

TalkingTree Blog joins up with GalaxyGoo Blog

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I've recently had the honor to be invited as a guest blogger on **GalaxyGoo** which emphasizes the unique nexus of web technology and science. Today I've made my first introductory post to GalaxyGoo Blog. Since I've never had an "About Me" section on TalkingTree.com, I'm reposting **my GalaxyGoo blog entry** here to serve just that purpose.

About Me

Hello, my name is Steven Erat and I'm the new kid on the GalaxyGoo block, er..., blog. I've been invited by Kristin Henry of GalaxyGoo to contribute blog entries based on my experience in both scientific research and software development. You might even know me already from **my blog** on TalkingTree.com or through my employer **Macromedia**.

Let me introduce myself with a little background. I've previously worked in science for about 10 years, mostly with the **Gerontology Research Center** at the National Institute of Aging, part of NIH, and later with the **USDA HNRCA** (Human Nutrition Research Center on Aging) at Tufts University in Boston. In both of those capacities I was a neuroscience laboratory research assistant for Dr. James A Joseph who generously took me under his wing, so to speak. Jim contributed greatly to my ability to think critically when reviewing the research of others, how to ask the right questions when approaching a new problem, and how to apply rigor when conducting research projects. During my tenure in Jim's lab our focus was on the aging process in brain; specifically, how oxidative damage alters **G-Protein Coupled Receptor** (GPCR) mediated signal transduction pathways of neurons, with emphasis on the corpus striatum, also known as the basal ganglia, where high levels of free radicals are released from dopamine metabolism. **Parkinson's disease** can be considered an extreme case of the normal type of aging process that occurs in this brain area, where the basal ganglia essentially deteriorates over time leading to uncontrolled shaking and poor motor coordination because the dopamine pathway in this brain area is involved in fine regulation of movement. At the USDA, our primary focus was to assess the **effect of fruits and vegetables as antioxidants** and how they could reduce or eliminate age related declines. I have to say that our research was so compelling that ever since then I try to eat as much blueberries, strawberries, and spinach as possible, and drink red wine on a regular basis. Its the colorants in those foods, the Flavonoids or Phytochemicals, that actually provide the antioxidant cocktail (no, not *that* cocktail, but rather a natural mixture of compounds) and have all been shown to decrease age related disease.

Over the years I've also worked as Laboratory Animal Technologist on xenotransplantation projects for the now defunct company Biotransplant, as seen in this PBS video **Organ Farm**. Xenotransplantation is the transplantation of organs or tissues between species. **One use of xenotransplantation** is the collection of brain tissue from fetal pigs where the area of the brain that is destined to become the basal

ganglia in the pig is implanted into the same part of the brain of Parkinson's patients that has deteriorated. Research focuses on how to prevent rejection of the tissue, which is particularly acute in when tissue is transplanted between species, and how to avoid PERVs, pig endogenous retroviruses. When those factors are minimized, the transplanted tissues from fetal pigs do quite well in human where they develop into precisely the type of neuron that should be in that area and go on to start producing the right neurotransmitter dopamine which helps ameliorate Parkinson's symptoms to at least partially restore motor control. This area of research continues and I'd like to post future blogs regarding the current state of this possible cure.

Overlapping with those laboratory experiences, I worked for many years on nights and weekends at **Tufts University School of Veterinary Medicine** as emergency room veterinary technician with horses and large animals. This deserves many blog entries of its own, but you may already be familiar with the place since this PBS Nova episode **Animal Hospital** was filmed while I worked at the hospital (**transcript**), and I worked side by side with those in the video including Rosa, Noelle, Marvilyn, Marty, Dr. Enda Currid, and Dr. Rose Paradis.

You may be wondering by now how it is that I work for Macromedia after this very unrelated history. Like many of my contemporaries in web technology, I started in the mid 90's by viewing source in my browser while curious about how this web page thingy worked. I remember how thrilled I was with my first HTML page in 1994 when I got the blink tag working; thankfully, the blink tag has effectively become a part of history like a fossil in the Burgess shale. I found myself obsessed with the new technology and by the end of the 90's I found myself anxious to get home so I could start building web pages until midnight and tinkering with Linux until even later. One of my roommates at that time had been hired by Allaire to work in technical support for a funky product I'd never heard of called Cold Fusion. He started showing me how the dynamic web worked and I was hooked. I immediately picked up and devoured ColdFusion 4 for Dummies, O'Reilly's Java 1.1, and Teach Yourself SQL in 10 minutes. A few months later I made the jump to join Allaire in Technical Support, and that's where I've been for 5 years this April, although Allaire Cold Fusion has since morphed into **Macromedia ColdFusion MX**.

As a member of technical support, or our preferred name product support, I spend my days following developments in the ColdFusion community, keeping pace with the new releases and new features, and mostly helping Macromedia customers learn how to administer ColdFusion servers, how to debug code related problems, how to troubleshoot problematic configurations, and how to better use the wide array of features in the ColdFusion server.

Integrated with supporting ColdFusion, I've become trained on related Macromedia products including Flash MX, Dreamweaver MX, Flex, and of course JRun. Working with ColdFusion also demands an understanding of internet protocols such as HTTP, SMTP, FTP, and even TCP, an administrative understanding of Operating Systems including my favorite **Red Hat Linux**, and a fair comprehension of database usage and SQL if not JDBC.

For someone trained in Biology not Computer Science, learning all this can be challenging, but I find it exciting and frankly I love coming to work because I continue to learn every single day.

My objective on the GalaxyGoo blog is to bridge my experience in both areas, to bring you some helpful information, or at least some fodder to get both of us thinking about science in general and applying the scientific method to software testing and troubleshooting in particular.

During future blog posts, I also hope to be able to read about current events in science or even primary research articles and provide an easy to read summary of "what do I need to know?" about the topic. I'm typically very disappointed with how science is reported in the popular media such as my local six o'clock news because they often simplify things to such an abstraction that there is virtually no value or take home lesson in the report.

Further, I've noticed quite an emphasis on the use of **Macromedia Flash** on GalaxyGoo, and I especially love the animation of the effect of neurotoxins on the **neuromuscular junction**. As my experience and training with Flash progresses, I'd like to contribute similar animations of biological events, perhaps starting with basic G-Protein Coupled Receptor Signal Transduction as a good jumping off point.

Well, I'm very pleased to join the ranks of GalaxyGoo! I look forward to blogging with you soon.