

A photograph of a modern campus building at dusk. The building has large glass windows and is illuminated from within. In the foreground, there is a large tree with white cherry blossoms, a smaller tree with purple blossoms, and a wooden bench. A golf cart is parked near the building. The sky is a deep blue.

ICDK OUTLOOK

INDUSTRY ON CAMPUS IN SOUTHERN GERMANY

TYPES AND CHARACTERISTICS

**INNOVATION
CENTRE
DENMARK**

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PUBLISHED BY

INNOVATION CENTRE DENMARK

Innovation Centre Denmark has the ambition to elevate Danish science and innovation through collaboration with world-leading innovation ecosystems.

Innovation Centre Denmark in Munich connects Danish companies, research organisations and higher education institutions with the Southern German innovation ecosystem and thereby provides access to one of the world's leading research and innovation environments.

Germany is one of the world's largest exporters and the biggest and most important export market for Denmark. Southern Germany, notably Bavaria and Baden-Württemberg, are hotspots for research and innovation.

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Illustrations:

This document has been designed
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PREFACE

ICDK Munich has created an “Industry on Campus” platform in order to tap into partnerships in Southern Germany to learn about the opportunities, as well engage, with potential partners for Danish universities and companies in Southern Germany. Access the platform here: www.industryoncampus.com.

With this ICDK Outlook we present a mapping of Industry on Campus and other strategic and long-term partnerships between universities, research organisations and industry partners in Southern Germany.

Who is this mapping for?

- Danish Universities: Innovation / Tech-Transfer / Industry Relations Management; GTS-Net; Danish companies seeking inspiration to increase strategic collaboration with private companies;
- large corporations and SMEs seeking inspiration to increase strategic collaboration with universities and other research organisations;
- “Matchmakers” such as danish business and innovation clusters, Confederation of Danish Industry, Universities Denmark seeking inspiration on how to support more formalized partnerships between research organisations and private companies;
- Danish technology parks seeking inspiration on new ways to engage with their members as well as universities and other research organisations.

With this ICDK Outlook, we wish to:

- Provide Danish universities, GTS Institutes and companies with an overview of Industry on Campus and other long-term partnerships in Southern Germany¹.
- Give Danish stakeholders tools and suggestions on why and how to interact with the partnerships.
- Highlight the potential learnings from Industry on Campus partnerships and collaboration models for Denmark. This includes how strategic collaboration between knowledge institutions and private companies can be initiated, formulated and strengthened.

We encourage you to reach out to Innovation Centre Denmark in Munich if you wish to engage with Industry on Campus partnerships in Southern Germany. ICDK can help with establishing contacts to partnerships and the research organisations and private companies behind them.

¹ The current mapping does not include classical membership-based innovation and business clusters or networks. However, you can read about some of these in our ICDK Outlook: “[Innovation Clusters in Southern Germany](#)” (2019)

1. INTRODUCTION

Strong technical universities, research organisations, as well as corporates and Mittelstand companies, including “Hidden Champions”, characterize the innovation ecosystem in Southern Germany. The German Federal Ministry of Education and Research as well as federal states, such as Bavaria and Baden-Württemberg, support strategic collaboration platforms between research organisations and companies through various programmes.

The collaboration between public and private entities have resulted in a number of long-term strategic partnerships with focus on research and innovation. Learning about the characteristics of Industry on Campus and how such partnerships are set up and work, can be valuable to Danish organisations’ work on strengthening public-private collaboration on research and innovation. Furthermore, getting insights into the motivation for initiating Industry on Campus partnerships from research institutions and private companies, could help decision-makers at Danish universities and companies in their work with strengthening the public-private collaboration and the transfer of research into industry and society.

We hope that this mapping of Industry on Campus partnerships can be a helpful tool to access potential partners in the innovation ecosystem in Southern Germany for Danish organisations.

Innovation Centre Denmark (ICDK) supports Danish research organisations and companies with internationalization. The center can bring together Danish and German stakeholders and help foster new collaborations between Denmark and Southern Germany, including in the area of knowledge transfer. Furthermore, through non-commercial as well as commercial services and collaboration platforms, ICDK gives advice to Danish knowledge institutions and companies on how to get access to world-leading innovation ecosystems as well as building sustainable partnerships between Danish and international innovation actors.

Visit www.icdk.de for more info on how Innovation Centre Denmark in Munich can help.

1.1 WHY IS THIS HAPPENING IN SOUTHERN GERMANY?

“With the eyes of” of ICDK Munich, one can point to the following factors as to why many Industry on Campus and other formalized research and innovation partnerships have been established in Southern Germany:

The region has: a number of strong technical universities, a strong industrial landscape within advanced manufacturing and production, and little reluctance towards close collaboration between industry and universities.

The research and technology organisation, Fraunhofer Society, and its institutes, are important mediators and bridge-builders between universities and companies, including SMEs. With research expertise as

well as test- and demonstration facilities, Fraunhofer acts as ‘glue’ between universities and industrial players.

While some partnerships are initiated bottom-up by individual companies and/or research organisations, other partnerships are initiated by means of public funding through traditional calls for proposals. Federal and state (“Länder”) level in Germany support partnerships between research organisations and industrial partners through long-term grants that also require ‘buy-in’ from companies through non-funded activities such as access to infrastructures and time allocation of company staff to the project. The following programmes can be highlighted as relevant in this context:

- 1** The [Research Campus Programme](#) of the German Federal Ministry of Education and Research (BMBF), which includes single-site cooperation between science and industry to create large-scale and long-term cooperation. The programme offers up to €2 million per year per partnership for a period of up to 15 years. To date, 9 research campuses are funded.
- 2** The [Clusters4Future](#) competition, which aims to create the next generation of regional networks. BMBF funds each cluster with up to €5 million per year. The funding period is up to 9 years. So far, 7 Clusters4future are funded.

3 The [Leading-Edge Cluster Competition](#), part of the German Government's High-Tech Strategy, which aims to build bridges between science and industry to enhance R&D activity between stakeholders. BMBF funds clusters with up to €8 million per year over a funding period of up to 5 years. To date, 15 leading-edge clusters have received funding.

4 The [Excellence Strategy](#) and its predecessor, the Excellence Initiative, which aims to strengthen the international competitiveness and visibility of German science in the long-term. At the University of Tübingen, a grant from the Excellence Initiative opened up for the creation of 'Industry on Campus Professorships', with the aim to integrate motivated scientists from industry into the university's research activities.

In addition, a number of initiatives and programmes at state level support strategic collaboration between research organisations and industry. One example is the **"Industry on Campus"** initiative of the federal state of Baden-Württemberg.

In 2014, the Ministry of Science, Research and Arts of Baden-Württemberg introduced the Industry on Campus programme in order to strengthen and speed up knowledge and technology transfer via long-term cooperation. 19 Industry on Campus partnerships were supported in this first phase, each phase has a duration of minimum 5 years. The idea was to support partnerships based on a common interest and joint commitment from research organisations, industry partners, as well as the State of Baden-Württemberg. A common feature these partnerships is that the main physical hub for the cooperation is located on the campus of a university.

Furthermore, engineers/companies are included in research design, while scientists are included in the process of transferring and implementing research findings into innovative products.

Read about two of the Innovation Campuses in Baden-Württemberg:

Cyber Valley in the [highlights from ICDK Munich's Industry on Campus Camp in November 2020](#) [in Danish].

Innovation Campus Mobility of the Future in ICDK Munich's report "[Green and Sustainable Mobility of the Future](#)" in our interview Dr. Max Hossfeld, [here](#).

As a successor to the Industry on Campus programme, the Ministry of Science, Research and Arts of Baden-Württemberg has now launched an *Industry on Campus 2.0*, in the form of so-called **Innovation Campuses**. Building on the original concept, the purpose with the Innovation Campus scheme is to speed up the transfer process and move innovation processes closer to market, while also including a broader group of stakeholders in the partnerships in “hub”-like structures.

On 1 July 2021, Innovation Centre Denmark in Munich and Baden-Württemberg International co-organised an Innovation Talk focusing on Industry on Campus. At the event, Mr. Thomas Bartel from the Ministry of Science, Research and Arts of Baden-Württemberg presented “The Technology Transfer Toolbox” and how the State works with technology transfer in relation to long-term cooperation. Read highlights from

Transfer via long term cooperation
The Industry on Campus Model

The slide displays a map of Baden-Württemberg with various logos and names of partner institutions and companies, illustrating the network structure of the Industry on Campus Model. Logos include M²OLIE, CARLA, iL, ARENA 2036, BOSCH, schufa, AESCULAP, and many others. The slide is branded with the Baden-Württemberg logo and the text "MINISTERIUM FÜR WISSENSCHAFT, FÖRDERUNG UND KULTUR".

Innovation Talk: Collaboration on Green Research and Innovation

1.2 WHY DO RESEARCH INSTITUTIONS AND INDUSTRIAL PARTNERS IN SOUTHERN GERMANY ESTABLISH INDUSTRY ON CAMPUS PARTNERSHIPS?

Industry on Campus partnerships are more widespread in Southern Germany than in Denmark, probably for many reasons. Seen from the perspective of ICDK Munich, the formalization of long-term cooperation between universities and industry in Southern Germany builds on both a tradition of long-term public research and innovation grant schemes, and large industrial players with a budget and willingness to enter into long-term partnerships. Furthermore, the fact that some of the Southern German research and innovation strongholds are in engineering and other natural science fields, “naturally invites” for close collaboration between companies and university researchers.

In general, both private companies and universities (as well as other research organisations) in Southern Germany seem open towards engaging in formalised public-private cooperation on research and

innovation. Several companies also have an interest in financing activities at universities, with the motivation that this can give better access to research results, scientific expertise, research infrastructure, and test and demonstration facilities. Furthermore, an important factor is the possibility to engage with excellent students for e.g., talent attraction/recruitment purposes.

From the side of university management and university researchers, the possibility to attract external funding and financing, get access to industry needs and cases, as well as infrastructure and applied technology, seem to be some of the primary motivation factors. In addition, a strong industry network can be helpful, when universities are applying for funding from public and private sources for research and innovation projects.



Photocredit: Canva, Jacob Ammentorp Lund

Industry on Campus partnerships in Southern Germany are often primarily focused on research and innovation collaboration. Most partnerships included in this mapping focus on application-oriented research, which naturally brings knowledge and technology transfer to the fore.

1.3 WHY IS THIS INTERESTING FOR DENMARK?

Strong, long-term platforms

Solving grand societal challenges and achieving objectives e.g. related to climate change, advanced production and digitization, require new public-private partnerships within research and innovation. Partnerships involving research organisations as well as private companies that can serve as platforms for knowledge exchange towards the development of new solutions. Furthermore, in order to be competitive, you need strong platforms for attracting funding from national and international sources (including from the EU Framework Programmes for Research and Innovation).

Universities and companies under one roof

Industry on Campus partnerships are relevant in this context as the mechanisms for their functioning aim to address the above to different extents. Even though the Danish landscape and innovation ecosystem is different than the Southern German ecosystem, Danish universities and companies can benefit from learning about how partnerships are set up, what the motivation is from public and private partners, and what needs to be considered in terms of IP etc. Especially because Industry on Campus and related partnerships are long-term formalized collaborations, that require clear frameworks and innovation models with relevance for both/all parties involved in order to be successful.

Sharing activities, infrastructure and staff, while ensuring integrity

Industry on Campus and related partnerships are long-term formalized collaborations, that require clear frameworks and innovation models with relevance for both/all parties involved in order to be successful.

Moreover, due to fact that Industry on Campus partnerships involve sharing activities and infrastructures (to a smaller or larger extent), they can open up for new forms of research and innovation collaboration.

The Industry on Campus partners' increased access to each other may reach a point where research and industry players regard each other as colleagues. This, of course, involves a number of advantages but also attention points in relation to academic freedom, research integrity etc. However, ICDK Munich has not yet directly come across problems or critique relating to research integrity arising from Industry on Campus partnerships.

The current mapping aims to provide an overview of Industry on Campus and other partnerships in Southern Germany that:

- Involve stakeholders from universities, non-university research organisations, as well as companies (corporates as well as SMEs), often supported by public governments through different programmes (triple-helix).

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- Combine scientific excellence with practical applications.
- Include fundamental research as well as application-oriented research and innovation.
- Involve private direct as well as indirect investments² into research environments at universities and research & technology organisations (RTOs).

In order to achieve the above-mentioned objectives, it can be relevant to look at Industry on Campus and other long-term strategic public-private research and innovation partnerships that include an “under one roof” approach. The approach

involves, to variable extents, shared infrastructures and includes staff exchange between universities and companies. Thus, they go further than traditional science parks where companies and the university area (campus) are separate from each other.

Industry on Campus partnerships go beyond individual project cycles and represent, more or less, permanent platforms for collaboration and exchange. Furthermore, some of these research and innovation partnerships include a spillover potential towards entrepreneurship, incubation and other activities involving the next generation of professionals.



Photocredit: Copyright University of Ulm ([source](#))

² E.g. through private foundations

2. CHARACTERISTICS OF INDUSTRY ON CAMPUS PARTNERSHIPS IN SOUTHERN GERMANY

Research and innovation collaboration between universities and private companies can take many shapes: from single-standing projects to long-term partnerships serving as platforms for multiple projects.

With this ICDK Outlook, we focus on the latter by highlighting strategic partnerships between one or more private companies, universities, and other research organisations, that allow for more in-depth collaboration by being 'under one roof', e.g. 'on campus'.

This ICDK Outlook covers Industry on Campus and other research and innovation partnerships in Southern Germany with the following characteristics:



Long-term partnerships and platforms between one or multiple private companies with one or multiple universities and/or other research institutions



Research and innovation as a core/main focus of the partnerships (often with a technological focus, including within Industry 4.0)



Partnerships **external/additional** to the company's own R&D department. Collaboration between staff from the research institution and the company.



Combination of considerable public (e.g. programme-based) and private (direct investments, in-kind, other) **financing/funding**



Formalised and institutionalized partnerships. **Governance** jointly between the public and private entities involved in the partnerships



Establishment of **new structures** and organizations on campus at a university or research institution



Resources (Personnel, resources and machinery) between the partners are pooled under one roof

2.1 FORMS OF INTERACTION BETWEEN UNIVERSITIES AND COMPANIES ON CAMPUS

2.1.1 BASIC VS. APPLIED RESEARCH

Whereas many Industry on Campus partnerships in Southern Germany address applied research and innovation, other partnerships include fundamental research. Endowed professorships are an example of this (see section 2.1.3). In the last-mentioned case, industry can have a long-term strategic interest in ensuring that the best expertise and scientific excellence is available and easily accessible in the regional innovation ecosystem. Furthermore, speeding up feedback loops between researchers and industry partners, e.g. when it comes to defining and scoping projects and research questions as well as testing proof of concepts, can be both time- and cost-effective.

Application-oriented research is the focus of most Industry on Campus partnerships included in this mapping. Often partnerships with a focus from industry take a 'step back' from product development/industrial R&D, in order to incorporate the new knowledge from research. At the same time, scientists might benefit from closer interaction with industry for the application, validation of, and feedback on, their research.

2.1.2 RESEARCH INFRASTRUCTURES AND TEST & DEMONSTRATION FACILITIES

An advantage of Industry on Campus partnerships is the pooling of resources, which can allow for easier access to research infrastructures and test & demonstration facilities. A focus in the German federal Research Campus programme is that campus projects need to pool resources or activities under one roof. Sharing infrastructures gives industrial partners an opportunity to test prototypes and develop proof of concepts. Furthermore, while not aiming for an immediate development, such collaboration may give companies the possibility to change their technology over a 5-10 year perspective. Thus, capacity building is a key element.

In 2015, the Fraunhofer Institute for Manufacturing Engineering and Automation (Fraunhofer IPA) opened the Application Center Industry 4.0 as one of the early test and demonstration facilities in Germany. The aim was to start several strategic cooperations between research and industry through Industry on Campus labs. Read more about the Industry on Campus labs at Fraunhofer IPA in the highlights from ICDK Munich's 'Industry on Campus Innovation Talk with Fraunhofer' from 29 April 2021.

2.1.3 RESEARCHER MOBILITY

One of the characteristics of several Industry on Campus partnerships is an exchange of researchers between universities and industry partners. Some partnerships include shared and co-financed researcher positions between the university and company. This can take place in the form of an endowed professorship, where a company finances research staff, salaries, infrastructure etc.. Examples of this model are [BOSCH financed professorships within Artificial Intelligence at the University of Tübingen](#) and [BMW endowed chair for Quantum Algorithms and Applications at the Technical University of Munich](#).

A second model is when company employees are seconded into a university. This is the case with the [Karlsruhe Service Research Institute](#) at Karlsruhe Institute of Technology (KIT) and [Zeiss Vision Science Lab including an "Industry on Campus Professorship" at the University of Tübingen](#). Furthermore, the University of Tübingen hosts other ["Industry on Campus Professorships"](#) as well.

A third example is a combination of the two first models: A company on campus hires its own industrial researchers, which then collaborate with university researchers in the (university) building next-door. [SCHAEFFLER Hub for Advanced Research on Campus at KIT](#) applies this model.

2.1.4 INCUBATION AND ENTREPRENEURSHIP

There are several examples of partnerships, with research as their primary focus, that since their establishment have launched incubation and entrepreneurship activities. This is the case with [M2OLIE](#), which is a partnership focusing on developing new methods to treat cancer. M2OLIE is funded by the Research Campus programme by the German Ministry of Education and Research. Another example is the [Cyber Valley cluster](#) (Stuttgart & Tübingen), which focuses on artificial intelligence. Cyber Valley is now a platform focusing on research activities as well as incubation and entrepreneurship.

2.1.5 OPEN INNOVATION

A new and very prominent Industry on Campus partnership, the [Zeiss Innovation Hub](#) at Karlsruhe Institute of Technology, is working with open innovation across research, education and incubation. This means inviting open exchange between researchers, students and industry. Such a "full circle" collaboration potentially opens up for new forms of interaction between universities and private companies.

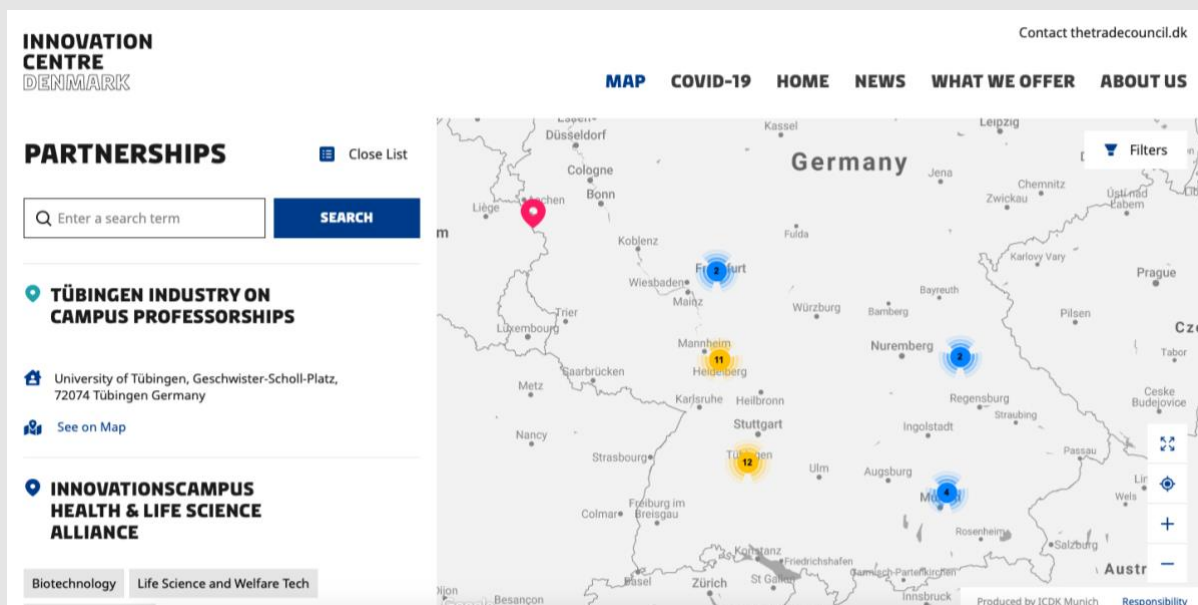
3 MAPPING INDUSTRY ON CAMPUS PARTNERSHIPS

Based on the common denominators listed above, ICDK has mapped a number of partnerships in Southern Germany.

We have included information on the following aspects:

- Initiation; Who initiated the partnership?
- Type of collaboration (1-1 partnership or partnership involving multiple stakeholders);
- Partners involved (universities, other research institutions, corporates, SMEs);
- Governance and organizational structure (including how to ensure an arm's length / checks and balances)
- Business models / financing;
- Objectives and Impact; aims and accomplishments of the partnerships
- Weighting of research vs. innovation (including entrepreneurship/incubation etc.)

You can find the information in our interactive map:



→ LINK TO INTERACTIVE MAP WITH SOME 25-30 PARTNERSHIPS:

WWW.INDUSTRYONCAMPUS.SPACE

3.1 ARTICLES AND INTERVIEWS WITH SELECTED INDUSTRY ON CAMPUS PARTNERSHIPS

3.1.1) SELECTED ICDK EVENTS AND ARTICLES ABOUT INDUSTRY ON CAMPUS

ICDK Munich's Industry on Campus platform: <http://www.industryoncampus.com>.

Industry on Campus material written and events organised by ICDK Munich:



Blogpost on the current mapping of Industry on Campus in Southern Germany:

[Forskningsinstitutioner og virksomheder under samme tag](#)



Blog Post interview with SCHAEFFLER Hub for Advanced Research on Campus at Karlsruhe Institute of Technology: [Når virksomheden rykker ind på campus](#)

“Central for organizing the collaboration between the many different actors is the handling of Intellectual Property Rights (IPR). Here M2Olie works with four different models.”

→ Read more about the industry on Campus collaborations in the highlights from the IoC Camp 2020 above [in danish].



Innovation Talk with Fraunhofer IPA, 29 April 2021: [Industry on Campus Innovation Talk with Fraunhofer \(thetradecouncil.dk\)](#)

“The fact that we are physically present at the campus, allows us as a company to shape the projects in the initial phase together with the university scientists”

→ Read more about the benefits of the SHARE collaboration in our blog post [in danish]



Blogpost with highlights from the Industry-on-Campus camp 2020, 21. Januar 2021: [Kom tæt på samarbejdet mellem universiteter og industrien i Tyskland](#)



Green Report: Interview with Ludwig Bölkow Campus in ICDK Munich's "Green and Sustainable Mobility of the Future" report, February 2021: [HOW BAVARIA'S RESEARCH AND INDUSTRY HUB ARE MAKING GREENER SKIES \(thetradecouncil.dk\)](https://thetradecouncil.dk)



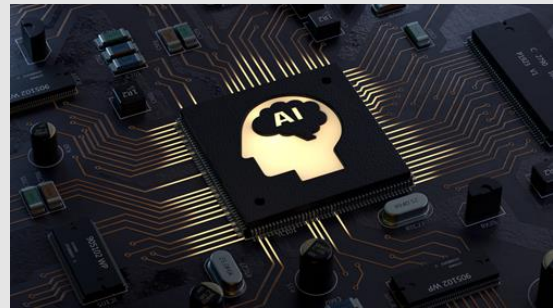
Innovation Talk: [Regional Innovation Partnerships as Innovation Drivers outside of the Big Cities | Baden-Württemberg International and Innovation Centre Denmark, 29 June 2021](https://thetradecouncil.dk)

"The approach is a regional innovation and ecosystem approach. The idea is to fund regional consortia - not institutions"

→ Read more about regional innovation partnerships from our Innovation Talk in June 2021.

"Bosch has started a network of collaboration with universities worldwide to benefit from the talents in higher education institutions"

→ Read more about BOSCH partnerships in the ICDK-ATV Tech Talk article below



ICDK-ATV Tech Talk: AI Update from Germany, 20 April 2021. Participation of Bosch Center for Artificial Intelligence: [Artificial Intelligence Made in Germany \(thetradecouncil.dk\)](https://thetradecouncil.dk)



Innovation Talk with Karlsruhe Service Research Institute, 6 October 2020: [Industry on campus: Perspectives from Karlsruhe Institute of Technology \(thetradecouncil.dk\)](https://thetradecouncil.dk)

3.1.2) CATALYSIS RESEARCH LABORATORY (CARLA): A PARTNERSHIP BETWEEN HEIDELBERG UNIVERSITY AND BASF

Written interview with Dr. Thomas Schaub, BASF, Head of the Catalysis Research Laboratory (CaRLa), 23 July 2021. Dr. Schaub is contributing with his personal perspective.

In addition to the interview below, Dr. Schaub and colleagues have contributed with the article: ["Tackling Challenges in Industrially Relevant Homogeneous Catalysis: The Catalysis Research Laboratory \(CaRLa\), and Industrial Academic Partnerships"](#) in The Journal of Organic Chemistry (*J. Org. Chem.* 2019, 84, 8, 4604–4614. Publication Date: October 1, 2018).

What was the key motivation from BASF to initiate CaRLa together with the University of Heidelberg?

- "This joint lab was initiated to
- facilitate a deep exchange
- and interaction in the
- projects... The intention of this setting was to go fast on new projects "

The key motivation was to tackle long term industrially relevant challenges in the field of homogeneous catalysis, where a strong academic input in basic research to enable completely new approaches is required. "Classical" collaborations are designed in such a way that research is performed in the laboratories of the academic partner and funded by BASF. Exchange usually occurs only a couple of times. And we worked with different collaboration partners from project to project. With CaRLa, we wanted to go for something new. This joint lab was initiated to facilitate a deep exchange and interaction in the projects together with our collaboration partner. The intention of this setting was to go fast on new projects with the established common expertise in this field.

What are the main principles of the collaboration model between BASF and the University Heidelberg in the context of CaRLa? (e.g., in relation to IPR and financing)

The collaboration model is based on mutual trust, and permanent exchange between both partners. This means that BASF is represented in the joint lab on the campus by the lab head from BASF (Thomas Schaub), who is also one of the scientific heads. A high input from the industrial side is secured by the close incorporation of other BASF-experts in all the different running projects. To secure the academic input, the other scientific head of CaRLa is from the university (Prof. A. Stephen K. Hashmi). In addition, the PostDocs are employees of the university and we're located on the campus in Heidelberg to allow a good interaction with the university. As a real joint lab, it is financed by both collaboration partners. All IP generated thus far is shared between BASF and the university of Heidelberg. BASF is the party who could commercialize this shared IP. In case of success, the university will also receive its share of the commercial value of the corresponding IP. This is all aligned within the general CaRLa-collaboration contract and does not have to be renegotiated for each individual project. This speeds up the start of new projects between the two parties significantly.

- “All IP rights generated
- thus far is shared between
- BASF and the University of
- Heidelberg. BASF is the party who would commercialize this shared IP “



Photocredit: Picture from the CaRLa Lab, Dr. Thomas Schaub and colleagues in action (source).

What would you say is the key impact of CaRLa? In other words, what would you highlight as your biggest success?

The CaRLa has been running since 2006 and we have a very good track record. Within the last 6 years, we transferred 14 projects that were started at the CaRLa to the central research of BASF for further process/product development. We filed 33 joint patent applications. From a BASF perspective, this is very successful and pushes us forward in the field of homogeneous catalysis, especially in developing novel, new approaches. We have published 96 papers in peer-reviewed journals, showing that our research is also of academic interest. Many of our former PostDocs went to industry after their time at CaRLa - to BASF and also to other companies. In CaRLa, they got a first insight into how to run industrially driven projects, which is good precondition to successfully apply to a job in the chemical industry.

What part of the collaboration is particularly challenging, and how do you overcome this challenge?

The biggest challenge is to identify the right projects for such a setting. From a BASF perspective, our interest is in generating sufficiently interesting results to justify continuing the projects in the central research of the company and in generating IP. For the academic partner and the PostDocs, it's important to work on projects, that are of high academic interest and to publish their results

- “We usually start projects
- that are of high academic
- interest, requiring a deep
- mechanistic understanding “

in renowned journals. Therefore, not every project idea is suitable for this setting. We usually start projects that are of high academic interest, requiring a deep mechanistic understanding to enable rational catalyst design, that are of long-term interest for BASF and directly involve relevant BASF research groups of interest. Out of the focus are short term projects, custom synthesis, upscale or pure screening projects. But at the end of the day, it's a case-to-case decision between the two scientific heads which projects we are pursuing.

How do you evaluate the long-term success of CaRLa?

The lab has now existed since 2006 and we intend to further continue this collaboration. For me, the track record regarding successful projects, publication outcome and an excellent education of the PostDocs for industrial positions is already a long-term success.



Photocredit: Heidelberg University - Communications and Marketing

Based on your experiences, what would be your main piece of advice to Danish universities and companies that wish to establish an "industry on campus" / "under one roof" collaboration?

Both partners must be well aware of the needs of the other party. It is also very important for such a close and long-term "under one roof" collaboration that it is in a field with a sufficient high interest for the industrial partner, as it binds a lot of resources. You need a large group of focused projects to generate the necessary critical mass and to justify continuous funding. For example, homogeneous catalysis is an important technology in BASF and we produce several million tons of products each year using it. So, there are enough steady needs from BASF in this field to be addressed at CaRLa. Founding such a joint lab in a field where a company does not have a long-term strategic interest is not recommended. In this case it would be better to go for classical collaborations.

- "It is also very important ...
- it is in a field with sufficient
- high interest for the
- industrial partner, as it binds a lot of resources "

4. RECOMMENDATIONS AND NEXT STEPS

Strategic partnerships between research organizations and industry will grow in importance, not least because knowledge and technology transfer are key tools to address complex problems and societal challenges. As the current mapping shows, Industry on Campus partnerships is not a 'one size fits all', there are many different ways of organizing strategic long-term cooperation. We hope that the mapping can be a first step in providing an overview of partnerships, and their characteristics, to equip Danish institutions and companies in seeking further information, and possibly take contact to the partnerships themselves or in coordination with ICDK Munich. Furthermore, we hope that the mapping can be of inspiration to higher education institutions, private companies, and authorities in Denmark, when taking next steps to increase collaboration on research and innovation.

Based on the mapping, we suggest the following recommendations to Danish stakeholders on how to collaborate with Industry on Campus partnerships in Southern Germany:

- **Check out the mapping and 'take what you can use':** Use the map to get an overview of about the different partnerships and consider how aspects of Industry on Campus can be incorporated in your organization's strategy for university-industry relations. Reach out to [Innovation Centre Denmark in Munich](#) for advice and contact to individual Industry on Campus partnerships.
- **Specifically for universities and other research organisations:**
Consider how on-campus collaboration with industry can help in achieving research and innovation goals.
Seek inspiration in Industry on Campus models as a way to anticipate problems and challenges when cooperating with industry.
- **Specifically for technology parks**
Have a look at Industry on Campus partnerships in Southern Germany, especially in regard to elements of shared and 'under one roof' activities. This could be an inspiration on how research and industry partners can work together on campus.

- **Specifically for companies (corporates and SMEs)**
Use the mapping to identify new ways of interacting with universities and research organisations in long-term cooperation.
Consider how partnerships can help to get better day-to-day access to university researchers, as well as to achieve faster feedback loops to speed up the process of innovation and development of new products and services.
- **Specifically for business and innovation clusters**
Based on the mapping and the German Industry on Campus experiences highlighted, consider how to bring universities, companies, and public organisations together in long-term platforms in order to facilitate the access to expertise and technology.

**ICDK MUNICH WILL CONTINUE
TO WORK ON INDUSTRY ON
CAMPUS STRATEGIC
UNIVERSITY-INDUSTRY COOPERATION.
GET UPDATED ON**

WWW.INDUSTRYONCAMPUS.COM

5. FURTHER BACKGROUND: ICDK MUNICH'S ACTIVITIES IN RELATION TO INDUSTRY ON CAMPUS PARTNERSHIPS

Through blogposts and articles, online Innovation Talks and an Industry on Campus Camp in 2020, ICDK Munich has engaged with different Industry on Campus partnerships with the purpose to learn from exchange experiences of research organisations and companies in Southern Germany. Information on the activities are gathered on the platform <http://www.industryoncampus.com>.

Framework for discussing and exchanging experiences on Industry on Campus

Based on dialogue and input from Danish universities and the Confederation of Danish Industry, our events and activities regarding Industry on Campus address, to different extents, the following themes and questions:



Partnership constellations

What type of research and collaboration are made possible through different partnerships between universities and private companies?



Partnership initiation and framework

Who reaches out to who to establish such a partnership?



Stakeholder management

Closed clubs or catalysts for collaboration between multiple stakeholders?



Impact

What impact do Industry on Campus partnerships have and how can it be measured?



Ensuring arm's length

How to ensure an arm's length when working together in such comprehensive and to some extent privileged partnerships?



Financing and business models

How to ensure a sustainable business model for both universities and private entities?