

## Project Partners/ Team

Prof. Dr. **Anna Kosmützky**  
**Sarah-Rebecca Kienast**, MA  
Leibniz Center for Science and Society  
Leibniz University of Hannover  
Lange Laube 32  
D-30159 Hannover, Germany  
[anna.kosmuetzky@lcss.uni-hannover](mailto:anna.kosmuetzky@lcss.uni-hannover)  
[rebecca.kienast@lcss.uni-hannover.de](mailto:rebecca.kienast@lcss.uni-hannover.de)

Prof. Dr. **Achim Oberg**  
**Olaf Kellermeier**, Dipl. Wi.Inf.  
University Hamburg, Institute for SME Re-  
search and Entrepreneurship, University  
Mannheim  
D-20146 Hamburg, Germany  
D-68161 Mannheim, Germany  
[achim.oberg@uni-hamburg.de](mailto:achim.oberg@uni-hamburg.de)  
[kellermeier@ifm.uni-mannheim.de](mailto:kellermeier@ifm.uni-mannheim.de)

Dr. **Jennifer Dusdal**  
Prof. Dr. **Justin J.W. Powell**  
Institute of Education & Society  
University of Luxembourg  
11, Porte des Sciences  
L-4366 Esch-sur-Alzette, Luxembourg  
[jennifer.dusdal@uni.lu](mailto:jennifer.dusdal@uni.lu)  
[justin.powell@uni.lu](mailto:justin.powell@uni.lu)



## Funder:

BMBF-Förderschwerpunkt  
Wissenschafts- und Hochschulforschung:  
Förderbekanntmachung  
“Qualitätsentwicklungen  
in der Wissenschaft”



## Duration:

7/2019—12/2022

International  
Research Project on

# Relational Quality:

Developing Quality  
through  
Collaboration Networks  
and Portfolios



<https://www.q-know.org>  
<https://www.wihoforschung.de/>

### Multidisciplinary Project:

The international collaborative and multidisciplinary Project “**Relational Quality: Developing Quality through Collaboration Networks and Portfolios (Q-KNOW)**” comparatively and historically charts the **massive expansion of science production worldwide**—through a focus on Germany, a leading science producer for over a century.

We investigate **how scientific publications and co-publications of organizations** that produce scientific knowledge have developed over time. We investigate the **proportion and impact of inter-organizational collaborative networks**, depending on **collaboration portfolios among organizations in Germany** (and all partner organizations **worldwide**) and how these relationships are leveraged to enhance scientific quality at organizational level.

The Q-KNOW project directly addresses this significant black box. The term “**quality development**” refers to interorganizational prioritization and related processes that lead to an improvement of scientific capacity and the reinforcement of certain performance outputs. Different organizational forms and single organizations are subject to specific determining factors and have different goals and tasks. Thus, we expect to find **different understandings of scientific quality and priorities** related to scientific quality development on the organizational level. Finally, we derive **recommendations for various levels of research policymaking and administration**.

### Work Program and Approach:

Our **research design integrates different analytical levels** to investigate Germany’s higher education and science system, its organizations, and its relationships globally.

On system level, we examine the **development of research collaborations and interorganizational collaborative networks of organizations** through co-authored journal publications. Analyzing **articles by researchers based in German organizations (and their co-authors worldwide) from 1900–2020**, we develop a unique bibliometric dataset, based on Clarivate Analytics’ Web of Science Science Citation Index Expanded (SCIE). Millions of research articles are being encoded, systematized, and classified (organizational forms).

On organizational level, our **case studies analyze selected nodes of these collaboration networks as well as organizational collaboration portfolios and their organizational conditions**. The collaboration portfolios take the number, quality (relative citation indices based on the number of citations, disciplinary, and field-specific citation rates), and the heterogeneity of collaboration relationships (N= ca. 60,000) of 4,500 organizations into account.

A **mixture of quantitative and qualitative methods** from STS and sociology as well as organization and higher education research will be applied to uncover trends and patterns over one hundred and twenty years.

### Planned Results and Scientific Outreach:

We combine the results of our **longitudinal bibliometric analyses (1900–2020) of collaboration patterns** of universities and other research organizations in Germany’s higher education and science system with **social network analyses**. This enables us to examine hypotheses on historical path dependencies of **collaboration portfolios among organizational forms of science-producing organizations**. Our selected **organizational case studies** will show possibilities for the further development of collaboration portfolios as well as disciplinary and spatial differences. From these results, we derive **policy recommendations for university management and research policymakers** to develop scientific quality through collaboration networks and collaboration portfolios.

Publications, selected (up to 2019):

Dusdal, J., Oberg, A. & Powell, J.J.W. (2019). **Das Verhältnis zwischen Hochschule und Wissenschaft in Deutschland: Expansion – Produktion – Kooperation**. In Deutsche Gesellschaft für Soziologie (Ed.) *Komplexe Dynamiken globaler und lokaler Entwicklungen – 39. Kongress der Deutschen Gesellschaft für Soziologie*.

Kosmützky, A. (2018). A Two-Sided Medal: **On the Complexity of International Comparative and Collaborative Team Research**. *Higher Education Quarterly* 72(4). doi:10.1111/hequ.12156.

Powell, W.W. & Oberg, A. (2017). **Networks and Institutions**. In: Greenwood, R., et al. (Eds.) *The SAGE Handbook of Organizational Institutionalism*. Los Angeles: SAGE Publications, 446–476.