

Matthew A. Engel

CONTACT INFORMATION

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INTERESTS

Business: Intellectual asset management, biomedical technology commercialization, regulatory affairs, small business management, venture capital
Scientific: Biochemistry, synchrotron radiation physics, crystallography, drug discovery.

EDUCATION

Stony Brook University, Stony Brook, NY, USA
Ph.D. Program (admitted) - Biomedical Engineering, Current
• Ongoing research at Brookhaven National Laboratory
M.S. - Biomedical Engineering, Completed May 2008
B.S. - Biology, Completed December 2004

PROFESSIONAL EXPERIENCE

Brookhaven National Laboratory, National Synchrotron Light Source, Upton, NY.
Research Assistant **June, 2005 - present**

Goals

- Develop a new method for drug discovery using high-throughput screening of protein micro-crystals. Engineer a microfluidic device for rapid analysis of pharmaceutical targets. Discover ligand-protein interactions for medically relevant targets using x-ray diffraction.

Duties

- Publish papers, purchase equipment, organize meetings, give presentations, and train students

Technical Skills

- Protein expression & purification, HPLC, MS, SDS-PAGE, srCD, SAXS, 1D ¹H NMR

Westbury Diagnostics, Inc., Westbury, NY.

Consultant: Manager of Information Systems **July, 2008 - present**

- Website construction, design and authorship
- Applied search engine optimization (SEO) technologies to increase marketability and visibility

Forest Laboratories, Inc., Commack, NY.

Intellectual Property Internship **May, 2008 - July, 2008**

- Contributed to patentability and freedom to operate opinions on pharmaceutical products. Worked directly with patent attorneys and scientific advisors to evaluate the current pharmaceutical pipeline and new opportunities
- Searched relevant scientific and patent literature to assess patentability and freedom to operate issues (calculated priority dates, patent expirations, PCT and U.S. filing timelines); Assisted with due diligence investigations, including interpretation of claims and analysis of complex file histories
- *Tools:* MicroPatent, Scifinder, USPTO Public database and Patent Application Information Retrieval (PAIR) system, FDA Orange Book

Applied DNA Sciences, Long Island High Technology Incubator, Stony Brook, NY.

Consultant **December, 2006 - February, 2008**

- Investigated forensic anti-counterfeiting technologies for pharmaceuticals
- Developed presentations for international exposure
- Communicated with major consulting firm to develop GRAS proposal

TEACHING
EXPERIENCE

Introduction to Biomedical Engineering: BME 100 Stony Brook University, Department of Biomedical Engineering, NY.

Teaching Assistant

Fall 2008

- Guest lecturer, organized review sessions, wrote exams, graded assignments

Neuroscience: HBY 695 Stony Brook University, Department of Physiology & Biophysics, NY.

Teaching Assistant: Presented 4 one hour lectures

Spring 2007

- Guest lecturer. Topics included structure and function of ion channels, GPCR'S, anatomy and physiology of the visual system

PUBLICATIONS,
POSTERS AND
ABSTRACTS

Engel, Matthew A., Studier, William F. and Allaire, Marc. The N-terminal Domain of Hepatitis C Virus is Unfolded. *2008 Biomedical Engineering Graduate Research Day*. Stony Brook University, Stony Brook, NY. Aug 25, 2008.

Engel, Matthew A., Studier, William F. and Allaire, Marc. Biophysical Characterization of an N-terminal Domain of Hepatitis C Core Protein Involved in Viral Assembly. *2008 NSLS/CFN User's Meeting*. Brookhaven National Laboratory, Upton, NY. May 21, 2008.

Engel, Matthew A. DNA Excipients for Pharmaceutical Anti-counterfeiting: the Genetic Pedigree. *Applied DNA Sciences: White Paper 1:1-4*. Long Island High Technology Incubator, Stony Brook, NY. 2007.

Engel, Matthew A. On the Admissibility of DNA Evidence: Impact of Daubert v. Merrill Dow Pharmaceutical's. *Applied DNA Sciences: White Paper 2:1-5*. Long Island High Technology Incubator, Stony Brook, NY. 2007.

Engel, Matthew A. Business Plan: Development and Commercialization of Drug Screening Technologies at the National Synchrotron Light Source. *Stony Brook University DARE Competition*. Stony Brook University Business School. 2007.

Engel, Matthew A. and Allaire, Marc. Single Crystal Diffraction Geometry at Multiple Wavelengths. *33rd Annual Northeast Biomedical Engineering Conference*. Stony Brook University, NY. March 10, 2007.

Engel, Matthew A. and Allaire, Marc. Synchrotron Radiation Circular Dichroism Indicates a Conformational Change in the PLA2 Domain of the B19 Erythroviral VP1 Capsid Protein in Response to Calcium. *New York Structural Biology Discussion Group*. Cold Spring Harbor Laboratory. July 19, 2006.

Engel, Matthew A., Allaire, Marc, Zádori, Zóltan, and Tijssen, Peter. Purification and Characterization of a Parvoviral Phospholipase A2. *New York Structural Biology Discussion Group*. Hunter College for Health Sciences. January 24, 2006.

Engel, Matthew A., Allaire, Marc, Zádori, Zóltan, and Tijssen, Peter. Purification of Parvoviral Phospholipase A2. *Brookhaven National Laboratory, SULI Poster Session*. August, 2006.

Engel, Matthew A., Allaire, Marc, Zádori, Zóltan, and Tijssen, Peter. Purification of the Phospholipase A2 Domain from the B19 Parvovirus. *U.S. Department of Energy Journal of Undergraduate Research, Volume VI, p125*. 2006.

Engel, Matthew A., Pentyala, Srinivas, and Rebecchi, Mario. Pharmacodynamics of Morphine, Fentanyl and Naloxone on Mu-Opioid Receptors in Differentiated Neuroblastoma. *The City College of New York, Einstein's in the City Conference*. April, 2005.

PRESENTATIONS

Engel, Matthew A., and Bourassa, Megan. Student Life at the NSLS. *2008 Summer Sunday*. Brookhaven National Laboratory, Upton, NY. 20 July 2008.

Engel, Matthew A., and Hayward, James, A. A Pharmaceutical Anti-Counterfeiting Device: DNA

Excipients. *International Society of Cosmetic Chemists, International Quality and Productivity Center*. Philadelphia, PA. November 8, 2007.

Engel, Matthew A.. New High-Throughput Screening Methods For Drug Discovery. *OSI Pharmaceuticals*. Farmingdale, NY. April 3, 2007.

Engel, Matthew A.. U.S. Patent Database Search of Synchrotron Technologies for Pharmaceutical Discovery. *Course in Cellular and Molecular Engineering*. Stony Brook University, Department of Biomedical Engineering. November 22, 2006.

CONFERENCES AND SYMPOSIUMS

Naturally Obsessed: The Making of a Scientist, Stony Brook University, Charles B. Wang Center.

Film Screening

February 4, 2009

Organized event in conjunction with the Graduate Student Organization and Center for Inclusive Education. Acquired funds, contacted and brought directors to the screening.

COMMUNITY SERVICE AND LEADERSHIP

Stony Brook University Senate, Graduate School Representative.

2009

Graduate School Organization (GSO): Senator, Stony Brook University, Department of Biomedical Engineering.

2008 - 2009

Resident Assistant, Stony Brook University, Dept. of Campus Residences.

2005 - 2006

- Paraprofessional staff member improving student life and promoting cultural diversity.

AWARDS AND COMPETITIONS

DARE Competition, Stony Brook University School of Business, NY.

Inventor/Finalist

2007

- Presented business plan to potential investors
- Published small business development proposal: New techniques for drug discovery

NYC Teaching Fellows, New York City Board of Education, NY.

Fellowship

Invited May 2006

Eagle Scout, Boy Scouts of America, Troop 41, Northport, NY.

1992 - 2000

INTERNATIONAL EXPERIENCE

Global Teacher's Conference: Prague, Czech Republic

American Council for International Studies.

February, 2009

Global Teacher's Conference: Krakow, Poland

American Council for International Studies.

February, 2008

COMPUTER SKILLS

MicroPatent, USPTO Public Pair, Microsoft, L^AT_EX2e, Google Apps, XHTML, WordPress.