Dimensions

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Benefits of Dimensions

- Improve proposal competitiveness by targeting funding opportunities for particular projects and teams, identifying collaborators and competition for particular projects and teams, and discovering and understanding published outcomes from grants

- Help colleges direct strategic investments and activities into research areas of high growth and potential

- Inform faculty hires by looking for the right candidates for cluster hires

- Identify companies to invite to networking events to foster and increase industry collaborations

How to use Dimensions to facilitate the growth of a research portfolio

A case study with a current user of Dimensions Plus who serves as an AVC for Research and Compliance, and a member of our development partner program

Anne Maglia serves as the Associate Vice Chancellor for Research and Compliance at University of Massachusetts Lowell, a member of our Development Partner Program. She describes how her office uses Dimensions to inform strategic planning for its research portfolio.

Anne provides oversight and direction for the Offices of Research Administration and Institutional Compliance. She ensures effective administration of the university's sponsored research portfolio and compliance with sponsor terms, laws, and regulations relating to the conduct of research. Her office also catalyzes the development and expansion of research activities across campus. Previously, Maglia served at the US National Science Foundation (NSF) as a science adviser and program director for six years.

Anne joined UMass Lowell two years ago during a period of rapid growth for the University. In the last five years, the organization has doubled its research expenditures with current annual research expenditures running at about $80,000,000.

The organization aspires to be a "Research I" university in the next 10 to 15 years and is pushing hard to build up its research portfolio. Anne says it is doing this is by using data to inform decisions at every level of the organization.

There are four different ways in which Anne Maglia and the research development team at UMass Lowell use Dimensions Plus:

1 **Improving proposal competitiveness**

2 **Directing strategic investments and activities**

3 **Informing faculty hires**

4 **Identifying opportunities for industry engagement**

Because UMass Lowell has a relatively small office of research development, being able to serve these use cases from a single database (Dimensions) – rather than multiple bibliographic databases – is useful, efficient and cost-effective. Anne says *"Using the single Dimensions interface makes it a lot faster and easier to do this work, and we are now working to train our faculty to use the resource and discover this information before they submit their proposals."*

Dimensions
By **DIGITAL**SCIENCE

Dimensions offers an easy way to see what a specific funding source has awarded, what publications have resulted, and how frequently those papers have been cited.
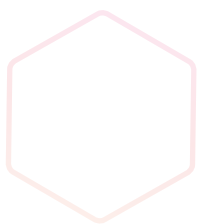
1. Improving proposal competitiveness

For this first use case, Anne says the data in Dimensions, and the links between the grants and resulting publications in Dimensions, is used to:

• Target funding opportunities for particular projects and teams

• Identify collaborators and competition for particular projects and teams

• Discover and understand published outcomes from grants

Anne shares a practical example. *"We had a faculty member who was not getting funding and was concerned because he was getting responses that his proposals did not quite fit the requirements of the solicitations. In Dimensions, we used his publication abstracts and keywords from his work to find projects recently funded in his research area. We saw who was funding this type of research, and at what fiscal levels, and were better able to target his work towards particular funders who would be more likely to fund it."*

In a second example shared by Anne, a faculty team at UMass Lowell was rejected on the basis that their research was not completely novel. *"Doing a similar abstract and keyword search in Dimensions with publication abstracts and keywords, we found another group that had been funded to do complementary research."* Because publications hadn't started coming out on the funded project, the UMass Lowell team wasn't aware of the research project. It seems from the funders perspective that the new project did not appear novel because they had funded something similar to it a few years earlier. Using insight from Dimensions, the UMass Lowell team sought to build a *"coopetition"* strategy with the other team, and are hoping to combine their complementary approaches into a larger and more interesting project that would be more competitive for future funding for both teams.

The next use case came from Anne's background as a program director at NSF. Anne says many funders do not want fund the same type of projects over and over. They want to see that the research they have funded is being built upon by new projects. Principal investigators who hope to be successful should be aware of awards made by the programs to which they are applying, and they should cite key relevant papers resulting from these awards. Anne says *"For our PIs, Dimensions offers an easy way to look at awards from a specific funding directorate and the publications resulted from those awards. The PIs can see if these are relevant to their research and build on the work to make a more attractive proposal for the funder."* Anne says this is particularly useful for PIs that are new to a research field or funding program. Dimensions provides an opportunity to see the breadth of publications resulting from a particular funder, and she encourages PIs to read those highly cited and/or germane publications resulting from a funding opportunity and include them in their proposals when appropriate.

> *Our PIs can easily see publications resulting from funding that are relevant to their project. We encourage them to build on these previous studies and cite resulting publications in their proposals when appropriate.*

KEY PUBLICATIONS
RESULTING FROM RFP
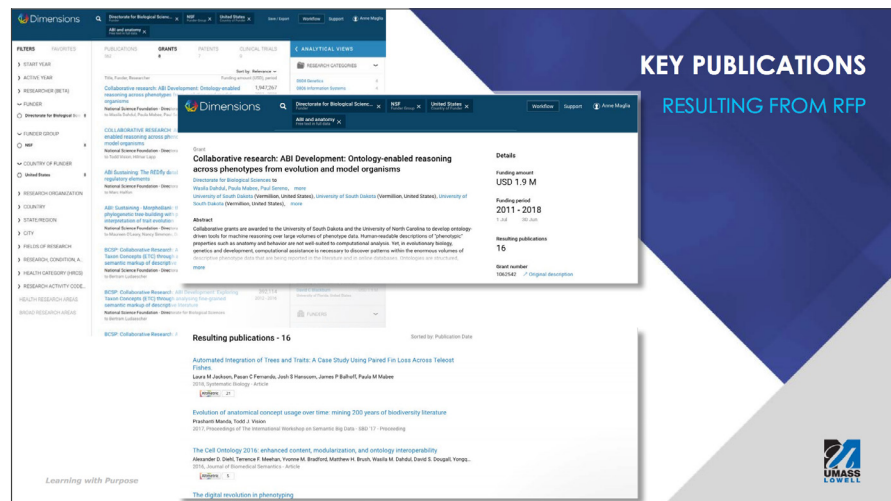
2. Direct strategic investments and activities

Anne and her team also use Dimensions for higher level strategic planning for the University. The organization is growing exponentially by investing some of their resources to multi-disciplinary collaborations and centers and institutes, allowing them to support more researchers by using money strategically.

As a case in point, Dimensions was used to help with annual strategic planning for one of UMass Lowell's colleges. The College identified several areas that they felt were strengths, and wanted to know which areas were prime for growth. Through the Dimensions interface, Anne's team identified the following information as indicators of potential for funding and research development for each of the strengths areas:

- Top funders ($$ and number of projects) - particularly looking at trends over time
- Funder trends ($$ and number of active projects) - particularly looking at trends over time
- Top funded in the state and region - particularly comparing to the competition
- Top funded in the United States
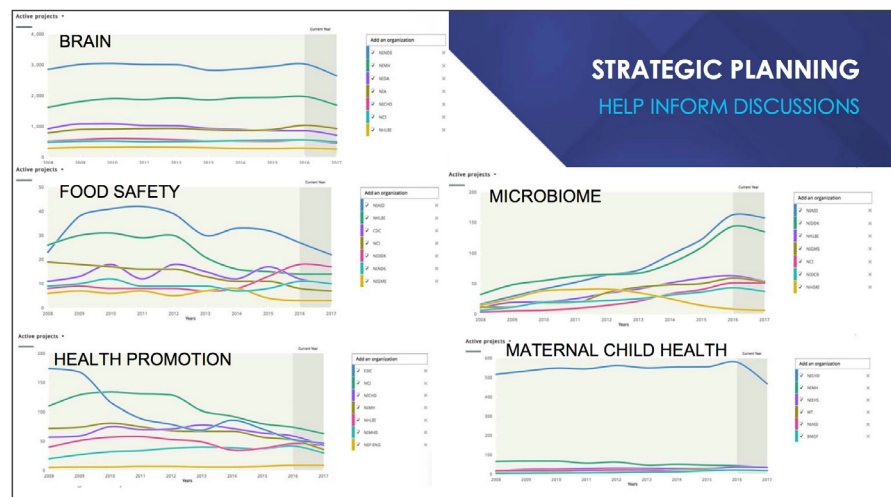
> *UMass Lowell used information from Dimensions to target areas for faculty cluster hires.*

STRATEGIC PLANNING
HELP INFORM DISCUSSIONS

The results helped the College identify, among other things, trends in funding by strength area. The College used the information to identify the areas that are most likely to grow and deliver a return on investment. Anne cautioned though that this doesn't mean the College should stop investing in research that has a downward funding trend, but when the College catalyzes multidisciplinary teams, they should consider developing partnerships that include areas that have upward funding trends so that more of the College are eligible can be responsive to new funding opportunities.
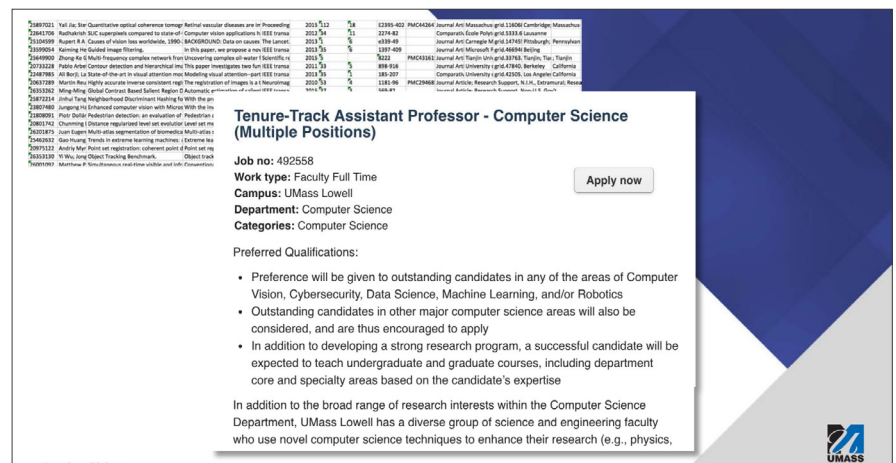
3. Inform faculty hires

U Mass Lowell is in a period of rapid growth and are hiring more than 25 new faculty member each year. Where possible, they hire in clusters of complementary researchers across colleges. To inform this approach, they are looking for areas of opportunity that would allow them to leverage their strengths, share resources, and hire in key areas that complement and bridge the expertise of existing researchers.

For one of their colleges, they used Dimensions data to targeting subtopics of research for multiple faculty postings in: biochemistry, computer science, cybersecurity, and polymer science. In each of these areas, they were looking for topics that would lead to growth and increased external funding.

- **Top funders ($$ and number of projects)**
- **Funder trends ($$ and number of active projects)**
- **Top funded in the state and region**
- **Top funded in the United States**
- **100 recently funded projects for top 5 funders**
- **Recent awards for top funded in state in focus area**
- **Top cited papers in the focus area**

The results were used to enhance job postings, which had been relatively general. By including more specific areas of study, especially those that cross disciplines and are priority areas for funders, they were able to target and hire candidates who work at the intersection of topics, and ultimately, form research teams across colleges.

> *When they started looking at funding trends, it became clear that they should be targeting candidates who work at the intersection of research topics and who could bridge to other departments and colleges.*

4. Identify opportunities for industry engagement

UMass Lowell's industry partnerships are growing, as is the percentage of their funding portfolio that comes from industry. One practical way they do this is by organizing a number of high profile events on campus that are of interest to regional companies. Anne's group worked with the Office of Technology Commercialization to identify potential industrial partners to invite to campus for a high profile conference. Using Dimensions, the UMass Lowell team identified companies in the Northeast US that had received SBIR and STTR funding in relevant technology areas. Anne says that *"Several of the companies that we targeted attended the event, and our group had the opportunity to engage with them and discuss potential collaborations."*