“The study of science, technology, engineering and mathematics (STEM) is vital for all nations and is especially critical for women from developing and emerging economies. The Schlumberger Foundation is committed to gender parity in science and recognizes that full access to and participation in a STEM curriculum is essential for the empowerment of girls and women.”

Ms. Roseline Chapel
President,
Schlumberger Foundation
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Introduction

Word from the President

In 2019 the Schlumberger Foundation continued with its flagship Faculty for the Future program focused on advanced academic research in science, technology, engineering, and mathematics (STEM) for women scientists from developing countries and emerging economies where they are still largely underrepresented.

These talented women in STEM gain admission to PhD and Post-Doctoral research programs in top international institutes around the world. During their study period abroad, they acquire not only a strong set of technical skills but also the soft skills needed to build up confidence in their own abilities. Through their immersion in world class scientific research institutes they establish lasting relationships and collaboration with academics and fellow scientists. Once back in their home institutions, their heightened visibility makes them shining examples for other girls and women questioning their own entitlement to science education.

Gender parity, both in STEM education and STEM vocations, is essential for innovative capacity and competitiveness everywhere in the world. This is even more true for developing countries where the number of women in STEM education and STEM-related jobs remains alarmingly low.

The Schlumberger Foundation is committed to gender-parity in science and recognizes that full access to and participation in a STEM curriculum is essential for the empowerment of girls and women. Recognizing that many eligible countries are not yet fully represented in the Faculty for the Future community, a specific multi-year focus has begun this year to identify reasons for this under-representation and to deploy further initiatives to reach out to the prominent universities in these countries to ensure that this program is known and accessible to its potential beneficiaries.

In addition, following the successful pilot last year in Nigeria, the decision was made to continue with Country Focus visits by the Schlumberger Foundation. These Country Focus visits allow motivated Alumnae back home to join forces with governmental and non-governmental organizations to discuss and implement concrete actions that will bring about changes for women in STEM in their home institutions, as well as at community and country level.

The main research disciplines of the 2019 cohort of new Fellows include chemistry, biological sciences, pharmacy, engineering, computer science and agricultural sciences. The research proposals selected reflect the regional challenges of the awardees and demonstrate the determination of these scientists to improve conditions in their native regions through science. STEM education is an essential factor in enabling and empowering these women to fulfill their potential, ultimately permitting them to address the changes that are needed in economic and social spheres, while at the same time rebalancing the gender gap in science education and careers in their home countries. We look forward to accompanying them on their journey.
Financial Overview
Financial Overview

In 2019, the Schlumberger Foundation continued with its flagship Faculty for the Future program focused on advanced academic research in STEM disciplines for women scientists from the developing world. The key goal of the program focuses on reducing the gender gap in STEM education by breaking down the economic barrier that prevents women from achieving their educational aspirations.

For the 2019-2020 academic year, a total of 38 new fellows were selected in 2019 bringing the total population receiving financial support from this program to 720 female scientists from 80 developing countries, studying in 30 host countries around the world.

The total of 38 new grants awarded in March 2019 represents a decrease of 31% YoY. The 93 renewed grants awarded represents a 20% decrease YoY. Grant spend decreased by 16% YoY reaching $4.9M (vs $5.7M last year). 68% of the total grant spend in 2019 was disbursed to grantees studying in the United Kingdom and the United States: $2M and $1.3M respectively (vs $3M and $1.8M last year). The remainder was disbursed to grantees enrolled at universities in Australia, Canada, Europe, New Zealand and South Africa.

For the 2020-2021 academic year, the Faculty for the Future program continued to attract high quality applications in 2019. 842 new applications were submitted (vs 526 in 2018) representing a 60% increase compared to last year. This is in part as a result of a focused call for applications campaign targeting developing countries currently under-represented by this program. In addition, a total of 100 renewal applications were submitted marking a 18% decrease from the previous year. This reduction reflects the end of the wave of renewals from peak numbers of new grants attributed in 2015.
Faculty for the Future Program

Recipients of the 720 Faculty for the Future Fellowships awarded to date come from developing and emerging economies representing most of the world’s continents. They have benefitted from attending leading research institutes in 30 host countries around the world.

In 2019, the choice of research projects focused on core scientific domains in physics, chemistry and mathematics. Many other fields such as civil & environmental engineering, agriculture, bioengineering, environmental sciences, computer engineering, hydrology, nutrition and medicine were also in evidence as many research projects directly focused on home country related issues.
THE FACULTY FOR THE FUTURE PROGRAM IN 2019:
CITIZENSHIP AND COUNTRY OF STUDY
720 FELLOWS FROM 80 COUNTRIES STUDYING IN 30 HOST COUNTRIES

AMERICAS
- United States: 244
- Canada: 31
- Mexico: 1 / 13
- Brazil: 16
- Colombia: 16
- Peru: 7
- Ecuador: 4
- Argentina: 3
- Guatemala: 3
- Guyana: 3
- Nicaragua: 3
- Bolivia: 2
- Costa Rica: 2
- Venezuela: 2

ASIA
- Japan: 13
- South Korea: 3 / 1
- Indonesia: 2 / 39
- Malaysia: 2 / 4
- China: 1 / 31
- Singapore: 1
- India: 77
- Pakistan: 55
- Bangladesh: 18
- Nepal: 13
- Vietnam: 13
- Philippines: 9
- Sri Lanka: 5
- Thailand: 4
- Myanmar: 3
- Cambodia: 2
- Mongolia: 2
- Afghanistan: 1
- Armenia: 1
- Bhutan: 1
- Kyrgyzstan: 1

EUROPE
- United Kingdom: 215
- Germany: 36
- Netherlands: 28
- France: 12
- Belgium: 11
- Sweden: 7
- Finland: 6
- Spain: 5
- Italy: 3
- Ireland: 3
- Austria: 2
- Denmark: 2
- Norway: 2
- Poland: 1
- Portugal: 1
- Russia: 1 / 4
- Switzerland: 1
- Ukraine: 2

AFRICA
- South Africa: 49 / 5
- Kenya: 1 / 25
- Nigeria: 101
- Ghana: 22
- Egypt: 21
- Tunisia: 15
- Sudan: 14
- Uganda: 14
- Ethiopia: 11
- Zambia: 8
- Cameroon: 7
- Madagascar: 6
- Malawi: 5
- Algeria: 4
- Benin: 4
- Lesotho: 4
- Namibia: 4
- Rwanda: 4
- Botswana: 2
- Libya: 2
- Mozambique: 2
- Sierra Leone: 2
- Liberia: 1

MIDDLE EAST
- Iran: 11
- Turkey: 11
- Palestinian Territory: 8
- Iraq: 6
- Jordan: 4
- Syria: 2
- Kuwait: 1
- Lebanon: 1
- Oman: 1
- Yemen: 1

OCEANIA
- Australia: 32
- New Zealand: 4
- Papua New Guinea: 3
- Fiji: 1

“Fellows” refers to current and former grantees of the program.
THE FACULTY FOR THE FUTURE PROGRAM IN 2019: HOST UNIVERSITIES

The Faculty for the Future Program in 2019 hosted fellows from 80 countries, studying at 30 host countries.

**United States**
- Boston College
- Brandeis University
- Colorado School of Mines, Golden
- Drexel University
- George Mason University
- Lawrence Berkeley National Laboratory
- Missouri Univ. of Science and Tech.
- Montana State University
- National Institutes of Health
- New Jersey Institute of Technology
- Ohio University
- Scripps Research Institute
- State University of New York, Buffalo
- Tennessee Technological University
- The University of Tennessee
- University of California at Los Angeles
- University of Chicago
- University of Houston
- University of Illinois at Chicago
- University of Kansas
- University of Massachusetts
- University of Miami
- University of Nebraska-Lincoln
- Univ. of North Carolina at Charlotte
- University of Texas at San Antonio
- University of Utah
- University of Washington

**United Kingdom**
- University of Cambridge
- University of Nottingham
- Imperial College, London
- University of Manchester
- University of London
- University College London
- University of Southampton
- University of Bath
- University of Leeds
- University of Strathclyde
- Lancaster University
- King’s College London
- Newcastle University
- University of Reading
- University of Surrey
- University of York
- University of Edinburgh
- University of Birmingham
- University of Bradford
- University of Huddersfield
- University of Hull
- University of Lancaster
- University of Stirling
- Aston University
- Bangor University
- Cranfield University
- Durham University
- Keele University
- Manchester Metropolitan University
- Northumbria University
- Plymouth University
- St. George’s University of London
- University of Essex
- University of Exeter
- University of Greenwich
- University of Liverpool
- University of London, Royal Holloway
- University of Portsmouth
- University of Roehampton

**Germany**
- University of Bonn
- University of Ulm
- Hamburger University of Technology
- Heinrich Heine University of Düsseldorf
- Jacobs University, Bremen
- Saarland University
- Technische Universität Berlin
- University of Leipzig
- Carl von Ossietzky University
- Centre for Solar Energy and Hydrogen Research
- Chemnitz University of Technology
- Darmstadt University of Technology
- Europa University Flensburg
- Free University of Berlin
- Geomar - Helmholtz Centre for Ocean Research
- Humboldt University of Berlin
- Ruprecht Karls Universität Heidelberg
- Technical University of Dortmund
- Technische Universität Hamburg
- Technische Universität Ilmenau
- Technische Universität München
- University of Kassel
- University of Konstanz

**Australia**
- University of Queensland
- James Cook University
- Queensland University of Technology
- University of Sydney
- University of Canberra
- University of Technology Sydney
- University of Melbourne
- Australian National University
- Curtin University
- Finders University, Adelaide
- Monash University
- Murdoch University, Perth
- University of Adelaide
- University of New South Wales
- University of South Australia
- University of Western Australia, Perth

**Canada**
- University of British Columbia
- University of Victoria
- University of Waterloo
- McGill University
- McMaster University
- University of Alberta
- University of Victoria
- Carleton University
- Ecole Polytechnique de Montréal
- Institut Nat. de la Recherche Scientifique
- University of the West of England

**South Africa**
- University of Cape Town
- Stellenbosch University
- University of the Witwatersrand
- University of Pretoria
- Rhodes University
- Tshwane University of Technology
- Nelson Mandela Metropolitan University
- University of Johannesburg
- University of KwaZulu-Natal
- University of the Western Cape

**New Zealand**
- University of Auckland
- Victoria University of Wellington
- Otago University
- Massey University
- University of Auckland
- University of Waikato
- University of Canterbury
- Lincoln University
- Massey University

**Japan**
- Kyoto University
- Kyushu University, Fukuoka
- Tokyo Institute of Technology
- Chiba University
- Hokkaido University
- Keio University, Tokyo
- Niigata University
- Tokyo University of Agriculture & Tech.

**Italy**
- Politecnico University of Milan
- University of Pisa

**Korea (Republic of, South Korea)**
- Ewha Womans University, Seoul
- Gwangju Institute of Science and Tech.
- Seoul National University

**Austria**
- University of Natural Resources and Life Sciences
- Vienna University of Technology

**Denmark**
- Technical University of Denmark
- University of Copenhagen

**Indonesia**
- Queensland University of Technology
- Telkom Institute of Technology

**Malaysia**
- Universiti Teknologi Mara
- Technological University of Malaysia

**Norway**
- Norwegian University of Life Sciences
- Norwegian Univ. of Science and Tech.

**China**
- China Univ. of Petroleum, Dongying

**Kenya**
- Jomo Kenyatta University of Agriculture and Technology

**Spain**
- Polytechnic University of Valencia
- University of Barcelona

**Mexico**
- National Autonomous University of Mexico

**Poland**
- University of Warsaw

**Portugal**
- University of Lisbon

**Russian Federation**
- Moscow Institute of Physics and Tech.

**Singapore**
- National University of Singapore

**Switzerland**
- Swiss Federal Institute of Aquatic Science and Technology
Regional Forums in 2019

Developing women leaders in science, technology, engineering and mathematics

Since the program was launched in 2004, the Schlumberger Foundation has hosted 20 in-person gatherings for Faculty for the Future Fellows to help nurture an international community of women leaders in STEM. The meetings are hosted yearly in association with prominent universities where Fellows (current grantees) are pursuing their studies and bring together both current grantees and Alumnae of the program. These events help to create a sense of community, where friendships and collaborations are forged and networking with well-known scientists and other accomplished leaders is facilitated.

Forums in the past have been held in the United Kingdom (London and Cambridge), in France (Paris and Clamart), in the United States (New York, Cambridge and Boston), the United Arab Emirates (Abu Dhabi), Indonesia (Bandung) and Cape Town (South Africa).

In 2019, a four-day Forum was held in Cambridge, in the United Kingdom for Fellows of the program who are currently studying in Europe as well as Alumnae who have returned to their home countries. 60 attendees gathered together to meet and exchange with each other, learn new skills and gain a heightened awareness of their own latent power and ability to become influential back in their home countries. Through learning sessions, panel discussions and breakout meetings, participants heard from leaders in STEM on topics such as overcoming obstacles that are preventing women from pursuing these fields, how to maintain physical, mental and emotional health as a woman in STEM, as well as looking at ways on how to support the up and coming generation of young women in STEM.

Speaking about these events, the Schlumberger Foundation President, Roseline Chapel, noted that “through the Faculty for the Future Forums, our goal is to reinforce the notion that each of these women has the power and the potential to change the world through and beyond their own actions. Not only do Fellows and Alumnae bring innovation and knowledge to resolve world challenges, they are a source of powerful inspiration for generations of women and girls who are incited to follow their example and pursue a path in science.”

The goal is to create a community of women leaders in STEM who will support the socio-economic development of their native regions by strengthening the faculties in their home universities. This is done through teaching and conducting research into relevant local challenges; inspiring other young women to pursue STEM careers; and using their own scientific expertise to influence policy making and catalyze socio-economic development both locally and internationally.
Country Focus Visit 2019
Pakistan

Following a successful week-long country focus event held in September last year with Alumnae in Nigeria, a similar event was held in November 2019, in Pakistan. The purpose of these country focus visits are twofold: firstly, to determine if the Faculty of the Future program, 15 years after its inception, is achieving its core mission of reducing the gender gap in STEM in developing and emerging economies; and, secondly, to find out what can be done to help Alumnae if this mission is being challenged.

Board members, together with the President as well as the Communications Manager of the Schlumberger Foundation, organized a week-long visit to Pakistan where a high number of Alumnae have graduated and returned. The main objectives of this visit were to firstly connect the FFTF Alumnae with each other and their university management, then with governmental and non-governmental bodies to help initiate and support further in-country actions aiming at gender parity in STEM.

Several meetings were set up with local universities, research centers, government bodies, including high level representatives from the National Commission on the Status of Women, as well as representatives from NGOs.

Information was gathered on concrete ways that the Schlumberger Foundation can build on the increasing momentum of the Faculty for the Future program to help leverage the recently acquired skillsets of these women. Workshops were held throughout the week with diverse stakeholders to examine various ways to encourage change in local communities and help stimulate reflection on the education choices available to girls and women from an early age which would ultimately lead to increased gender parity in STEM disciplines and careers.

Three themes were retained following team workshops held with the Alumnae throughout the week: i) Policy making in relation to family-friendly initiatives; ii) Skills Development for Women in Academia; iii) Industry need/Research Portal for Women. These themes will be explored by different workgroups over the coming months to find possible solutions or successful inroads at least, to finding a way forward.

The response and feedback from this visit have been encouraging. With continued input and guidance from the Schlumberger Foundation, this determined, focused cohort of Alumnae back in Pakistan are collaborating with each other to seek tangible ways to incite more girls and women to choose science as their preferred path.

The lessons learned from the focused country visits to Nigeria and Pakistan will be passed onto other countries where a critical mass of Alumnae have returned to help them keep up the momentum of the step-by-step change that is needed in their home faculties and local communities to encourage girls and women to enroll in STEM subjects and ultimately find employment in a STEM field to help themselves and their countries develop and grow.
Role Models in STEM

This section looks at some of the positive impacts that the advanced research projects of a selection of Fellows of the Faculty for the Future program will have on their home country or region. In addition, these scientists have each in their own way become influential role models and mentors for other girls and women by demonstrating that real-world issues can be solved through science and technology to improve the lives and living conditions of people not only in their home regions, but on a global scale as well.
Taghried Isam Mohammed
ABDEL-MAGID
Sustainable Construction Materials for Low-Cost Housing

Taghried Isam Mohammed Abdel-Magid was born in Khartoum, the capital of Sudan. Taghried studied at the University of Khartoum where she obtained a BSc in Civil Engineering, later followed by an MSc in Structural Engineering in 2012. Since 2013, she has held a position as lecturer at the School of Civil Engineering of the Sudan University of Science and Technology (SUST) in Khartoum.

Taghried was raised in a home surrounded by books. Her passion and zeal for exploring, studying, searching and analyzing were nurtured by her parents from an early age. Particularly drawn to the field of material sciences, her research at SUST focused on construction materials. She published and contributed to conferences with seven research papers before embarking on her PhD in 2018 at the University of Bath in the United Kingdom. Her research work in the Faculty for Civil Engineering focuses on sustainable construction materials in line with the UN Sustainable Development Goals (SDGs) and her own vision of Sudan in 2030. This involves the identification of renewable natural materials as an alternative to cement, bricks, and steel in the construction industry, as these industries are major contributors to greenhouse gas emissions. Such sustainable materials should undergo strict minimum levels of processing while maintaining focus on functionality, durability and a safe living environment.

Sudan is a country rich in natural resources such as sorghum, sesame, groundnut, millet, cotton, and sugarcane crops. Cultivation of these agro-industrial materials produces high volumes of residues that are commonly discarded by open burning. In a circular economy pattern, Taghried is studying the potential use of these wastes in the production of sustainable construction materials for low-cost housing in developing countries. By so doing, she is also addressing UN SDGs Nos. 3, 9, 11, 12, and 13 with one sweep! She is assessing the strength, durability and life cycle of these construction materials in comparison to conventional ones. Through this research work her central goal is to reach low-income families in Sudan. She hopes that the fruit of her findings can be easily adapted and used on readily available materials by local communities with a minimum of training and instruction. If successful, such an outcome would lead to larger numbers of low-cost sustainable housing zones. Ultimately it is expected that her results can be applied to several geographical contexts and settings and provide solid support for further research in the domain of sustainable and low-cost housing worldwide.

There are, however, other hurdles to overcome before such a project as this is fully operational. Taghried knows that her research needs the backing of the appropriate regulatory bodies for it to be successfully implemented. Hence, she is planning to address the legislative bodies in Sudan and arrange to bring them into the folds of research and academia. This way, she can steadily bring together a community of people working together to transform the findings of her PhD into the long-cherished reality of serving the communities for which her research was designed.

After completion of her PhD, Taghried intends to return to her academic-research-community-service employment at SUST and work as a consultant engineer. Ultimately, her aim is to encourage more women in her country to become professional engineers. To this end, she is planning to foster a platform that will attract women and juniors’ participation in conferences, workshops, school development programs, etc. focused on science and engineering themes. Taghried firmly believes that education is the path that turns ‘developing’ into ‘developed’, it is this path that she is on right now and it is the one that she intends to follow for the full duration of her career as a Civil Engineer.
María Eugenia (Maru) Castellanos Reynosa was born and raised in Guatemala City, the capital and largest city of Guatemala, Central America. Her interest in science was sparked by her parents, who bought her a chemistry set that unfortunately led to a memorable explosion and a lot of mess around her family house!

Maru obtained a BSc in Biological Chemistry from Universidad de San Carlos de Guatemala in 2005 and then worked at a local tuberculosis laboratory, which increased her awareness of the lack of resources in her country’s health system, resulting in many people dying from preventable and treatable diseases. In 2008, she completed an MSc in Medical Microbiology from the School of Tropical Medicine at Liverpool University, in the United Kingdom, supported by the Japan-Inter-American Development Bank scholarship program.

Returning to her hometown, Maru accepted a position at the Universidad del Valle de Guatemala teaching and working as a research assistant in the Malaria and Vector Biology Unit of the university’s Center for Health Studies.

In 2014, Maru went to the U.S. supported by a Fulbright fellowship and a desire to pursue a doctoral degree at the Department of Epidemiology and Biostatistics under the mentorship of Dr. Christopher Whalen, Ernest Corn Professor of Infectious Disease Epidemiology at the University of Georgia’s College of Public Health. Between 2016-2019, her doctoral studies were funded by the Schlumberger Foundation Faculty for the Future Fellowship and, more recently, by the UGA Graduate School. The goal of her dissertation has been to further the understanding of the factors contributing to the incidence of tuberculosis in low-income settings in order to advise policy measures to prevent tuberculosis transmission. Her research focused on two countries: Uganda and Guatemala. Maru has been awarded the 2019 Outstanding Epidemiology PhD student Award from the UGA College of Public Health.

Following completion of her PhD, Maru has accepted a position as a postdoctoral research associate at the Global Health Institute at University of Georgia. This work will focus on mapping the spread of tuberculosis using advanced technologies, including Geographical Information Systems and network analysis. Besides her work in tuberculosis transmission in Uganda, Maru continues to interact with her Guatemalan collaborators and partners on infectious diseases research in the country. One of the projects evaluates the durability of long-lasting insecticidal nets in Guatemala and is the first of its kind in Latin America. It will provide critical information to the health officers of Guatemala on how to implement future evaluations and highlights the importance of the engagement of the National Malaria Program with the community.

In addition to her position at UGA, she holds a position as Lecturer in the online graduate course ‘Epidemiological Research Methods’ for students of the Master course on Epidemiology at the Universidad del Valle de Guatemala. She has provided mentorship and supervision to over 30 graduate students from Guatemala, Honduras, El Salvador, Panama, Dominican Republic, and Belize. She serves as advisor for the thesis of selected MSc students studying infectious diseases. Maru’s overall mentorship goal is to contribute to her advisee’s research visibility by encouraging them to publish in peer-reviewed journals. This will help to address the lack of research publications from Guatemala in the international scientific community.

Maru’s passion and long-term commitment is to advance the field of infectious disease epidemiology in the tropics using her skills as a medical microbiologist and epidemiologist. She intends to continue mentoring the new generation of epidemiologists and public health officers of Guatemala and the Central and Caribbean regions that will base their decisions and interventions on epidemiological principles. She plans to continue expanding her research activities on malaria and tuberculosis in Guatemala and other tropical regions with national and international collaborations in order to advance the prevention, control and management of malaria, tuberculosis and other infectious diseases.
Marwa ELAMIN
“A Daughter of Dreams” – Focusing on Science

Marwa Elamin was born in Jeddah, Saudi Arabia and moved back to her home country in Sudan when she was twelve years old. In 2012, Marwa obtained an MBBS in Medicine and Surgery from the University of Gazira, Sudan. She worked in a variety of hospital departments to understand different medical specialties before settling on neuroscience as her chosen career path. She could not find any suitable graduate programs in sub-Saharan Africa or the Middle East so moved to the University of Hartford, Connecticut, in the United States, where in 2017 she gained an MSc in Neuroscience, graduating at the top of her class and receiving several awards during her studies.

During her MSc research, Marwa found that there is evidence that a ketogenic diet (often called the Atkins diet) may be beneficial in treating epilepsy and Alzheimer’s disease. Her current PhD research at the University of Hartford focuses on understanding how this diet works on a cellular level, utilizing neurons derived from epileptic children to apply ketone bodies while recording neuronal activity via state-of-the-art electrical equipment. The study is also collecting neuronal cells and measuring changes in genetics, activity, and protein levels in these cells. Elucidating the molecular pathways through which a ketogenic diet works may provide alternative treatment options that will target pathways to alleviate the necessity to undergo this restricted dietary regime.

In recent times, Sudan has been undergoing a vast, constructive and positive transition, which has opened doors for reforms to occur in political, social, and academic institutions, including efforts to build and strengthen many STEM-related fields in the country. Marwa, in her own unique and original style, has been involved in these transitional changes that have been sweeping through Sudan by writing poetry to document major events taking place while encouraging people to defend freedom, peace, and justice. Marwa’s poems have been featured nationwide on mainstream news media in Sudan.

A staunch advocate for women’s rights and education, writing weekly articles in a leading Sudanese newspaper, Marwa now has tens of thousands of followers on her social media accounts. She has today become one of the most influential young women in Sudan. “I feel honored and privileged to be in a position where I can contribute to positive change in my country” says Marwa. However, she explains that “being an activist and a social media influencer is great, but Sudan lacks successful women scientists as well. This is why focusing on science and research will always be my number one priority.”

To this end, Marwa has leveraged her influence on social media to engage people in science-related activities. For example, she is actively sharing her PhD experience on social media. She has recently started a new trend where people ask her science-related questions and she answers by making a video on the topic. Tens of thousands of people watch these videos, and as a result, she gets lots of questions about neuroscience and how to become a successful scientist. Girls of all ages are sending her positive messages and telling her how she has become their role model. This is clearly something that Marwa holds dear to her heart: “I am committed to promoting and creating an environment in Sudan where women have equal opportunities to grow and succeed in science and other academic fields, and I hope to continue to be an inspiration for young girls and women to join science-related fields”, she says.

After her PhD studies Marwa plans to return to teaching at the University of Gazira to continue her research on epilepsy, and ultimately become a professor. Her longer-term plan is to establish a ketogenic therapy center that will help in the management of epilepsy in her country using lower cost therapies.
Salam MALOUL

Sunlight-Driven Energy Systems

Salam Maloul was born and raised in Selat Al-Daher, a town in the north region of West Bank, Palestine. She comes from a large family of 5 girls and 2 boys and she attended a local school in her town. Living in a war zone, her childhood experience was difficult as she had to cope daily with the constraints and uncertainty generated by these circumstances.

Salam attended Birzeit University (BZU), in Ramallah, where in 2011 she earned a BSc in Chemistry. After graduation she moved to Germany to study at Ulm University where she obtained an MSc in Materials Science and Engineering. Since 2014, she has worked as a faculty member at her home university (BZU).

In 2017, she embarked upon an ambitious PhD journey, again at Ulm University, joining the research group of Professor Carsten Streb which focuses on the development of energy conversion materials for decentralized energy systems (solar and hydro). Salam received a financial fellowship from the German Academic Exchange Service (DAAD) in addition to supplementary financial support from the Faculty for the Future program for her PhD program.

Salam's research is currently focusing on solar energy conversion and solar hydrogen production to develop new systems which are cheap and highly reactive. The search for clean energy sources and systems are of great value to humanity and the environment. The development of sunlight-driven systems which allow the production of hydrogen by photocatalytic water splitting is currently a critical research topic. Her project specifically focuses on the synthesis and characterization of new covalent photosensitizer-catalyst dyads. She will test the reactivity of the synthesized dyads for the hydrogen evolution reaction (HER) using visible light.

This PhD is a key opportunity for Salam to expand her knowledge and expertise in areas which are highly relevant for future global technological developments related to solar energy conversion, molecular materials design and chemical synthesis and analysis. Upon completion of her PhD, she will go back to Birzeit University to resume her position as a faculty member where she expects that her newly acquired technical knowledge and skills will contribute to the successful future of her work.

In addition, she will continue investing time in encouraging high school students to visit Birzeit University, introducing them to the laboratories there and allowing them to perform some amusing experiments. Salam says, “I think it is really important to encourage students at an early age to become interested in science through fun activities. It is crucial to remove the mystery around scientific pursuits and demonstrate that science is accessible to anyone who cares to try!”