# Combining top down and bottom up in research information management.

Research landscape at the Friedrich-Alexander-Universität Erlangen-Nürnberg

## Facts for FAU

FAU is one of the ten largest research universities in Germany. With more than 40.000 students, over 600 professors and approximately 180 million €in research funding annually, managing and presenting research details is a key interest for the university.

## CRIS details

The FAU Current Research Information System (FAU CRIS) went live in February 2015. Since then, users have entered more than 51.000 publications and validated more than 1.400 research projects.

## Topic introduction

This paper looks at the effort of creating a representation of FAU's varied and diversified research landscape, combining the traditional top-down approach with a more detailed structural bottom-up view.

## Descriptions of challenge

Until recently, FAU research was structured at two different levels: At the top level, key research priorities were (and are) defined for the university as a whole and for the five faculties. These are updated on an irregular basis when there is need for new fields or when the layout of existing ones have changed. With 8 research fields for the university in total and 5 to 13 research fields for each faculty, these have a broad scope and are designed to encompass a lot of different approaches.

The second approach to research structure is carried out by the chairs themselves. If you look at the various individual websites of FAU's over 600 different chairs and professors, research fields are usually mentioned. These are used to structure research on a much finer level, but there is a lot of variation in regards to the quality and method of these efforts.
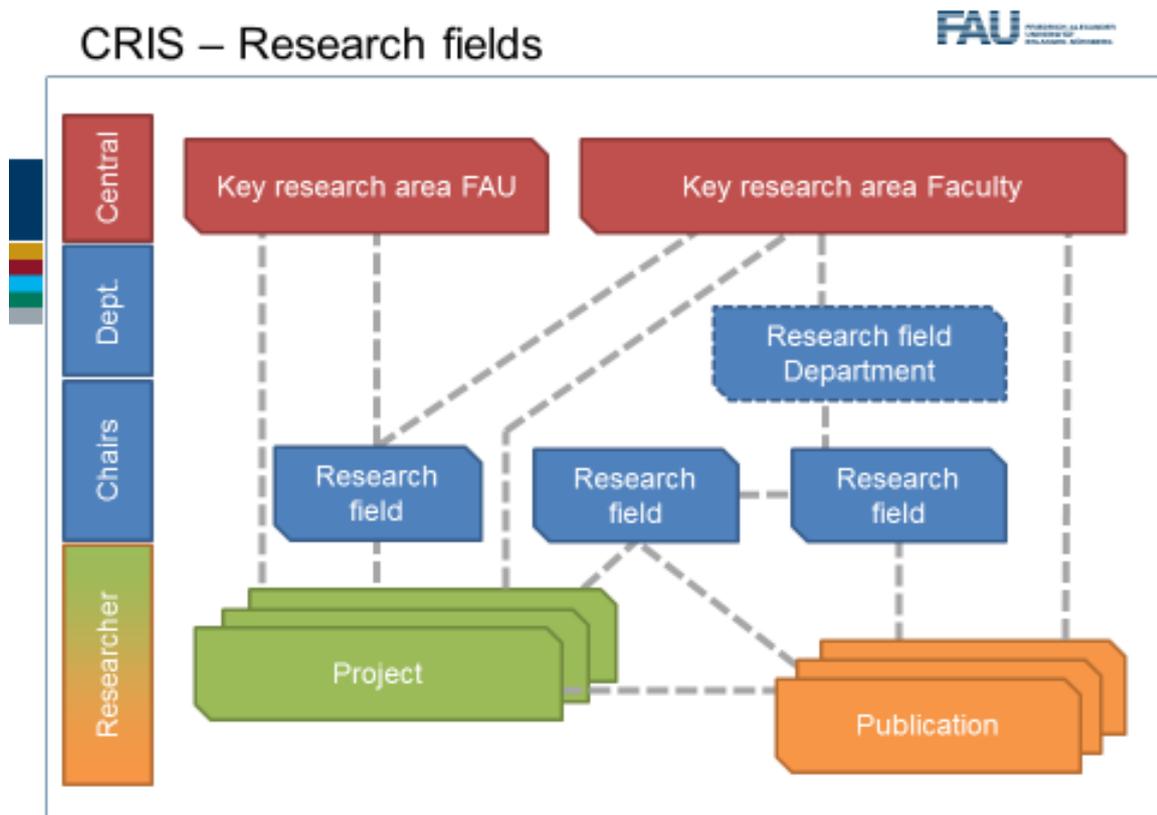
The challenge was to find a way to combine these in a way that is accessible while still providing the necessary flexibility.

## Solution

We decided to combine the mapping structure of both approaches, giving each unit the ability to create their own structur and to link this structure to the larger picture, be it on a Department, Faculty or University level. Creating a detailed research landscape and including it in the comprehensive research

information system allows better linking of our metadata overall, thus improving reports and queries on every level.

## Landscape structure



## Reuse data for web pages

At the moment, FAU is in the process of migrating the majority of individual websites from older CMS to WordPress. Seeing that most individual chairs already use research fields to structure the presentation on their websites, FAU CRIS offers a Plug-In feature for WordPress that is able to create websites from scratch. The content is then updated automatically whenever new data is entered in CRIS. Alternatively, data can be displayed in existing WordPress websites using the same Open Source Plug-In.

## Top-down issue

One major drawback of "top-down" university-wide research areas is the distance to the actual research. Changes and new developments take time to reach the research administration, and take even longer to be formulated into new key research areas.

## Bottom-up closer related to scientists

By enabling the individual chairs to create and maintain their own research landscape, and by encouraging them to link those to the existing top-level areas, new insights into the varied and diverse research activities of a large university can be gained.

## Key research priorities of the university

Another advantage is the clustering effect of the research fields: Top-level areas are prone to change in order to adapt to changes in leadership or overall targets. If all research output is directly linked to these top-level areas, researchers need to go through hundreds of publications and dozens of projects for a chair every time an area is changing. By clustering the publications and projects on a chair basis, only a few new links are necessary.

## Key research fields faculties

Our faculties use research fields to both organize current activities as well as to manage the overall direction their research is headed. The information available was restricted to either very detailed information (hundreds of individual projects and thousands of publications), or to very general (Professor A, chair B). With the introduction of the new research landscape, structured hierarchical information has become available to both central administration and the faculties' research coordinators.

## Using Converis

FAU CRIS is based on Converis 5.5 (Clarivate Analytics). In 2017, up to 100 concurrent users were logged in. The main advantage of Converis is the adaptability, which was inherently necessary for creating and introducing the entities and links used in building the research landscape.

## Activities, projects, publications, patents

FAU CRIS offers a number of ways in which research output can be related to research fields and key research areas. All these links can be used to automatically provision websites with research information using an Open Source WordPress Plug-In.

## Involve researchers

Up-to-date research information and linked data is necessary for any kind of reporting done at a researcher or administration level. We have found those chairs that actively use FAU CRIS to fill their websites to have a far better quality of current data.

## Get consistent information for administration and reports

The main driving force behind the introduction of both CRIS and the research landscape was the central administrations need for both consistent reports and structured data. We have successfully identified key stakeholders who also profit from the new approach. By involving them in both the planning process as well as the roll-out of the new structure, we have improved the acceptance and are ensuring a higher data quality.

## Evaluation Phil.Fak.

The first major project using the new research landscape was the research evalution done by the Faculty of Humanities and Theology. A wide scope of research activities across ten departments made

this a good starting point to test both the accessibility of the new structures as well as the acceptance within the community. The fact that the entry of "historical" publication data for this faculty had mostly been finished in December 2016 proved to be an advantage. It enabled the researchers to focus on the new research landscape and on research projects.

## Lookout

At the moment, the introduction is far from finished. To avoid bottlenecks in support, we are moving from faculty to faculty with the formal roll-out. A number of chairs in those faculties scheduled for later roll-out are already implementing the new system, however and are actively using it to accelerate the switch from their old websites to a new WordPress instance. This proves that the need for a comprehensive research landscape is not one envisioned only in the ivory tower of the central administration, but is being embraced by our researchers as well.