

Brussels 4

## An Elemental Process Nears Its End

It's (almost) official: Elements 114 and 116 have been named. On 1 December, at the closing ceremony of the International Year of Chemistry in Brussels, the International Union of Pure and Applied Chemistry announced that element 116 is to be dubbed livermorium (after the Lawrence Livermore National Laboratory), and element 116 will be flerovium (after Russian physicist Georgy Flerov). The researchers who discovered the elements got to propose the names, but it will be at least another 5 months before they are official. First, the public will get a chance to comment on the monikers, and experts will conduct further reviews. Then, the IUPAC Bureau will decide whether or not to add the pair to the periodic table. Barring the unexpected, however, look for Lv and Fl to show up in textbooks next year.

## NEWSMAKERS

### It's Official: Glover New E.U. Science Adviser

Two years after saying he would appoint the European Union's first chief science adviser, European Commission President José Manuel Barroso announced on 5 December that Scottish microbiologist **Anne**



**Glover** will take up the job in January. She will act as an independent adviser to Barroso on scientific issues and controversies.

Glover will "act as a bridge with the scientific community to ensure that innovation contributes to our growth," Barroso said. "We must communicate better ... on the benefits of scientific advances and also on their risks."

Glover, who has been the chief scientific adviser to the Scottish government since 2006, is not well known outside of Scotland. But those who know her say it is a terrific choice. "She has done an absolutely amazing job" as Scotland's first science adviser, says Ian Diamond, principal and vice-chancellor of the University of Aberdeen, where Glover worked for most of her career.

Glover's own research has focused on microbiological diversity and the development of so-called biosensors, microbes that can report the presence of contaminants by glowing in the dark. <http://scim.ag/a-glover>

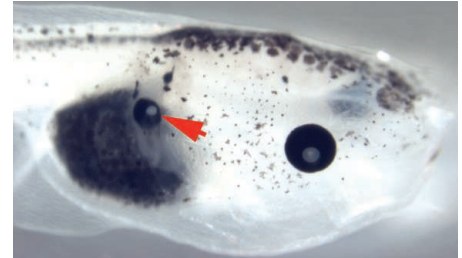
## FINDINGS

### Voltage Change Forms Eyes In Head—Or Wherever

A natural bioelectrical current jumpstarts normal eye development in frogs, researchers have discovered—suggesting a new route toward repairing damaged or diseased eyes.

Almost all cell membranes have "ion channels" that let charged particles move in and out—the essence of an electrical current. But the first clue that bioelectricity might be critical to eyes came a decade ago when Michael Levin at Tufts University in Medford, Massachusetts, and his colleagues altered the number of ion channels in cells in different parts of a frog embryo and found that lens and retinal tissue formed outside the head. Later work by others showed that cells destined to become eyes had an excessive negative charge.

Levin's team has now verified that these



**Electric eye.** A little voltage produces peepers.

pre-eye cells were hyperpolarized, produced DNA regulatory proteins important for eye formation, and did become a lens and retina. Modifying the function of ion channels in four-cell frog embryos led to eyes in the tail and on the gut, but only where cells experienced a particular voltage range, the researchers reported this week in *Development*. "Bioelectrical information is both necessary and sufficient for inducing development of the vertebrate eye." >>



### What the Dog Saw

Some dog owners swear that their pooches can read their minds. But the canine companions are actually just reading humans' subtle cues. To find out just how important visual cues are, U.S., Dutch, and Belgian researchers are building DogCam. Modeled after human eye-tracking devices, this dual-camera system can follow a dog's gaze to see if it's the eyes or hands or some other body part that's giving the human away.

The goggles are modified off-the-shelf dog glasses: One wireless camera sits between the eyes for a dog's eye view of the world, and the other is mounted so that it points to the dog's eye. DogCam was tricky to design, says Alejandra Rossi, a graduate student in cognitive science at Indiana University, Bloomington. The device needs to be robust enough to collect good data, she says, but "you don't want your dog to wear a threatening and bulky laboratory-only system." She plans to use DogCam to understand the visual dynamics of dog-human social interactions.

CREDITS (TOP TO BOTTOM): SHERRY AW AND MICHAEL LEVIN; COLIN ALLEN; SCOTTISH GOVERNMENT