

LLEWELLYN "LEY" RICHARDSON

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HIGHLIGHTS

Interdisciplinary knowledge of chemical engineering, biology, chemistry, and materials science
Proficiency in biomaterial synthesis and characterization
Development of mammalian cell biology experimental techniques
Leadership in team-oriented research

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA
Ph.D. in Chemical Engineering, Minor in Finance, Degree expected in May 2005
GPA: 4.5 / 5.0

Virginia Polytechnic Institute & State University (Virginia Tech), Blacksburg, VA
B.S. in Chemical Engineering, Minor in Chemistry, May 1999
Summa Cum Laude, Commonwealth Scholar, GPA: 3.9 / 4.0

RESEARCH EXPERIENCE

- 1999 – Present **Graduate Research Assistant, MIT Department of Chemical Engineering**
Thesis: "Effect of Ligand Presentation on Fibroblast Signaling and Motility"
Advisor: Linda Griffith
- Synthesized and characterized biocompatible protein-tethering polymer
 - Developed *in vitro* protein-polymer thin film cell assays
 - Analyzed spatial localization and transduction of cell signaling
 - Developed quantitative cell adhesion, migration, and proliferation assays
 - Employed three MIT undergraduates in experimentation and data analysis
- Skills include: organic polymer synthesis; ¹H-NMR; peptide synthesis; HPLC; radiolabeling; various microscopy techniques; immunoprecipitation; densitometric Western blot; various quantitative cell adhesion, proliferation, and migration assays
- 1999, 2002 **Summer Intern, E. I. du Pont de Nemours & Co.**, Wilmington, DE
- Developed and implemented mammalian cell culture, biomaterial testing, and biocompatibility testing protocols for potential surgical adhesive products (2002)
 - Participated in research and development of bioprocess downstream separation methods (1999)
- 1997 – 1998 **Undergrad Research Assistant, Virginia Tech Chemical Engineering Department**
Studied melting and crystallization mechanisms and calorimetric and gas adsorptive properties of α -olefin/ethylene branched copolymers
Advisors: Professor Herve Marand, Professor Eva Marand

LEADERSHIP EXPERIENCE

- 2000 – 2004 **Vice President of Personnel, Thirsty Ear Pub**, Cambridge, MA
Managed personnel issues for graduate student-operated campus bar at MIT, including hiring, training, and payroll distribution
- 2001 – 2004 **Research Advisor, MIT Biological Engineering and Materials Science & Engineering**
- Supervised two Biological Engineering Masters thesis research projects
 - Developed and supervised two summer research projects for visiting undergraduate students in Center for Materials Science and Engineering

2000 – 2003 **Lab Safety Coordinator, Griffith & Lauffenburger Research Groups**

- Enforced general lab safety, hazardous waste disposal, and radiation safety
- Served as liaison to MIT Environmental Health and Safety office

OTHER EXPERIENCE

Spring 2003 **Teaching Assistant, MIT Department of Chemical Engineering**

Administered course, taught recitations, and held office hours for *Biotechnology and Engineering* course focused on drug-eluting stents (freshman through graduate level)

1995 – 1997 **Co-op Process Engineer, E. I. du Pont de Nemours & Co., Parkersburg, WV**

- Provided day-to-day manufacturing engineering support for Delrin® polymer plant
- Designed and directed tank and piping installation projects
- Increased plant capacity using statistical process improvement methods (team member)
- Designed and implemented EPA-regulated environmental sampling procedures

AWARDS

National Research Council Ford Foundation Graduate Fellow

GEM Consortium - DuPont Graduate Fellow

American Indian Science & Engineering Graduate Scholar

PUBLICATIONS

Richardson, L.B., Hess, S.L., Tran, K.T., Wells, A., Griffith, L.G. Co-regulation of fibroblast migration by fibronectin density and spatial location of activated EGF receptor. (manuscript in preparation)

Tran, K.T., **Richardson, L.**, Griffith, L., Wells, A. EGF-like repeats of tenascin-C, at limiting concentrations, preferentially signal migration. (manuscript in preparation)

Alizadeh, A., **Richardson, L.**, Xu, J., McCartney, S., Marand, H., Cheung, Y.W., Chum, S. Influence of structural and topological constraints on the crystallization and melting behavior of polymers. 1. Ethylene/1-octene copolymers. *Macromolecules*. 32 (19): 6221-6235, Sep 21 1999.

PRESENTATIONS

- 7th World Biomaterials Congress; Sydney, Australia, May 2004 (Oral Presentation)
- Chemical Engineering Student Seminar Series, MIT, Apr 2003 (Oral Presentation)
- American Institute of Chemical Engineers Annual Meeting; Indianapolis, IN, Nov 2002 (Oral Presentation)
- American Institute of Chemical Engineers Annual Meeting; Reno, NV, Nov 2001 (Oral Presentation)
- Engineering Tissues Workshop; Hilton Head, SC. Feb 2001 (Poster)

OUTSIDE INTERESTS

Running; Mountain-biking; Hiking; Golf; Tennis

REFERENCES

Prof. Linda Griffith
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