Health, and Harvard Catalyst Profiles, run by the Harvard Clinical and Translational Science Center in Boston — are among those working to forge a network of scientists by wooing whole institutions to adopt their platforms and upload profiles of their faculty members. "Openness is a big deal as VIVO carves out its niche," says Mike Conlon, the site's director.

This approach is gaining traction. On 9 October, the US Department of Agriculture (USDA) was the first federal agency to join the 14 academic institutions worldwide that contribute to VIVO's 21,000-member network. Harvard Catalyst Profiles has more than 30,000 users, from institutions including Harvard University and the University of California, San Francisco. "We believe that data used in networks need provenance and structure — some kind of hosting institution or scientific society verifying the credibility of data," says Conlon. Sharon Drumm, a staff officer for the USDA Agricultural Research Service in Beltsville, Maryland, says that the USDA wants VIVO to connect its 3,500 researchers with the hope of fostering collaborations, providing a single information repository for the public and allowing prospective retirees to pass on institutional knowledge.

Conlon cautions that some networking sites simply ingest publicly available data, creating profiles of people who aren't users. Sites with no checks on data run the risk, he says, of offering less valuable information. James suggests that a high enough proportion of fake profiles could undermine entire sites. In principle, the VIVO and Profiles models are more reliable, because they use vetted data.

VIVO hopes to link profiles with not only publications or grants, but also the most important thing that scientists share — data. "Right now data are the stepchildren of this thing," says Conlon. Linking data sets to people would allow potential collaborators to see what others can offer, he says.

But the existence of a network of profiles, even a vetted one, doesn't necessarily mean that researchers will use it as more than just another database. "I think there's a difference between scientists actively using a network and simply signing up all the scientists in an institution," says Mendeley chief executive Victor Henning.

It is clear that no single site will meet all scientists' needs. What isn't clear is which combination of sites will. "Scientists are not really interested in social networking as an end in itself," says Henning. "They network to boost productivity." ■

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TURNING POINT
Francesca Malfatti

Francesca Malfatti, a postdoctoral researcher at Scripps Institution of Oceanography in San Diego, California, received the International Recognition of Professional Excellence prize in August from the International Ecology Institute in Oldendorf, Germany. The award honours young ecologists who make breakthroughs. Malfatti explains how she and her mentor found an unexpected relationship between microbes.

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How did you get a post in the United States?
I was born in Trieste, Italy, and spent my summers collecting shells along the Adriatic Sea. I decided to study marine biology at the University of Trieste. I got a six-month grant from the Italian embassy in the United States, and could take that money anywhere in the United States. My mentors at Trieste collaborate with Farooq Azam, a marine ecologist at Scripps who specializes in microbial food webs, and he agreed to host me. We established a rapport and he has kept me on through my PhD and postdoc studies.

How did you make a breakthrough discovery?
My research advanced significantly when Dr Azam received money from the Gordon and Betty Moore Foundation in Palo Alto, California, to buy a US$250,000 atomic-force microscope. Using this tool, we were able to conduct our investigations at different resolutions, and discovered an unexpected relationship between bacteria that were thought to be complementary, yet isolated from one another.

Was it difficult to confirm your findings?
It took about a year and a half to understand how best to use the atomic-force microscope. Once I mastered it, I found co-occurrence of heterotrophic bacteria and cyanobacteria. It took another three months of more-quantitative measurements to validate the discovery.

Why is this an important discovery?
It changes how we perceive bacterial life in the open ocean. Cyanobacteria are primary producers, and get energy from the Sun; heterotrophic bacteria are the major consumers of cyanobacteria. Our hypothesis is that cyanobacteria photosynthesize part of the organic matter taken up by heterotrophs in a more tightly coupled, possibly symbiotic, system than we realized. This has implications for carbon cycling in the ocean.

Why did you apply for the award?
Dr Azam nominated me. In his 30 years of studying marine microbial systems, he had never thought that heterotrophs and cyanobacteria would be associated for any part of their lifetimes. He thought finding such an unexpected relationship was worthy of the award.

Why are you moving on from working with him?
We will continue until I leave Scripps at the end of 2011. We have a solid working relationship, but we decided to diversify. He thinks it is best for my career and education that I see another lab or institution. So far, we have written down 21 wide-ranging ideas that we both think should be tackled.

How will you decide how to divide the work?
Luckily, there is so much to do that it will be easy to avoid overlap or competition. We are trying to be pragmatic about who can do what type of research. For example, if I end up doing another postdoc or become a starting professor without much start-up money, I probably won't be able to do certain kinds of experiments, such as those that require atomic-force microscopy.

What sort of impact do you hope your research will have?
Dr Azam impressed upon me the need to create better models of dynamic ecological systems to serve policy-makers and humanity as a whole. Understanding the ocean helps humans because so many biogeochemical processes occur there. I hope my efforts help to build up an accurate ocean-based model of the planet that might help society both predict and safeguard against any impacts of climate change.

Do you feel pressure to follow up with another breakthrough?
No. My brain doesn't work that way. We already live in a very competitive environment. I am a self-motivator, and doing science well is good enough. Not everybody can win a Nobel Prize, but we still need strong science. ■

INTERVIEW BY VIRGINIA GEWIN