

TheScientist

BEST PLACES TO WORK

2011 POSTDOCS

FACULTY of 1000

Setting up your own scientific laboratory is no easy task, but this year's respondents are using their postdoc experiences to prepare for the challenge.

BY CRISTINA LUIGGI

The postdoctoral years are a critical time in a budding scientist's career. Decades ago, doing a postdoc was a voluntary option for new PhDs who were not quite ready to commit to a permanent position. Now postdoctoral positions are required training for the next generation of scientific leaders in academia and industry.

According to Peter Peters, founder of the Postdoc Career Development Initiative, based in the Netherlands, the main concerns plaguing today's postdocs are landing a permanent position after 10-plus years of training and adjusting to the responsibilities of running a lab.

"It was a daunting task to go from the level of postdoc to a PI," remembers Peters, who took a position at the Nederlands Kanker Instituut in the Netherlands—#10 among this year's international institutions—after completing his postdoc at the National Institutes of Health in Bethesda, Maryland. Upon returning to his home country, he was disappointed to find that Dutch postdocs weren't getting any guidance in valuable skills required for the transition, such as grant writing, networking, and lab leadership.

Through the Postdoc Career Development Initiative, which Peters tends to when he's not running his 12-member cell biology lab, he organizes workshops and retreats to help postdocs all over Europe make the leap from lab member to lab leader. Indeed, postdocs at the institutions that topped the Best Places to Work survey this year said that it is the fine balance between independence and guidance that is helping them take off their training wheels and become better leaders.

The emphasis on individualism at University College London, this year's top international institution, for example, "is good for learning because you get to be more independent quicker," says postdoc Andrea Alenda. Similarly, the creative freedom postdocs enjoy at the Woods Hole Oceanographic Institution is a commonly cited draw of the marine lab, #2 among US institutions.

Check out the 2011 top-ranking institutions for postdocs in the United States and around the world, compare the strengths and weaknesses of the top 40 US institutions, topped by the Whitehead Institute for Biomedical Research, and learn tips from foreign postdocs about how to adjust to the culture shock of another country.

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TOP 40 INSTITUTIONS USA

#1-20

RANK 2011	RANK 2010	INSTITUTION	STRENGTHS	WEAKNESSES
1	3	Whitehead Institute for Biomedical Research, Cambridge, MA	Facilities and Infrastructure Funding	Family and Personal Life Communication
2	9	Woods Hole Oceanographic Institution, MA	Value of the Postdoc Experience Training and Mentoring	Facilities and Infrastructure Pay and Benefits
3	25	Van Andel Research Institute, Grand Rapids, MI	Family and Personal Life Communication	Career Development Opportunities Facilities and Infrastructure
4	11	Argonne National Laboratory, IL	Career Development Opportunities Value of the Postdoc Experience	Funding Facilities and Infrastructure
5	4	Novartis Institutes for Biomedical Research, Cambridge, MA	Pay and Benefits Facilities and Infrastructure	Communication Value of the Postdoc Experience
6	-	Oklahoma Medical Research Foundation, Oklahoma City, OK	Value of the Postdoc Experience Communication	Facilities and Infrastructure Funding
7	12	J. David Gladstone Institutes, San Francisco, CA	Funding Pay and Benefits	Communication Equity
8	17	Fox Chase Cancer Center, Philadelphia, PA	Communication Career Development Opportunities	Facilities and Infrastructure Equity
9	19	Fred Hutchinson Cancer Research Center, Seattle, WA	Equity Funding	Communication Family and Personal Life
10	26	Vanderbilt University, Nashville, TN	Facilities and Infrastructure Career Development Opportunities	Family and Personal Life Equity
11	22	Emory University, Atlanta, GA	Training and Mentoring Career Development Opportunities	Equity Funding
12	-	US Environmental Protection Agency, Washington, DC	Pay and Benefits Family and Personal Life	Training and Mentoring Facilities and Infrastructure
13	37	University of California, San Francisco, CA	Facilities and Infrastructure Value of the Postdoc Experience	Pay and Benefits Family and Personal Life
14	21	National Cancer Institute, Bethesda/Frederick, MD	Family and Personal Life Career Development Opportunities	Equity Pay and Benefits
15	15	Institute for Systems Biology, Seattle, WA	Pay and Benefits Career Development Opportunities	Value of the Postdoc Experience Facilities and Infrastructure
16	14	Children's Hospital of Philadelphia, PA	Career Development Opportunities Communication	Facilities and Infrastructure Value of the Postdoc Experience
17	32	Washington University, St. Louis, MO	Training and Mentoring Facilities and Infrastructure	Pay and Benefits Equity
18	-	University of Arizona, Tuscon, AZ	Communication Pay and Benefits	Family and Personal Life Training and Mentoring
19	20	Medical College of Wisconsin, Milwaukee, WI	Training and Mentoring Career Development Opportunities	Value of the Postdoc Experience Pay and Benefits
20	-	Carnegie Institution for Science, Washington, DC	Equity Training and Mentoring	Pay and Benefits Family and Personal Life



TYPE OF INSTITUTION

- 35% University, college, or other academic institution (nonmedical)
- 25% Medical school or college
- 21% Research institute (nonprofit, nonacademic)
- 8% Government organization
- 8% Hospital
- 3% Other



AREA OF SCIENCE

- 61% Biological sciences
- 28% Medical sciences
- 8% Physical sciences
- 3% Environmental sciences



TOP 40 INSTITUTIONS USA

#21-40

RANK 2011	RANK 2010	INSTITUTION	STRENGTHS	WEAKNESSES
21	33	University of Texas M. D. Anderson Cancer Center, Houston, TX	Training and Mentoring Value of the Postdoc Experience	Communication Career Development Opportunities
22	24	University of Alabama at Birmingham, AL	Training and Mentoring Pay and Benefits	Equity Facilities and Infrastructure
23	-	University of Texas Southwestern Medical Center, Dallas, TX	Funding Communication	Equity Family and Personal Life
24	-	Janelia Farm Research Campus, HHMI, Ashburn, Virginia	Facilities and Infrastructure Pay and Benefits	Career Development Opportunities Funding
25	61	University of Pittsburgh, PA	Communication Value of the Postdoc Experience	Pay and Benefits Funding
26	1	Trudeau Institute, Saranac Lake, NY	Funding Value of the Postdoc Experience	Equity Facilities and Infrastructure
27	30	St. Jude Children's Research Hospital, Memphis, TN	Facilities and Infrastructure Pay and Benefits	Communication Equity
28	55	Roswell Park Cancer Institute, Buffalo, NY	Facilities and Infrastructure Career Development Opportunities	Funding Family and Personal Life
29	27	National Institutes of Health, Bethesda, MD	Facilities and Infrastructure Career Development Opportunities	Communication Value of the Postdoc Experience
30	65	Memorial Sloan Kettering Cancer Center, New York, NY	Training and Mentoring Facilities and Infrastructure	Communication Family and Personal Life
31	7	University of Colorado Denver, CO	Value of the Postdoc Experience Family and Personal Life	Training and Mentoring Pay and Benefits
32	-	Johns Hopkins University, Baltimore, MD	Facilities and Infrastructure Training and Mentoring	Value of the Postdoc Experience Equity
33	18	Princeton University, NJ	Pay and Benefits Family and Personal Life	Communication Training and Mentoring
34	72	Massachusetts General Hospital, Boston, MA	Value of the Postdoc Experience Family and Personal Life	Pay and Benefits Funding
35	-	H. Lee Moffitt Cancer Center & Research Institute, Tampa, FL	Funding Communication	Equity Facilities and Infrastructure
36	-	North Carolina State University, Raleigh, NC	Equity Facilities and Infrastructure	Training and Mentoring Family and Personal Life
37	-	Scripps Institution of Oceanography, San Diego, CA	Equity Family and Personal Life	Funding Facilities and Infrastructure
38	46	University of North Carolina at Chapel Hill, NC	Family and Personal Life Facilities and Infrastructure	Equity Pay and Benefits
39	-	University of Washington, Seattle, WA	Equity Funding	Value of the Postdoc Experience Communication
40	34	University of Michigan, Ann Arbor, MI	Value of the Postdoc Experience Facilities and Infrastructure	Pay and Benefits Equity



48%

40%

Postdocs who are citizens of the country where they are doing their postdoc



52%

36%

Postdocs born in the country where they are doing their postdoc

29%

Postdocs who expect to have a tenured or tenure-track academic position in two years



OVERALL RATING OF POSTDOC POSITION

32% Excellent
30% Very good
21% Good
11% Fair
6% Poor



TOP INSTITUTIONS USA

Retirement denotes a plan with a match from the employer

RANK	INSTITUTION	POST-DOCS	SALARY	POSTDOC RESOURCES	BENEFITS
1	Whitehead Institute for Biomedical Research, Cambridge, MA	127	\$49,100–\$52,300	Development program, postdoc association	Health, retirement
2	Woods Hole Oceanographic Institution, MA	70	\$35,000–\$115,000	Postdoc association, office and lounge	Health, relocation
3	Van Andel Research Institute, Grand Rapids, MI	22	\$40,000–\$48,000	Development program, postdoc office	Health, retirement, relocation
4	Argonne National Laboratory, IL	~300	\$55,000–\$91,700	Development program, postdoc office and association	Health, retirement, onsite day care
5	Novartis Institutes for Biomedical Research, Cambridge, MA	42	starts at \$55,000	Development program, postdoc office	National health, pension, relocation
6	Oklahoma Medical Research Foundation, Oklahoma City, OK	53	\$37,700–\$42,600+	Development program, postdoc office and association	Health, retirement, life and disability insurance, relocation
7	J. David Gladstone Institutes, San Francisco, CA	104	\$44,900–\$75,000	Development program, postdoc office and association	Health, life and disability insurance, retirement, relocation
8	Fox Chase Cancer Center, Philadelphia, PA	~90	\$37,400–\$51,600	Development program	Health
9	Fred Hutchinson Cancer Research Center, Seattle, WA	237	\$37,700–\$52,000	Development program, NPA membership, child care subsidy program	Health, life and disability insurance, retirement
10	Vanderbilt University, Nashville, TN	545	\$37,700–\$65,000	Development program, postdoc association and office	Health, life and disability insurance, retirement
11	Emory University, Atlanta, GA	581	starts at \$37,700	Development program, postdoc association	Health, life and disability insurance, retirement
12	US Environmental Protection Agency, Washington, DC	90	\$48,800–\$92,900	Development program, postdoc office	Health, life insurance, retirement, relocation
13	University of California, San Francisco, CA	1,100	\$37,700–\$89,000	Development program, postdoc association	Health, life and disability insurance, retirement
14	National Cancer Institute, Bethesda/Frederick, MD	1,000	\$49,400–\$66,300	Development program, postdoc office	Health
15	Institute for Systems Biology, Seattle, WA	42	average \$43,000	Development program, postdoc association	Health, life and disability insurance, retirement

Research Freedom at Woods Hole

#2 USA One of more than six top-notch marine labs that call Cape Cod home, the Woods Hole Oceanographic Institution (WHOI) boasts more than 1,000 scientists, students, and staff, as well as many high-profile achievements, including the discovery of deep-sea hydrothermal vents and the infamous HMS *Titanic*. To that list WHOI now adds its selection as this year's #2 Best Place to Work in the United States as a postdoc.

"It's such an academically stimulating environment," says Amy Apprill, a postdoc at WHOI since September 2009, who studies the microbiomes of marine mammals and coral reefs. While it wasn't easy leaving sunny Honolulu, where she completed her PhD, Apprill says she was lured to the institute by the tremendous creative freedom she experiences as a postdoctoral scholar. WHOI offers three types of postdoc positions, and

Apprill is receiving 18 months of internal funding to pursue her own research interests. "Postdocs are treated as junior colleagues," she says, "so we're able to come in and start new projects."

"I really do have the opportunity to do whatever I find is interesting," agrees Kakani Young, also a postdoctoral scholar, who studies the propulsion mechanisms of marine organisms. Since she arrived last September, Young has been provided with a refurbished lab filled with new equipment where she can just let loose.

Postdoctoral fellows, who come to WHOI with fellowship support from external agencies, also work on their own projects, often in collaboration with multiple advisors in one or more departments. And while postdoctoral investigators, initially funded by grants obtained by faculty, tend to work more closely with their advisors, all postdocs are allowed to be the lead principal investigator on grant proposals.

TOP INSTITUTIONS INTERNATIONAL

RANK	INSTITUTION	POST-DOCS	SALARY	POSTDOC RESOURCES	BENEFITS
1	University College London, United Kingdom	655	£31,800–£41,700	Development program	Health, pension, relocation
2	Novartis International, multinational	40 (Basel) 10 (Horsham) 15 (Shanghai)	starts at CHF 84'000 (Basel) £33,000 (Horsham) RMB 132,000 (Shanghai)	Development program, postdoc office	Health (private in Horsham, Shanghai), retirement (Basel, Shanghai), pension (Horsham), relocation
3	Biotechnology Center TU Dresden (BIOTEC), Germany	54	€38,200–€52,000	Development program, office space	National health, retirement
4	University of Queensland, Brisbane, Australia	757	\$68,000–\$109,000	Development program	National health, relocation
5	Max Planck Institute, multinational	~440	€25,200–€36,000	Development program, office space	Health (varies according to institute)
6	Center for Regenerative Therapies (CRTD), Dresden, Germany	36	€38,200–€52,000	Development program, office space	National health, retirement
7	University of Dundee, Scotland	230	€29,000–€35,600	Development program, postdoc association	National health, pension
8	MRC National Institute for Medical Research, London, UK	205	£27,500–£45,400	Development program, postdoc association	Health, pension
9	Instituto Gulbenkian de Ciência, Oeiras, Portugal	84	€17,900–€29,200	Development program, postdoc committee, office space	National health
10	Nederlands Kanker Instituut (NKI), Amsterdam, The Netherlands	130	€37,400–€47,800	Development program, postdoc office	Health, pension, tax reduction, relocation

University College London—A Melting Pot

#1
INT'L

There's a reason why University College London (UCL), the #1 institution on this year's international list, calls itself "London's Global University." Since its inception in 1826, its core mission has been to open its doors to students of all nationalities, classes, races, and religions. It has bred 21 Nobel Prize winners to date and is home to some 22,000 students, more than a third of whom are international. This diversity is what UCL postdocs say makes their years there so enriching.

"It's been quite a welcoming university," says Andrea Alenda, a Spanish-born postdoc in neuroscience currently studying visual processing in the hippocampus. Alenda says she was drawn to UCL by its extensive community of researchers (more than 2,500 in the life sciences alone). "You have conferences going on all the time in any topic and very big names come constantly to UCL," she adds.

The fact that it is centrally located in the most populous city in the European Union is another major plus, adds Iroise Dumontheil, who left her native France to do both her PhD and postdoc in cognitive neuroscience at UCL. "It's a very interesting city to



be in," she says. Alenda agrees: "Even when you stay very late at night working, when you go out, it's crowded with people."

In addition to the perks of living in such a cosmopolitan city, London also appeals to foreigners because it is very well connected to the rest of Europe—and much of the world—making travel relatively simple. And while living in London can be quite expensive, Alenda says that on top of the postdoc's salary, UCL provides its postdocs with cost-of-living assistance.



Enjoying a Successful Postdoc Abroad

There's a long list of hurdles that come along with choosing to do a postdoc abroad—getting work visas, opening bank accounts, finding adequate housing, and so on. But logistics aside, the hardest thing for many international postdocs is getting over the culture shock. Here are a few tips from those who've done it.

Bunk with the natives

When Taiwanese Shih-Nan Chen came to the United States in 2002 to do his PhD, he made a bold decision—he opted to live with Americans. While it might have been more comfortable to bunk with fellow students from Taiwan, in retrospect it was the best decision he made, says Chen, now a postdoc at the Woods Hole Oceanographic Institution, this year's #2 US institution. "My knowledge of American slang words increased exponentially," he says. Jumping straight into the deep end is the best approach for quickly learning English, the language of science, agrees cell biologist Peter Peters of the Netherlands Kanker Instituut, #10 on this year's international list.

Watch local TV hits

As Chen was settling into his new American routine, he did encounter one recurring problem. "After a while, people go to bars,

and they want to talk about something fun related to pop culture, sports, high school, or politics," he says. "This is the part where I struggled." To learn more about these cultural references, Chen absorbed a regular dose of American television, including football games and episodes of CBS's sitcom *The Big Bang Theory*, which appropriately revolves around a group of socially awkward yet brilliant physicists.

Embrace the lab ethos

For Andrea Alenda, the move from Spain to England for a postdoc at University College London, #1 on this year's international institutions best list, meant learning the "English way" of doing things. It came as a shock to her, for example, that her colleagues barely made conversation in the lab, but would quickly liven up in a pub after work. She was also put off by their confrontational attitudes during lab meetings. Adapting to the new lab customs not only made her appreciate her new home, it made her a better scientist, Alenda says. "They're very aggressive in the questions that they ask you because they understand that you have to defend your work," she says.

SURVEY METHODOLOGY

The Scientist posted a Web-based survey from September 8 to November 29, 2010, and invited readers who identified themselves as nontenured life scientists working in academia, industry, or noncommercial research institutions to respond. We received 2,881 usable responses. We asked respondents to assess their work environment and experience by indicating their level of agreement with 38 criteria in 9 different areas. Respondents also indicated which factors were important to them.

To calculate an institution's overall ranking, we first weighted each factor based on the average importance score. Because several factors that are ranked as important in the United States are ranked as less important outside the United States and vice versa, we used different factor weightings to rank the two groups of institutions.

The overall rankings are based on the average score per institution over all factors weighted according to their regional importance. Detailed information on the survey methodology is available on *The Scientist* Web site at www.the-scientist.com. Our sample of scientists was self-selected, and we have made no attempt to standardize the results or to conduct detailed statistical analyses.

The survey was developed and responses were analyzed by *The Scientist* staff.

