof. Dr. Hilmi Volkan Demir, TÜBA Member from Bilkent University and Prof. Dr. Özgür Banş Akan, TÜBA Young Academy Member form Koç University took TÜBİTAK Science Award 2020 in the field of engineering sciences Incentive Awards; Dr. Bilge Baytek in and Dr. Ferdi Karadaş from Bilkent University took award in the field of basic sciences. Prof. Dr. Sinem Çöleri from Koç University, Prof. Dr. Hakan Usta from Abdullah Gül University and Assoc. Professor Mustafa Serdar Önses.
from Erciyes University took award in the field of engineering sciences. Prof. Dr. Elif Çadırcı from Atatürk University and Assoc. Prof. Tevfik Tamer Önder, TÜBA Young Academy from Koç University took award in in the field of health sciences.

The awards will be given to their owners at a ceremony to be held on the date to be announced later. We congratulate all of our award-winning scientists and wish them continued health and success.

Assoc Prof. Akın Ünver, TÜBA Young Academy Member elected as ISA Board Member

Assoc. Prof. Hamid Akın Ünver, TÜBA-GEBİP award winner and Kadir Has University International Relations Department Faculty Member has been elected to the Board of Directors of the International Studies Association (ISA), headquartered in the USA and the world’s largest and most respected scientific institution in the field of international relations.

He was nominated during election among academicians who have made important studies on international relations both regionally and globally. He received the most votes as a result of the election attended by ISA members. Ünver will serve as a member of the ISA Board of Directors for two years between 2022-23.

Benedykt Polak Award to Assoc. Prof. Hacer Topaktaş Üstüner

Assoc. Prof. Hacer Topaktaş Üstüner, 2017 TÜBA-GEBİP, 2015 TÜBA-TEÇEP Award winner and Istanbul University (İÜ) Faculty Member was awarded with the “Benedykt Polak Award”.

Assoc. Prof. Üstüner, who was nominated by Consulate General of the Republic of Poland in Istanbul for the was awarded due to her work on “Turkey-Poland Relations and Polish History”.

The Benedykt Polak Award, which has been presented to a local and foreign researcher in Poland every year since 2015, will be presented to its owners in a ceremony to be held in Poland’s Lancut Palace in October 2021.

“2021 Sabri Ülker Science Award” to Assoc. Prof. Elif Nur Fırat Karalar

Assoc. Prof. Elif Nur Fırat Karalar, TÜBA-GEBİP Member Award winner and Koç University Molecular Biology and Genetics Department received the “2021 Sabri Ülker Science Award”.

The Sabri Ülker Science Award Ceremony was held at the Metabolism and Life Symposium with the participation of scientists who are experts in the field of metabolism. The event hosted by the Sabri Ülker Foundation was chaired by TÜBA Member Prof. Gökhan Hotamışlıgil and organized by Harvard Sabri Ülker Metabolic Research Center, this year’s science award was presented to Assoc. Prof. Elif Nur Fırat Karalar. Elif Nur Fırat Karalar seeks answers to how cell structures known as centrosome and cilium, which play a critical role in cell division and communication, are formed and function. Karalar and her team believe that all the answers they will reach will allow the development of new methods for the diagnosis and treatment of disorders in these structures. Karalar and her team also aim to determine the causes of developmental and metabolic disorders such as kidney disorders, blindness, obesity and diabetes, and guide the diagnosis and treatment of these diseases in their work that was awarded the Sabri Ülker Science Award.

Great Support from ERC to Dr. Mehmet Cengiz Onbaşılı TÜBA Young Academy Member

Dr. Mehmet Cengiz Onbaşılı, TÜBA Young Academy Member from Koç University Electrical and
Electronics Engineering Department has been awarded a grant from the European Research Council (ERC) for his project titled “Spintronic Circuits with Very Low Power Consumption Close to Thermodynamic Limits and Broadband”.

Dr. Onbaşlı, owner of the 2019 TÜBA-GEBI Award, is redesigning the basic building blocks of our electronic circuits with a brand new physics and chemistry, using the spins of electrons, with the research that will be funded by ERC for 5 years. Within the scope of the project, circuit components that can realize both data storage and artificial neural networks using nano-scale circular spins are prepared. The project aims to read, write and permanently store information with at least 100 times less energy than existing transistors, thanks to new two-dimensional material designs and insulating magnetic thin layers. Thus, it is planned to increase the battery life of mobile devices tens of times.

TÜBA Young Academy Member Assoc. Dr. Tamer Önder Produced Liver Cells from Stem Cells

TÜBA Young Academy Member Assoc. Dr. Tamer Önder, from Koç University Faculty of Medicine and Translational Medicine Research Center (KUTTAM), and a group of Turkish scientists produced liver cells from stem cells in a laboratory environment.

A New System for the Diagnosis of COVID-19 by TÜBA Young Academy Member Assoc. Prof. Özgür Şafak Şeker

TÜBA Young Academy and Bilkent University National Nanotechnology Research Center (UNAM) Faculty Member Assoc. Prof. Urartu Özgür Şafak Şeker and his team developed a new system for the diagnosis of COVID-19. The project, which was financially supported by Bilkent University UNAM and TÜBITAK, included Assoc. Prof. Şeker as leader and the Synthetic Biosystems Laboratory members Çisil Köksaldı, Recep Erdem Ahan, Sila Kose, Nedim Haciosmanoğlu and Ebru Şahin Kehribar took part in.

While the RT-PCR method used for the diagnosis of coronavirus was widely used all over the world and in Turkey, this method generally required a polymerase chain reaction device capable of optical reading and trained personnel. In order to create a parallel system to this system, Assoc. Prof. Şeker and his team started to work using synthetic biology approaches. As a result of the study, an innovative diagnostic system emerged. “Synthetic key systems for coronavirus detection” were developed using synthetic biology and advanced genetic engineering methods. The diagnostic system developed with synthetic biology was converted into a device with 3D technology.

TÜBA Young Academy Member Assoc. Prof. Zeki Candan on the Wood Material Science & Engineering Editorial Board

TÜBA Young Academy Member and Istanbul University, Faculty of Forestry Faculty Member Assoc. Dr. Zeki Candan was elected to the Editorial Board of Wood Material Science & Engineering Journal.
TÜBA Moved to New Headquarter

TÜBA has moved to the new and more convenient address at Vedat Dalokay Caddesi, No: 112 as of February 2021.

TÜBA has much better physical conditions in its new building like 4800 square meters with its large library, conference and meeting rooms, studio, 38 project offices.

The new TÜBA building, which can be easily reached by public transportation, is 10 minutes away from the city center of Ankara.

TÜBA is also continuing its academic and administrative activities in Istanbul Rabi Madrasa, located in Suleymaniye Kulliyah and TÜBA’s Library, located in ITU Maçka Campus.