

A documentary film from
THE WORLD ACADEMY OF SCIENCES

twas

SCIENCE IN EXILE

Director: **Nicole Leghissa**

Four researchers,
in flight from war.
They dream of science
in a time of peace.

 **Sida**
Swedish International Development
Cooperation Agency

 **FONDO
AUDIOVISIVO
FVG**

 **RICHARD
LOUNSBURY
FOUNDATION**

HYPHAE


Crew

directed by **NICOLE LEGHISSA**
produced by **EDWARD LEMPINEN**
cinematography by **NICOLE LEGHISSA** and **IVAN GERGOLET**
edited by **IVAN GERGOLET**
original music by **HAVIR GERGOLET**

Featuring

GHANYA NAJI AL-NAQEB (Yemen-Sudan), Nutritional scientist
AHMAD SADIDDIN (Syria-Italy), Economist, agriculture and development
ZAID ALHAJJAJ (Iraq-Germany), PhD candidate in pharmaceutical biotechnology
SAJA TAHA AL ZOUBI (Syria-Lebanon), Economist, agriculture and gender

and

ALLAN E. GOODMAN, President and CEO, Institute of International Education (IIE), USA
ULRIKE ALBRECHT, Head of Strategy and External Relations, Alexander von Humboldt Foundation, Germany
MUSTAPHA JAZAR, Founder and President, Lebanese Association for Scientific Research (LASeR)
STEPHEN WORDSWORTH, Executive Director, Council for At-Risk Academics (CARA), UK
KARLY KEHOE, Historian, Global Young Academy, Saint Mary's University, Canada



“Science in Exile”: Synopsis

They are scientists in developing countries, committed to a life of research. Focused on fields ranging from agriculture to climate change and medical care to economics, they are pursuing discoveries and innovations that will improve life for the people in their countries, and their regions. But then comes a conflict, a war. Universities are bombed. Colleagues disappear, or are killed. And those who remain – what should they do? where should they go?

“Science in Exile” explores how recent violence in Syria, Yemen and Iraq has threatened the lives of four researchers, forcing them to suspend their work and flee their homelands. The same decision has confronted uncounted thousands of their colleagues globally – scientists, engineers, doctors and medical researchers, advanced science students.

“Science in Exile” challenges the common stereotypes of refugees from a war-ravaged region. It finds women and men with years of training and experience who are struggling to find a place in new lands – a safe place where they can continue their research and make a scientific contribution.



Tasnim News | CC-BY-SA-4.0

SCREENINGS: Science in Exile is available without charge for screenings at your institution or event. Please visit <https://twas.org/science-exile>.

A Global Context

Driven by civil conflicts and war, millions of people in recent years have left their homes in such countries as Syria, Afghanistan, Iraq and Yemen. In news coverage, they are often portrayed in starkly negative terms, and as they arrive in their new countries, they are often met with opposition, hostility and xenophobia.

The World Academy of Sciences (TWAS), based in Trieste, Italy, works to build scientific capacity in the developing world. As this historic migration unfolded, TWAS began to hear troubling stories from scientists in the region – laboratories damaged, universities closed, colleagues disappeared or killed. These stories in some cases came from scientists who had participated in programmes offered by TWAS and its partner, the Organization for Women in Science for the Developing World (OWSD).

In 2017, with support from the Swedish International Development Cooperation Agency (Sida), displaced and refugee scientists became a priority focus for TWAS. In March 2017, the TWAS science diplomacy programme co-organised a workshop in Trieste, Italy. “Refugee Scientists: Transnational Resources” convened more than 50 participants from 19 countries for a week-long exchange of information and analysis that produced an extensive list of recommendations.

The film “Science in Exile” emerged from the workshop. It was born from the belief that a commitment to science for developing countries required a commitment to scientists who have been driven from those countries. Every scientist who leaves represents a significant loss to the development potential of the home country; in the view of TWAS and many partner organisations, the global scientific community is obligated to support these displaced scientists, so that their skills are cultivated and not lost. They may have great potential for contributing to scientific progress. Someday, many of them will be needed to help rebuild their home countries.

“Science in Exile” was planned and filmed over a period of 11 months. Director Nicole Leghissa, an Italian, travelled first to Lebanon – to the Syrian refugee camps of the Beqaa Valley, and to the city of Tripoli, headquarters of the Lebanese Association for Scientific Research (LASeR), which runs innovative programmes serving hundreds of students among the Syrian refugee community.

In subsequent months, she and her team travelled in Sudan, South Africa, Germany, Italy, the UK, including Scotland, and the United States. She came to know a number of displaced scientists, many of whom opened their lives to her. Even after escaping the cities that had turned to battlefields, they often found new struggles in their adopted countries. At the same time, many have been fortunate to find vital support from organisations such LASeR, the Scholar Rescue Fund, Scholars at Risk, the Council for At-Risk Academics, the Alexander von Humboldt Foundation’s Philipp Schwartz Initiative and the German Academic Exchange Service (DAAD).

The resulting film, “Science in Exile”, is a scientific story, but it is also a profoundly human story. It counteracts the stereotypes that dominate much public debate. The film focuses on the stories of four displaced scientists: two from Syria, one from Iraq and one from Yemen. They work in fields such as nutritional biology, pharmaceutical chemistry and agricultural economics. Each is at a different stage of the transition as they look to resume their work in a safe, secure environment.

But they have this in common: Each dreams of the day when he or she can return home to rebuild.

Statement from Director Nicole Leghissa

Through this film, I really wanted the displaced scientists to speak for themselves.

My choice from the beginning was to build the story's structure following the protagonists' words and experiences. I spent a long time looking for the right people, and when I found them, I established with them a very personal relationship.

We became friends and they opened to me the doors of their lives. They shared their thoughts, fears and hopes. They did this because they trusted me and because they thought that this film could be useful to support other scientists like them.

All the people who participated in this documentary, in front and behind the camera, did it for the same purpose: to have an impact, to support change.





Director

Nicole Leghissa, an Italian filmmaker and documentary director, has worked for international production companies and broadcasters such as HBO, Channel 4, and ARTE, creating historical and cultural television series and documentary films.

With her educational background in Diplomatic and International Sciences, Ms. Leghissa has developed a special sensitivity to global issues related to development. For the past five years she has worked in collaboration with The World Academy of Sciences (TWAS) and the Organization for Women in Science for the Developing World (OWSD) telling stories of scientists and scholars doing research around the world. In 2013, she directed the film “Seeds of Science”, focusing on four TWAS-supported scientists in Kenya. The film has shown on Italian television, and at a range of diplomatic and education events in Europe and Latin America.



Producer

Edward W. Lempinen joined The World Academy of Sciences (TWAS) as public information officer in 2013. He served as producer of the documentary, “Science in Exile”, and has played a leadership role in the Academy’s initiatives in support of refugee and displaced scientists. At TWAS, he has guided the development of numerous short films, and served as the adviser for Nicole Leghissa’s 2013 film “Seeds of Science”.

He previously served for nine years as senior writer at the American Association for the Advancement of Science (AAAS), where he wrote and edited a monthly column in the journal *Science* and managed the AAAS website. Previously, he was the news director at Salon.com, a pioneering online news site. He has been a reporter and editor at U.S. newspapers including *Newsday* (New York), the *San Francisco Chronicle* and the *Chicago Sun-Times*.

ABOUT TWAS The World Academy of Sciences for the advancement of science in developing countries – TWAS – supports sustainable prosperity through research, education, policy and diplomacy. TWAS was founded in 1983 by a distinguished group of scientists from the developing world, under the leadership of Abdus Salam, the Pakistani physicist and Nobel Prize winner. Today, TWAS has more than 1,200 elected Fellows from nearly 100 countries; 14 of them are Nobel laureates. The Academy is based in Trieste, Italy. Through more than three decades, its mission has focused on supporting and promoting excellence in scientific research in the developing world and applying scientific and engineering research to address global challenges. TWAS receives core funding from the government of Italy and programmatic funding from the Swedish International Development Cooperation Agency (Sida). It is a programme unit of UNESCO.

Press coverage

Physics Today | 4 April 2018

Displaced scientists strive to restart professional lives in new lands

Physics Today | 4 April 2018

New Books & Media

Al-Fanar Media | 6 March 2018

New Film Focuses on 4 Arab Researchers' Lives in Exile

The Signal (University of King's College, Canada) | 14 February 2018

Halifax would be a good home for refugee scholars, researcher says

Halifax Chronicle-Herald (Canada) | 8 February 2018

Initiative aims to help at-risk scholars find safe haven

SciDev.net | 7 December 2017

Film documents plight of Arab scientists in exile

New Scientist | 16 December 2017

Bringing it all home (print)

New Scientist | 7 December 2017

How refugee scientists can change the world (web)

The National (United Arab Emirates) | 12 November 2017

Initiative helps relocate academics from war-torn Arab countries with hopes they will return home

ISSUES & EVENTS

PHYSICS TODAY

Displaced scientists strive to restart professional lives in new lands



Record numbers of scientists are fleeing persecution and conflict. Host universities and communities can benefit from the brain gain.

After earning his PhD in geophysics in Egypt, Ahmad Ibrahim returned home to Syria in 2010 to work at the petroleum ministry, where he did groundwater field surveys and environmental studies on groundwater pollution. He was called to do military duty for a year, but a few months in, the uprising that sparked the Syrian civil war began and his service was extended. He heard about academic friends and colleagues being killed. "I felt guilty. It was stressful. I made the dangerous decision to leave," he says. In mid-2013 he deserted. He laid low in Syria for more than two years before getting himself smuggled to Turkey. He is now a postdoc in Germany.

In 2013 Eghal Daougan returned to her native Yemen with a PhD in biochemistry from the National University of Malaysia. The next year, as a faculty member at Al Saoud University in Taiz, she helped found the country's first program in therapeutic nutrition. Then civil war broke out and attacks on the university killed some of her colleagues and students. Daougan holed up in her home and other hiding places for eight months, with no work and no income. "I needed to continue my academic journey and to support my family," she says. In 2014 she was able to go back to Malaysia as a visiting scholar thanks to a fellowship from the Institute of International Education Scholar Rescue Fund (IIE-SRF).

More than 65 million people worldwide have been forcibly displaced, about 22.5 million of whom are refugees from conflict or persecution, according to the United Nations Refugee Agency. Some 28,800 are forced to flee every day. No reliable data exist as to the number of scientists among them. Carmen Bachmann, a professor of business taxation and finance at the University of Leipzig in Germany, is among those who have tried to get those num-

SYRIA IS JUST BEYOND THESE MOUNTAINS. But earlier this year, when it became too dangerous for this scholar of gender studies to continue working in her native country, she fled to the UK, where she managed to get a fellowship at Oxford University. She is one of the scholars featured in the 2017 film *Science in Exile*.

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CULTURE

Bringing it all home

Refugee scientists can change the world, finds Sandrine Ceustermont

Science in Exile, directed by Nicole Leghissa

GHAYNA NAJJ AL NAQEB left Yemen because she felt her life was at risk. In my faculty, a few people disappeared. We don't know anything about them," she says. Her story isn't unique. Millions fled Africa and the Middle East when conflict and war closed in. But as a scientist, Najaj Al Naqeb may have been in greater danger since authoritarian regimes often target the group because of their knowledge and influence. Although it is hard to get exact numbers, thousands of science students and professionals are thought to be among those seeking refuge. Now they are the focus of a documentary by Italian artist and film-maker Nicole Leghissa. Her *Science in Exile* recently premiered at the World Science Forum in Jordan, and will be shown globally in 2018. The film explores the journey of Najaj Al Naqeb and three other refugee scientists from Syria and Iraq, now pursuing careers far from their homes. "It was hard to find displaced scientists who want to talk," says Leghissa. "Many are scared." They were also hard to find physically because they may live in camps or work in their own field of science. Even when refugee scientists receive fellowships or are offered a job, the transition can be tough. Many struggle to get a visa or may find their knowledge isn't up to educational standards. Loneliness is also a big issue for those who leave families behind. There's racism. "It's especially an issue for women wearing veils who are on their own," says Leghissa.

Even job offers are rarely for permanent posts, adding to feelings of instability. After being uprooted, refugee scientists worry about what will happen if their host country can no longer accommodate them. Ahmad Sadiq is a Syrian agricultural economist featured in the film. He relocated to Italy, and for him the lack of stability was the hardest part. "I was offered a position at a university for two years and it was obvious 'Loneliness is a big issue for the refugee scientists who left families behind. Then there's racism' that it was just a transitional phase," he says. "I was anxious." There are upsides, of course. Najaj Al Naqeb, now in Germany studying Yemeni plants used in traditional medicine, has access to expertise and technology not available at home. And Sadiq now works at the UN Food and Agricultural Organization, where he is gaining an international perspective to complement his role as a national adviser in Syria. But previous experience helps too. Sadiq's knowledge of the Middle East, where there is already water and food shortages due to climate change, has been an asset when working on models of the financial impact of global warming in some countries in the Middle East and North Africa. Many refugees hope to return to their countries eventually. For Leghissa, they are bridges having worked in very different cultures, they bring a unique knowledge. She says, "They are big resources for their countries economically, and socially." If it is able to return to Yemen, Najaj Al Naqeb may be able to boost her country's economy by setting up a lab to develop medicines from Yemeni plants. And Sadiq thinks that

Ghayna Najaj Al Naqeb now has a new life in another country developing a labour force skilled in science and technology will play a part in repairing Syria's destruction. Before that was the case, there were only five public universities for 22 million people. Scientists were paid well and there was no freedom of expression, two things she thinks are necessary for science to grow. Refugee scientists have a lot to contribute, but they need more support too. Several organisations and scholarship funds offer financial help, but less emotional support is available, and many institutions aren't clued up about refugees' experiences. Leghissa thinks ongoing assistance should be available, including help if they opt to resettle. Meanwhile, raising awareness is a big step forward. Sandrine Ceustermont is a writer based in Moscow

Quotes

"Many thanks for giving us an opportunity to screen it and to let people be aware of situations, [and] more importantly that there are support system in place to help scientists in difficult conditions."

– **Byambajav Buyandelger**, PhD, Integrated Cardio Metabolic Center (ICMC), Karolinska Institutet
Department of Medicine, Sweden

"Finally we do not see masses of indistinct people fleeing from war, but persons and their individual stories."

–**Fernanda Sehbe Rizzo**, Brazil (fsr producoes)

"The film is a powerful picture of the toll that leaving their home countries has taken on these scientists and an inspiring story of the important research they are still managing to do."

–**Monica Baldwin**, *Physics Today*

"Fabulously moving"

–**Iris Kisjes**, Elsevier Foundation, The Netherlands

"Science in Exile offers a brief but poignant glimpse into the lives and aspirations of young displaced scientists, from their own perspective."

–**Teresa Stoepler**, Global Young Academy, USA

"Science in Exile drives home a point that Saint Mary's University, and other universities in Canada and around the world, can and must be aware of the dire challenges facing colleagues at-risk globally. Our own faculty member and Canada Research Chair, Dr. Karly Kehoe, is featured in the film. She is leading the effort at Saint Mary's to support scholars at risk, and this film serves as inspiration for others to be active and involved."

– **Malcolm Butler**, Vice President, Academic and Research, St. Mary's University, Canada



Screenings

Since its premiere in November 2017, “Science in Exile” has screened in two dozen countries on six continents, at major scientific meetings, diplomatic gatherings and at university events. Learn how to screen the film at your event: <https://twas.org/science-exile>

8 November 2017	World Science Forum Dead Sea, Jordan
2 December 2017	Elsevier Foundation Amsterdam, The Netherlands
7 December 2017	US National Academies Symposium on Human Rights Washington, DC, USA
16 January 2017	University of Amsterdam Amsterdam, The Netherlands
13 February 2018	Saint Mary’s University Halifax, Nova Scotia, Canada
14 February 2018	American Association for the Advancement of Science Annual Meeting Austin, Texas, USA
9 March 2018	Institute of International Education-Scholar Rescue Fund, 2018 Forum New York, New York, USA
19 April 2018	University of Potsdam Centre for Citizenship, Social Pluralism and Religious Diversity Potsdam, Germany
7 May 2018	Rutgers University Bi-Annual Statistical Mechanics Conference Rutgers, New Jersey USA
8 May 2018	University of Bielefeld EU Horizon 2020 Bridge Project Bielefeld, Germany
10 May 2018	Province of Trento - Training Centre for International Cooperation Trento, Italy
11 May 2018	University of Trento Rovereto, Italy
17 May 2018	University of Lagos Department of Zoology Lagos, Nigeria

- 20 May 2018 **Festival èStoria**
Gorizia, Italy
- 25 May 2018 **Shenzhen Institutes of Advanced Technology**
Chinese Academy of Sciences
Shenzen, China
- May 2018 **Karolinska Institutet**
Huddinge, Sweden
- May 2018 **Malawi University of Science and Technology**
Limbe, Malawi
- 4 June 2018 **Julius Maximilian University of Würzburg**
Würzburg, Germany
- 7 June 2018 **University of Turku/Finnish National Agency for Education**
Turku, Finland
- 7 June 2018 **University of Port Harcourt - Abuja campus**
Abuja, Nigeria



- 8 June 2018 **Zimbabwe Technology Centre**
affiliated with University of Zimbabwe, Zimbabwe Institution of Engineers, et. al.
Harare, Zimbabwe
- 8 June 2018 **Ministry of Higher Education, Science and Technology**
XIV International Congress of Scientific Research
Santo Domingo, Dominican Republic
- 12 June 2018 **Royal Society/UK Academies Human Rights Committee**
London, UK
- 21 June 2018 **University of Perugia**
Perugia, Italy
- 22 June 2018 **University of Hull**
(UK Refugee Week)
Hull, UK
- 28 June 2018 **Socios en Salud Sucursal**
Lima, Peru
- 28 June 2018 **International School of Science Journalism of Erice**
Ettore Majorana Foundation
Erice, Italy
- 3 July 2018 **European Academy of Science Film (EURASF)**
CERN
Geneva, Switzerland
- 6 July 2018 **Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - OGS**
Trieste, Italy
- 12 July 2018 **Liverpool Arab Arts Festival**
Liverpool, UK
- 14 July 2018 **EuroScience Open Forum (ESOF 2018)**
Toulouse, France
- July 2018 **Thamar University**
Faculty of Medicine and Health Sciences
Thamar, Yemen
- 17 September 2018 **Ceremony of Trieste scientific institutions**
Trieste, Italy
- 27 September 2018 **World Social Sciences Forum**
Fukuoka, Japan

- 28 September 2018 **CERN – European Organisation for Nuclear Research**
Researchers' Night festival (opening film)
Meyrin, Switzerland
- 5 October 2018 **MIT**
Experimental Study Group
Cambridge, Massachusetts USA
- 28 October 2018 **13th Biennial Meeting of the International Human Rights Network of Academies and Scholarly Societies**
The Korean Academy of Science and Technology
Seoul, South Korea
- 29 October 2018 **Festival Pariscience (international science film festival)**
Paris, France
- 6 November 2018 **University of Rome**
Department of Physics
Rome, Italy
- 11 November 2018 **InScience - International Science Film Festival**
Nijmegen, Netherlands
- 23 November 2018 **University of Münster**
Münster, Germany
- 21 February 2019 **Melbourne Social Equity Institute**
University of Melbourne
Melbourne, Australia
- 25 February 2019 **Marie Curie Alumni Association (international network)**
General Assembly
Vienna, Austria
- 26 March 2019 **Gender Equality for Mobile Scientists**
University of Newcastle (UK)
Newcastle, UK
- March 2019 **University of Alberta**
Edmonton, Canada
- 3 May 2019 **University of Munich**
Munich Centre for Ethics
- 21 May 2019 **Sida Science Days**
Stockholm, Sweden

22 May 2019

EURAXESS Conference 2019

Prague, Czech Republic

17 June 2019

Refugee Week

Global Academy of Agriculture and Food Security

University of Edinburgh

Edinburgh, UK

27 June 2019

Science in Exile - Researchers turned refugees

EURAXESS Meeting Point Vienna

co-organized with the Austrian Agency for International Cooperation in Education and Research (OeAD-GmbH)

Vienna, Austria