



A magnetic hub Boston

The Boston area is now a major region for biotechnology research.

Scientists working in Boston and Cambridge, Massachusetts, sometimes refer to the area as ‘the hub’. But ‘the magnet’ might be a more suitable name — or ‘the bank’. The greater Boston area leads the United States in attracting money from the National Institutes of Health (NIH) — it received \$1.5 billion in 2000, nearly 10% of the biomedical agency’s entire budget for that year.

Harvard University and the Massachusetts Institute of Technology (MIT), the area’s two flagship universities and their affiliates, draw so many donations that anything under \$100 million barely registers. And the area, which already has one of the largest concentrations of biotechnology companies in the world — and a few billion dollars in venture capital funding — is now attracting the interest of more established drug companies. Novartis, for example, announced this month that it is moving its worldwide research and development headquarters to Cambridge.

All of these components add up to massive job opportunities, although the cost of living in the area is rising and the biotech market remains unstable after the terrorist attacks of 11 September. And, despite the implication that all the sites are in contact with each other in the ‘hub’, the area has a reputation for competition and secrecy that some researchers say is not without foundation.

Susan Lindquist, director of the Whitehead Institute in Cambridge, believes that with “spectacular growth” ahead and a reduction in competition — at least for resources — some of those boundaries may be dissolving. Lindquist is currently evaluating whether to split her genome institute into two — one part for genome sequencing, the other to do more postgenomic work, using tools such as microarrays



and mass spectrometers. She thinks that such a split might attract a wider variety of scientists and allow the institute to capitalize on the data it is generating.

Lindquist is also considering how to create more flexible career paths within the institute, possibly by balancing tenure-track positions with more short-term contracts. In addition, she wants to find scientists who will run and improve technological tools, in much the same way that physicists at large labs tend instrumentation but are still regarded as scientists rather than “high-priced technicians”, she says.

Shuguang Zhang, associate director of MIT’s Center for Biomedical Engineering is also breaking down barriers. For him, the interdisciplinary approach is what makes the centre run. Zhang, a geneticist by training, is trying to design biopolymer scaffolds onto which cells can be cultured to generate replacement tissues. For his work, he relies on collaborations with mathematicians, engineers, computer scientists, and even a



Susan Lindquist



Shuguang Zhang

Joining the drug hunt

The Boston area, with its combination of universities, research hospitals and venture capital, is attracting increased activity in cancer-drug discovery. About a quarter of Boston's 150 or so biotech companies engaged in drug discovery have active cancer-research programmes.

One of the newest additions, GenPath, is a good illustration of the local synergy. The company was founded by Dana-Farber Cancer Institute researchers Ronald DePinho and Lynda Chin. It is funded with \$15 million from local venture capital firm MPM Capital, which has over \$1 billion under management. And it is advised by local cancer-research luminaries, including Tyler Jacks, director of the Center for

Cancer Research at the Massachusetts Institute of Technology, and Raju Kucherlapati, director of Harvard Partners Center for Genetics and Genomics. The company expects to hire over 20 scientists in the next 6–9 months.

Meanwhile, AstraZeneca's Boston R&D facility illustrates how more established companies are increasing their activity in the area. When Jeffrey Hanke, the company's vice-president of cancer research, joined AstraZeneca about two years ago, he oversaw a group of seven staff. That number has grown to about 50, and will double once they move into a new building to be completed late next year. Infectious diseases and technology development groups will share the new facility. **P.S.**

scientist from MIT's famed media lab. To foster these links, he frequently crosses the sky bridges that connect his biological engineering building with the chemical engineering and biology buildings. He even crosses rhetorical bridges to work with George Whitesides, chemist and biopolymer expert at 'rival' Harvard.

EXPANSION PLANS

Harvard, too, is showing signs of building bridges as it expands. The university is in the second year of a \$700-million, five-year building plan (see *Nature* **409**, 271; 2001), fuelled partly by the NIH — Harvard received \$250 million in 2000.

One of its latest additions is the Bauer Center for Genomics Research, which aims to conduct postgenomics research by teaming physicists, mathematicians, chemists and computer scientists with biologists (see *Nature* **416**, 256–257; 2002). The centre, which is still searching for a few more fellows, puts its emphasis on collaboration. And, like Zhang's lab, its location is designed to stimulate those interactions. It serves as a node between a biochemistry building and a building for molecular and cellular biology.

Another recently announced project in the area is a \$50-million genetics building that will house 300 research staff shared by Harvard Medical School, Brigham and Women's Hospital and Massachusetts General Hospital. Denise Faustman, an immunologist at Massachusetts General Hospital, notes that the

concentration of institutes makes recruiting easier — especially for candidates who have scientist spouses, as their partner's employment prospects are also improved. Once graduate students or postdocs secure a position, the area's reputation gives them a head start over young scientists from some other parts of the country. Faustman gets regular calls from recruiters wanting to employ people from her lab.

The high concentration of universities, hospitals and drug-development companies in the Boston area also provides job security and allows some to take risks earlier in their career. Faustman has hired a few scientists whose gambles in younger biotech companies have not worked out.

SECURE POSITIONS

The perception of job security helped Scott Sneddon decide to risk moving from established drug firm Pfizer in Connecticut to the smaller biotech company Genzyme in Cambridge. He counsels his friends in the drug industry to take similar chances in the area.

He says that he does not regret his move, because he enjoys his new employer's interactions with academia. For example, David Housman, an MIT researcher who specializes in Huntington's disease, approached Genzyme with an assay that he thought might be useful to screen for the disease. The company tweaked the assay and produced a more refined screen, and in the process Housman gained a better understanding of Huntington's.

Although location in the area does result in such synergies, it can also cause some difficulties, says Connie Pate, senior director of recruitment at Millennium Pharmaceuticals. As the company shifts from drug-discovery into product development, it is looking for more "downstream" people, she says — scientists with expertise in regulatory affairs, biostatistics and clinical trials.

With more drug firms and other established biotech companies moving in, finding qualified local candidates is getting tougher, says Pate. "We have to cast the net wider." That means appealing to scientists from parts of the country with significantly lower costs of living, she says.

Still, even with such pressure, Peter Blume-Jensen had little problem finding qualified candidates for his fledgling cancer-research group at the Serono Reproductive Biology Institute in Randolph. Like many other companies in the area, Serono, a specialist in fertility medicine, is now investing heavily in cancer-research drug discovery (see 'Joining the drug hunt'). Even though Blume-Jensen cast an international net, he ended up hiring several scientists already working in the Boston area, showing that the 'magnet' has already managed to attract a huge amount of talent. ■

Paul Smaglik is editor of *Naturejobs*.

Whitehead Institute ♦ www.wi.mit.edu

Center for Biomedical Engineering ♦ web.mit.edu/cbe/www

Bauer Center for Genomics Research ♦ cgr.harvard.edu



The Whitehead Institute (above) hopes to capitalize on the genomics data it is generating.