Helping researchers do IT.

“In the era of big data more researchers are dependent on digital technology. I want to help researchers find the appropriate tool for the job,” says Data Champion, Susan Branchett

Susan Branchett has worked at the interface between science and software for several years. Since obtaining her PhD in Computational Quantum Mechanics at University College London, she has assumed various professional positions to provide IT services and software support. Following her post as Director of Business Development and Operations at the Netherlands eScience Center, she joined TU Delft’s IT Innovation Department two years ago to share her expertise in Research Data Innovation.

Demand for digitalisation

Branchett aims to help researchers use IT. “In the era of big data researchers are becoming more dependent on software, algorithms and complex data analysis. I want to help them find the appropriate tool for the job.” She explains her mission to become a point of contact for researchers at TU Delft. “I wish to bridge the gap between science and IT. Researchers can come to me for help and support, and I can show them how to apply IT tools to save time and improve their research.”

She identifies challenges of finding suitable tools during a time of rapidly evolving IT development. “Researchers are often immersed in their work and don’t have the time, know-how or inclination to keep abreast of emerging technologies. What’s more, they often don’t know where to seek IT support.” To this end, Branchett decided to become a Data Champion to engage with the research community and raise awareness of the support services provided by the IT Department.

A survey about storage

Before you can provide researchers with IT support, you need to find out what support they require. Earlier this year, Branchett and colleagues from the IT Department disseminated a survey to learn about the storage requirements of academic staff at TU Delft.

The survey asked questions about their current needs and preferences for data storage. With 625 respondents, the results gave in-depth insight into data storage practice across all eight university faculties. “We discovered that around 75% of academics share data with students; more than 75% share data with external collaborators; and, more than 50% share data globally.” Branchett continues, “The majority of academics share confidential data with international collaborators and are using their own personal devices to do so. From this, we identify that improvements to data storage can be made.”

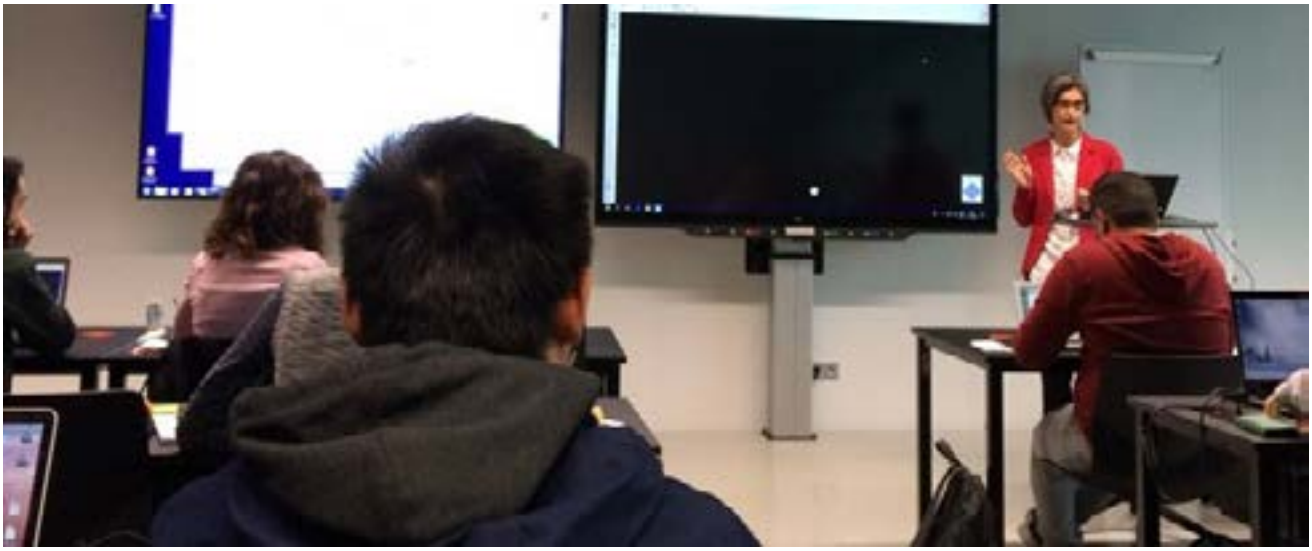
In response, Branchett and co-workers, Bert Kuipers and Wim Penninx, submitted a report to the Paul Hillman (Head of IT) and Bart Feenstra (Manager of the Shared Service Centre) to summarise the results and propose recommendations for improving existing data storage services. Branchett presented an overview of the survey results during the latest Data Champions meeting.

Education for engagement

Working within the Innovation Department, Branchett is continually exploring new ways to support academics in their education. Last year, she organised a Deep Learning workshop which brought together 80 participants to learn basic concepts of machine learning. The workshop proved so popular that places were filled within 24 hours of its announcement! Head of the Computer Vision Lab, Jan van Gemert, introduced basic theory of machine learning, including the concept of ‘feed-forward’ and convolutional networks. Followed by Osman Kayhan and Data Champion, Paul van Gent, who shared hands-on examples for participants to put theory into practice and experiment with their newly acquired programming skills.

In July, Branchett instructed a Software Carpentry workshop within a week of becoming certified. She reflects on her experience of delivering her first workshop, “Initially, I was apprehensive as I hadn’t taught a classroom full of students for a long time. However, it was truly inspiring to work with Data Steward, Kees den Heijer. We received positive feedback and I can’t wait to do it again!”

Branchett highlights the benefits of Software Carpentry workshops for researchers of all career stages. “The course teaches basic programming skills to help early career researchers get off the ground. It also offers more formal training for established researchers who may be self-taught in software development.” She adds, “Participants have an opportunity to learn new skills in a supportive environment and meet like-minded people who they can contact for help.”



Caption: Branchett instructs her first Software Carpentry workshop.

Reaching out to researchers

To reach the wider research community Branchett organised an interfaculty micro-sabbatical. This means that she spends one day per week working closely with researchers to understand how they use IT and how she can help them apply IT solutions for more innovative research. Her efforts promise campus-wide impact as she aims to spend six months working in each faculty.

Her first micro-sabbatical began in October 2018 in the Faculty of Civil Engineering and Geosciences. She spent each Tuesday working with Jerom Aerts, a hydrology PhD student supervised by Nick van de Giesen and Data Champion, Rolf Hut, on 'eWaterCycle II'. This project aims to understand water movement on a global scale to predict floods, droughts and the effect of land use on water balance. The group use a hydrological model to evaluate water flow in a real-world environment. Branchett contributed to the development of a Python Jupyter Notebook that makes data visualisation easier for the group. "I helped develop code for their model so that they can produce graphs and statistics more efficiently. Now, they can import files and generate graphs immediately without having to process data, saving both time and effort." Read more about Branchett's first micro-sabbatical project: 'Using Jupyter to study Earth'.

Her current micro-sabbatical in the Faculty of Applied Sciences involves installing and running Open Source software on the Chemical Engineering computer cluster. As this project ends in October, Branchett is seeking a new faculty to join. If you'd like to use her IT support in your faculty, feel free to contact her! (Details provided below).

A community for collaboration

Branchett is a core team member of the Netherlands Research Software Engineer Community (NL-RSE), an initiative taken by the Netherlands eScience Center and ePLAN to build a community of research software engineers in the Netherlands.

Branchett believes that fostering a collaborative community of software engineers is important for the future of science. “As our reliance on software grows, researchers possessing the technical capacity to write and contribute to software become intrinsic within the academic system. We must give these researchers more visibility and harness their expertise in order to build a sustainable scientific community.”

The second NL-RSE Conference will take place in November, inviting expertise from Dutch Universities, research institutes, companies and other organisations to facilitate networking, knowledge exchange and recognition for research software. The call for contributions to the programme is now open.

Computing Questions?

Want to do IT better? Need help choosing the right tool for the job? Want to arrange a micro-sabbatical within your research faculty? Contact Susan: S.E.Branchett@tudelft.nl or visit her at the University Corporate Office. You can also learn more about her interests and expertise by visiting Twitter, LinkedIn and Github.

Citation

This showcase is a selection from the following publication:
Clare, Connie. (2019). The Real World of Research Data [Book]. Zenodo. http://doi.org/10.5281/zenodo.3584373.