Modeling Research Collaborations as Internationalization Strategy

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The DFG - Who We Are and What We Do

- Central public funding organization for basic research in Germany
- A self-governing body of science and research
- Member organization (universities, academies, research organizations)
- The budget in 2019: €3.3 billion in direct research funding, provided primarily by the federal government and the 16 German Länder
- In 2019, the DFG funded around 31,150 projects
The DFG - Who We Are and What We Do

► serves all branches of science and the humanities
► fosters scientific excellence through competition
► No call, no deadlines (rare exceptions)
► supports international cooperation in research
► advises political and social decision-makers
► supports the transfer of knowledge between science and industry

Funding in 2019, by scientific discipline
The DFG promotes international cooperation
Because…

► Research *transcends national boundaries*
► Certain topics are best researched within the framework of *international collaborative projects*
► It is important to establish connections *with countries in developing regions*
► …

And in order to:
► **Further internationalize** the German research landscape
► **Facilitate cooperation** between the world’s top researchers
► …
How Does the DFG Fund International Cooperation?

All DFG funding programs generally allow the integration of international components as e.g. travel allowance, exchange of students/scientists.

- Researchers who work abroad always need a cooperation partner in Germany who submits the proposal and/or invites the researcher.

DFG support for projects with international partners is generally based on the principle of mutual responsibility. **Exception**: in cooperation with developing countries DFG can cover a part of the costs of the international partners.
DFG Office North America

The USA and Canada play a leading role within the context of increasing globalization in science and research. North America — and especially the USA — continues to be the most competitive research region in the world. More than a quarter of the global funds spent on research and development are invested here, and more than half of all DFG-funded research fellows travel to North America after completing their doctorate for their important first career step.

The DFG maintains regional expertise at its headquarters in Bonn as well as running its own North American office in two locations, Washington D.C. and New York City. In Washington D.C., the DFG maintains close ties with North American funding organizations, facilitates transatlantic research projects, and helps to shape science policy dialogue. In New York, the focus is on the marketing of research funding, an effort conducted jointly with German partner organizations such as the German Academic Exchange Service (DAAD) and the Alexander von Humboldt Foundation (AvH), and in collaboration with German universities in North America. Together, these offices facilitate contact between scientists and researchers in Germany and North America, support early-career researchers here on a DFG fellowship, and organize outreach activities to showcase German research regionally.

Examples for Funding Programs

Funding International Research

- German research partner

- Joint project idea

- Initial funding? DFG program *Initiation of International Collaboration*
  
  https://www.dfg.de/en/research_funding/programmes/international_cooperation/initiation_international_collaboration/index.html

- Project funding? E.g. DFG program *Individual Research Grants*
  
  https://www.dfg.de/en/research_funding/programmes/individual/research_grants/index.html
What is an International Research Training Group?

- **Bilateral doctoral research and training program** of a German university and a partner institution abroad
  - set up and run by of 5-12 senior researchers on each side
  - innovative and focused research programme
  - specific qualification programme (courses, workshops, joint summer schools)
  - transparent and structured supervision and mentoring
  - Reciprocal research stays of 6-12 months at partner site

**Benefits:**
- synergies through complementary resources
- early integration into the international research community,
- better qualification for careers in- and outside of academia
- Building block for sustainable individual and institutional cooperation
What is an International Research Training Group?

DFG Funding is available for...

- Up to 9 years
- People
  - 2-3 consecutive cohorts of 10-15 PhD students each
  - Postdocs (1-2)
  - Participating undergraduates
- Resources
  - Research cost: consumables, literature, documentation etc.
  - Qualification and mobility: research stays, curricular activities, joint workshops, guest etc.
  - Support funds: e.g. for coordination, recruitment, gender equality measures…
  - foreign partner needs complementary funding!
    - basic support for +/- same no. of doctoral candidates (posts, research cost)
    - cooperation (research stays, joint events etc.)
International Research Training Groups
Canada as largest partner country

- total budget for IRTGs and RTGs:
  ~220M EUR (2019)
- open to all fields of science & humanities
- bottom-up: no priority topics; no quota, no priority countries for IRTG
- 34 IRTG = 15% of 225 RTGs
- partners in 13 countries w/wide
- largest partners: Canada, USA, China and Australia

IRTGs by subject area and by partner country

January 2021
Recent Calls for Proposals with Partner Organizations in North America

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| NSERC-DFG Lead Agency Activity on Sustainable Processes & Chemistry                | Step 1: modified Alliance International Cooperation Grant at NSERC, 7 Dec. 2022 (6:00pm EST/2:00pm CEST)  
| Possibility for German-American Collaboration within SSRC's Media & Democracy Program | Since 2018                                                    | Social Science Research Council (SSRC)                                    | https://bit.ly/2CFUkgn                                   |
| DFG-IRTG/NSERC-CREATE                                                              | Submission on a rolling basis                                 | Natural Sciences and Research Council of Canada (NSERC)                   | https://bit.ly/3goFU4x                                  |

**NOTE:** If you do not find any suitable options here, please do not hesitate to get in touch with us. We welcome the opportunity to look for solutions tailored to your needs.
Thank you!

For more information

► About the DFG: http://www.dfg.de
► About RTG/IRTG: http://www.dfg.de/gk
► About German research institutions: http://research-explorer.de
“To design the future through the innovative integration of education, scholarship, diverse partnerships, and our global community”
Research is Global

"We need diverse teams -- working across borders, cultures and disciplines -- to solve global problems, and to help navigate social and geopolitical challenges."
Editorial, Nature 2021


“International scientific collaboration is a must”* in an “age of research driven by international collaborations”**

*UNESCO 2014; **Adams, Nature 2013
Drexel’s top collaborating countries: China, Canada, UK, Germany, France, Italy, Japan

Research publications with at least one international collaborator 2008–2021 (InCites–Web of Science)
Action Items for Advancing Global Research

Creating Systems

Develop Global Research Operations Guide (NSPM 33):
- Contracts and intl law
- Hiring intl contractors
- Paying intl vendors
- IRB for intl projects
- Export control/security

Invest in expertise:
- Global research compliance
- Positions in HR, Counsel, tax, risk management...
- Coordinate efforts within supporting units

Securing Funding

- Start-up and seed funds + Research Awards for Global projects in various disciplines w strategic partners
- Structures to support funding from foreign foundations and donors
- Funding & infrastructure to support short-term visiting scholars
- Support for intl Graduate Students (funding, advising, mentoring)

Increasing Impact

- Incentivize applied / translational projects with global partners, including patents, transnational start-up incubators
- Increase civic and corporate engagement abroad through research
- Track and publicize data on Global research (use for rankings, funding apps)
- Commit to Global as part of hiring, FAR, tenure and promotion decisions
# Global Research Collaborations: Three Examples

## Interdisciplinary Centers

**Center for Functional Fabrics and A.J. Drexel Nanomaterials Institute:**
Joint collaborations with partners in Korea and Japan to incorporate MXenes into yarn in functional fabrics and smart textile device

**Urban Health Collaborative:**
Salud Urbana en América Latina (SALURBAL) project to study how urban environments and policies impact health with institutions in Chile, Colombia, Brazil, Argentina, Mexico

**AgeWell Collaboratory:**
Virtual Shoes: Using Virtual Reality to Enhance Safety and Foster Better Design for Older Adults in the Built Environment with Politecnico di Milano

## Research Co-ops (Students) with Industry

**Coop in Germany:**
Chemical engineering lab on theranostics and colloids at Bochum University

**Coop in South Korea:**
National NanoFab Center (KAIST, Daejeon)

**Coop in Greece:**
Education development with cultural organizations and hospitality management

**Coop to Launch Global Companies:**
Close School of Entrepreneurship provides start-up funds for students launching their own companies

## Research with Social Impact

**FMC in India Collaboration:**
Chemical corporation FMC; Drexel’s Public Health and Business; and Indian NGO “Community Pure Water” study the health impact and community attitudes toward FMC’s clean water project in India (reverse-osmosis water-filtration plants)

**World Vision in Africa Collaboration:**
World Vision and the Dornsife Global Development Scholars Program at Drexel implement capacity-building programs for bridging gaps between scientific research, development practice, and applied problem-solving in public health across Africa.
UAS7 - 7 German Universities of Applied Sciences

Prof. Dr. Andreas Zaby
President UAS7 and Berlin School of Economics and Law
ABOUT UAS7

UAS7 is a strategic alliance of seven leading German Universities of Applied Sciences (UAS), with representations in Germany, North and South America. UAS7 universities excel in applied teaching and research and have a strong focus on internationalization. With our representations abroad we promote international academic exchange by providing opportunities for teaching and research collaborations, study abroad and internship opportunities, and alumni relations.
UAS7 - Research Strategies

- UAS7 is committed to the applied sciences and thus following the guiding principle "Shaping social innovation" not only in teaching but also in research and transfer regarding international research activities.

- UAS7 international research focus and research projects explicitly refer to global challenges.

- Strategic partnerships of UAS7 universities serve to build profiles at the highest level.

- UAS7 universities raise awareness of international / EU activities among research institutes; present research performance in an international context at conferences and through publications and raise awareness of peer review activities among researchers.

- Various funding agencies and organizations fund UAS7 research collaborations with foreign cooperation partners.
International Research Collaborations at UAS7 Universities – 3 Examples

• **HAW Hamburg** (with 22 partners from EU and Malaysia)
  “*BIO PLASTICS EUROPE*” - The project addresses the topic of sustainable solutions for bio-based plastics on land and at sea. It intends to develop sustainable strategies and solutions for bio-plastic products.

• **HWR Berlin** (12 partner from EU incl. Ryerson University, Baruch College NY, University of South Florida)
  “*Models and Methods for an active ageing workforce: an international academy*” - The main objective of the MAIA Academy is to create a unique research and innovation staff exchange network focused on the ageing problem in manufacturing.

• **HS Bremen** (Marie Skl. Curie Progamme – with EU and other European members)
  “*Advancing Space Access Capabilities - Reusability and Multiple Satellite Injection*” - The purpose of the project is to develop a program that focuses on several specific areas of cutting-edge space access research.