



# 2015 CAREER HANDBOOK

The Employer Sourcebook for Scientists

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# INTRODUCTION

Thanks for picking up a copy of the 2015 Career Handbook. Our goal, with this booklet as well as all the career resources from *Science*, is to bring you useful, relevant information to help you navigate the job search process and manage your development in a way that leads you to a truly rewarding career.

To that end, we have teamed up with some great organizations to bring you information about the latest career opportunities in many different fields. The profiles shown here will give you a sense of the types of organizations that are recruiting and the kinds of positions they offer. We've also included some articles with some general tips and advice on job searching.

In addition to the companies featured in this book, you can search thousands of additional job postings on our website [ScienceCareers.org](http://ScienceCareers.org)—all for free.



Editor: Allison Pritchard

Copy Editor: Yuse Lajiminmuhip

Design: Lisa Baehr

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# THE TRANSFERRABLE POSTDOC

BY KENDALL POWELL  
AUGUST 22, 2014

Now more than ever, experts say, postdoctoral fellows need to cultivate a broad base of beyond-the-bench skills and capitalize on transferring them to the next stage of their career to be as competitive as possible. In today's competitive job market, it is vitally important for postdocs to accumulate skill sets on their CVs right alongside their publications—whether their next career move is research-based or not. Postdocs who repurpose their lab leadership and project management skills into star candidate qualities have an advantage when looking to step into their next position.

When an infectious disease fellowship at the Centers for Disease Control and Prevention in Atlanta turned out to be a poor fit for Melissa Ramirez, she moved on to other postdoctoral opportunities where she picked up skills in grant writing, student mentoring, and teaching. Her last stop was as a postdoctoral teaching scholar at North Carolina State University in Raleigh, where she was immersed in teaching and curriculum development for the campus's undergraduate microbiology students.

At each stage of postdoctoral development, Ramirez gained valuable skills that have now successfully translated into a new career as a teaching assistant professor at NC State.

Her success was not a given, but came after several years of gathering broad expertise across areas and matching those skills to her interests. Ramirez' approach should make her postdoctoral colleagues sit up and take note—no matter which direction they take next, it's a tough job market out there. Almost every sector of the science and technical labor market has tightened since the Great Recession began in 2008.



*Problem solving, analytical thinking, and understanding how to run proper experiments translate beautifully in today's companies operating within Internet-based commerce.*

— Joe Hardy



MEG BUSCEMA

*Paula Stephan urges postdocs to periodically step away from their research to make sure they collect transferrable skills, too.*

"It's very hard to find research positions, in general," says Paula Stephan, professor of economics at Georgia State University in Atlanta and a research associate at the National Bureau of Economic Research. "Postdocs, for the last couple of years, have had particular difficulty because of a soft economy."

Universities in both the United States and Europe are hiring more contract-based faculty or faculty in tenure-track positions that have no salary guarantee and require outside grant funding. Stephan notes that a combination of factors have hit biomedical job candidates especially hard, including the flattening of the U.S. National Institutes of Health budget and the consolidation, downsizing, and off-shoring of jobs among pharmaceutical firms. Some of the largest chemistry labs in the United States, such as DuPont, are also downsizing. "Once we get updated data from the Survey of Earned Doctorates and Survey of Doctorate Recipients, I think we'll see that industry is hiring fewer Ph.D.s for research positions as well."

Compounding the problem is the expectation gap that exists among the roughly 56% of postdocs who believe they will continue on to tenure-track academic positions and the 21% who actually did in 2012 ([scim.ag/XWZwhv](http://scim.ag/XWZwhv)). In addition, the definition of a successful academic job candidate has also shifted in the last decade. Beyond stellar research and publication records, faculty candidates must also collaborate across disciplines and the globe, and have a sharp talent for fundraising.

Although this might all seem bleak, Doctorate-holding scientists are highly employable in many arenas. While postdocs tend to put their heads down and toil to collect data, Stephan and others urge them to periodically step away from their research to make sure they collect transferrable skills, too.

“Actually many of the skills we need for academic careers are the same for non-academic careers,” says **David Bogle**, chemical engineer and pro-rovost of the Doctoral School at University College London. Strengths in analytical thinking, problem solving, written and oral communication, and collaboration make postdocs universally attractive. “No employer wants somebody that is narrow-minded” or too narrowly focused, say Bogle.

## Got skills?

A variety of self-assessment resources can help postdocs track their progress. “Young scientists need to periodically sit back and think, what skills do I have? What skills do I need for my project? And what am I lacking?” says Bogle.

He recommends the Researcher Development Framework created by Vitae ([scim.ag/1IVhLtb](https://scim.ag/1IVhLtb)), a career development organization based in Cambridge, United Kingdom. The framework covers four domains scientists need to be effective: intellectual knowledge, personal effectiveness, professional standards, and working with others.

Similarly, the myIDP website ([myIDP.sciencecareers.org](https://myIDP.sciencecareers.org)) is particularly well-suited to helping biomedical scientists explore careers and set goals for career development. **Sibby Anderson Thompkins**, director of postdoctoral affairs at University of North Carolina (UNC), Chapel Hill, advises using the National Postdoctoral Association’s Core Competencies document and the checklist at the end of it ([scim.ag/1pmZp9l](https://scim.ag/1pmZp9l)) as a concrete way to discuss professional development and specific skills goals with postdoctoral advisors.

## A skills frame-shift

The core skills that every postdoc needs to transition to a successful academic career are well known. Professorships go to those who exhibit clever experimental design and efficient research project management, who can deliver persuasive scientific arguments, and who are able to write clear, concise, and winning publications and grant proposals. But many postdocs may overlook that those same skills—with a slight tweak in frame-of-mind—make them highly marketable for other positions as well.

Anderson Thompkins says postdocs have to shift their own thinking about their acquired skills and how best to present them to potential future employers. “Postdocs are, in fact, mini project managers,” she says, and should describe themselves as such. “Think more broadly—can you manage people, manage time, meet deadlines, and organize? All those skills are really useful in any job. Any job.”

Bogle points to another skill that is highly valued in the workplace, but often undervalued by scientists: “The communication of complex ideas in a clear, transparent way. It’s difficult to deliver complex messages quickly.” **Joe Hardy** adds that problem solving, analytical thinking, and understanding how to run proper experiments translate beautifully in today’s companies operating within Internet-based commerce. “Right now, the way companies think about developing and marketing products is essentially an experimental model,” says Hardy, the vice-president for research and development at Lumosity, a cognitive-training software company based in San Francisco.

Web-based and technology firms often take the approach of an A-B test, he says, with different customers exposed to different experiences. Then, companies measure behaviors like clicking links or purchasing in response. Postdocs understand the importance of random assignment of conditions, good experimental controls, and how to process the data coming back. “In this world of the Internet, millions of experiments are happening simultaneously. Experimental design and analysis are big players now,” Hardy notes.



PHOTO: BY BRIAN KRAATZ  
Faysal Bibi

*Even though writing clearly, presenting complex ideas, and successful completion of projects comes with the postdoc territory, job seekers might need to spell these abilities out for employers.*

Another invaluable skill postdocs must possess to succeed in almost any later venture is writing clearly and concisely. Doing three paleontology postdocs in France, Berlin, and New York—and writing multiple fellowship applications to fund them—prepared **Faysal Bibi** for pursuing the large grant he needs to secure a permanent faculty position. Now in a five-year “habilitation” post as an assistant professor of paleontology at the Museum für Naturkunde in Berlin, Bibi says he has the confidence to write a proposal for the €1–2 million grants necessary to sustain a research program.

When it dawned on **Christine Gould** that she actually enjoyed the process of writing up her thesis and postdoctoral work, she investigated scientific writing careers. As a medical writer for Health Interactions in San Francisco she prepares manuscripts, slide presentations, and abstracts for biotechnology clients. Careers that employ scientific writing skills include science communications and journalism, medical writing, regulatory affairs, and continuing medical education (or CME). **Jeff Sfakianos** even found that his manuscript-writing skills were extremely handy when filing patent applications for his therapeutics startup company. Sfakianos, who did a postdoc at Genentech, found that the back-and-forth with patent examiners mirrored the process of peer review. “Writing my own papers was more important than I imagined,” he says.

Even though writing clearly, presenting complex ideas, and successful completion of projects comes with the postdoc territory, job seekers might need to spell these abilities out for employers. Hardy of Lumosity stresses that if postdocs are transferring outside of their immediate research field, then they must describe in detail (and perhaps in a profession-matched vocabulary) their accomplishments and what useful, relevant skills they have attained.

Gould did this by flipping her curriculum vitae on its head. She listed all of her writing experience at the top—including contract editing work, blogging, and courses in science writing—and de-emphasized her research. “I described myself as a medical writer who happens to have eight years of experience in cancer biology.” Later, she was told her resume stood out to the human resources department.

## Missing from the toolkit

Most postdocs make good project managers, shepherding multiple lines of research into a coherent final publication, but they often lack other types of management training. Fiscal, personnel, and time management are critical for careers both inside and outside academia. These skills, along with teaching and business know-how, should top the list of anyone heading out on the job market, but obtaining them requires extra effort.

As a senior postdoctoral researcher at Uppsala University in Sweden, **Grzegorz Wicher** has acquired an impressive list of technical skills from specialized mass spectrometry to microdissection and primary cell culture. But when it came to starting up his own cell culture company, PrimeCell, he took advantage of the Uppsala Innovation Centre, which helps researchers commercialize their ideas.

Through the center, he took the three-month Business Lab program to gain some business, marketing, and legal knowledge and to get connected to experts in those areas. He also attends “business pub” meetings every couple of weeks to chat with others starting companies and “exchange knowledge with a beer in your hands.”

**Chris Blagden**, director of CME development and strategy for HealthmattersCME in New York notices another skills gap: while postdocs get loads of practice at bringing projects to an endpoint, they get “very little training in the way of doing it cost-effectively and time-effectively.” These are key for CME projects—and for many other client- or product-based projects—that must come in on time and under budget. Postdocs who have managed their own research budget or met tight deadlines may have a leg up.

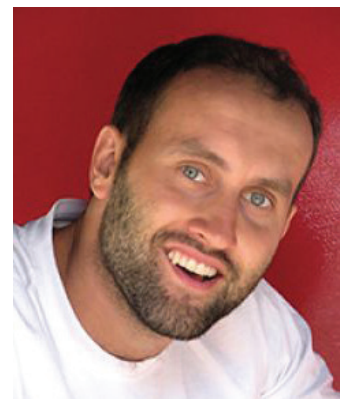


PHOTO: COURTESY  
OF GRZEGORZ WICHE

Grzegorz Wicher attends “business pub” meetings every couple of weeks to chat with others starting companies.



Considerable skills gaps can exist even for postdocs remaining in academia. The leap from postdoc to lab head comes with considerable shifts in focus and responsibilities—teaching, lab management, dealing with interpersonal conflicts, and a penchant for fundraising ([scim.ag/1mCSOTf](http://scim.ag/1mCSOTf))—which don't necessarily come naturally. Academic career development programs, like the popular Preparing for Academic Practice at Oxford University in the United Kingdom, can pave the way for postdocs moving toward tenure-track posts.

Ramirez' teaching scholars program at North Carolina State University provides a foundation for transitioning to teaching faculty positions. With other fellows, she helped teach, organize, and administer the courses and answered student questions. Postdocs can also explore teaching careers through programs such as the American Society for Microbiology's Teaching Fellows Program, a five-month online development course.

Ramirez says her past research career greatly influences her teaching. She was already skilled at distilling down her research to a few sentences to grab the attention of scientists outside her field. "It's the same thing with students—you have a few minutes to capture their attention in a lecture or you've lost them for 50 minutes."

## Running a successful marketing campaign

Regardless of whether postdocs transfer skills to a permanent professorship or to another field entirely, they must think broadly about how to market themselves when the time comes. Much like a presidential bid, running a successful self-marketing campaign requires starting years ahead.

Anderson Thompkins says that postdocs who come to the UNC office early realize they must have a clear sense of their end goal to maximize their postdoctoral time. The most successful postdocs, she says, consider different options, having multiple "plan Bs" and do not bank on one particular career path.

Bogle suggests that trainees ponder career choices at two special times: research highs and research lows. "Take a break and look around. Go to the pub with friends and talk about it. Explore, get out there and find out what's on offer. Make all the connections you can and make use of all the external contacts you can."

*"Take a break and look around. Go to the pub with friends and talk about it. Explore, get out there and find out what's on offer."*

— David Bogle

Young scientists have things backwards if they research intensely for 10–12 hours per day and then only spend 15 minutes on a job search, says Hardy. "You should spend significant amounts of time investigating, networking, and understanding what people like you have gone on to do."

Although self-promotion doesn't always come naturally to scientists, postdocs need to think strategically about how best to position themselves in the research enterprise. In his various postdoc posts, Bibi soaked up cutting-edge techniques, such as evolutionary meta-analysis and genomics, and made valuable personal connections.

"What paid off is that I liked to be a bit of the odd one out, surrounded by people who worked on different things or in different [geologic] time periods." This way, he gained both innovative technical skills and expanded his network well beyond his subfield. As an academic job candidate, he says, "this is something I think I can sell much better than simply saying that I study fossil antelopes."

Bibi has landed on the exact right word: "sell." Job searching in today's market is fundamentally about selling yourself, your ideas, and your skills and convincing a potential employer of your value. Luckily, that's one skill many postdocs have already unwittingly mastered. After all, how many times have you given a seminar and successfully persuaded the crowd to believe you and your data?

# ANNUAL TOP EMPLOYERS SURVEY: EMPLOYEES THRIVE ON INNOVATIVE DESIGN

BY VIRGINIA GEWIN  
OCTOBER 17, 2014



First-in-class drugs and drought-resistant seeds may not seem to have much in common but the transformative technologies being developed to produce these game-changing products do. At the heart of those discoveries are the companies, identified by the 2014 *Science* Careers Top Employer Survey, that foster a spirit of innovation. These 20 biotechnology and pharmaceutical companies have their eyes on transformative prizes and invest in the intellectual capital needed to get there. From encouraging risky research to bolstering academic collaborations, keeping employees engaged and excited about their research is priority number one.

If there is one budding sentiment in the life sciences these days, it's this: The divide between biotech and pharma is crumbling. Not only are biotech companies loosening pharma's stronghold on small molecules, but pharma is, increasingly, forging biotech

research alliances. In fact, pharma companies are setting up shop in biotech-bastions such as Boston, Massachusetts.

A more collaborative era of data-driven discovery—one in which scientists can deftly navigate the regulatory hurdles and development costs necessary to create novel products—is emerging. Adoption of agricultural biotech is at an all-time high. According to a 2013 report by Transparency Market Research, the genetically modified (GM) seed sector is growing at a 9.9% compound annual growth rate, a clear sign of unmet needs in agriculture. And, according to the Pharmaceutical Research and Manufacturers of America, first-in-class therapeutics make up an astounding 70% of the global drug development pipeline.

From new cures to new crops, this year's top employers know that design and diligence go hand in hand. Regeneron Pharmaceutical, Inc.—the top company for the 3rd year in a row—is a biotech bucking to be the next Apple. At the company's 25th anniversary celebration this year, Founding Scientist and Chief Scientific Officer **George Yancopoulos** sought inspirational words to share with his staff. He researched Apple, often cited as the world's most innovative company, at its 25th year mark. He found that, while Apple was considered a solid company, they had yet to invent the iPad or the iPhone. He shared the story at the Regeneron party. "That's our challenge," Yancopoulos told the crowd, "I want us, in 10 years, to be known for the technology we have yet to invent."

*From new cures to new crops,  
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The next decade looks equally bright at Novo Nordisk (#2; up from 11 in 2013), the global leader in diabetes drugs. The Danish drug-maker expects a decade's worth of 10% annual growth in revenue. With a 6,000-strong R&D-focused recruitment push by 2023 and a new \$180 million headquarters, according to Chief Scientific Officer **Mads Krogsgaard Thomsen**, they are clearly positioning themselves for a new era in the company's history.

There were two fresh names on the 2014 list: the largest U.S. pharma, Johnson & Johnson (J&J), which raked in \$28 billion in worldwide pharmaceutical sales last year, reappeared at #19 after a four-year absence, and a newcomer to the list Actelion (#14), a Basel-based biotech currently working on 25 small molecules. "We're the biotech without the large molecules," says **Roland Haefeli**, head of investor relations and public affairs at Actelion.

Perhaps not surprisingly, many of the top 20 companies boast unbelievably low turnover rates, typically lower than 8%. The agricultural-focused biotechs are even lower with roughly 3% of employees at both the #6 top employer, Monsanto Company (up from #14 in 2013), and #9, Syngenta (up from #13 in 2013), voluntarily leaving each year. That's a sharp contrast to a July report from the human resources services company Randstad Pharma that states over 50% of biotech and pharma employees expect to search for a job in the next year.



A common thread runs through the top 20 list: Give employees the intellectual freedom and support necessary to pursue high-risk/high-reward goals—and they'll deliver. Add to this a noble mission, such as increasing food security or decreasing disease suffering, and employers can create a positive feedback loop that maximizes employees' drive and dedication as well as company profits.

## Methodology

# Top Twenty Employers

2014 Rank 2013 Rank **Employer** (Global Headquarters)

2014 Rank	2013 Rank	Employer (Global Headquarters)	Innovative leader in the industry	Treats employees with respect	Has loyal employees	Is socially responsible	Work culture values aligned	Makes changes needed
1	1	Regeneron Pharmaceuticals, Inc. (Tarrytown, NY)	•	•	•	•	•	•
2	11	Novo Nordisk (Bagsvaerd, Denmark)	•	•	•	•	•	•
3	2	Genentech (South San Francisco, CA)	•	•	•	•	•	•
4	3	Vertex Pharmaceuticals Incorporated (Boston, MA)	•	•	•	•	•	•
5	5	Eli Lilly and Company (Indianapolis, IN)	•	•	•	•	•	•
6	14	Monsanto Company (Creve Coeur, MO)	•	•	•	•	•	•
7	4	AbbVie (North Chicago, IL)	•	•	•	•	•	•
8	16	Roche—excluding Genentech (Basel, Switzerland)	•	•	•	•	•	•
9	13	Syngenta (Basel, Switzerland)	•	•	•	•	•	•
10	10	Biogen Idec (Weston, MA)	•	•	•	•	•	•
11	8	Novartis (Basel, Switzerland)	•	•	•	•	•	•
12	18	Abbott (Abbott Park, IL)	•	•	•	•	•	•
13	9	Boehringer Ingelheim (Ingelheim, Germany)	•	•	•	•	•	•
14	—	Actelion (Allschwil, Switzerland)	•	•	•	•	•	•
15	17	Celgene Corporation (Summit, NJ)	•	•	•	•	•	•
16	20	Bayer (Leverkusen, Germany)	•	•	•	•	•	•
17	12	DuPont (Wilmington, DE)	•	•	•	•	•	•
18	19	Amgen (Thousand Oaks, CA)	•	•	•	•	•	•
19	—	Johnson & Johnson (New Brunswick, NJ)	•	•	•	•	•	•
20	—	Merck KGaA/Merck Serono/EMD Serono (Darmstadt, Germany)	•	•	•	•	•	•

The 20 companies with the best reputations as employers and the top three driving characteristics for each company, according to respondents in the 2014 survey undertaken for the Science/AAAS Custom Publishing Office. The companies without a 2013 rank did not receive enough mentions to qualify or did not receive a high enough ranking during the 2013 survey.



Each year, *Science Careers* conducts a web-based survey of individuals familiar with biotechnology and pharmaceutical employers to determine the best employers in the field. The survey was conducted from March 20 to May 4, 2014. Roughly 65,000 individuals—more than twice the number contacted last year—were invited to take the survey. In all, 5,394 returned surveys served as the basis for the analysis. Roughly 25% of respondents were contacted by direct email; the remaining 75% of surveys were returned following promotion by 573 contacts in human resources at biotech and pharma companies (*Science Careers* database). The top 20 companies were determined using a statistical process that calculates a unique ranking score for each company rated. Only companies rated by 35 or more respondents were eligible for the top 20 best employers list.

The majority of respondents (74%) were current employees of the company who took the opportunity to rate their employer's performance. These are not entry-level staff either; roughly 65% have been in the workforce at least 10 years. Basic researchers made up 22% of the survey respondents, while 27% work in applied research, 36% work in development, and 12% are administrators or executives. This year, of the 19% of respondents who said they were likely to seek a different position in the next year, 39% indicated the primary reason for the change was career advancement, down from 41% in 2012.

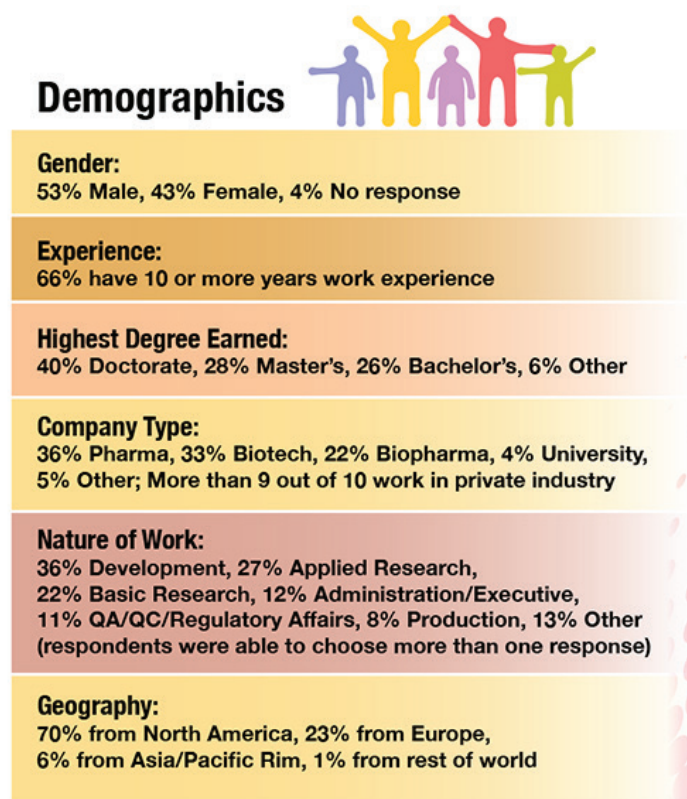
Once again, respondents ranked “is an innovative leader in the industry” as the most important driver in choosing the best companies. The remaining drivers: “is socially responsible,” “has top leadership that successfully makes changes needed to keep the organization moving in the right direction,” “has loyal employees,” “treats its employees with respect,” and “has work culture values that are aligned with employees’ personal values”—suggest today’s employees are an idealistic lot.

Novo Nordisk, Monsanto, Roche (excluding Genentech and up 8 places to #8), and Syngenta all made impressive leaps to reclaim spots on the top 10 list.

Genentech (#3), Vertex Pharmaceuticals Incorporated (#4), Eli Lilly and Company (#5), AbbVie (#7), and Biogen Idec (#10) round out the top 10 employers (see chart on previous page).

## Innovation, defined

Innovation is, arguably, the most overused word in industry. In fact, it means different things to different people; each company has its own culture of finding a “new” product, process, or pipeline. What works at one company will contrast wildly with what works at another. Yet, despite an almost indefinable quality, our survey reveals that, like good art, employees know innovation when they see it and believe it is the single most important characteristic of a “best employer.”



In the last 10 years, Novo Nordisk has developed more of a risk-taking culture to match their grand goal of defeating the growing epidemic of diabetes. “Originally we were not so much into risk taking,” says Krogsgaard Thomsen. Now, they are using stem cell research to create insulin-producing cells. “I get questions from research directors at other companies asking if we’re serious, and I always answer ‘yes,’” he adds. “If we can surpass a barrier to improve the power and convenience of our medicines, we’ve got to do it.” To inspire that spirit of innovation, the new Novo Nordisk headquarters was designed to resemble the hexamer structure of insulin. “Even in our architecture, we’re trying to mimic things that exist in the human body,” he says.

At Regeneron, critical breakthroughs are tackled by bringing the intellectual firepower under one roof. They call it the “think tank.” It’s just an ordinary meeting room, except the 10–30 invitees expect marathon meetings, sometimes reassembling over the course of several days to kick around new ideas. “We have great stamina here,” says **Neil Stahl**, Regeneron’s senior vice president for research and development. Their Veloc-Immune mouse model was an idea which evolved during a “think tank”

meeting. The model has been used to produce fully human monoclonal antibodies and was key to creating the 15 antibodies the company currently has in the clinic—among them a cholesterol reducer and a pain reliever. Even though Regeneron now has external scientists bringing innovative ideas to their doorstep, it doesn’t change their approach. “A lot of these ideas are clever, but not useful or applicable to the bottlenecks in the drug discovery world,” says Yancopoulos. “We understand where innovations are needed to speed drug development and pursue those ideas.”

In keeping with the Apple analogy, the most inventive design is often the game-changing idea. For example, they are excited about their new “bi-specific” technology—essentially one antibody, two actions. One arm of the antibody activates T cells and another arm binds to a tumor target. “It’s an elegant design—an antibody hybrid, made cleanly, with no artificial pieces unlike other bi-specifics that have more of a ‘Rube Goldberg’ design,” says Stahl. It is Regeneron’s first drug candidate that will harness the immune system to attack cancer cells, he says. “That’s the kind of stuff that our employees see coming up, and keeps them excited about in the future.”

When Janssen Pharmaceuticals, the R&D arm of pharma giant J&J, decided they were going to focus on novel therapeutics of big impact, rather than follow the competition’s focus on branded generics or biosimilars, they completely redesigned how they could tackle that goal by opening five so-called innovation centers. The aim is to bring expertise together, rather than reinvent the wheel. Once academic and small company researchers make discoveries, pharma executives can contribute their scientific expertise to help turn those discovery into products. “We want to find the best partners and the best science to develop innovative products,” says Jeffrey Nye, head of neuroscience innovation and partnership strategy at Janssen R&D and the J&J Innovation Centers. “And it’s working.” For example, their Boston-based innovation center launched with news of a \$12.9 million deal to back Rodin Therapeutics, a Cambridge, Massachusetts-based biotech using epigenetics to develop novel therapeutics for neurological disorders, notably Alzheimer’s disease.

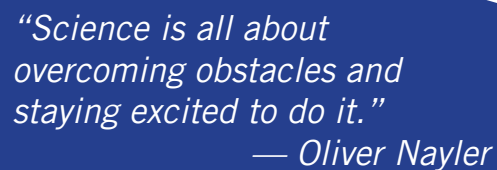
It may sound like giving academics money to do a research job, but Peter Lebowitz, global head of oncology R&D at Janssen, says that couldn’t be further from the truth. “We build a close tie to what these researchers are doing and provide our own expertise,” he says. In fact, his neuroscience colleagues are dreaming up unprecedented drug delivery strategies. “We think, in the near future, it will be possible to treat schizophrenia with four injections per year instead of [patients] having to take pills three times a day,” says Hussein Manji, global head of neuroscience R&D at Janssen. But that’s an approach that only one of the largest pharma companies in the world can take.

In contrast, small, young biopharmaceutical companies, like Actelion, carve out their niche through discovery. Actelion is only 15 years old—and their first internally discovered compound, macitentan, was approved to treat pulmonary arterial hypertension—making 2013 a big year for them.

“Science is all about overcoming obstacles and staying excited to do it,” says Oliver Nayler, Actelion’s head of cardiovascular and fibrosis biology.

At Actelion, employees are increasingly motivated by visualization technologies, such as automated live-cell imaging and high content screening, that offer new means to view and quantify cellular, even subcellular, processes. “It opens up a whole new world, by letting us see what impact our compounds have on cells, which stimulates our creativity to explore new experimental approaches,” says Nayler.

Developing cutting-edge products in the agricultural seed sector, where a constant need to protect crops from drought and disease requires multi-prong strategies, takes on a number of different flavors. For example, both Monsanto and Syngenta have released drought-tolerant seeds. Genomics-based discovery is key for identifying genes of potential interest to plant breeders and biotech seed developers. Monsanto’s newest drought-tolerant product, Drought Guard, relies on a gene that creates a chaperone protein to coat a plant’s RNA during stressful conditions and maintain the plant’s normal cell functions, while Syngenta’s hybrid contains novel drought-tolerant gene combinations. Both companies are also exploring RNA interference (RNAi) technology—the use of RNA molecules to inhibit gene expression—to prevent plant diseases. And while Monsanto is digging into which soil microbes might help grow seeds better, Syngenta is hot on uncovering what metabolites can reveal about maximizing plant growth.



*“Science is all about overcoming obstacles and staying excited to do it.”*  
— Oliver Nayler



## Driving Characteristics of Top Employers

2014	2013	<p>Driving characteristics are listed in descending order of impact on overall employer rankings.</p> <p>Shaded backgrounds indicate the characteristics in common for the two years.</p>
1. Innovative leader in the industry	1. Innovative leader in the industry	
2. Treats employees with respect	2. Treats employees with respect	
3. Loyal employees	3. Socially responsible	
4. Socially responsible	4. Loyal employees	
5. Work culture values aligned	5. Has a clear vision	
6. Makes changes needed	6. Does important quality research	

## Something to believe in

This year's survey responses revealed that employees want to work for a company that holds itself to a high ethic—and walks the walk to prove it. Syngenta employees have long enjoyed a community garden on campus where green thumbs could raise potatoes and carrots from company seeds to donate to a local food bank. In addition, last fall, Syngenta put forward a more global strategy called The Good Growth Plan which makes six commitments to improve resource use efficiency, including finding ways to produce more food with less waste, degradation, and poverty.

For **Hope Hart**, Syngenta's product safety team leader, the company's commitment to social responsibility reinforces her volunteer work at local schools or community groups where she discusses the safety of GM crops or how they help increase small-farm-holders' profits. "I'll go wherever we are invited to share how we know that GM crops are safe because it's an issue that is close to my heart," says Hart.

Monsanto, too, is facing the controversy surrounding genetic engineering head on. A couple of years ago, the company assessed the challenges of, and criticisms against, genetic modification research and realized that they needed to have a more proactive voice on the issue. "We have really started to create a path for employees to engage more in social media or participate in science-based interactions with the public on the questions about the role of science and innovation in agriculture," says **Robb Fraley**, Monsanto's chief technology officer. Their solution, an ambassador program, generated a huge amount of interest. Over 1,000 employees signed up to receive training to be an ambassador and reach out directly to consumers to address question and concerns about science. "You can tell there was a pent-up, innate desire to get more involved. It's been a great employee motivator," adds Fraley. "People really are making a difference in farmer's lives and they want that to continue," he adds.

Fraley says the company's core mission is a critical part of its attraction to potential employees. Internal Monsanto surveys reveal that employee engagement scores are 80%–90%. "That is extraordinary," says Fraley. "We're competing for talent all around the world to expand breeding efforts and having an engaged, diverse workforce is key," he adds.

It's not just the agricultural biotech companies that want to do right by the environment. Actelion has incorporated green building standards in all new construction projects, including the use of solar panels and electric car charging stations, and continues to increase waste recycling efforts. "The young scientists we hire care about these things," says **Tina Kitt**, communications specialist at Actelion. That sentiment is reflected in the survey results as well. Employees are happiest when their work values align with their employer.

*This year's survey responses revealed that employees want to work for a company that holds itself to a high ethic—and walks the walk to prove it.*

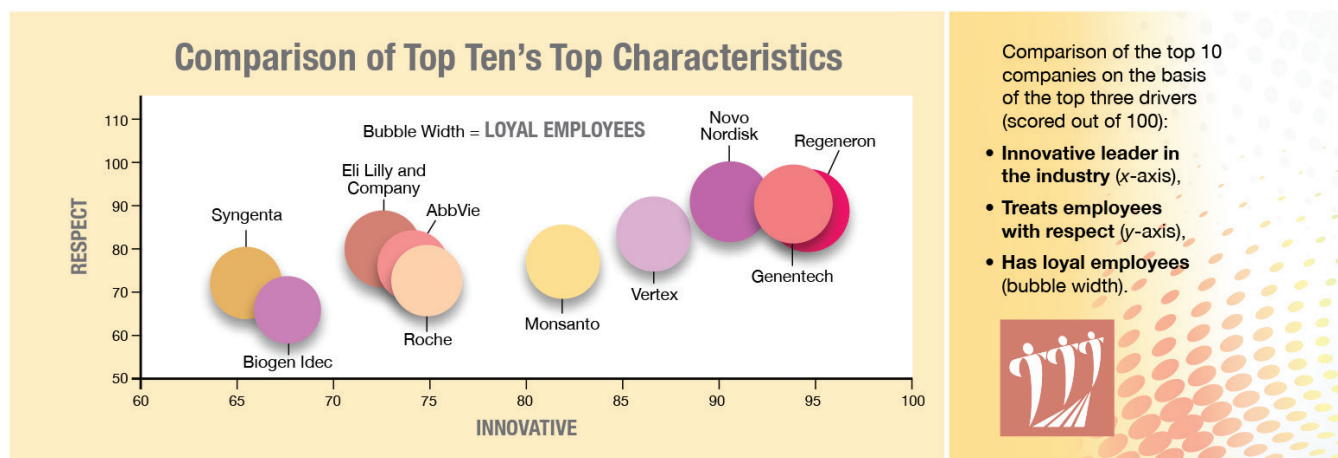
But it goes beyond corporate social responsibility. “We are passionate about doing research that helps the patient,” says Krogsgaard Thomsen. In fact, Novo Nordisk routinely invites patients to the research facilities to share their experiences. “When we heard that patient outcomes are held back by fear of hypoglycemia (low blood sugar), we created drugs that result in a reduced risk of hypoglycemia,” he says.

Novo Nordisk adheres to what they describe as a triple bottom line: doing business that focuses on public health, society, and the shareholders.

“Novo Nordisk is consistently one of the top two health care companies in the Dow Jones Sustainability Index, which tracks the sustainability performance of the largest 2,500 companies listed on the Dow Jones Global Total Stock Market Index. When employees can identify with a company’s vision, and it goes beyond making a profit, they feel they can really align with shared goals,” says Krogsgaard Thomsen.

Not surprisingly, several of these top employers, including Actelion, Syngenta, and Regeneron, also make science education a focus of their social responsibility efforts. Actelion supports the Mobile Bus, a rambling lab equipped with basic science experiments. Yancopoulos says Regeneron sponsors the Westchester Science and Engineering Fair owing largely to two persistent high school science teachers who made him realize that most scientists had, at some point, a science teacher who helped make a difference. “We have to do this for the next generation,” he says.

## Employee appreciation



The survey data reveals that employee appreciation creates a positive feedback with company loyalty. The company rated highest on “treats employees with respect,” Novo Nordisk, also had the highest “loyal employee” rating. “Our international colleagues often comment on how much they appreciate the trust we show in our employees, that it’s a sign of respect,” says [Ann-Charlotte Hasselager](#), corporate vice president of R&D Human Resources at Novo Nordisk. That trust goes both ways. “Every now and then while turmoil surrounds our company, employees support the company and management. There’s not a them [versus] us thing,” says Krogsgaard Thomsen. Flexible work policies, especially those that bolster work-life balance, are a way the company demonstrates its respect for employees.

Rewarding top work is perhaps the best employee motivator. Monsanto’s strong focus on employee recognition includes quarterly recognition events, as well as an annual “Above and Beyond” awards ceremony, with the highest awards going to scientists who have discovered products. They also have sustainable yield pledge awards for actions, such as improving water availability or increasing crop productivity, that conserve more or improve lives.

Monsanto has also taken a broad view of employee well-being. To better understand employee needs and feedback, Monsanto has opened several lines of communication between employees and management. In addition to a biannual internal survey, they also conduct “pulse” surveys on specific employee populations each quarter.

The goal is to provide an inclusive environment in which employees can thrive. **Melissa Harper**, Monsanto’s head of diversity, can rattle off a dozen resource groups designed to support employees—the focus can range from adoption assistance to a lesbian, gay, bisexual, and transgendered network. “We take the time not only to listen but to act on what we’re hearing from our employees,” says Harper. Similarly, Janssen Pharmaceuticals offers adoption assistance and health care advocacy and support.

During the World Cup, there’s one surefire way to acknowledge and appreciate that diversity: televise the soccer matches. In fact, World Cup viewing was a common theme among the top employers. “Our company recognizes that its employees are passionate about sports, and playing the World Cup shows they appreciate our passions as much as they trust us to get our work done,” says Hart. Actelion employees are so soccer-crazed, they hold their own tournament each year. “We all get a bit worried because the teams play so hard,” says Haefeli. “We keep our medical services nearby—just in case.”

*The teams that play hard together, work hard together. “When people come together and play on teams, it feels like a family.”*

— **Gaby Scherer**

The teams that play hard together, work hard together. “When people come together and play on teams, it feels like a family,” says **Gaby Scherer**, Actelion director of human resources. Appreciative of that family feel, Actelion recently built an on-site day care because Basel, in particular, has a tight childcare market. They also accommodate employees who choose to work less than full-time, often after having children. In fact, 17% of their workforce is part-time.

Still, most of the top employers cast aside any form of a caste system. “There’s not the stereotypical hierarchy at Syngenta,” says Hart. “Of course we have levels of management, but everyone’s ideas matter.” Syngenta’s collaborative nature initially unnerved **Michiel van Lookeren Campagne**, Syngenta’s head of biotechnology “My first meeting at the company, we

sat in a round circle of chairs,” he says, “and I wondered ‘where did I land?’” But, he found, it’s just the company’s culture. “When we are meeting, we are all present—no one is typing on a computer.”

For scientists, a collaborative culture can matter most. Regeneron was formed, in part, because Yancopoulos, who was discouraged from collaborating during his days in academia, thought that was the wrong way to do science. “Science is interactive and that was one of our core values from day one,” says Stahl. Yancopoulos says successful collaborations are all about finding synergies. “Most companies exchange dollars for brains, but we don’t work that way,” says Yancopoulos. “We have a lot of biologics and antibodies that we want to test in collaborators’ systems, but we exchange things of respected value like our technologies, reagents, and know-how.” As a result, they are building a company, like Merck KGaA and Genentech (a member of the Roche group) before them, on a foundation of science and technology. “We’re not going to just come up with one drug, we’re going to build a company that’s able to go from basic science into the clinic over and over again.”

But, as Janssen’s Manji points out, the only way to set up outstanding collaborations is to have a lot of strength on the inside. “When I came here over five years ago, one thing I noted is that we’re trying to do things that are so complex, and there is a lot of good science going on outside our walls—we should find ways to work together,” he says. “It is not just ‘us or them’ anymore.”



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[www.aaas.org/mmfellows](http://www.aaas.org/mmfellows)

The AAAS Mass Media Science & Engineering Fellows Program seeks to increase communication skills in student scientists. From grant writing to interacting with their community, these skills will benefit a student's career path and increase public understanding of science and technology.

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## LOCATION

Various cities across the US

## PRIMARY CONTACT DETAILS:

AAAS Mass Media Science & Engineering Fellows Program  
1200 New York Ave, NW  
Washington, DC 20005

Email: [mmfellowship@aaas.org](mailto:mmfellowship@aaas.org)  
Phone: 202.326.6441

## About Us

This highly competitive program strengthens the connections between scientists and journalists by placing advanced undergraduate, graduate, and post-graduate level science, engineering and mathematics students at media organizations nationwide for 10 weeks during the summer. Fellows have worked as reporters, editors, researchers, and production assistants at such media outlets as the Los Angeles Times, WIRED, National Public Radio, National Geographic and Scientific American. The AAAS Fellows use their academic training in the sciences as they research, write and report today's headlines, sharpening their abilities to communicate complex scientific issues to non-specialists. Participants come in knowing the importance of translating their work for the public, but they leave with the tools and the know-how to accomplish this important goal. Over its 40 year history, the program has supported 635 Fellows.

### Criteria:

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3. Successful applicants must attend an orientation at AAAS headquarters at the beginning of the summer (early June) and a wrap-up session at the end of the summer (mid-August). They will prepare reports on the progress of their fellowships throughout their placement.

## KEY RECRUITING AREAS

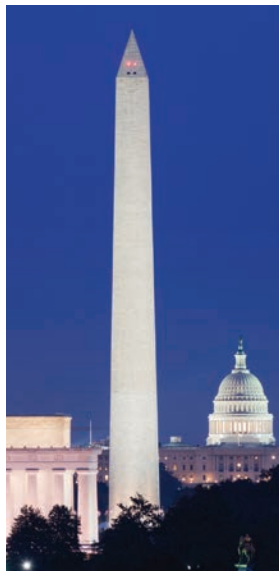
Communication  
Agriculture  
Animal Studies  
Anthropology  
Applied Mathematics  
Astronomy and Planetary Sciences  
Atmospheric Science  
Biochemistry  
Biology (Cell, Molecular, Developmental)  
Chemistry  
Climate Science  
Ecology  
Engineering  
Environmental Sciences  
Genetics  
Geosciences/Earth Sciences  
History of Science  
Material Sciences  
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Physics  
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Statistics



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## SCIENCE & TECHNOLOGY POLICY FELLOWSHIPS



[aaas.org/stpf/sc](http://aaas.org/stpf/sc)

### LOCATION

Washington, DC

### PRIMARY CONTACT DETAILS:

Email: [fellowships@aaas.org](mailto:fellowships@aaas.org)

Phone: 202.326.6700

### About Us

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**Fellowships Year:** September 1, 2016 – August 31, 2017

### KEY RECRUITING AREAS

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Medical and Health Sciences

Biological, physical and  
earth sciences

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## KEY RECRUITING AREAS

- Corporate
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- Regulatory Affairs and Compliance
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## LOCATION

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## PRIMARY CONTACT DETAILS:

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Cambridge, MA 02142  
USA

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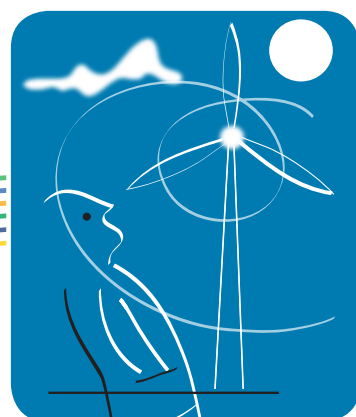
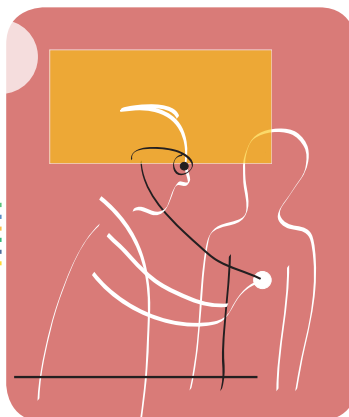
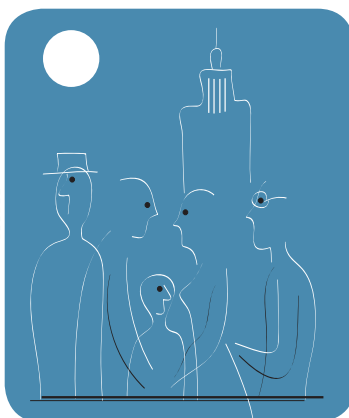
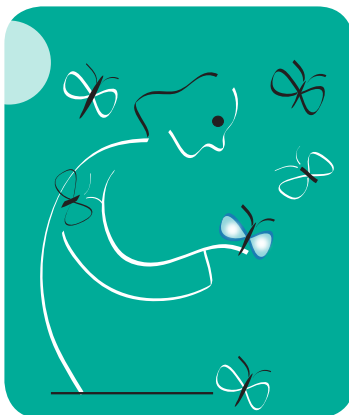
## KEY RECRUITING AREAS

- Molecular Biology
- Immunology
- Fibrosis
- Neurobiology
- Pathology
- Cell Biology
- Antibody Engineering
- Computational Biology
- Postdoctoral Program

Postdoc and young investigators

# opportunities

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## LOCATION

São Paulo, SP, Brazil

## PRIMARY CONTACT DETAILS:

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05468-901 • São Paulo, SP • Brazil

Phone: +55-11-3838-4224

## KEY RESEARCH AREAS

Earth Sciences

Engineering

Exact Sciences

Life Sciences

Physical Sciences

Social Sciences

## About Us

Fifty percent of all science created in Brazil is produced in the State of São Paulo.

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The **Young Investigators Awards** is part of FAPESP's strategy to strengthen the State research institutions, favoring the creation of new research groups. See more about it at [www.fapesp.br/en/yia](http://www.fapesp.br/en/yia).

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# Postdoctoral Research Positions

The Department is actively seeking postdoctoral fellows in a wide variety of fields within molecular and cellular biology. We are seeking highly creative and motivated postdocs with broad interests and outstanding graduate training. We encourage applicants from various backgrounds and promote diversity throughout the University. Postdoctoral appointments are initially 1 year in duration, renewable on an annual basis.

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## LOCATION

Cambridge, MA, USA

## PRIMARY CONTACT DETAILS:

Department of Molecular and Cellular Biology  
Harvard University  
52 Oxford Street  
Cambridge, MA 02138

## KEY RECRUITING AREAS

The scientific questions explored in the department span a wide range and include as diverse topics as Biochemistry and Biophysics, Genetics and Genomics; Development and Cell Biology, Molecular Evolution as well as Neurobiology and Structural Biology.

## About Us

Greetings and welcome to the Department of Molecular and Cellular Biology (MCB), at the main Cambridge campus of Harvard University. We are seeking highly creative and motivated postdocs with broad interests and outstanding graduate training.

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## LOCATION

Klosterneuburg, Austria

## PRIMARY CONTACT DETAILS:

Am Campus 1, 3400 Klosterneuburg

Email: [office@ist.ac.at](mailto:office@ist.ac.at)

Phone: +43 (0)2243 9000

## KEY RECRUITING AREAS

Biology

Neuroscience

Mathematics

Physics

Computer Science

## About Us

The Institute of Science and Technology Austria (IST Austria) is a PhD granting research institution located in Klosterneuburg, 18 km from the center of Vienna, Austria. Inaugurated in 2009, the Institute is performing basic research in biology, computer science, mathematics, neuroscience and physics. The Institute employs professors on a tenure-track system, postdoctoral fellows, and doctoral students at its international graduate school. President of IST Austria is Thomas A. Henzinger, a leading computer scientist and AAAS, ACM and IEEE Fellow. [www.ist.ac.at](http://www.ist.ac.at)

**Tenure Track Career:** To foster a creative and interdisciplinary scientific atmosphere, all hierarchical and separating organizational structures, such as departments, are avoided at IST Austria. The scientists are organized into independent research groups, each headed by a professor or a tenure-track assistant professor. The decision to promote an assistant professor to professor with a permanent contract is based entirely on an evaluation of the scientific achievements by international experts. Research excellence and promise are the exclusive hiring criteria for all scientists at IST Austria – from doctoral students to professors. [ist.ac.at/research](http://ist.ac.at/research)

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**Postdoctoral Career:** Highly qualified recent PhD graduates are encouraged to apply for a postdoctoral position with the faculty of IST Austria. Applications for postdoctoral appointments are accepted on a continuous basis and decided by the research group leaders. In addition, IST Austria has set up the ISTFellow program for exceptional postdoctoral researchers with a higher degree of independence. [ist.ac.at/istfellow](http://ist.ac.at/istfellow)

**ISTernship program for undergraduates:** BS or MS students (or equivalent) interested in an internship may apply directly to a research group leader or to the Institute's summer internship program, called ISTernship. [ist.ac.at/isternship](http://ist.ac.at/isternship)



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## LOCATIONS

Tarrytown & Rensselaer, NY; Basking Ridge, NJ;  
Limerick & Dublin, Ireland

## PRIMARY CONTACT DETAILS:

777 Old Saw Mill River Road  
Tarrytown, NY 10591  
Phone: 914.847.7000

---

## About Us

Motivated by the desire to improve patients' lives, Regeneron employees create an invigorating work environment that leads to new discoveries and products. Headquartered in Tarrytown, NY, we are a premiere and innovative biotechnology company in the pharmaceutical industry that is always on the look-out for intelligent and interesting employees—like you. Our state-of-the-art production facility has a multitude of Engineering and Automation job opportunities and is located in Rensselaer, NY. We also have a third office location with a dedicated team in Basking Ridge, NJ as well as two newly opened offices in Ireland that are located in Limerick and Dublin.

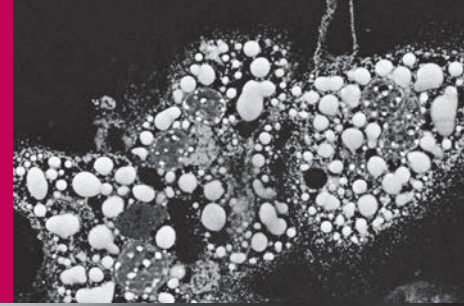
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St. Jude Children's Research Hospital is ranked as one of the top 10 "Best Places to Work in Academia" since 2005 by *The Scientist* magazine and is recognized as one of the premier centers for groundbreaking pediatric research. Efforts are directed at understanding the molecular, genetic and chemical bases of catastrophic diseases in children; identifying cures for such diseases; and promoting their prevention.

At St. Jude, world-renowned scientists and clinical investigators share their knowledge to translate research results into novel approaches for clinical treatments. We offer sophisticated centralized resources and well-equipped facilities, including the Hartwell Center for Bioinformatics and Biotechnology, the Good Manufacturing Practice facility and numerous basic science labs.

Research staff positions at our state-of-the-art core facilities are available to individuals with bachelor's, master's, or doctoral degrees and offer continuing growth opportunities within our research career ladders.

To learn more, visit [www.FindStJude.jobs](http://www.FindStJude.jobs) and enter code: **SCIENCE2015**

Named one of the *Memphis Commercial Appeal's* Top Workplaces in Memphis, 2014.  
Secretary of Defense Employer Support Freedom Award recipient, Employer Support of the Guard and Reserve of the Department of Defense, 2014.  
Named to *Fortune* magazine's 100 Best Companies to Work For, 2011-2014.  
Named the nation's best children's cancer hospital by *U.S. News & World Report*, 2010.  
Named the nation's No. 1 pediatric cancer care hospital by *Parents* magazine, 2009.  
Ranked in the top 10 best places to work in academia by *The Scientist*, yearly since 2005.

EOE/Minorities/Females/Vet/Disability  
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**St. Jude Children's  
Research Hospital**  
ALSAC • Danny Thomas, Founder





[www.stjude.org/jobs](http://www.stjude.org/jobs)

## LOCATION

Memphis, TN, USA

## NUMBERED EMPLOYED

3,600+

## About Us

St. Jude Children's Research Hospital is a world-renowned institution that is recognized as one of the best places to work in the nation. As a premier center for research and treatment of childhood catastrophic diseases, we employ a diverse team of more than 3,600 scientific and healthcare professionals dedicated to the promise of hope.

- We've been recognized for four consecutive years as one of Fortune's "100 Best Companies to Work For."
- We are ranked as one of the top 10 best places to work in academia by The Scientist.
- Best of all, our employees consistently say that the pride they feel in helping fulfill the St. Jude mission of finding cures and saving children is highly motivating.

At St. Jude Children's Research Hospital, our mission – to find cures and means of prevention for pediatric catastrophic diseases – is everyone's top priority. To ensure that our valued people receive the support and rewards they deserve, we offer a competitive and affordable benefits package. Our goal is to keep you and your family healthy, strong and thriving, so we can focus together on our important work.

Our beautiful campus in Memphis is designed to offer a wealth of amenities to make your work enjoyable, provide personal support and keep you healthy and engaged. Features include a free on-campus wellness and fitness facility, onsite farmer's market and food trucks (seasonal), onsite credit union, a variety of wellness programs, onsite cafeteria and Starbucks, lunch time on-site summer concert series, free parking, on-site detailing, mobile dry cleaning services and onsite travel office. Additional benefits include child care discount (two miles from campus), financial education, estate and funeral planning services, 529 college savings plan and much more.

## KEY RECRUITING AREAS

Biostatistics  
Bone Marrow Transplantation and Cellular Therapy  
Cell and Molecular Biology  
Chemical Biology and Therapeutics  
Computational Biology  
Developmental Neurobiology  
Epidemiology and Cancer Control  
Genetics  
Hematology  
Immunology  
Infectious Diseases  
Oncology  
Pathology  
Pediatric Medicine  
Pharmaceutical Sciences  
Psychology  
Radiological Sciences  
Structural Biology  
Surgery  
Tumor Cell Biology

# Job Search Essentials

## Resources

### Differences Between Resumes and CVs

	CVs	Resumes
	Longer & comprehensive	Tailored summary
Depth	Full listing of background and research	Brief snapshot of skills and experiences
Length	Flexible (shorter in industry)	1–2 pages
Critical elements	Full list of publications, presentations, research, service	Transferable skills and experiences
Used for	Academic jobs, industry research, fellowships, grants	Nonresearch jobs outside of academia

### Related *Science Careers* articles

- Mastering Your Ph.D.: Preparing for Your Post-Ph.D. Career
- E-Persona Non Grata: Strategizing Your Online Persona
- Maximizing Productivity and Recognition, Part 2: Collaboration and Networking
- The Informational Interview
- The One-Minute Talk
- Making the Most of Career Fairs
- Writing a Winning Cover Letter
- Put Some Muscle into Your Marketing Materials
- Resume Rocket Science, 2007
- 15 Minutes to a Better Interview
- The Walking, Talking Interviewing Machine
- The Dreaded Phone Interview
- Negotiation Boot Camp

Find these articles online at  
[ScienceCareers.org](http://ScienceCareers.org)

### Related Books

- *The Chicago Guide to Your Career in Science: A Toolkit for Students and Postdocs*, Victor A. Bloomfield and Esam E. El-Fakahany
- *Put Your Science to Work*, Peter Fiske
- *What Color is Your Parachute? A Practical Manual for Job-Hunters and Career Changers*, Richard Bolles

### Other Resources

- LinkedIn – for networking
- The Informed Job Search booklet – available at [ScienceCareers.org/booklets](http://ScienceCareers.org/booklets)
- Individual Development Plan: [myIDP.ScienceCareers.org](http://myIDP.ScienceCareers.org)
- *Science Career Forum*: [scforum.ScienceCareers.org](http://scforum.ScienceCareers.org)

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FROM THE JOURNAL SCIENCE 

# Job Search Essentials

## Questions

### Questions to Ask Yourself

- What do you like to do? What energizes you?
- Do you want to do lab work/research?
- Where do you want to work?
- What do you want to wear to work?
- How often do you want to change projects?
- What sorts of hours do you want to work?
- Are you willing to travel?
- What sort of funding situation do you want to be in?
- What nonscience interests or skills do you want to use?
- How important is your income level? Job security?
- What sort of stress levels do you want to deal with?
- Would you like to work independently or as part of a team?

### Questions to Ask in an Informational Interview

- What attracted you to this field?
- What do you like most or least about this position or field?
- Describe a typical day or week.
- What steps did you take to break into this field?
- What skills are most helpful in your job? How can I develop them?
- To what professional associations do you belong?
- What advice would you give somebody interested in your line of work?

### Questions You Might Be Asked at an Interview

- Tell me about yourself.
- What are your strengths?
- What are your weaknesses?
- Why this organization? Why this job?
- What can you do for us?
- Why are you leaving research? (if applicable)

### Questions to Ask at an Interview

- What does the job entail?
- What are the opportunities for advancement?
- How will you help with my professional development?
- What are the future goals for the organization?
- What are the roles of different team members?
- Tell me about the culture of the organization.



Check out the job listings at  
[ScienceCareers.org](http://ScienceCareers.org)

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FROM THE JOURNAL SCIENCE 

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**THE AMERICAS: WEST**

**TINA BURKS**

202 326-6577  
tburks@aaas.org

**THE AMERICAS: EAST**

**NANCY TOEMA**

202 326-6578  
ntoema@aaas.org

**THE AMERICAS: CUSTOMER SERVICE**

**MARCI GALLUN**

202 326-6582  
mgallun@aaas.org

**JAPAN**

**SHIMADZU ADCOM CO. LTD.  
KATSUYOSHI FUKAMIZU (TOKYO)**

+81 3 3219-5777  
kfukamizu@aaas.org

**HIROYUKI MASHIKI (KYOTO)**

+81 75 823-1109  
hmashiki@aaas.org

**ADARSH SANDHU**

(Collaboration & Custom Publishing)

+81 532 81-5142  
asandhu@aaas.org

**CHINA, KOREA, SINGAPORE,  
TAIWAN, THAILAND;  
ASSOCIATE DIRECTOR,  
COLLABORATION, OPERATIONS,  
AND CUSTOM PUBLISHING**

**RUOLEI WU**

+86 186 0082-9345  
rwu@aaas.org

**EUROPE, INDIA, AUSTRALIA,  
NEW ZEALAND, REST OF WORLD**

**SARAH LELARGE**

+44 (0) 1223 326527  
slelarge@science-int.co.uk

**AXEL GESATZKI**

+44 (0) 1223 326529  
agesatzki@science-int.co.uk

**AROUND THE WORLD:  
CUSTOMER SERVICE**

**KELLY GRACE**

+44 (0) 1223 326528  
ads@science-int.co.uk

# Science Careers

**Science Headquarters**

1200 New York Avenue, NW  
Washington, DC 20005 USA