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Education

Massachusetts Institute of Technology, Biological Engineering Division
Bioengineering Ph.D. student (2003-)

University of Minnesota, Department of Biomedical Engineering
B.Bm.E., Biomedical Engineering, *Summa cum laude* (1999-2003)

Graduate Research Experience – Ph.D. Thesis Project

“Characterization of Cell Signaling Networks in an *in vitro* 3D Liver Bioreactor”
Massachusetts Institute of Technology (Jan. 2004-)
Advisors: Prof. Linda G. Griffith and Prof. Douglas A. Lauffenburger

Undergraduate Research Experience

1. “Modeling Actin Filament Branching using Monte-Carlo Simulations”
Minnesota Supercomputer Institute Internship & Senior Thesis Project,
Department of Biomedical Engineering, University of Minnesota (May 2002-June 2003)
Advisors: Prof. David J. Odde and Prof. Victor H. Barocas

Developed a Monte-Carlo computer model to simulate the three-dimensional growth and branching of actin filaments to examine statistical correlations to experimental observations.
2. “Cell Irradiation Analysis in a Laser-Guided Direct Writing System”
Undergraduate Research Opportunities Program,
Department of Biomedical Engineering, University of Minnesota (Feb.-Apr. 2002)
Advisor: Prof. David J. Odde

Designed and developed an assay for studying the effects of irradiation due to laser-guided direct writing of healthy human multi-potent adult progenitor cells.
3. “Laser-Guided Direct Writing System Design and Experimental Analysis”
Undergraduate Research Opportunities Program & Directed Research Course,
Department of Biomedical Engineering, University of Minnesota (Sep. 2000-May 2002)
Advisor: Prof. David J. Odde

Designed and developed a laser-guided direct writing system for demonstrational use at the Science Museum of Minnesota. Collected and analyzed data from particle trajectories in a laser guided direct writing system for comparison to theoretical predictions.

Professional Experience

Research & Development Intern
CoAxia, Inc., Maple Grove, MN (May-Sep. 2001)
Supervisor: Steve Berhow
Researched, built, and tested prototype medical devices for animal and human trials.

Fellowships & Scholarships

1. Whitaker Foundation Graduate Fellowship in Biomedical Engineering (2003-2005)
2. Dean's List, Institute of Technology, University of Minnesota (Fall 1999-Spring 2003)
3. National Merit Scholarship (1999-2003)
4. U2000 Scholarship, University of Minnesota (1999-2003)
5. Robert C. Byrd Scholarship, State of Minnesota (1999-2003)
6. Biomedical Engineering Department Scholarship, University of Minnesota (2002)
7. Richfield (MN) Teachers' Union Scholarship (1999)

Poster Presentations

1. National Conference on Undergraduate Research (NCUR) Poster Session (Mar. 2003)
"Modeling Actin Filament Branching in Three Dimensions"
2. University of Minnesota Biomedical Engineering Society (BMES) Poster Symposium (Nov. 2001)
"Design of a Laser-Guided Direct Writing System for Demonstration of Optical Forces and Linear Momentum of Light"

References

Linda G. Griffith, Ph.D.

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David J. Odde, Ph.D.

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Robert T. Tranquillo, Ph.D.

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Steve Berhow

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