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Joy C. Perkinson

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Permanent Address:
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Objective

Seeking opportunities to gain experience in environmental engineering through externship positions for Spring 2009.

Education

Massachusetts Institute of Technology Cambridge, MA
Candidate for B.S. in Materials Science and Engineering, June 2009.

Coursework includes Mechanical Behavior of Materials, Materials Project Laboratory, Organic and Biomaterials Chemistry, Materials Laboratory, Materials Processing, and Undergraduate Thesis. GPA: 4.7/5.0.

Skills

Lab: Extensive experience with machine room fabrication, clean room fabrication, 3D printing, interference lithography, scanned probe microscopy, profilometry, SEM, magnetometry, spin coating, sputter deposition, RIE, general laboratory procedures, laboratory safety, HF safety, chemical waste disposal, and keeping a detailed lab notebook. Familiar with mechanical strength testing, XRD, gel electrophoresis, calorimetry, and magnetoresistance measurements.
Languages: Spanish and Norwegian.

Experience

Undergraduate Researcher, Ross Group, MIT Cambridge, MA

January 2008–present.

Fabricated and researched thin polymer films in a clean room to investigate nanoscale patterning. Examined effects of chain composition of copolymers and thin film processing. Collaborated with overseas research groups. Wrote technical memos and research articles.

June–July 2007.

Fabricated nanomagnet arrays and multilayer rings for use as magnetic data storage devices. As part of a small team, researched their use as magnetic data storage devices. Independently collected magnetoresistance and magnetometry data on samples.

June–December 2006.

Researched thin magnetic films for applications in magnetic data storage. Worked independently in lab. Fabricated samples via sputter coating, and investigated film properties using vibrating sample magnetometry and alternating gradient magnetometry. Co-authored a paper in the Journal of Applied Physics.

Head of Lab Group, Materials Project Laboratory, MIT *September 2008–present.* Cambridge, MA

Organized the efforts of a 4-person project lab group fabricating microscale metamaterials via interference lithography to investigate their photonic and mechanical properties. Presented results frequently. Acted as liason to the course professor.

Research Assistant, Glasfeld Group, Reed College *January–August 2004.* Portland, OR

Researched protein crystallography to determine protein interactions structure and to enhance understanding of protein function. Worked independently in a laboratory to optimize a process for growing MntR protein crystals, and investigated their structure using XRD.

Leadership

President of MIT Assassins' Guild *May 2008–present.*

Managed the five-person governing council of MIT's live-action roleplaying society, a club with over a hundred active members. Negotiated group safety regulations with MIT administrators and campus police.