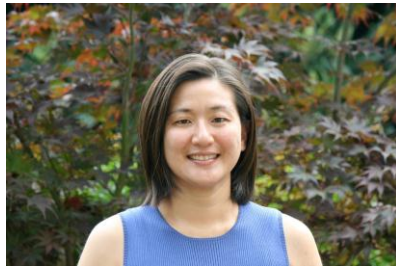


Career Series

Interview with Dr. Eurie Hong, Saccharomyces Genome Database



Dr. Eurie Hong is a Senior Research Scientist with the Saccharomyces Genome Database in Stanford, California. She received her Ph.D. from the University of Chicago, and immediately took a position at SGD as a Scientific Curator, eventually becoming a Head Curator and then a Senior Research Scientist (all positions are explained in detail below).

Basic job description:

Senior Research Scientist at the Saccharomyces Genome Database (SGD)

Type of education/training required:

Having a Ph.D. is a requirement. The majority of our team did postdoctoral work, but I did not. The key factor is that you have to be a good scientist. There is a strong need for scientific curators to be good scientists; because there is so much data being generated, we need to ensure that the data being put into databases is of good quality.

Special talents or skills that contribute to career:

Being a curator gives you the opportunity to see science on a global scale. It is important to have intellectual curiosity, the ability to learn a new area of science quickly, to be able to critically evaluate the data that new area of science, and to see the bigger picture of how data are connected.

Average income range for people working in your area (entry level through experienced persons):

This depends so much on where you are working. On the West coast, a scientific biocurator would start at \$60,000, while senior scientific biocurators would make between \$80,000 and \$90,000.

How many positions are at your current place of employment? Approximately how many similar positions are there in the United States?

There are 12 total curators at SGD, representing approximately 9 full-time employees. It is hard to guess the total number of positions in the United States. [*The International Society of Biocuration affiliations list would place it around several hundred*].

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What is involved in a typical workday?

First, let me explain the different curator positions I have had at SGD over the years.

Initially I was hired as a **Scientific Curator**. The main responsibilities included summarizing experimental results from the scientific literature, answering questions from the scientific community, and helping update and maintain the website. At SGD we get about 100-150 new research papers per week. I would read the literature in order to identify key, novel experimental results that characterize the activity, biological role, or localization of a gene product. I would take these data and create an annotation using a controlled vocabulary system; in other words, I would take the gene functions that have been described using free-text language and represent that using a format that a computer program could also use. The Gene Ontology is one of the controlled vocabulary systems used at SGD so I worked on expanding the biological concepts that are represented in the GO. I also answered questions from the scientific community about how to access the data at SGD or direct them to other helpful online. In addition, I worked on updating the website. Scientific Curators work with the software group to create new pages to display new data types, as well as test all the webpages for usability.

After three years of being a Scientific Curator, I became the **Head Curator**. In addition to continuing to do the jobs of a Scientific Curator, I managed the entire curation process. I was focused on setting curation priorities, improving the efficiency and accuracy of creating annotations, and making sure that projects moved forward.

I currently hold a **Senior Research Scientist** position at SGD. I like to refer to the position as an “Academic Curator”, where I am focusing more on how to develop new processes to improve curation. This includes the novel application of tools that have been used in other areas of science to try to improve the efficiency of curation. I am no longer managing other curators, rather I am trying to see how new curation methods might work, and I am doing a lot of collaboration with other groups that have good tools and software.

Back to the original question of what is involved in a typical workday. The simplest explanation is that I surf the web and read email! I say this because the papers I read and the tools I am exploring are all online, and everyone communicates via email. The SGD project has several remote curators, and the GO Consortium is an international project, so that means a lot of email. We communicate via teleconferencing as well, and sometimes have meetings over instant messaging.

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What do you like the best about your work? The least?

I didn't go the traditional academic route mainly because when I was at the end of my graduate career, I realized that I was an intellectual hummingbird. I would get the most excited when I attended general meetings, like the Yeast meeting, and hear about research being done in many different areas. So, I realized that I shouldn't continue down the current path I was on and focus on a single scientific problem. I wanted to be able to stay in touch with a wide range of scientific topics. This position gives me the opportunity to encounter and explore different diverse scientific problems almost every day.

The flip side to that is that as a curator, you don't have the luxury of delving deeply into a subject or taking a week to learn a new field or concept. You need to be able to come up to speed with new research, technology, and fields incredibly quickly. This means that you aren't an expert in any one area, and sometimes you may miss the mark when interpreting new results.

How does your current position compare to working in other settings, like academia or industry?

It is similar to academia in that we have a very open office environment. All of the members of our group are in one area, and there is constant communication among the entire project. As in an academic setting, flexible hours are acceptable. However, unlike academia, as a scientific curator you can put in your 40 hours per week and do your work, but depending on your responsibilities, you may have few requirements outside of work.

I can't really directly compare curation to industry, because I don't know about industry work. I can tell you from observing my friends in industry that their position can be very stressful for them. Most of them work in cutting-edge biotech fields, either in pharmaceutical companies or next generation sequencing companies, and they have investors breathing down their backs. At SGD it is stressful at times, but there is always a direct end-goal, which is to make the best possible data available in a way that is accessible and searchable. There is always work to do, and the yeast community is very vocal about wanting and needing certain things, but they aren't antagonistic and there are no investors breathing down our back.

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Why did you choose this career?

When I finished grad school, I wanted to find something where I was exposed to a diverse range of science. I looked for science liaison positions at schools and companies where I would be reviewing press releases and such for scientific content. I also thought about starting a career in science journalism. I saw the SGD position pop up on the home page, and I applied. Fortunately, it has been a great fit for what I was interested in.

What are your career goals?

Ultimately I would either like to head up my own database group in academia or industry developing processes and pipelines to help the scientific community understand and interpret their data. As more universities, institutions, and companies invest in generating results using high-throughput technologies, the need to organize and interpret all this data is going to be critical. Also, I would like to explore if there is a need for a new type of literature-curated database in these settings. People recognize the need for curation, but it is hard to fund.

What path did you take to get to your current position?

I received my Ph.D. from the University of Chicago, where I worked in Dr. Doug Bishop's lab on the biochemical characterization of the yeast meiotic Dmc1 protein. I went immediately from there to SGD, and have taken on several roles here, as I detailed before.

In what ways does your degree help you with this job?

When I was in grad school, the first genome had been sequenced and microarray experiments were just starting. There was lots of new technology, and I was enamored by it. My advisor didn't discourage me from thinking about using these new tools in my research, but he wasn't a big fan of technology for technology's sake and he made me think about the question that I would address with these tools. He taught me to evaluate tools based on their biological usefulness. This point helps with curation—when I read a paper with a new technology, I hear Doug's voice asking what biological questions can be answered using the technology and this helps me not get swept up in the novelty of the technique.

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If you could begin again in your career, what would you do differently?

On some days I think maybe I should have done a postdoc, but at the time I was ready to move on. Other than that, I should have been more proactive about getting hands on experience with new technology during graduate school.

What would be your career advice to someone who is currently in a genetics Ph.D. program? To someone who is currently a postdoctoral associate?

I am not sure what I would say to a postdoc, since I never was one myself. But to graduate students I would say: Explore! Take the time to explore. I know that universities are trying to limit the time students stay in graduate school, but take the time to explore and make sure you have the freedom to do so. Slow down. Don't try to get through it as fast as you can if you are enjoying yourself. If you don't think that you'll have the luxury of freedom in graduate school, maybe put off going to grad school for a year. I know at that age a year seems like such a long time. But there is really no better time to explore!