



## **iJOBS Career Panel Series: Bench Research in Biotech and Pharm**

Tuesday November 10, 2015

4:30-6:00pm

Medical Science Building, Rosemary Gellene Room B515

185 South Orange Avenue

New Jersey Medical School

Newark, NJ 07103

At Celgene, the Cell Therapy group does GMP manufacturing and is a preclinical and translational team. The group integrates data from animal models and moves the project into IND submissions and Phase 1 clinical trials. Employee needs to understand GMP process, cytotoxic assays, and be able to interact with contract research organizations for animal work or other outside projects.

Enzo is a biotech company with about 500 employees. The Clinical labs makes tests for the clinical market and the Life Sciences labs make kits for academic research. Since they are under FDA regulation, the Clinical division has much tighter rules to follow than the Life Sciences division which is under state regulation. Since it is a small company, as a PhD you might be in charge of 3-4 projects at a time and report to the CEO directly. The employee needs to understand regulatory issues, be GMP compliant and be able to confer with clinical labs. When the project is done, it is passed onto a clinical lab for validation and a list of suggested improvements. Once those are addressed, it gets moved to a larger study with more patients.

Merck Research Labs have many different people working on projects together to put drugs on the market:

Preclinical/Discovery

Chemistry

Pharmacology

PK/PD drug metabolism

Safety assessment

Pharmaceutical Science

### Levels of employment (slightly different titles at different companies)

1. Technician for someone with a BS degree
2. Postdoc program for a fresh PhD
3. Scientist I for a fresh PhD – spends 50% of time at the bench and may have postdoc and tech reporting to them
4. Scientist II
5. Senior Scientist for someone who integrates across multiple groups
6. Principal Scientist is someone who is world-renowned

7. Senior Principal Scientist - solves problems with the big projects
8. Distinguished Scientist
9. Vice President

#### Skills that are in high demand right now

- Highly quantitative skills
- Flow cytometry
- Next gen sequencing
- Mass spec
- GMP compliance
- Regulatory issues
- Soft skills – communication both up and down the chain of command
- Teamwork and knowing how to address other people's needs

#### Opinions on areas of future growth

- Neuroscience
- Systems biology and pharmacology
- Bioengineering
- Anti-aging
- Metabolomics
- Combining disciplines (e.g. psychoimmunology)
- Protein (antibody) and stem cell therapeutics
- Combining therapies (e.g. cells and small molecules)
- Personalized medicine

#### **General Advice**

If you go to a small company or a subsidiary of a large company then you wear many different hats and learn a lot.

In industry, you have to constantly remake yourself and learn new techniques and disciplines to keep up with the times.

Whether to do a postdoc or not: a short postdoc will help you get a position at the bench in industry. If you do a postdoc in industry, you can probably get a quick publication and you can go back to academia still. You should ask companies' HR people what their policy is on hiring postdocs permanently.

Postdoc program at Merck: 50% stay at Merck after postdoc. You can look for an internal job after 2 years even though the program is for 3 years.

At Celgene 50% of the new hires were contractors before they got hired.

Headhunter/recruiting firms such as Joule and Labtech usually come to campus or you can reach out to them to find contracting positions.

Most companies will sponsor International Students for visa or Green card.

Many companies have internships that are over the summer. Applications usually come out in January.

When you apply, your resume will be put through a computer program to filter people out. If you can get it to a person in the company then at least it will be looked at by a human being.

Then you have a phone interview in which you usually have to describe your PhD research in 2-3 minutes.

The job talk is 45 min and then you meet with about 10 people individually. You need to make a good impression during the talk so they are interested in you the rest of the day. They are looking for publications, fellowships and being an invited speaker on your resume when they are hiring you.

**Jeffrey R. Harris PhD**

Senior Scientist  
Preclinical and Translational Development  
Celgene Cellular Therapeutics  
7 Powder Horn Drive  
Warren, New Jersey 07059  
[jeharris@celgene.com](mailto:jeharris@celgene.com)



Jeff is a dedicated and innovative stem cell biologist with a passion for regenerative medicine, and translating stem cell therapy from preclinical animal models into the clinic. He is currently working as a Senior Scientist for the Preclinical and Translational Development group at Celgene Cellular Therapeutics (CCT) in Warren, New Jersey. In this role, he is leading CCT's Natural Killer cell therapy preclinical program. He received his PhD in Molecular Cell Biology and Masters in Management from the University of Florida, and performed his postdoctoral studies at Duke University in the Department of Pharmacology and Cancer Biology. In addition to his career goals of helping cure disease using cell therapy, he has a passion for scientific education and connecting people.

**Andrew L'Hullier, PhD**

Scientist  
Enzo Life Sciences  
[andrewlhu@gmail.com](mailto:andrewlhu@gmail.com)



During Andrew's PhD studies at Rutgers he studied the mechanisms of mesenchymal stem cell mediated immunosuppression in humans. With a background in

immunology, stem cells, and flow cytometry, he now designs clinical in vitro diagnostic products for a range of disease types at Enzo Life Sciences.

Andrew specializes in detection of mRNA using flow cytometry by in situ hybridization, and is developing this technique for diagnosis of a number of diseases. Enzo's first product in this line was recently approved by New York State for analysis of cervical cancer risk, and Andrew is looking forward to launching more diagnostics with this and other exciting new technologies.

**Rumin Zhang**  
**Senior Principal Scientist**  
**Merck Research Laboratories**  
**2000 Galloping Hill Road**  
**Kenilworth, NJ**  
**[rumin.zhang@merck.com](mailto:rumin.zhang@merck.com)**



Rumin Zhang is a Senior Principal Scientist at Merck Research Laboratories. He joined Schering-Plough Research Institute in 1990 after obtaining his Ph.D. from SUNY/Buffalo. Over the last 25 years he has adapted to the changing climate in drug industry and successfully expanded his roles from peptide chemist to enzymologist to biophysicist to pharmacologist. He has co-authored over 55 research papers and patents and has become a key opinion leader in binding kinetics-perceptive and mechanism of action-informed drug discovery. He has been involved in the drug discovery of anti-infective, anti-aging, and anti-cancer drugs.