

As products enter clinic...scientists shown the door.

Oncology company OSI Pharmaceuticals of Melville, NY, announced, on August 11, its intention to cut 90 of its UK employees, 18% of its workforce, mostly in research, to save \$10–15 million. The same month, the company completed the US submission of a New Drug Application (NDA) for Tarceva, for the treatment of patients with advanced non-small cell lung cancer. The moves are *de rigueur* for biotechs these days, in keeping with the larger trend toward focusing resources on clinical development programs that will generate product revenues as rapidly as possible rather than on early stage research.

As biotech companies evolve into product development companies and their lead programs enter human testing, they naturally have to focus their resources on the expensive clinical programs that will help them establish a profitable business. Discovery programs often suffer in the process. Genomics-oriented discovery biotech Exelixis, in S. San Francisco, California, for example, expects to save \$10 million per year after cutting 62 jobs, or 11% of its workforce in June, as a means to support the clinical trials of two of its product candidates, after filing two Investigational New Drug Applications the same month. Perhaps the most dramatic example of a discovery-oriented company shaping itself around a clinical opportunity is Onyx Pharmaceuticals, which in June 2003, reduced itself to virtually a single phase 3 program; this prompted a second round of layoffs in six months.

Companies in OSI's, Exelixis' and Onyx's position "have no choice," explains Paul Branthwaite, vice president and managing director, Europe, for executive recruiter Bench International, in Basingstoke, UK. "The harsh reality facing boards of directors at biotech companies that are slow to transition to development and commerciali-

Table 1 Hiring trend in large versus small biotechs in 2003

	Employees end 2003 ^a	Employees end 2002 ^a	Change
Top tier (6 companies) ^b	35,235	29,874	5,361 (+18%)
Small biotechs, market caps roughly \$400–800 million (15 companies) ^c	5,055	5,052	3 (0%)

^aFiscal year. ^b2002 data are for Biogen and Idec separately, pre-merger. ^cTop tier: Amgen, Genentech, Biogen Idec, Gilead, Genzyme, Chiron. ^dSmall biotechs: Telik, Abgenix, Vertex, Tanox, NPS Pharmaceuticals, Exelixis, Atherogenics, Dendreon, Transkaryotic Therapies, Medarex, Regeneron, Incyte, Adolor, Cubist, Diversa. Source: SEC filings

zation of products is that the financing environment is generally poor," adds John Archer, senior partner in the healthcare sector for Russell Reynolds Associates International in New York City.

In some cases, scientists that are made redundant are paying the price of biotech companies' adopting new business models. "Unless a molecule is truly novel, the old paradigm of out-licensing late-stage preclinical compounds doesn't work," Branthwaite says. "Pharma companies are asking for proof of concept in man, leaving biotechs in a hole, with their original financial model and funding not providing them with the wherewithal to take compounds to this stage." As a result, many biotechs now need to sustain development longer at the expense of their early-stage R&D.

Although the notion of building a fully integrated company is still alive, "There are probably less than a dozen mid-sized biotechs that can juggle both discovery and development," suggests Wendell Wierenga, head of R&D at Neurocrine Sciences, a company that focuses on neurological treatment. Those that make the attempt tend to limit themselves to a specialty therapeutic niche, such as Cephalon in CNS or Sepracor in respiratory diseases.

But "the model of letting investment capital sit for 10 years can't be supported," Wierenga adds. Indeed, investors' unwillingness to wait the decade or more for research to translate into product revenues also explains the biotech industry's move toward in-licensing—another trend that threatens funding for early-stage R&D, and scientists' jobs. And nowhere is that trend more in evidence than the IPO market where floated companies increasingly rely on in-licensed products (see Table 1).

Some of the most recognized discovery biotechs have similarly changed their businesses to emphasize more rapid product development, including many of the

genomics pioneers. Millennium Pharmaceuticals in Cambridge, Massachusetts, InCyte in Wilmington, Delaware, which axed 257 employees (~57% of workforce, primarily involved in genomics research) in April, and Celera Genomics in Rockville, Maryland, have each increasingly dedicated resources to product acquisitions to accelerate becoming a drug development company.

At Millennium, for example, by the end of 2002—nine years after the company was formed—not one of its research programs had yielded a molecule in human clinical trials (either for itself or its many partners for whom it engaged in R&D). Instead, the company added two clinical-stage products from a merger with LeukoSite, in 1999, and a marketed product, through the acquisition of Cor Therapeutics, in late 2001. Then, to manage its new portfolio and keep its goal of profitability on the horizon, Millennium laid off 103 people in December 2002, followed by another 600 workers, mostly in discovery, six months later.

The general drift is still for the large drug companies to get out of basic research, not into it, points out Branthwaite. And recruiters confirm that scientists in biotech rarely move to large drug companies. But Donna Lee, president of life sciences executive search firm Lee Heagy & Co. in Great Falls, Virginia, has seen such movement in the proteomics and bioinformatics fields. She adds: "Some of the tools developed in biotech are now of interest to big pharma in drug discovery and better targeting of patients who will respond positively to specific therapeutic drugs, both in the clinic and eventually for personalized medicine."

Overall, top-tier biotechs appear the most eager to hire. Among US public biotechs, for example, more mature top-tier firms added 18% to their workforces in 2003, while hiring at smaller companies was flat (see Table 2).

Mark Ratner, Cambridge, Massachusetts

Table 2 In-licensing in biotech companies with recent IPOs

IPO window (number of IPO)	Number of in-licensed programs among IPO companies
Mid 1999–2001 (70)	6 ^b
Mid 2003–2004 (33)	15 ^a

^aIn Europe and the US. ^bIncludes two spinouts from Roche. Source: Windhover Information's Strategic Transactions database

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