

Palestinian-German Science Bridge

Connecting people and knowledge



Forschungszentrum Jülich



1956

Foundation
December 12



Shareholders

90 % Federal Republic of Germany
10 % State of North Rhine-Westphalia



11

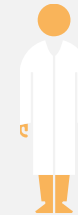
INSTITUTE

2 Project agencies



861

Millionen Euro Budget in 2021
(40 % Third-party funding)



7,120

Employees

2,669 Scientists incl.
891 PhD students and
312 Postdoctoral researchers



934

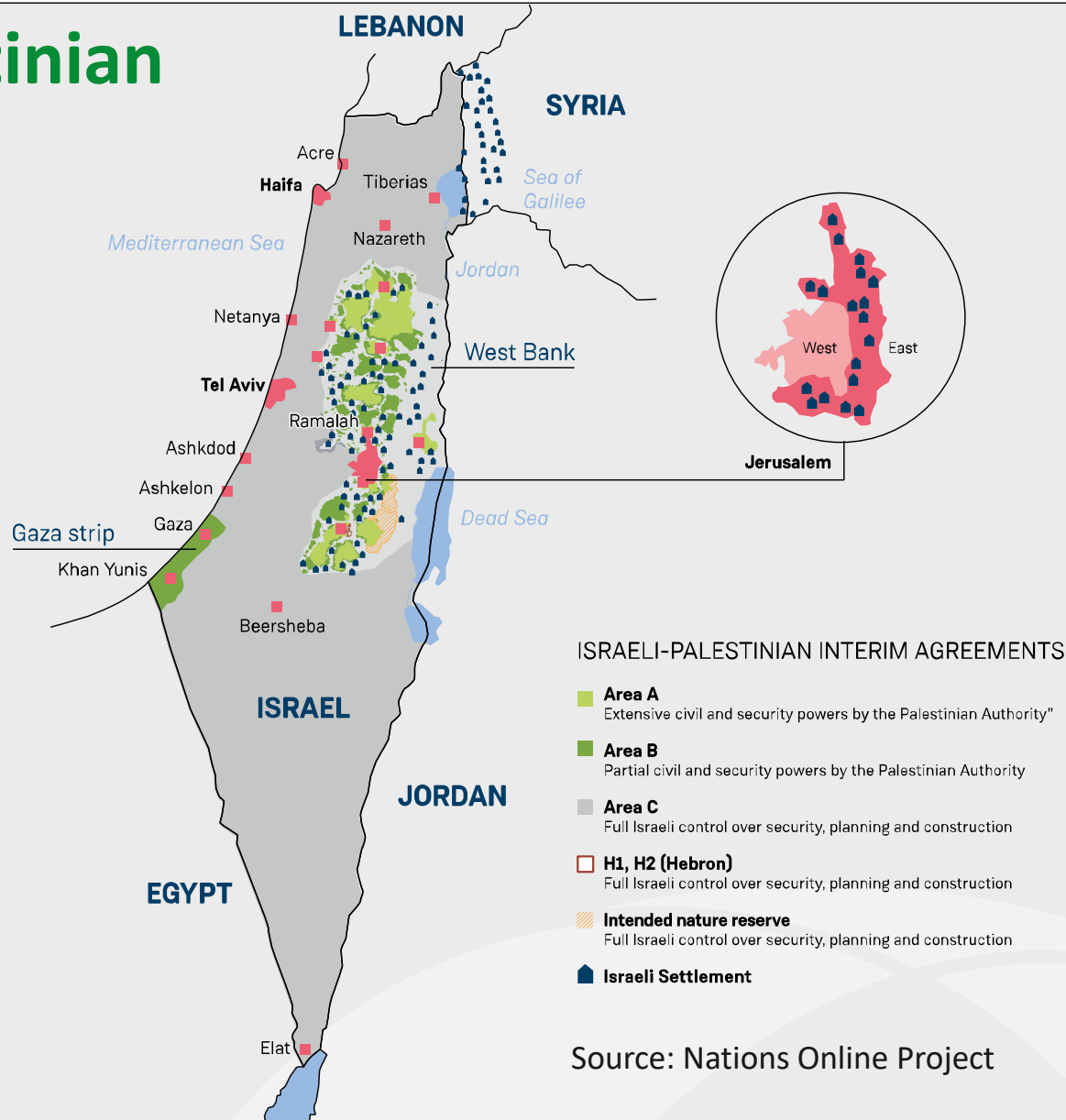
Guest researchers

From 65 countries

Statistics as of August 2022

Research in Palestinian territories

- Occupation with many restrictions
- Lack of infrastructure for experimental research
- Limited possibilities for instrumentation and scientific infrastructure
- Sound basic and theoretical education
- Highly motivated students and faculty members



Objectives and long-term vision

- **Combining the strengths of both sides**

Building a bridge to connect scientists with common research interests

- **Internationalization Strategy of BMBF:**

„Working with emerging and developing countries to shape the global knowledge society“

- **Development of national science and technology infrastructure in Palestinian Territories**

To meet the needs of the local community

With adequate career perspectives for highly-qualified Palestinian graduates

- **Development of graduate and research programs**

- **Supporting the establishment of national research and/or technology service centers**

Palestinian-German Science Bridge

- Pilot project for development of a joint research and education program
- Partners:
Forschungszentrum Jülich
(with its network of partner universities)
- **Palestine Academy for Science and Technology PALAST**
(representing all Palestinian universities)
- **Funding:**
including initial grant and extension
BMBF: 5.44 M€ over 8 years (2017 – 2025) – Pilot project



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Federal Ministry
of Education
and Research

Status Report (Statistics from summer 2022)

- 90+ students (BSc, MSc, PhD from 3 months to 3-4 years), 10 PhD degrees
- 23 bilateral cooperation roadmaps, 6 research clusters
- 42 staff visits at FZJ (3 days to 10 weeks)
- 17 invitations to FZJ scientists to deliver lectures in Palestine
- 20 networking visits from students to home university per year
- Trainings in science management & soft skills
- Topical Workshops:

Bioelectronics

- IBI-3
- PPU

Health Science Simulationen

- IBI-7
- Birzeit University

Plant sciences and Algae

- IBG-2
- Bethlehem Uni

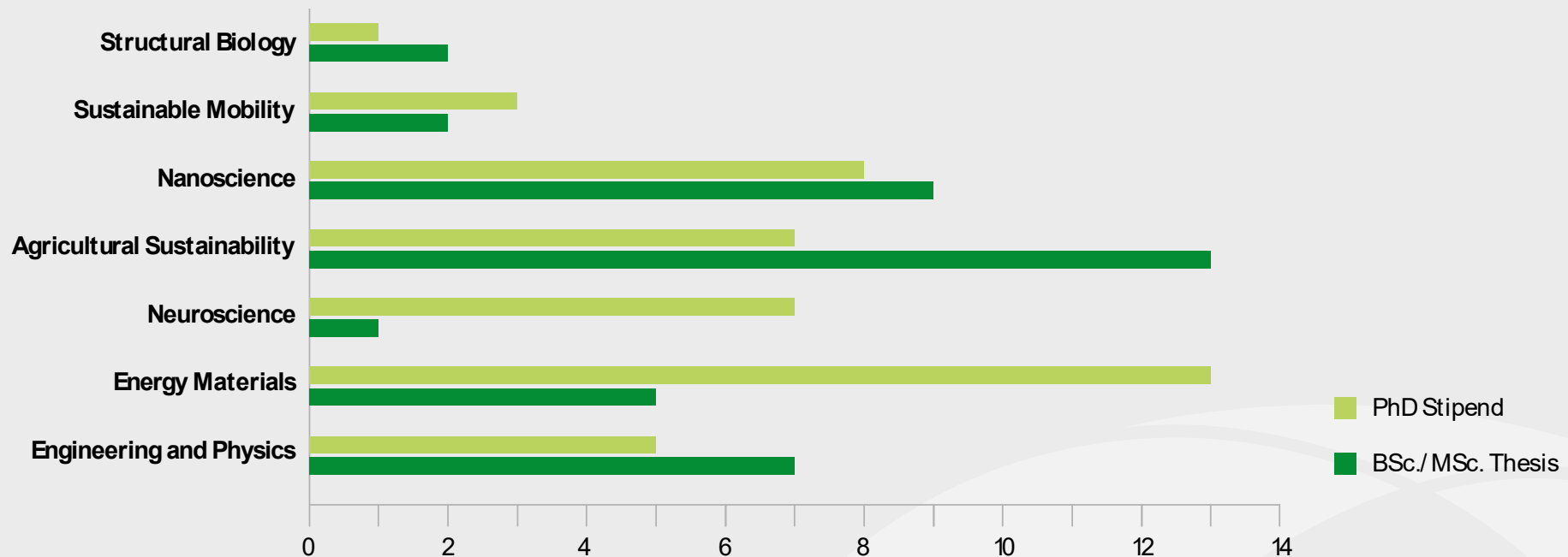
Medical imaging

- INM-4
- Al-Quds University

- Presence at local events, for example Scientists 4 Palestine Physics School (2019) and the 7th Palestinian conference on modern trends in mathematics and physics (2022)

Popular research topics - clusters

- Cooperation between 2+ partners at FZJ and 2+ partners in Palestine
- Aims to promote sustainability, identify the most effective models for cooperation & put alumni in leadership positions



Research clusters and knowledge transfer

Title	Main Activity	Method of knowledge transfer
Agricultural Sustainability	Studying local affects on agricultural chain from wastewater to algae to fertilizer to soil to plants	Opportunities to work on projects that offer direct solutions to agriculture in the local climate (conducted at FZJ and locally)
Energy Materials	Design of energy efficient materials specifically dealing with spintronics applications	Joint measurements and simulations, involvement of SESAME, schools and trainings
Nanoscience	Fabrication, characterization and applications of nanomaterials on industrial and biomedical fields	Build-up of large network of scientists with complementary competences to conduct research on both sides
Neuroscience	Interdisciplinary, multimodal brain imaging to record structural, functional, and molecular information at the same time	Largely based on mobility and building competences locally
Structural Biology	Experimental and modelling methods to obtain structural information	Joint research, measurement times, combining experiment and modelling/algorithm
Sustainable Mobility	<ul style="list-style-type: none"> -Pedestrian dynamics and heterogeneous crowd compositions - Social cost benefit analysis of hydrogen economy 	Intercultural studies of mobility needs, work with open source software and joint data

PGSB Returner Program

The PGSB Returner Program offers Postdoctoral stipends of up to 2 years to PhD Fellows who have:

- Successfully submitted/defended their PhD thesis
- Submit a project proposal demonstrating their ability to carry out scientific research independently
- Demonstrate a clear commitment to forwarding the PGSB objective of contributing to joint research and education with a Palestinian research institution
- Obtain a clear commitment from a Palestinian research institution or university offering long-term cooperation and career perspectives

5 Fellowships already allocated
4 decisions expected in early 2023

PGSB alumni at:

Karlsruhe Institute of Technology (KIT), Karlsruhe
Arab-American University (AAUP), Jenin, Ramallah
Birzeit University, Birzeit
Palestine Technical University, Kadoorie Tulkarem



Dr. Hebah Fatafta at her PhD defense, 2022

Outlook and next steps

- Working with **research clusters** and **alumni** toward the build-up of infrastructure and instrumentation, for example in the form of SMART-Labs (**S**cience **M**edicine **A**ppplied **R**esearch and **T**echnology)
- **Widening the scope** to include vocational and technical education, science management, innovation & entrepreneurship
- **Open for cooperation with further partners and networking**
 - Already under discussion with RWTH Aachen and Cologne University
 - Cooperation in the region, for example with SESAME



Dr. Sabreen Hammouda representing the energy materials cluster and Forschungszentrum Jülich at the HESEB opening ceremony, SESAME, 2022

Contacts

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Chair of Palestinian Advisory Committee:

Prof. Imad Khatib, ikhatib@staff.alquds.edu

Further information:

www.fz-juelich.de/ue/pgsb

PGSB in Nature:

<https://www.nature.com/articles/s41578-023-00557-x>

Topical workshop in planning
Sept 2023 at SESAME, Jordan

AI-Workshop in planning for Fall
2023 in Jülich