BOOKS & ARTS

Real science on show

The revamped museum at the Massachusetts Institute of Technology will offer the public access to science in action, as more museums should, argues director John Durant.

MIT MUSEUM

The Massachusetts Institute of Technology (MIT) used to run a small, almost hidden museum that had one really big asset: MIT. A wealth of exemplary scientific and technological research was directly accessible to the museum, an advantage not enjoyed by many, much larger, national and independent museums. Later this month, MIT will open a greatly expanded museum that seeks to exploit this advantage by engaging visitors directly with some of the institute's current research.

There are good reasons to care about public engagement with research. It is science-in-the-making that holds the key to many of the most pressing challenges we face. Today the public is confronted with conflicting claims about what science has to say and what it doesn't have to say, for example, on the role of rising carbon dioxide emissions in global climate change, on the potential value of experiments with human embryonic stem cells, or even about the history of life on Earth (as in the new Creation Museum in Petersburg, Kentucky). So it is crucial that citizens should acquire a feel for the real thing, for scientific and technological practice.

One or two independent museums of science and technology have recognized and acted on the importance of public engagement with research. In London, visitors to the Wellcome Wing at the Science Museum encounter contemporary science and technology news displays in the Antenna exhibition, and can even volunteer as research subjects in the Live Science section of the Who Am I? gallery; and visitors to the Darwin Centre at the Natural History Museum can engage with curators working with the museum's collections. Similarly, the Science Museum of Minnesota offers the public access to science news and views through its Science Buzz initiative; and the Exploratorium in San Francisco regularly links visitors directly by live webcast to scientifically important research sites around the world.

There's no one right way of giving the public access to the business of science. Offering people the chance to volunteer as research subjects can work well in some areas of biomedical science. Some natural-history disciplines

MIT Museum will display for the first time devices invented by information theorist Claude Shannon, such as this juggler.

provide opportunities for 'citizen science', whereby non-professionals contribute directly to the collection of data — on, for example, the distribution of particular species, or the timing of seasonal phenomena such as budding and flowering. But it's difficult to offer citizens science opportunities in, say, particle physics or quantum chemistry.

This is where university museums of science and technology have a role. For the most part, university museums are relatively small and short of resources (space, staff, funds). But what they may lack in resources, they can more than make up for in access to the people and processes of science and technology, which gives them the opportunity — and the responsibility — to contribute to the public's engagement with these things.

Visitors to the new MIT Museum will encounter an introductory gallery that showcases a range of live projects across the institute. For the opening, there is a collaborative

project between MIT and the Woods Hole Oceanographic Institution to build the next generation of remotely operated vehicles for underwater ocean exploration; a cancer research programme using the familiar zebrafish as a model to understand genetic developmental processes; and an MIT Media Lab project to build an urban concept car for the twenty-first century. In the future, we hope to present a much larger and more representative array of MIT research projects, and even to create a laboratory within the museum that scientists and engineers can use if they are willing to conduct their day jobs in public.

The introductory gallery will also feature 'MIT 360', a dedicated space with the capacity to connect audiences directly with researchers by video conference. In MIT 360, we plan to link visitors with oceanographers on Cape Cod as they receive data feeds from remotely operated vehicles out at sea. Similarly, we could enable visitors to interact with neuroscientists as they record brain images from awake human subjects. None of this is technically difficult — it's simply a matter of using appropriate ethical frameworks and communication technologies to link citizens directly with science-in-the-making.

All this depends on one scarce and ultimately limiting resource: scientists' time. Research scientists and engineers are busy people, and they need to be willing to carve out space in their crowded calendars to talk to interested or concerned members of the public about what they're doing. We find that most of our colleagues at MIT are willing to do this, provided the demands are reasonable. Long may this continue. Both scientists and the public will benefit from greater mutual understanding. If scientists close off, they risk at best not being understood and at worst not being trusted or supported. The stakes — for science and for the rest of society — have never been higher. ■

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The MIT Museum re-opens on 29 September 2007
(<http://web.mit.edu/museum/>).