

CURRICULUM VITAE

Jason Michael Dahlstrom

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Overview:

A non-traditional student, I returned to college part-time at Boston University in 2001. I maintained a 3.90 GPA while traveling across North America as a field technician in the network security industry. I transferred to the University of New Hampshire in Durham and became a full-time student in the fall of 2003. I am a senior in the Electrical and Computer Engineering program, and a University Honors and Honors in Major student with a 3.95 GPA. I recently received both the University Award of Excellence and the Alumni Meritorious Society Association Prize.

Research Experience:

March, 2005 – May, 2006 – Senior Design Project and Honors Senior Thesis: “**Computational Modeling and Brain-Computer Interfaces: An Investigation of Sea Lamprey (*Petromyzon marinus*) Neural Tissue.**” This project attempts to reproduce and extend research conducted at Northwestern University and proposes to 1) simulate a two-port neural system in MATLAB™ 2) design and build an instrument for interfacing with neural tissue 3) construct a simple robotic “body” for biological neural tissue and 4) interface the robotic body with lamprey neural tissue. UROP funded Fall, 2005.

Summer, 2005: IROP – Two Investigations with Lamprey GTH. International Research Opportunities for undergraduates award for proposal to investigate GnRH-I regulation of lamprey GTH by RT-PCR at Kitasato University in Sanriku, Japan - Summer, 2005. Identify GTH binding in lamprey pituitaries by immunocytochemistry at Sado Marine Biological Station in Niigata, Japan - Summer, 2005.

January, 2004 – Present: Undergraduate Research Assistant, Department of Biochemistry and Molecular Biology, Sower Lab. Lab research centers on vertebrate brain and pituitary hormones. Duties include: Supporting ongoing research. Perform steroid and receptor RIA, tissue RNA extraction and isolation, RT-PCR, gel electrophoresis and immunocytochemistry. Mentor: Dr. Stacia Sower – Biochemistry.

Fall, 2004: Honors Fields and Waves Special Project: Electrostatics modeling of the human brain in MatLAB™. Mentor: Dr. Kent Chamberlin – Electrical Engineering.

Fall, 2004: Honors Signals and Systems Special Project: Design and develop a 60Hz notch filter for EEG signal processing. Mentor: Dr. Gordon Kraft – Electrical Engineering.

Fall, 2003: Honors Biology Special Project: Immunofluorescence staining of HeLa cells. Cultured and stained HeLa and 3T3 cells. Mentor: Dr. Andrew Laudano – Biochemistry.

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Teaching Experience:

Fall, 2004 – Present: Teaching Assistant, College of Engineering and Physical Sciences. By special arrangement of the Chairperson of Electrical and Computer Engineering. Engineering Analysis – MATLAB laboratories applying concepts of multivariable calculus to engineering problems (Spring, 05). Electromagnetic Fields and Waves I – Peer Led Team Learning (Fall, 04).

Fall, 2003 – Present: College of Health and Human Services, Department of Kinesiology. Instruction of laboratory skills in EMT-Wilderness, EMT-Basic, First Responder and CPR & First Aid.

Leadership & Community Service:

March, 2002 – Present: Durham Ambulance Corps: Durham Ambulance Corps is a 37 year old, 50+ member all-volunteer emergency medical service organization providing Advanced Life Support care to the communities of Durham, Lee, Madbury and the University of New Hampshire.

- President March, 2004 to March, 2005.
- Acting Treasurer March, 2004 to August, 2004.
- Finance Committee from March, 2003 to March, 2004.

August, 2003 – Present: University of New Hampshire Men's Crew: An intense athletic program run by campus recreation, the men's crew team practices six days a week and competes in the East Coast Athletic Conference against colleges across New England. Ineligible to compete as a rower as of March, 2004 according to the East Coast Athletic Conference's interpretations of NCAA guidelines.

- Assistant coach since March, 2004.
- Captain and first novice boat stroke August, 2003 to March, 2004.

April, 2004 – Present: Great Bay Rowing Club: Head coach and assistant to the Program Director for this Durham-based community rowing program. Coached approximately 25 Masters Women and 8 Masters Men in the 2004 rowing season. Actively participate in club growth and vision.

Committees and Organizations:

September, 2004 – Present: Inquiry Journal Editorial Board. Editorial review of undergraduate student research papers for the University's student research journal. Appointed senior co-editor July, 2005.

August, 2004 – February, 2005: Durham Strategic EMS Planning Committee. Formed committee to address long term emergency medical service planning for the Town of Durham. Includes members from the Town of Durham and the Durham Fire Department.

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Professional Affiliations:

Association for Computing Machinery (ACM) Fall, 2004 – present.
Society of Integrative and Comparative Biology (SICB) Spring, 2004 – present.
Institute of Electrical and Electronics Engineers, Inc. (IEEE) Fall, 2003 – present.
International Registry of Emergency Medical Technicians Summer, 2003 – present.

Awards and Honors Societies:

University of New Hampshire – Dean’s List, Highest Honors. Spring, 2005.
UNH Alumni Meritorious Service Award Association Prize – May, 2005.
University of New Hampshire – University Award of Excellence. April, 2005.
Durham Ambulance Corps – Outstanding Service Award. February, 2005.
University of New Hampshire – Dean’s List, Highest Honors. Fall, 2004.
Golden Key International Honour Society By invitation Fall, 2004 – present.
Tau Beta Pi – Engineering Honor’s Society By invitation Fall, 2004 – present.
Durham Ambulance Corps – Rookie of the Year Award. February, 2004.

Research Grants:

NSF Research Experience for Undergraduates (\$2000) – Fall Semester, 2004.
Supports undergraduate research on brain and pituitary hormones in lamprey, conducted in the research lab of Dr. Stacia Sower.

UROP Undergraduate Research Grant (\$493) – April, 2005. For undergraduate honors senior thesis proposal entitled “Computational Modeling and Brain Computer Interfaces”. Grant covers costs for Fall, 2005 component – design and construction of neural interface instrumentation and computational modeling of neural tissue in MATLAB™.

NSF Research Experience for Undergraduates (\$3000) – Spring Semester, 2005.
Supports undergraduate research on brain and pituitary hormones in lamprey, conducted in the research lab of Dr. Stacia Sower.

IROP Undergraduate Research Grant (\$7066) – November, 2004. For international undergraduate research proposal entitled “Two Investigations with Lamprey GTH”. To be conducted during the summer of 2005 in the United States and Japan.

NSF Research Experience for Undergraduates (\$2000) – Fall Semester, 2004.
Supports undergraduate research on brain and pituitary hormones in lamprey, conducted in the research lab of Dr. Stacia Sower.

SURF Undergraduate Research Grant (\$3500) – April, 2004. For undergraduate research proposal entitled “Endocrine Disruption of the Reproductive System in Vertebrates”. Declined due to conflict with PSNH Scholarship.

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Scholarships:

Leopold Schepp Foundation Scholarship (\$4000) – May, 2005.
Dr. Benjamin Bronstein Endowed Scholarship (\$500) – May, 2005.
Winchester R. Wood Memorial Scholarship (\$2000) – April, 2005.
Douglas R. Woodward Scholarship (\$1000) – April, 2005.
S. Robert Levine & Craig R. Benson Scholarship (\$1000) – April, 2005.
Howard W. Cope Memorial Scholarship (\$1000) – April, 2005.
Raymond M. Krainsky Scholarship (\$4800) – April, 2005.
William E. Knox Scholarship (\$500) – April, 2005.
New England Health Care Engineering Society Scholarship (\$3000) –September, 2004.
PSNH Scholarship/Internship (\$5000/\$6000) – April, 2004.

Certifications and Specialized Training:

New Hampshire EMT Basic 2003 - Present.
Massachusetts EMT Basic 2003 - Present.
Wilderness EMT Basic 2004 - Present.
University of New Hampshire Radiation Worker 2004 – Present.
University of New Hampshire Vertebrate Animal Handler 2004 – Present.
SCUBA Certified Open Water Diver 1998 – Present.
Cisco Certified Network Professional 2001-2004.
Microsoft Certified Systems Expert 2001-2004.

Professional Experience:

Platform & Release Engineer – Mazu Networks, Inc.

February 2001 – July 2003 : Cambridge, MA : <http://www.mazunetworks.com>

Started as the sole customer engineer, deploying Mazu's flagship linux-based DDoS network security product into enterprise and carrier class networks across North America. Migrated into platform and release engineering May, 2002. Worked primarily on network interface device driver and kernel performance issues, using ksymoos analysis, kernel debuggers, profiling-enabled kernels, Ixia network test equipment and kernel and driver source code modifications. Worked specifically with Intel's gigabit ethernet driver and Donald Becker's tulip drivers, and with MIT's "click" kernel and user-level code. Extensive kernel build experience lead to role as release engineer.

Lead Operations – Vibrant 3D, Inc.

August 2000 – February 2001 : Portsmouth, NH : <http://www.Vibrant3D.COM>

Vibrant 3D is an incubational "Internet Enabled 3D Engine" software company with a sophisticated virtual reality ActiveX plug-in for Internet Explorer. I was responsible for all aspects of the company's operational requirements, including design and implementation of scalable corporate, development and production networks and computing resources. I

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developed operational requirements, planning, guidelines and projections to facilitate an operational group of 12-15 hires anticipated upon first-round funding.

Director of Engineering - SEG Network Technologies, Inc.

September 1998 – September 2000 : Hanover, NH : <http://www.segNET.COM>

SegNET is a New England regional commercial ISP providing managed connectivity services, collocation, web hosting and development. SegNET pioneered the deployment of both DSL and wireless services in New Hampshire, and grew rapidly into a multi-state communications provider. I helped lead the growth from startup ISP to multi-million dollar corporation.

Owner – DEM Consulting

1997 - 1998 : White River Junction, VT

Provided Unix and Windows NT/95 system administration to the Upper Valley region businesses, including networking and software design, implementation and troubleshooting services.

System Administrator / Programmer – H.C. Sharp Software, Inc.

1997 – 1998 : Thetford, VT

Developed a 32 bit windows application for accounting and income tax preparation using Borland C++ and Microsoft Foundation Classes.

System Administrator – NSF's Center for Human Simulation

1994 – 1997 : Denver, CO : <http://www.uchsc.edu/sm/chs/>

Administered the Center for Human Simulation's network and systems, including UNIX, Windows and Macintosh platforms. Programming responsibilities included system level and network programming to enable high speed communications between image rendering workstations and a Windows NT machine with a force feedback 3-dimensional pointer with the objective of simulating surgical procedures in virtual reality.

System Administrator – UnixOps, University of Colorado at Boulder

1993 - 1995 : Boulder, CO - <http://boulder.colorado.edu/main.html>

UnixOps, a division of Computer and Network Services, is responsible for all non-public UNIX machines at the University of Colorado, Boulder campus. UnixOps supported 200+ workstations and a dozen CAD, statistics and programming labs. Areas of personal emphasis included networking, network security, compiler support and centralized administration techniques.