

# Christopher M.L.S. Bouton, Ph.D.

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## Education

- Ph.D.                    **Johns Hopkins University**  
                             **Neuroscience Doctoral Program**  
                             **2001**  
                             *Dissertation Title:* Use of Molecular and Genomic Approaches to Characterize  
                             Molecular and Cellular Effects of Lead Toxicity  
                             *Dissertation Committee:* Jonathan Pevsner, Ph.D. (Advisor); Solomon Snyder, M.D.,  
                             D.Sc., D.Phil. (Hon. Causa); Anirvan Ghosh, Ph.D.; Joseph Bressler, Ph.D.
- B.A.                     **Amherst College**  
                             **1996**  
                             *Magna Cum Laude*

## Research & Work Experience

- 2003 to 2004         **Scientist II, Bioinformatics, GenPath Pharmaceuticals**  
                             **Cambridge, MA**  
                             - Perform large-scale gene & protein expression research & analysis.
- 2001 to 2003         **Computational Biologist, LION Bioscience Research Inc. (LBRI)**  
                             **Cambridge, MA**  
                             - Perform large-scale gene & protein expression research & analysis.  
                             - Identify putative pharmaceutical targets using computational methods.  
                             - Develop databases, software & algorithms for analysis in multiple research areas.  
                             - Prepare patent filings in multiple therapeutic research areas.
- 2002 to Present     **Adjunct Assistant Professor, Boston University, Bioinformatics Graduate**  
                             **Program**  
                             **Boston, MA**  
                             - Collaborate in computational biology research projects.  
                             - Teach bioinformatics graduate courses.  
                             - Mentor graduate students in summer internships.
- 1996 to 2001         **Dissertation Research, Johns Hopkins University**  
                             **Baltimore, MD**  
                             - Performed molecular biology, microarray and bioinformatics research addressing  
                             the effects of lead toxicity.  
                             - Developed DRAGON, a web-accessible database for microarray data analysis  
                             ([www.dragondb.org](http://www.dragondb.org)).  
                             - Developed DRAGON View, information visualization tools for microarray data.  
                             Mentors: Jonathan Pevsner, Ph.D. (Advisor); Solomon Snyder, M.D., D.Sc., D.Phil.  
                             (Hon. Causa); Anirvan Ghosh, Ph.D.; Joseph Bressler, Ph.D.
- 1995                   **Hughes Senior Thesis Fellowship, Amherst College**  
                             **Amherst, MA**  
                             Performed electrophysiological research concerning Alzheimer's disease.  
                             Mentor: Stephen George, Ph.D.
- 1994                   **Research Fellowship, Rockefeller University**  
                             **New York City, NY**  
                             Studied expression profile of cerebellar degenerative related proteins.  
                             Mentor: Robert Darnell, M.D., Ph.D.
- 1993                   **Internship, The Jackson Laboratory**

**Bar Harbor, ME**

Researched the expression of uncoupling protein.

Mentor: Leslie Kozak, Ph.D.

1992

**Research Internship Program, Merck Pharmaceuticals**

**Rahway, NJ**

Designed an intranet accessible, peptide mimetic database.

Mentor: Dennis Underwood, Ph.D. & Mary Baum, Ph.D.

1991

**Internship, The Jackson Laboratory**

**Bar Harbor, ME**

Researched the expression of uncoupling protein.

Mentor: Leslie Kozak, Ph.D.

**Publications**

Bouton CM, Henry G, Colantuoni C, and Pevsner J. DRAGON and DRAGON View: Methods for the Annotation, Analysis and Visualization of Large-Scale Gene Expression Data. Parmiagiani G, Garrett ES, Irizarry RA, Zeger SL. (eds), *The Analysis of Gene Expression Data: methods and software*. Springer-Verlag, New York, 2003.

Bouton CM and Pevsner J. DRAGON and DRAGON View: Information Annotation and Visualization Tools for Large-Scale Expression Data. Baxeavanis, A., Davison, D., Page, R., Stein, L., Stormo, G. (eds), *Current Protocols in Bioinformatics*. John Wiley & Sons, Inc., New York, 2003.

Bouton CM and Pevsner J. (2002) DRAGON View: information visualization for annotated microarray data. *Bioinformatics*, **18**, 323-324.  
PubMed ID: 11847082

Bouton CM, Hossain MA, Frelin LP, Laterra J, Pevsner J. (2002) Microarray analysis of differential gene expression in lead-exposed astrocytes. *Toxicol. Appl. Pharmacol.*, **176**, 34-53.  
PubMed ID: 11578147

Bouton CM, Frelin LP, Forde CE, Godwin HA, Pevsner J. (2001) Synaptotagmin I is a molecular target for lead. *J. Neurochem.*, **76**, 1724-35.  
PubMed ID: 11259490

Bouton CM and Pevsner J. (2000) DRAGON: Database Referencing of Array Genes Online. *Bioinformatics*, **16**, 1038-1039.  
PubMed ID: 11159315

Bouton CM and Pevsner J. (2000) Effects of lead on gene expression. *Neurotoxicology*, **21**, 1045-1055.  
PubMed ID: 11233751

Colantuoni C, Purcell AE, Bouton CM, Pevsner J. (2000) "High throughput analysis of gene expression in the human brain." *J. Neurosci. Res.*, **59**, 1-10.  
PubMed ID: 10658179

Hossain MA, Bouton CM, Pevsner J, Laterra J. (2000) Induction of vascular endothelial growth factor in human astrocytes by lead: Involvement of a protein kinase C/activator protein-1 complex-dependent and Hypoxia-inducible factor 1-independent signaling pathway. *J. Biol. Chem.*, **275**, 27874-82.  
PubMed ID: 10882716

Johnston-Wilson NL, Bouton CM, Pevsner J, Breen JJ, Torrey EF, Yolken R. (2001) Emerging Technologies for Large Scale Screening of Postmortem Human Brains in the Study of Severe Psychiatric Disease. *Int. J. Neuropsychopharmacol.*, **4**, 83-92.  
PubMed ID: 11343633

Thinakaran G, Regard JB, Bouton CM, Harris CL, Price DL, Borchelt DR, Sisodia SS. (1998) Stable association of presenilin derivatives and absence of presenilin interactions with APP. *Neurobiol. Dis.*, **6**, 438-453.  
PubMed ID: 9666482

## **Computer Skills**

### **Languages**

Perl, Java, SQL, PHP, HTML, CGI, Ruby

### **Database Management Systems**

MySQL, Oracle 8i/9i, MS Access, SQL Server, mSQL, Postgres

### **Operating Systems**

Linux, Unix/Irix, Mac OS X, Microsoft NT / 2000 / XP

### **Platforms**

Linux clusters, Xserve clusters, SGI Origin mainframes, Paracel

### **Microarray Packages**

Genespring, Partek Pro, Affymetrix GeneChip Analysis Suite, Spotfire, Bioconductor

### **Statistical Packages**

Matlab, R, S-PLUS

### **Bioinformatics Software**

Bioperl, BLAST, PSI-BLAST, PHI-BLAST, BLAT, HMMER, Glimmer, Genscan, Rasmol

## **Developed Software**

DRAGON Database ([www.dragondb.org](http://www.dragondb.org))

DRAGON View Analysis & Visualization Tools ([www.dragondb.org](http://www.dragondb.org))

WiseSAGE (proprietary LBRI software)

*In Silico*-SAGE Subtraction Engine (proprietary LBRI software)

Target Identification Pipeline (proprietary LBRI software)

ExpGrapher: Database & Visualization System for Target Expression Data (proprietary LBRI software)

SeqListMaker: Automated Patent Listing Generation Software (proprietary LBRI software)

Gene Shopping Cart: Centralized Target Research & Collaboration Environment (proprietary LBRI software)

## **Awards and Honors**

Magna Cum Laude, Amherst College, 1996

The Hughes Foundation Research Fellowship, 1995

The National Science Scholarship, 1995

Westinghouse Science Talent Search Award Scholarship, (6th Place, \$15,000 prize), 1992

## **Teaching Experience**

Co-Professor (with Simon Kasif, Ph.D.), 1 year, "Biological Databases" (bioinformatics graduate program core course), Boston University, 2003

Teaching Assistant, 2 years, "Introduction to Bioinformatics", Johns Hopkins University, 2000, 2001

Teaching Assistant, 3 years, "Neuroscience A" (JHU medical school core course), Johns Hopkins University, 1999, 2000, 2001

Teaching Assistant, 1 year, "Neurobiology" (Biology 35), Amherst College, 1995

## **Presentations**

Poster, "Analyzing Large-Scale Gene Expression Data within a Biological Context Using DRAGON and DRAGON View"

"Genome Informatics", Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 2003

Slide Presentation, "Analyzing Large-Scale Gene Expression Data within a Biological Context Using DRAGON and DRAGON View"

"Informatics and Microarray Data Analysis", Cambridge Heathtech Institute, Zurich, Switzerland, 2003

Slide Presentation, "Methods for the Analysis of Annotated Expression Data"

Boston University, Boston, MA, 2002

Slide Presentation, "DRAGON and DRAGON View: Tools for Large-Scale Expression Analysis"

National Institute of Aging, Baltimore, MD, 2001

Slide Presentation, "DRAGON: Database Referencing of Array Genes Online"

NIH, Bethesda, MD, 2000

Poster, "DRAGON: Database Referencing of Array Genes Online"

ISMB, 2000

### **References**

Available upon request.