

Biologists join forces

Life scientists increasingly rely on large pieces of research equipment to do their work. As **Laura Greenhalgh** reports, a group of institutions called Core4Life is working out a new approach to sharing the cost of all the kit.

More than any other discipline, biology has experienced a technological revolution over the past decade. Since the first draft of the human genome was produced in 2000, full genomic sequencing has become routine—as has the imaging of molecular structure and intense computational analysis of biological data.

All these techniques require expensive and complex laboratory equipment. “For an individual research lab today, it is impossible to master all the different technologies needed to answer a biological question,” says Geert Van Minnebruggen, integration manager at the VIB research institute in Flanders, Belgium. Thus, shared kit with highly skilled operators has become standard at biology research centres across Europe.

“Technologies are becoming very expensive and they turn over very rapidly,” says Doris Meder, head of core facilities at the Centre for Genomic Regulation in Barcelona, Spain. “For each institute to be able to renew its machines and to keep pace with new technologies is a real challenge.”

In 2012, Van Minnebruggen and Meder teamed up with counterparts at four other biology institutes to create the Core4Life group. In joining forces with the European Molecular Biology Laboratory in Heidelberg, Germany, the Functional Genomics Center in Zurich, Switzerland, the Max Planck Institute of Molecular Cell Biology and Genetics in Dresden, Germany, and the Vienna Biocenter Campus and Science Support Facilities in Austria, their intention was to build an alliance with the technological capacity to remain at the front line of biology.

“We decided we have to step up, and instead of only thinking at institute level, think at alliance level,” says Meder. Core4Life has set up working groups within different biological subdisciplines to scout for the best equipment, which can then be validated quickly using an enlarged pool of users. The alliance is also hoping to improve the training of its technicians, by sharing knowledge and organising joint courses for personnel both inside and outside the group.

But despite the obvious financial and scientific benefits, Meder and Van Minnebruggen acknowledge that there are “still some hurdles” to capacity sharing between their institutes. For it to work effectively, access to a core facility in another institute in another country must be as easy as it is at home—regardless of geographi-

cal location, operational procedure or accounting policy. “There is no legal model for this, so it’s something that needs to be developed,” says Meder.

Core4Life therefore wants to establish common standards across the six institutes. Ultimately, the alliance hopes to create a model for sharing that provides access for all researchers under its umbrella, as well as investigating how to jointly buy and operate equipment. As technology development may involve sharing confidential data, intellectual property issues must also be ironed out.

It is only within a trusted circle that such collaboration can be developed, says Van Minnebruggen. “It’s good to start small and then to aim big,” he says. “We decided to take real actions on the ground with a maximum of six...otherwise the dilution factor is too big.”

Later, the group would like to open up its alliance to a Europe-wide association for life science research facilities, to share best practice and improve training opportunities. “Joint investment and sharing capacity is not possible with 500 institutes,” says Meder. “The idea is for us to be the catalyst for a big community.”

Such an association would also provide research facilities with political weight, to lobby for policy change at both national and EU level—with infrastructure funding top of the list.

At present, getting money for major equipment from external sources commonly revolves around one specific research project. In a position paper outlining the aims of the alliance, Meder and Van Minnebruggen argue: “More funding schemes are needed that finance the infrastructures directly, as well as technology development and implementation, without the need to focus on a [specific] research question.”

Core4Life has in mind the example of the 25-year-old United States Association of Biomolecular Resource Facilities, which represents 140 public and private laboratories and operates committees for science policy, education and career development, as well as working groups in different subdisciplines. “In time, we can start thinking about expanding the alliance to turn the small nucleus into a broad platform,” says Van Minnebruggen.

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