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Patricia Beckmann with her dog Ginger Grace I-Lean. (Credit: Boomer Depp)



## A Zigzagging Path Points Straight to Success

Nearly anyone with 25 years of biotech experience would be happy

to have a résumé like **Patricia Beckmann's** (<http://otradi.org/bios/staff/pbeckmann.htm>). It hits many desirable highlights: postdoc experiences as a Fullbright scholar and a visiting scientist at the **National Cancer Institute (NCI)** (<http://www.cancer.gov/>), many dozens of published papers and patents, and a long list of impressive job titles from drug companies to law and venture capital firms to state economic development organizations. Beckmann is also among the inventors of blockbuster rheumatoid arthritis drug **Enbrel** (<http://www.enbrel.com>).

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Including the licensed versions sold outside of North America, Enbrel generated more than \$3.6 billion through the first 9 months of 2010.

Indeed, for the past few years Enbrel has been the world's best-selling **biologic** (<http://en.wikipedia.org/wiki/Biologic>), according to Krishan Maggon, a biotech consultant based in Geneva, Switzerland. Biologics -- a class of compounds created by biological processes instead of chemistry -- include a range of antibodies, interleukins (proteins and molecules critical to the function of the immune system), and vaccines.

Today, Beckmann is president and executive director of **Oregon Translational Research and Drug Development Institute (OTRADI)** (<http://www.otradi.org/>), based at Portland State University. There she's working on another long shot: growing a biotech industry in Oregon, from the ground up and during a recession.

Beckmann has turned a modest amount of state economic-development funding -- the institute has received about \$1.6 million a year in state support since its inception in 2007 -- into a handful of **achievements** (<http://www.otradi.org/news.htm>), including \$26 million in additional funding with affiliated researchers at Oregon universities and companies and a laboratory capable of screening more than 10,000 chemicals a day for druglike activity. She expects the institute to be self-sustaining on federal grants and contracts by 2013.

"She's a fantastic mentor to early-career scientists, for sure," says **Robert Jordan** (<http://www.otradi.org/bios/board/rjordan.htm>), senior director of antiviral research at **SIGA** (<http://www.siga.com/>) in Corvallis, Oregon, and chair of OTRADI's board. "And she has the uncanny ability to recognize the value of early-stage research."

But for all her successes, what stands out most when Beckmann tells her story are the many setbacks she's faced through the years and how she has learned from them.

### Spurred by early obstacles

The first setback was probably the greatest. When Beckmann was 8, her mother died of cervical cancer. Years later, while finishing a biochemistry Ph.D. at the University of Arizona and applying for a Fullbright fellowship at the **Ludwig Institute for Cancer Research in Uppsala, Sweden** (<http://www.licr.org/>), Beckmann realized how much her childhood loss was motivating her professional goals. When the Fullbright interviewers asked why she wanted the position, she remembers answering, "Well, my mom died from cancer, that's why."

Empathy for cancer victims and their families was supplemented by some righteous indignation stoked in her first job out of college. After earning a bachelor's degree in biology, chemistry, and art in 1978 at **Evergreen State College** (<http://www.evergreen.edu/>) in Olympia, Washington, Beckmann went to work as a technician at the **University of Washington** (<http://www.washington.edu/>) in a pathology lab studying atherosclerosis.

To help prepare for graduate or medical school, she took a graduate class focusing on hands-on research. She got permission from her immediate boss, the lab manager, to use proteins from the atherosclerosis lab for a class project to study cell proliferation.

Beckmann's work won praise from her instructor, chair of another department in the university. But when word got back to her own department chair -- her manager's manager -- that one of his technicians was doing stand-out independent research with material from his own lab, the response was not what she expected.

"He brought me into his office and yelled at me, saying, 'You are just a pair of hands; you should only be doing what I tell you to do!'" Beckmann says. Years later, she made peace with the man, who died in 1999 and whom Beckmann prefers not to name out of respect for his memory. "He saw that he kind of misread me many years before, and we became colleagues," she says. "But I never wanted to be an academic after that."

As she wrapped up her postdoc at NCI in 1988, biotech seemed to be surging. The soon-to-begin Human Genome Project was getting lots of press attention, and Beckmann decided to look for a job in industry.

"She was extremely motivated and willing to succeed, but it was a gutsy decision," says **Pier Paolo Di Fiore** (<http://www.ifom-ieo-campus.it/research/difiore.php>), who supervised Beckmann at NCI and today is a pathology professor at the University of Milan Medical School in Italy. "The academy is a more linear path; you know if you publish papers and get grants you'll be moving forward."

Managing a career in industry, Beckmann would find, was anything but straightforward.

## A decade of frustration, then finding her groove

Her first post-postdoc job, in 1988, was at Seattle-based Immunex, then a 7-year-old company focused on developing drugs to treat immune-system disorders. For 5 years, Beckmann was engrossed in many research projects, including an investigation of **tumor necrosis factor receptors (TNFRs)** ([http://en.wikipedia.org/wiki/Tumor\\_necrosis\\_factor\\_receptor](http://en.wikipedia.org/wiki/Tumor_necrosis_factor_receptor)). These are spots on a cell's surface membrane that catch dangerous TNF proteins and stop them from damaging cells.

Beckmann's work identifying TNFRs was critical to the development of Enbrel, today prescribed to treat autoimmune disorders such as rheumatoid arthritis and psoriasis. The drug is a soluble form of the receptor. Essentially, it acts as a free-floating sponge in the bloodstream that soaks up the dangerous TNF proteins.

At the time, however, Enbrel's launch was still 10 years away and its chances of success were uncertain. She worked hard but grew increasingly frustrated at being pigeonholed as merely a scientist. She found herself shut out of business-related discussions about her projects, particularly those where decisions were made about budgets and market strategy.

"That was where my frustration came from," she says. "I wanted my colleagues to take me seriously and not just say, 'She's a scientist and she does good scientific work but doesn't know how to look at market opportunities.'"

And although her publication record attests to her productivity as a researcher -- she was a named author on more than 40 papers during her first 5 years at the company -- even at the bench Beckmann faced obstacles. When conflicts arose about ownership of various projects, she says, her male colleagues would go to supervisors to plead their cases, usually successfully. More galling was when she was left out of decision-making altogether, including a few times when department heads reassigned male colleagues to take over her projects without consulting her.

Four weeks after giving birth to her third child in 1993, Beckmann got a call that she was needed back at work. She insisted that what was best for her and the baby was another month at home. When managers at Immunex declined her request, she quit.

Next came several years of peripatetic attempts to gain the sort of experience, especially in finance and law, that she felt she needed to continue to advance in the industry. She first passed through another biotech company; then a San Diego-based patent law firm, where she learned she hated being a nonlawyer in a law firm setting; and finally a start-up of her own, which explored creating a dander-free cat through genetic engineering.

"I did all the epidemiological analysis; 20% of the population is allergic to cats," she says, laughing. "I thought it was a good idea."

That business -- VetMed -- stalled for lack of funding. Yet her wanderings did achieve their intended purpose. In 1998, Immunex rehired her, first as a contractor in the legal department and then as a full-time scientific liaison focused on research administration.

That year Enbrel was **approved** (<http://nyti.ms/fw2j0f>) by the U.S. Food and Drug Administration. By 2000, Enbrel sales topped \$650 million and Immunex, established in 1981, was breaking all of its previous records for sales, profit, and cash flow. The following year, Beckmann shared the Intellectual Property Owners Association Annual Inventor of the Year **honors** (<http://www.ipo.org/AM/Template.cfm?Section=Home&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=7801>) with Immunex colleagues Craig Smith and Raymond Goodwin.

Enbrel's success put Beckmann's career on a different trajectory, much the way a bestselling book or album can vault a novelist or musician to prominence. She no longer had to struggle for access to business decision-makers -- now they sought her out. Her first stop was Vulcan Ventures, the Seattle-based firm that manages the business and philanthropic activities of Microsoft co-founder and multibillionaire Paul Allen.

"She had worked at Immunex's law department, was one of the co-discoverers of Enbrel and was listed on multiple original Immunex patents, and had been involved in preclinical work on compound discovery," says **Ruth Kunath** (<http://www.linkedin.com/pub/ruth-kunath/11/711/896>), who managed Vulcan's biotech portfolio from 1992 to 2003 and hired Beckmann. "She was a very interesting candidate."

Beckmann left Vulcan in 2005 when the firm began to shrink its portfolio. Next came a series of senior positions in Seattle in venture capital and at a venture-backed biotech start-up. She continued her formal training as well, completing a 2-year **Kauffman Fellowship** (<http://www.kauffmanfellows.org/home.aspx>) focusing on global venture capital leadership. When Oregon venture capitalist and Kauffman mentor Bill Newman told her of the OTRADI position, her interest was piqued, she says, because she thought she could apply most of her accumulated experience in both business and science.

## Money and mentoring

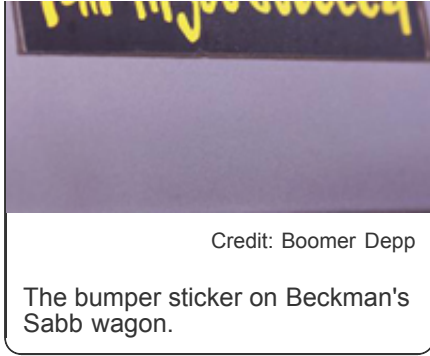
First, Beckmann needs to find more money. State funding for OTRADI fell far short of her expectations. The recession hit Oregon especially hard: The state has one of the worst unemployment rates in the nation, 10.6%, and new governor John Kitzhaber is **facing** (<http://www.businessweek.com/ap/financialnews/D9KJJC0G0.htm>) a daunting \$3.5 billion budget deficit.

The economic climate has forced Beckmann to improvise by bulking up on fee-for-service assaying work in her state-of-the-art labs, partnering on research proposals with universities and biotech businesses, and beginning several of OTRADI's own research initiatives aimed at commercialization. She has found enough money to begin offering grants of up to \$25,000 each to universities and companies with promising ideas. And her team took home \$3 million as the regional winner in the **i6 Challenge** (<http://www.eda.gov/i6>), a White House funding initiative to promote high-tech entrepreneurship by awarding competitive grants in six regions of the country.



Beckmann hopes the award will help the state legislature and local investors decide in OTRADI's favor as she seeks millions more in funding this spring. She wants to expand the institute by building an incubator facility that could provide venture funding, facilities, and management for early-stage biotech companies in the state.

In the meantime, Beckmann plans to nurture Oregon's nascent biotech industry, particularly by mentoring early-career researchers. She remembers her difficulty reaching decision-



makers at Immunex, where she had "no idea, from a political standpoint, how I could break those kinds of barriers since I didn't have a support system that was telling me about what was going on."

Her advice to scientists starting out? "Seek a mentor out," she says. "If there's one person that you think will be the right person, but they end up not being real supportive or you find that they are stabbing you in the back one way or another, find another one."

Her advice on dealing with inevitable failures is more succinct. "It's okay to fail," she says. "That's why I have a bumper sticker on my car that says 'fail 'til you succeed.' "

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