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**James Holmes**

Aspiring Scientist

Home [REDACTED]

**Home Address**

James Holmes

[REDACTED]  
San Diego, CA 92129

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**OBJECTIVE**

To obtain a position as a neuroscience graduate student

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**EDUCATION**

- 2006 - 2010, University of California, Riverside
- Graduated with B.S. in Neuroscience
- Dean's Fellow
- Regent's Scholar
- Phi Beta Kappa Society

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**SKILLS**

- Dissection, buffer preparation and staining
- Fluorescence microscopy, dissection microscopy, cell counts
- Proficient using computer software including Microsoft Office
- Adaptable to work environment; problem solver

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**RELATED EXPERIENCE**

**UCR, Department of Cellular Biology & Neuroscience** Riverside, CA 92521      December 2007 - September 2009  
*Laboratory Assistant*

- Digitization of mice with mitochondrial rich muscle
- Fluorescence microscopy of neuronal mapping of the Zebra Finch
- Dissection, staining and photography of hummingbird and Passeriforme flight muscles
- Comparison of motor end plate stains of flight muscles

**Camp Max Straus** 6505 Wilshire Boulevard, Suite 600      June 2008 - August 2008  
*Camp Counselor*

- Provided leadership and guidance to underprivileged children.
- Took an active stance as a positive role model.
- Assisted children in achieving their potential.
- Facilitated excellence in mentoring.

**UCR, Department of Chemistry** Riverside, CA 92521      December 2006 - June 2007  
*Laboratory Assistant*

- Analyzed mass spectrometry and HPLC data, graphs and principles
- Performed redox titrations, chromatography, ultra violet spectroscopy, etc.

**Salk Institute for Biological Studies** La Jolla, CA 92037      June 2006 - August 2006  
*Student Intern*

- Designed a computer program to illustrate temporal perceptions of causality
- Executed procedures (pipeting, gel electrophoresis, conceptual modeling, etc.)
- Programmed a flicker fusion utility, which notes differences in contrast between monitors.

Rational people act based on incentives for self-fulfillment, including fulfilling needs of self-development and needs of feeling useful and helpful to others. I look forward to fulfilling my quest to advance my knowledge and I plan to use my critical thinking skills by studying the subject I am passionate about, neuroscience.

I desire to attend graduate study at the University of Illinois, a leader and innovator in scientific research, because the university will provide opportunities to pursue my foremost passions, the science of learning, cognition and memory. I have always been fascinated by the complexities of a long lost thought seemingly arising out of nowhere into a stream of awareness. These fascinations likely stemmed from my interest in puzzles and paradoxes as an adolescent and continued through my curiosity in academic research.

Making new discoveries in neuroscience is intrinsically rewarding in its own right. I have an unquenchable curiosity, a strong desire to know and explore the unknown, and a need to persist against the odds. Graduate study at the University of Illinois will provide a focus for me to perform and achieve through neuroscience research.

To prepare myself for graduate study at the University of Illinois, I sought involvement in a general array of academic research. My first summer internship, at the Salk Institute of Biological Studies, was done while I was still in high school. Working in Terrence Sejnowsky's computational neurobiology lab, I had little experience in computer programming and the work was challenging to say the least. Nonetheless, I taught myself how to program in Flash and then constructed a cross-temporal calibration model. The purpose of this model was to show an illusion between cause and effect relationships. In this illusion, the mind is actually tricked into believing an action precedes the event that caused it. Completing the project and presenting my model at the end of the internship was exhilarating and I believe graduate study at the University of Illinois will provide commensurate opportunities for a satisfying neuroscience research experience.

Another laboratory I worked in was within the department of chemistry at the University of California, Riverside. Having previously been exposed to a computational approach, I wanted to explore the facets of chemical analysis. Beginning by making buffer solutions, I soon advanced into more complicated techniques. These included performing high performance liquid chromatography, mass spectrometry and ultra violet spectroscopy on a modified twelve mer dna sequence. With the end product we bombarded the dna with ultra violet rays to observe cancerous effects. Although I don't plan on curing cancer in graduate school I believe this research experience is worthwhile and relevant to my goals of contributing to neuroscience. Only with a multidisciplinary perspective to the specialized field of neuroscience can we hope to fully understand the brain.

The most recent laboratory I worked in was the Flight Lab in the department of cellular biology and neuroscience. Working in this lab enabled me to distinguish structural and quantitative differences in neural systems at a lower level of functional analysis. I dissected various flight muscles of Passeriformes and then stained their motor end plates. With these stained muscles, I compared their arrangements to the stained muscles of hummingbirds, which have a unique motor end plate pattern. In the future my

goal is to analyze and study higher neural functional levels of analysis such as learning and memory.

Researching learning and memory interests me because these are the very cognitive processes which enable us to acquire information and retain it. They are at the core of what distinguishes us as people. Due to the seemingly infinite vastness of indefinite knowledge we must be selective in our pursuits of knowledge. This is why I have chosen to study the primary source of all things, our own minds.

Ultimately, I aspire to become a cognitive neuroscientist. I intend to continue performing research after graduate school in either academic or public sectors. My life-long goal is to increase the efficiency of how human beings learn and remember.