ARAB-GERMAN YOUNG ACADEMY OF SCIENCES AND HUMANITIES

Newsletter 2/2017

Tying the Past with the Present

Migrant flows have always been a part of human history, but the perception of these flows has changed. The international AGYA workshop 'Refugee Transfers in the Euro-Arab Mediterranean Zone' explored how host communities viewed and dealt with migration throughout the centuries.

Over 65.6 million people worldwide are refugees or internally displaced.[1] This, arguably, is the largest migrant flow in the history of mankind, surpassing even World War II. AGYA members Tamirace Fakhoury and Jenny Oesterle organised an international AGYA workshop to put current events into a transhistorical perspective. Jenny Oesterle explained: 'Flight, displacement, persecution, and protection of refugees are not only currently relevant but have a historical dimension which reaches far back to the premodern era'. From 10 to 12 April 2017, the workshop brought together researchers specialised in different time periods and disciplines in Byblos, Lebanon to discuss how societies received refugees and how migration might enrich communities both of arrival and origin.

FROM THE FIRST MUSLIM REFUGEES TO THE FIRST MODERN MIGRANT CODE

The contributions of the workshop participants showed how host communities dealt with the frequent population transfers between major ethnic and religious groups within the Mediterranean. Jenny Oesterle focused on the first Hijrah in the seventh century, when early Muslims fled religious persecution in Mecca and crossed the Red Sea to the Kingdom of Abyssinia (Ethiopia). Recognizing their similarities as worshippers of a monotheistic faith, the Christian king welcomed the refugees and granted them protection. Another example are the aftermaths of the Ottoman-Russian wars of the nineteenth century, which pushed over two million ethnic Muslims from Russian into Ottoman territory. The Ottoman Empire reacted by setting up refugee camps, even opening the imperial mosque Hagia Sophia as a reception camp. In 1857, the Ottomans created one of the first modern migrant codes that allowed refugees to build homes and exempting them from taxation and conscription to ease their settling and integration.

REFUGEES' CULTURAL, POLITICAL, ECONOMIC AND SOCIAL CONTRIBUTIONS

Another aim of the workshop was to look at refugees as 'agents and transmitters of cultural, political, economic and societal norms', as Tamirace Fakhoury highlighted. The works of Iraqi-German writer Hussein al-Mozany, for example, demonstrate how immigrants culturally enrich their host communities and foster a shared identity. His novels, written in German, not only speak of identity and integration but also open windows to foreign worlds for his readers. In the Middle Ages, the flight of Europe's Jewish and Muslim populations from the Christian Reconquista of Spain and the Inquisition illustrates knowledge transfers trough migration. They were re-integrated in the Eastern Mediterranean, bringing Andalusian achievements, for example in the field of Arabic grammar, with them.

The workshop's findings will be published in an edited volume. Transnational Migration is one of AGYA's cross-cutting topics, which started with the AGYA Conference on Migration in 2016. The goal is to address issues of migration from an Arab-German perspective.

CONTENTS

[1] UNHCR 2017: https://goo.gl/27Mbxw

Cultural Exchange Across Borders, Oceans, and Times

The AGYA conference 'Dynamics of Cultural Impact: Arab and German Cultural Heritage of Zanzibar' explored contemporary effects of historic cultural interactions based on the example of Zanzibar, Oman and Germany.

The history of the Apfelstrudel (apple strudel) cannot be told without taking a look at the history of cultural exchange and trade between Zanzibar and Germany in the nineteenth century, nor without taking into account Zanzibar's long Arab merchant tradition since the seventh century. Zanzibar even became an overseas territory of the Sultanate of Oman in the fifteenth century.

ZANZIBAR'S ARCHITECTURE: FROM PORTUGUESE FORTRESSES TO GERMAN PLATTENBAUTEN

Cultural exchange processes affect identity, language, artefacts, traditions, and values of a society. They also commonly become manifest in the architectural landscape of a city. AGYA member Bilal Orfali and Architect Ayman Jalloul analysed the cosmopolitan architecture of Zanzibar:

Zanzibar's 'Stone Town' is a conglomeration of various architectural styles from different countries and time periods that were adapted and synthesised on the island. A good example here is the 'Old Dispensary', built in 1849, a well-preserved landmark of Zanzibar. Its hybrid architecture combines Indian influences on the island through its ornamental façade with a traditional Omani U-shaped floor plan, and is adapted to the climatic specificities of an East African island. A more recent and curious example is the Michenzani public housing project: Tower blocks, so-called Plattenbauten, built by the German Democratic Republic (GDR) in the 1970s as a gift, after Zanzibar officially recognized the GDR as a sovereign state in 1964.

HOW SAYYIDA SALME, PRINCESS OF ZANZIBAR AND OMAN, BECAME EMILY RUETE

Cultural entanglements also become visible in the lives of individuals. This is certainly the case regarding the extraordinary life of Sayyida Salme, Princess of Zanzibar and Oman (1844 – 1924). The princess married a German tradesman in 1867 and moved to Hamburg, Germany. Her 'Memoirs of an Arabian Princess from Zanzibar' (1888), published under her German name, Emily Ruete, are considered the first autobiography written and published by an Arab woman. They reflect an important episode of German-Zanzibari-Omani history, as AGYA member Norman Domeier pointed out. Her memoires give rare information on the life of an Omani woman in the nineteenth century, while, at the same time, she directed her stories at a European audience, with the aim of breaking down stereotypes. It is thus also an important work for historical and contemporary women's studies, even though it is scarcely academically explored.

THE POEMS OF ARAB NAVIGATOR AHMAD IBN MĀJID (D. 1500) LED SAILORS TO ZANZIBAR

When it comes to cultural identity, language is a key and sometimes a compass. The workshop in Salalah was opened by Ramzi Baalbaki, head of the academic council for the Doha Historical Dictionary of the Arabic Language, with a keynote on the status of the Arabic language. In the field of literary studies, AGYA member Kirill Dmitriev focused on pre-modern Arabic poetry in and on Zanzibar. Praised in the poems of famous navigator Ibn Mājid as a place of happiness, sailors were once guided to this island by his easily remembered rhymes.

The workshop was a project of the **AGYA Working Group *Common Heritage and Common Challenges*** and was organized by Nuha Al-Shaar, Kirill Dmitriev and Bilal Orfali.

Date Fruit – a Link between Traditional and Regenerative Medicine

Over the past ten years, the heritage discourse in the Gulf countries has underlined the significance of date fruit in the tradition of the Arab culture as an authentic local resource and as a source for sustaining human life. According to tradition, the Prophet Muhammad broke his fasting by eating dates; a ritual which is still practiced by the majority of Muslims today.
AGYA members Younis Baqi (Chemistry) and Mohamed Abou El-Enein (Health Sciences) are analysing the medical potential of dates for fighting cancer in their Tandem Project 'Investigating the Bioactive Properties of Natural Products of GCC Origin'.

WHY DO SCIENTISTS FROM CHEMISTRY AND HEALTH SCIENCES WORK TOGETHER ON DATES?

Mohamed: As head of clinical development at the Berlin-Brandenburg Center for Regenerative Therapies at Charité Berlin, I am responsible for transforming research findings into clinical applications. My primary interest within the field of regenerative medicine focuses on the clinical translation of cell and gene therapies. I am very interested in how natural bio-products , such as dates, can stimulate cell growth.
Younis is in the process of analysing date extract to determine its medical application in the treatment of diseases such as cancer. This is how dates bring us together.

WHAT ARE THE SPECIAL CHARACTERISTICS OF DATES WITH REGARD TO THEIR MEDICAL APPLICATION?

Younis: The fruit of the date palm possesses high nutritional and therapeutic value, with a significant amount of antioxidant, antibacterial, antifungal, and antiproliferative properties. Antioxidants are also known as 'free radical scavengers'; they are chemical compounds that react with and neutralize free radicals, thus preventing them from causing damage and diseases such as cancer.
To investigate the health-promoting properties of dates, I am currently focusing on the species which is native to Oman: the Omani Elite Variety 'Khalas'. Recently, the Chemistry Department at Sultan Qaboos University, where I work as an assistant professor, has been equipped with a well-advanced natural products isolation and extraction laboratory with which my team and I were able to prepare the natural extracts. The analysis of these extracts is currently being conducted at German universities, since I have always worked in close and productive collaboration with German partners.

DOES THE PERCEPTION OF NATURAL PRODUCTS DIFFER BETWEEN THE ARAB AND GERMAN MEDICAL SYSTEMS?

Mohamed: The use of natural products is considered as part of traditional medicine, also known as 'folk medicine'. In my experience, conventional medicine, which is mostly palliative, is more commonly used in the German society, rather than traditional medical approaches. Although, in the case of everyday diseases such as the common cold, natural remedies and healing herbs are also widely utilised. In Arab countries, both of these concepts of medicine are employed alongside each other; however, with different preferences: traditional medicine is considered a collection of the assembled knowledge of practices that are thousands of years old, some even based on religious beliefs, and it is held in high esteem.

Younis: From the scientific point of view, natural product compounds have been a successful medicinal source for the pharmaceutical industry. Since natural products are naturally biosynthesized, they are found to interact with very crucial biopolymer molecules in the living cells, such as proteins, DNA, and RNA. Drugs target the same molecules. It has been estimated that 62% of all modern drugs originate from natural products, of which 14% either mimic natural products or contain the natural product pharmacophore. The remaining 38% of current drugs are either purely synthesised (27%), or synthesised to mimic a natural product (11%).
The results on cancer research show that dates, with their highly favourable compounds, have great potential for implementation in the field of regenerative medicine. I personally believe that natural products, with their ability to bind cell molecules, will have positive effects on enhancing cell recovery. Let's investigate this potential together and expand our current Tandem Project within AGYA to implement our findings in the area of regenerative medicine.

Younis Baqi is Assistant Professor at the Sultan Qaboos University. His research focuses on the product isolation and synthesis of new organic compounds for development of pharmaceutical products. He is a member of the AGYA Working Groups Arab and German Education, Energy, Water and Environment, Health and Society, and Innovation.

Mohamed Abou El-Enein is Professor and Head of the Clinical Development Platform at Berlin-Brandenburg Center for Regenerative Therapies (BCRT) at Charité University Hospital. He is mainly responsible for transforming research findings of the scientists into clinical applications. He is member in charge of the AGYA Working Group Health and Society.

A review article about this project was published in the journal Frontiers in Plant Sciences in May 2017: Baqi et al. 2017: Date Palm Tree (Phoenix dactylifera L.): Natural Products and Therapeutic Options. In the second quarter of 2017, it was among the top 5% most viewed and downloaded articles in the journal Frontiers in Plant Science.

A Brave New Smart World? The Potential and Limitations of Nano-Technology

Have you ever wondered about the different aspects of our future 'smart world'? Can you imagine how smart cities will change urban life?
AGYA members Kalman Graffi (Computer Sciences) and Ahmed S. G. Khalil (Physics) work together on the potential and limitations of nano-scale device-to-device communication through their joint AGYA Tandem Project 'Egyptian-German Partnership on the Modelling and Simulation of Networked Nano-Scale Devices'.

WHAT ARE THE CURRENT AND FUTURE APPLICATIONS OF NANO-SCALE DEVICE-TO-DEVICE COMMUNICATION?

Kalman: The topic of communication between nano-scale devices presents a wide range of relevance for society, as it has applications in health (inner-body robot swarms), city development (smart cities and smartdust) as well as entertainment and social interaction (wearable computers). In the future, we will have comprehensive computing, where the devices will not be visible but can be found everywhere, for example in our clothes and our furniture.

Ahmed: The future of the health applications envisages having nano-robot swarms in our bodies that will perform monitoring and diagnostic services. Having information from inner-body robot swarms will provide up-to-date information on the conditions of patients, which can be processed and analyzed by doctors or artificial intelligence services across the globe. This will allow for better diagnoses and treatments in the future.

HOW DOES YOUR AGYA TANDEM PROJECT CONTRIBUTE TO THE INNOVATIVE RESEARCH OF NANO-TECHNOLOGY?

Ahmed: In this interdisciplinary project we explore the limitations of physics and computer science and identify the common viable paths to create smart communication networks for nano-scale devices. We achieve this through simulations of device-to-device communication at a swarm level and, in a second step, through the creation of nano-scale devices.

Kalman: Similar to ants, nano-scale communication devices can locally interact with each other. This novel technology helps to build future applications in health and society. What we need to understand today are the manufacturing processes that create nano-scale devices that can communicate, as well as identify, suitable communication protocols. Within our AGYA collaboration, our PhD students from Germany and Egypt engage in exploring the limitations of this technology, combining knowledge from physics and nano-manufacturing as well as from the field of communication networking in computer science.

HOW CAN WE IMAGINE THE APPLICATION OF NANO-TECHNOLOGY IN CITIES AND TOWNS?

Kalman: Just recently, Darmstadt won a competition for becoming Germany's most digital city. It will become an example of how an interconnected environment can benefit society in terms of the economy, traffic, day-to-day life, and health. The city will profit from city-wide free WiFi connection, assistance systems for the elderly who live alone, and smart parking, through which free parking spots can be found more quickly.

Ahmed: Egypt is also planning a new digital capital along the corridor between Cairo and the Red Sea. The new smart capital is planned to serve as a hub for innovation and will be fully connected to a smart transportation network, an ecological waste management system, and sustainable water systems.

CAN YOU STILL IMAGINE SOME LESS POSITIVE PERSPECTIVES ABOUT THE WHOLE DEVELOPMENT?

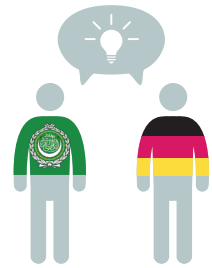
Kalman: Nano-scale devices of course pose many challenges to society in terms of privacy. Smart technology could indeed be used to comprehensively monitor citizens in a 'smart city'. In our research, however, we are still engaged in basic research of local nano-scale communication, and far-removed from dealing with the details of regulating its potential application.

Kalman Graffi was AGYA Co-President 2016-2017. He is Junior Professor and Head of the Laboratory for Technology of Social Networks at the Heinrich Heine University in Düsseldorf. His research focuses on secure and reliable protocols for distributed systems, innovative concepts for social networking, and distributed markets in service-oriented architectures. He is member in charge of the AGYA Working Group Innovation.

Ahmed S. G. Khalil is Associate Professor of Physics and the Director of the Center for Environmental and Smart Technology at Fayoum University in Egypt. His research focuses on the surface and interface engineering of functional devices used for different applications, including solar energy, water desalination, and printed electronics. He is member of the AGYA Working Group Innovation and member in charge of the Energy, Water and Environment group.

AGYA Tandem Projects

In 2016, the German Federal Ministry of Education and Research (BMBF) granted AGYA 4 million Euros in funding to support interdisciplinary AGYA research projects. Along with 36 research projects of the 6 AGYA Working Groups, AGYA members have carried out 67 joint research projects in the format of Tandem Projects. Within this format, one Arab and one German member of AGYA work together on a topic of their shared research interest.



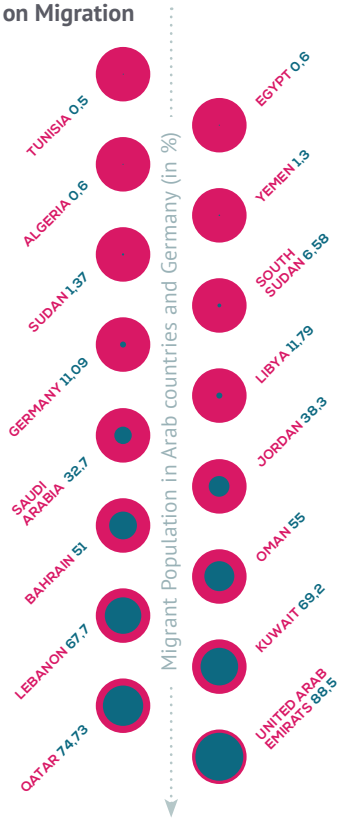
Since 2016, 67 AGYA Tandem Projects have been carried out.

The AGYA Tandem Projects were carried out in 23 countries in the Arab world, Europe and Germany.

AGYA members who engaged in the Tandem Projects contributed expertise from 23 academic disciplines. Most frequently represented are:

5 FACTS YOU CAN LEARN FROM AGYA TANDEM PROJECTS – READ MORE ON AGYA TANDEM PROJECTS ON AGYA.INFO

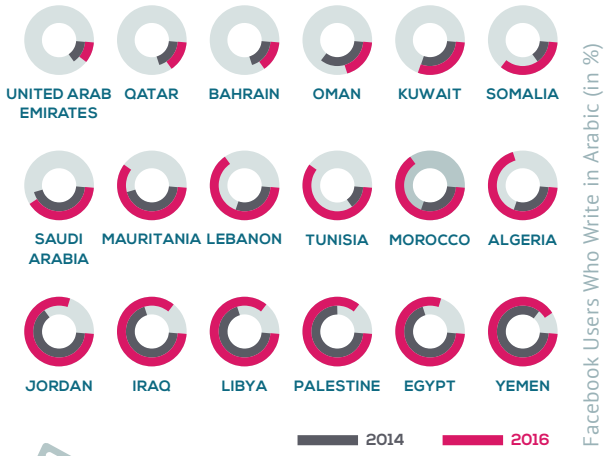
Opening New Perspectives on Migration



AGYA members Tamirace Fakhoury & Jenny Oesterle compared past and present migration movements around the Mediterranean from an Arab-German perspective (also see AGYA's 2016 Policy Report on Migration).

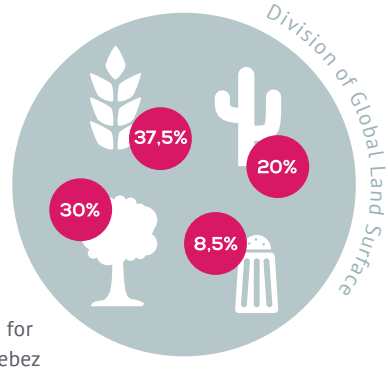
Practicing "Blickwechsel"

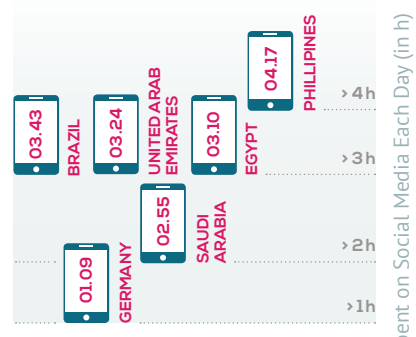
Arabic is becoming increasingly important as a language of everyday communication. The summer school for young Arab and German scholars run by AGYA members Barbara Winckler & Bilal Orfali promoted Arabic as an active academic language. Please also see Bilal Orfali`s working paper (2016) on changes in Arabic language teaching.



What Can Be Done with Saline Soil?

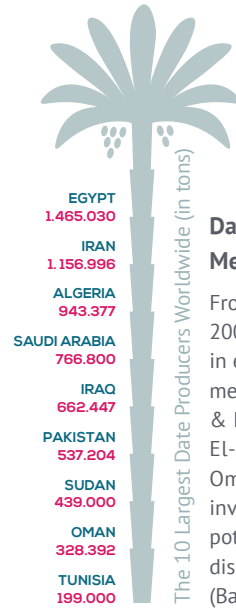
AGYA members Ahmed Debez & Skander Elleuche, together with Jan Friesen and Carsten Montzka, investigated the use of salt-tolerant plants for energy production (Debez et al. 2017).





"Dynamics of Change" in Communication

AGYA members Hanan Badr & Carola Richter explored the spaces and actors involved in transforming communication and media systems ("Dynamics of Change" Conference Report 2017).



Dates as Medicine?

From the more than 2000 date variations in existence, AGYA members Younis Baqi & Mohamed Abou El-Enein chose an Omani date fruit to investigate its medical potential for fighting diseases such as cancer (Baqi et al. 2017).

Sources quoted: You may find Orfali's working paper as well as the policy and conference reports on the AGYA website: www.agya.info | www.ArabSocialMediaReport.com
Baqi et al. 2017: Date Palm Tree (Phoenix dactylifera L.): Natural Products and Therapeutic Options. In: Frontiers in Plant Sciences. 8:845. | Debez et al. 2017: Facing the challenge of sustainable bioenergy production: Could halophytes be part of the solution?. In: Journal of Biological Engineering. 11:27.

Egyptian Minister of Higher Education and Scientific Research visits AGYA

The Egyptian Minister of Higher Education and Scientific Research, Prof. Dr. Khaled Abdel Ghaffar, visited the Arab-German Young Academy of Sciences and Humanities (AGYA) on the occasion of his official stay in Germany. In a solemn AGYA event, a Memorandum of Understanding between the Arab-German Young Academy of Sciences and Humanities and the Egyptian Academy of Scientific Research & Technology (ASRT) was signed. This agreement seeks as a concrete step to establish an AGYA regional office at the Egyptian Academy ASRT in Cairo.

(Sitting, from left to right): Prof. Dr. Verena Lepper, AGYA Principal Investigator (PI), Prof. Dr. Martin Grötschel, President of the Berlin-Brandenburg Academy of Sciences and Humanities (BBAW) and Co-Chair of the AGYA Advisory Board, Prof. Dr. Mahmoud Sakr, President of the Academy of Scientific Research & Technology (ASRT) and Member of the AGYA Advisory Board. Standing: Prof. Dr. Khaled Abdel Ghaffar, Minister of Higher Education and Scientific Research of the Arab Republic of Egypt

Latest News

11 excellent scholars were selected in 2017 following a public call for AGYA membership: **Nadine Abdalla** (Egypt, Political Science), **Nageh Allam** (Egypt, Physics), **Jan Busse** (Germany, Political Science) **Djamel Djenouri** (Algeria, Computer Science and Engineering), **Christian Fron** (Germany, Ancient History), **Ahmed N. Hegazy** (Germany, Medicine), **Zeina Hobaika** (Lebanon, Biochemistry), **Beate Ulrike La Sala** (Germany, Philosophy), **Dominik L. Michels** (Saudi Arabia, Computer Science & Mathematics), **Maha Nasr** (Egypt, Pharmaceutics), **Marc Ringel** (Germany, Political Economy). The new members will be officially inaugurated at the AGYA Annual Conference in Amman in October 2017.

Upcoming events

31 October – 3 November 2017
Rabat, Morocco
Workshop: 'Nano-Technology Applications in Energy, Environment and Health: Benefits and Potential Risks', AGYA Working Group Energy, Water and Environment

6-10 November 2017
Hamburg, Germany
Maker-Workshop, 'Make a Difference!' AGYA Working Group Innovation

12-15 November 2017
Ras Al-Khaimah, UAE
AGYA at the Forum: 'Entrepreneurship and Innovation Challenges in the 21st Century', Tandem Project of Laila Prager & Ahmad Sakhrieh

23-26 November 2017
Doha, Qatar
Second AGYA Math Olympiad Camp, AGYA Working Group Arab and German Education

24-26 November 2017
Tunis, Tunisia
Conference: 'Media Transitions and Cultural Debates in Arab Societies: Transhistorical Perspectives on the Impact of Communication Technologies', AGYA Working Group Common Heritage and Common Challenges

3-10 December 2017
Ulm, Germany
Intensive Practical Training Course on the Fabrication of Electronic and Optoelectronic Devices, AGYA Working Group Energy, Water and Environment

4-9 December 2017
Khartoum, Sudan
Workshop: 'Application of Multi-Analytical Techniques for the Characterisation of Archaeological Materials from Archaeological Sites in Sudan – Part II El-Khandaq', Tandem Project of Abdalla Elbashir & Verena Lepper

6-10 December 2017
Brussels, Belgium
Workshop: 'The European Union and the Arab World: Current Challenges for Cooperation', AGYA Working Group Transformation

7-13 December 2017
Sicily, Italy
Workshop and Qualitative Interviews: 'Discovering Common Roots: Sicily and the Mediterranean, a History of Pluralistic Traditions', AGYA Tandem Projects of Nuha Al-Shaar, Oliver Korn, Norman Domeier & Ammar Abdulrahman

12 December 2017 – May 2018
Göttingen, Tübingen, & Berlin, Germany
Exhibition: 'Flight and Migration in the Paintings of Syrian Artists', AGYA Tandem Projects of Jens Scheiner, Fatima Kastner, Nuha Al-Shaar & Ammar Abdulrahman

15-18 December 2017
Tunis, Tunisia
Workshop: 'Precision Engineering of the Genome – Ethical Perspectives in Societies with Islamic and Christian Heritage', Tandem Project of Salma Balazadeh & Henda Mahmoudi

16-21 December 2017
Berlin, Germany
Workshop: 'The Role of Science Journalism in Societies: Arab-German Perspectives', AGYA Working Group Health and Society

26 January 2018
Berlin, Germany
Launch of the first AGYA Science Comic: 'Picture it! The Potential of Halophytes in Bioenergy Production', AGYA Tandem Project of Ahmed Debez & Jan Friesen

About Us

The Arab-German Young Academy of Sciences and Humanities (AGYA) was established in 2013 at the Berlin-Brandenburg Academy of Sciences and Humanities as the first bilateral young academy worldwide. AGYA promotes research collaboration among outstanding early-career researchers (3-10 years post-PhD) from all disciplines who are affiliated with a research institution in Germany or any Arab country. The academy provides partnership-building opportunities and funding to support the innovative projects of its members in various fields of research as well as in science policy and education. Four public Calls for Membership have been issued to date, which addressed excellent early-career scholars from various disciplines who are based in the 22 Arab countries or in Germany. From among hundreds of applicants, 66 members – in an equal proportion of Arab and German scholars – have been selected to join AGYA.

AGYA

at the Berlin-Brandenburg Academy of Sciences and Humanities
Jägerstr. 22-23
10117 Berlin/Germany
+49 30 20 370 281
agya@bbaw.de

www.agya.info
Twitter: @AGYA_events
Facebook: www.facebook.com/agya.info

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