

# 2011

In a year of global political and economic volatility, the waters of biomedicine have stayed relatively calm. No 'occupiers' pitched tents in hospital hallways, no major scientific leaders have been overthrown and chased abroad, and, although funding from the US National Institutes of Health has remained flat since 2004, at least it's not dipping as low as the stock market on bad trading days. In fact, there might even be some reason to celebrate: as *Nature Medicine* went to press, the US Food and Drug Administration had approved 29 new drugs in the 2011 calendar year, the highest number in the past six years.

But this ship has rocks to dodge yet. The end of 2011 witnessed two blockbuster drugs falling off the so-called 'patent cliff', and

more medicines hang on by a finger, including the blood thinner Plavix (clopidogrel), made by Sanofi and Bristol-Myers Squibb, and Pfizer's Viagra (sildenafil) for impotence, both scheduled for generic manufacturing next year. And, in June 2012, the US Supreme Court is slated to weigh in on whether the federal government can mandate that all citizens pay for insurance—a requirement that anchors President Barack Obama's healthcare bill. The effects of that ruling will ripple out to affect drug pricing and revenue, though the jury is still out on exactly on how.

Before we walk the plank into 2012's circling sharks, let's take a breather and review this past year while the fish are still biting and the sun is out.

## The Yearbook

We list key people who made headlines this year, either by standing up for what they saw as right or by stopping what they felt was wrong.



**Aaron Swartz**  
**Least likely to hide behind a wall**

Internet whiz kid and activist Swartz is a vocal advocate for open access to data on the Web. In July, the US Attorney's Office indicted him with the allegation that he inappropriately accessed the computer networks at the Massachusetts Institute of Technology. He is accused of having downloaded more than 4 million academic articles from the online academic journal archiving system, JSTOR, through the MIT network. Swartz, who was a fellow at the Edmond J. Safra Center for

Ethics at Harvard University at the time of his indictment, pleaded not guilty to all the charges made against him this summer and was released on unsecured bond. There is no verdict on the case yet.



**Michele Bachmann**  
**Most likely to spread a rumor**

Bachmann made headlines in September this year in her bid for the White House when she implied a link between the human papillomavirus vaccine and mental retardation during a nationally televised political debate. Bachmann claimed she met a woman whose daughter had suffered cognitive damage after receiving Merck's Gardasil, which protects against cervical cancer. The Republican congresswoman from Minnesota did not offer evidence to support the connection, which is unsubstantiated in the scientific and medical

literature. She later admitted she was neither a scientist nor a doctor, but her statement reignited public debate over vaccine safety.



**Ivan Oransky and Adam Marcus**  
**Least withdrawn**



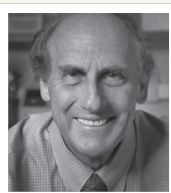
Journalists Oransky and Marcus have made it their quest to document the litany of research papers withdrawn from scientific journals. Their bold blog *Retraction Watch* has analyzed more than 250 retractions in nearly 350 posts since its launch in August 2010. The writers' meticulous coverage of high-profile retractions this year—such as those related to some of Marc Hauser's primate research and Joachim Boldt's work in anesthesiology—brought retractions and the scientific process to the fore (see page 1544).



**Judy Mikovits**  
**Least tired of XMRV**

Mikovits has had an exhausting year. Her hypothesis that the retrovirus xenotropic murine leukemia virus-related virus (XMRV) causes chronic fatigue syndrome took a beating in September. That month saw the publication of a partial retraction of her group's 2009 *Science* paper on the subject, citing worries about the contamination of some samples. In the same issue was a multisite follow-up study, from a group that included Mikovits, that could not reproduce the results of the 2009 paper.

Amidst allegations of not sharing samples, Mikovits lost her job at the Whittemore Peterson Institute (WPI) in Reno, Nevada. In the latest twist, the institute has filed a lawsuit against her, claiming that she failed to return hardware containing WPI research data. Mikovits' lawyer has been quoted in the press saying that her client denies all charges.



**Ralph Steinman**  
**Most Nobel exit**

Ralph Steinman would have heard the news had he lived three extra days. Steinman, who lost a four-year battle to pancreatic cancer in October, received science's highest honors just days after his death: the Nobel Prize in Physiology or Medicine. The Rockefeller University biologist discovered dendritic cells and clarified their essential role in priming the adaptive immune system. His career was spent trying to use dendritic cells to fight cancers and resulted in the first therapeutic cancer vaccine, Dendreon's Provenge (sipuleucel-T). Steinman spent his final months testing at least eight experimental therapies on himself.