

Q&A

Lucia Votano is the incoming director of the National Laboratory in Gran Sasso, Italy, one of four national labs in the country's National Institute of Nuclear Physics.



What does your new post mean to you?

My appointment, which begins in September, represents the first time a woman has been named as director of any of the National Institute's four labs. The National Laboratory is the world's largest underground lab for astroparticle physics, and my election is a sign that the institute is taking a big step forward and that women in science are now considered as qualified as men for such a post.

On a personal level, the position is a natural progression from the beginning of my career as a physicist. It will be my last role — a fitting completion. After this I will retire.

What do you consider your biggest challenge?

In April, a devastating earthquake in our region killed more than 200 people, injured 1,500 and left 55,000 homeless. Our lab activity never stopped completely because our building was built to withstand seismic

activity. But people who work and live here are homeless. For me, the important challenge is helping the people. We have donated space for the region to set up a school, we host municipal and other meetings and we are involved in setting up a new interactive science museum in the ruined centre of L'Aquila.

What's your greatest scientific achievement?

I'm quite proud of my present experiment, the Oscillation Project with Emulsion Tracking Apparatus (OPERA), in which a muon-neutrino beam generated at the CERN particle-physics lab near Geneva, Switzerland, is directed towards our detectors. I chaired the OPERA policy- and decision-making board and helped to determine the design, construction and definition of the beam apparatus. We are trying to prove neutrino oscillation, in which a muon, tau or electron neutrino changes from one type to another.

Do bias and bureaucracy plague physics in Italy?

In particle physics, we may be in a better position than other fields. Politics has always been far, far away from our rules and internal government. Perhaps it's because we are always involved in international collaborations, so we must be able to work well with other scientists and other institutes. Otherwise we would disappear from the experiment.

What is the secret of scientific success?

You must do your job with great devotion, dedication, diligence and care. You must continually compare your ideas with those of your colleagues and share your objectives with colleagues. You do not impose your ideas on anyone.

What do you value most about the scientific process?

Intellectual honesty. It's a value that we should try to export to other fields, such as politics.

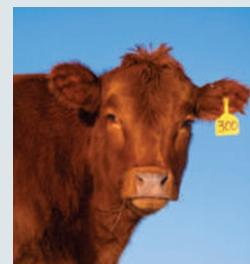
Interview by Karen Kaplan

IN BRIEF

UK lab to get new digs

The laboratory at the centre of the UK foot-and-mouth disease outbreak in 2007 is getting a £100-million (US\$165-million) renovation aimed at attracting scientists back to the Institute for Animal Health (IAH).

The new facilities at the Pirbright Laboratory, where the IAH studies how to control and treat infectious diseases in animals, are due for completion in 2013.



The lab, shared by the IAH and vaccine manufacturer Merial, was linked to two foot-and-mouth outbreaks (see

Nature 449, 259–260; 2007). Reports both before and afterwards called the lab “shabby”, “substandard” and “dilapidated”.

Revamping it and improving biosecurity will make it easier to recruit and retain quality scientists, says science minister Paul Drayson. The renovation is being funded by the new Department for Business, Innovation and Skills.

Banking on energy

Research scientists are set to benefit from a \$3-billion pledge by the US Department of Energy for alternative-energy research and manufacturing. It will help fund such areas as battery manufacturing for hybrid and electric vehicles; new energy research centres; and upgrades of energy-research infrastructure at national labs.

The largest sum, \$2.4 billion, is expected to support research at vehicle and battery manufacturers (see *Nature* 460, 791; 2009). Another \$377 million will support 46 ‘energy frontier’ centres at universities, national labs and research institutions. These will focus on basic and applied science in various fields including biofuels, solar cells and carbon sequestration (see *Nature* 459, 285; 2009).

Also, \$327 million will pay for research, instrumentation and lab infrastructure at 10 national labs. Of that, \$60 million, the largest allocation, goes to Fermilab in Batavia, Illinois, for a particle accelerator.

The funding, announced earlier this month, is part of President Barack Obama's economic recovery plan.

S. WIRZBA/CORBIS

POSTDOC JOURNAL

Failure to communicate

Sometimes in science we fail to communicate effectively. As I try to tell colleagues and friends what I do in the lab, I'm reminded of a germane quote. In the film *Cool Hand Luke*, Luke refuses to submit to the system in a Florida prison camp. After many raucous encounters with Luke, the outraged prison warden concludes: “What we've got here is failure to communicate.”

I talk about science with colleagues, friends and family every day. Science can be regarded as a separate language, replete with its own

vocabulary, syntax and usage. When I share this language with colleagues, no translation is needed. But with friends and family, I have to translate to be fully understood.

Take my PhD thesis. When co-workers asked what the title would be, I could say: “High-resolution genome-wide mapping of the yeast transcription machinery”.

Implicit in this is my use of a method of chromatin immunoprecipitation followed by hybridization to microarrays or high-throughput sequencing for “high-resolution

genome-wide mapping”.

But when my family asked the same question, I had to say, “I study how your cells control what genes are turned on and off.”

Having found it's not easy to explain my research in either the untranslated or translated version, I've learned a valuable lesson. Regardless of the intended audience, being clear and concise pays off if you want to be understood.

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