



## **CAREER PANEL: CLINICAL DIAGNOSTICS**

February 10, 2015  
Medical Science Building, Room C600  
185 South Orange Avenue  
New Jersey Medical School  
Newark, NJ 07103

### **Mary Carayannopoulos, PhD**

Robert Wood Johnson University Hospital  
One Robert Wood Johnson Place - MEB 212  
New Brunswick, NJ 08901  
Tel: 732-418-8118  
Email: [mary.carayannopoulos@rwjms.rutgers.edu](mailto:mary.carayannopoulos@rwjms.rutgers.edu)



Mary received her PhD in Immunology from UT Southwestern Medical School in 1997. Next, from 1997-2004 she did a post-doc in Reproductive Endocrinology at Washington University, St. Louis. She also did a Clinical Chemistry Fellowship at Wash U. She was an Assistant Professor of Pediatrics at Washington University from 2004 – 2009, and was the Associate Director of the St. Louis Children's Hospital Clinical Laboratory. From 2009-present, she is a Clinical Assistant Professor of Pathology and Laboratory Medicine at Rutgers RWJMS and the Director of Clinical Chemistry at Robert Wood Johnson University Hospital.

### **Advice on how to get a job in biomarker testing in a hospital or industry**

There are several kinds of jobs within biomarker testing:

- 1) Clinical Chemist: evaluates blood, studies DNA, examines tissue, or studies cells. May be a research scientist or a developer of diagnostic products. Clinical chemists research and develop laboratory procedures that help physicians make earlier, more precise diagnoses and tailor therapy for patients. Spends time consulting with physicians and other healthcare providers, researching and developing new diagnostic products, establishing standards for new products, developing instrument systems for diagnostics manufacturers, working with clinicians to test new products, and monitoring new products for the FDA.
- 2) Medical Microbiologist: is involved in developing, conducting, and interpreting tests for patients with viral, bacterial, fungal, and parasitic infections, and for those prone to infections, such as cancer and AIDS patients.
- 3) Molecular Diagnostics. molecular testing for human genetics, infectious diseases, hematopathology, oncology, pharmacogenetics and histocompatibility.

There are 2 year fellowships you can apply to while you are a postdocs that prepare you for these careers.

Clinical Chemistry program list: <http://www.comacc.org/training/Pages/default.aspx>

Medical Microbiology program list: <http://www.asm.org/index.php/postgraduate-training-cpep/cpep-approved-programs>

Molecular Pathology program list:

[http://www.abmgg.org/pages/training\\_accredprog.shtml](http://www.abmgg.org/pages/training_accredprog.shtml)

[http://www.abmgg.org/pdf/Lab%20Programs%20Table%20for%20Web%20Site\\_Aug%202014.pdf](http://www.abmgg.org/pdf/Lab%20Programs%20Table%20for%20Web%20Site_Aug%202014.pdf)

These fellowships are usually in a Pathology Department at a medical school and you spend some time doing your postdoc and some time training as a diagnostician. The fellowships pay for 2 years of your postdoc salary.

Clinical chemists have traditionally worked in hospital or clinical laboratories, but they also work in academic environments or in industry. Hours can be flexible or part time. The biomarker assays are usually developed by companies (e.g. Merck, Roche, Siemens) but you learn how the assays work and oversee technicians who are using the assays in the hospitals or in clinical trials to look for biomarkers.

### **Homer Adams III, PhD**

Scientist, Oncology Translational Research

Member: Heme Disease Area Stronghold (DAS)

Janssen Research & Development

Welsh and McKean Roads

Mailstop 41-2101-C

Spring House, PA 19477

Tel: +1 215 628 5830

Email: [hadamsii@its.jnj.com](mailto:hadamsii@its.jnj.com)



Homer Adams III is currently a lead biomarker scientist in the Translational Research group at Janssen R&D in Spring House, PA. Homer's academic career included a B.S. at Tuskegee University, M.S. at Washington State University, Ph.D. at UMDNJ-Newark followed by postdoctoral studies at Baylor College of Medicine. Having begun in Animal Sciences and transitioning into biomedical/translational research, he now works extensively on hematological cancers with a focus on myeloma and leukemia. His work encompasses both pre-clinical and clinical research studies with an emphasis on project management and identification of biomarkers to determine drug efficacy, progressive disease, and novel drug combinations.

### **Advice on how to find an entry-level job in industry:**

#### Getting yourself ready for applying:

Postdoc is a good time to position yourself for a job in industry. Go to small meetings and meet people that might be good postdoc mentors.

Pick a lab that does research that lends itself well to industry (e.g. bloodborne biomarkers).

While looking for postdoc to find someone who will help you develop and prepare for

job in industry (aka interview the mentor).

Build your brand so people know who you are and what you stand for.

Learn the language of the pharmaceutical companies.

Publications and grants show productivity and that you can bring a project to completion.

Learn the process of how to mature a drug.

If you are interested in clinical studies, volunteer at places like a VA Hospital to learn how clinical trials run.

Show leadership skills by serving on committees such as the IACUC as a student member or help organize a conference.

#### Interview process:

There are LinkedIn groups you may be asked to join that will be an invitation to a site visit with a poster session of potential job applicants. Find the right person to listen to your poster and make yourself known.

After that you might have a phone interview and then be invited in for a talk.

When give your talk, tell a story. Be very extroverted and demonstrate good communication skills.

Show that you know how to design an experiment that will give clear results quickly.

#### Early career experiences:

At the starting level you may spend 50% time in lab and 50% in clinical trials but you cannot get much lab work done because you are in so many meetings.

It is a myth that you don't have to work after hours in industry although they are aware of family commitments.

There is a Bridges track in industry where you can exchange jobs within the company for 6 months to see if you want to move around to a different position.

Whereas in academia they want you to try 3 projects simultaneously and will be happy if one of them is showing real promise, in industry they want you to have 7 projects going and have all of them making some progress. It is a new kind of time management that you have to learn.