

1. WILL FAIRBROTHER

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2. Home Address

141 Alfred Drowne Road
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3. Education

Undergraduate	1990	Oberlin College, Chemistry, BA
Graduate Degrees	1994	Columbia University, MS, MPhil
	2000	Columbia University, PhD "Human Genomic Sequences that Inhibit Splicing"

4. Professional Appointments

2001-2003	Postdoctoral Associate, Massachusetts Institute of Technology, Center for Cancer Research, Cambridge, MA,
2003-2005	PhRMA Informatics Fellow, Massachusetts Institute of Technology, Center for Cancer Research, Cambridge, MA
2005-present	Assistant Professor, Brown University, Department of Molecular Biology, Cellular Biology and Biochemistry
2006-present	Member, Center for Computational Molecular Biology, Brown University
2006–present	Member, Center for Genomics and Proteomics, Brown University

5. Completed Publications

a,b. Books, Chapters

Not applicable

c. Refereed journal articles

Tantin D, Gemberling M, Callister C, **Fairbrother W**. "High-throughput biochemical analysis of in vivo location data reveals novel distinct classes of POU5F1(Oct4)/DNA complexes." *Genome Research* 2008 Mar 13.

Fairbrother W, Lipscombe D. "Repressing the neuron within." *Bioessays*. 2008 Jan; 30(1):1-4.

Nicole Pfarr, Dirk Prawitt, Michael Kirschfink, Claudia Schroff, Markus Knuf, Pirmin Habermehl, Wilma Mannhardt, Fred Zepp, **William Fairbrother**, Michael Loos, Christopher B. Burge and Joachim Pohlenz " Linking C5 deficiency to an exonic splicing enhancer mutation." *J Immunol* 174(7): 4172-4177 (2005).

Fairbrother WG, Holste D, Burge CB, Sharp PA. "Single nucleotide polymorphism-based validation of exonic splicing enhancers" *PloS Biol.* 2(9): 1388-1395 (2004).

Fairbrother WG, Yeo GW, Yeh R, Goldstein P, Mawson M, Sharp PA, Burge CB. "RESCUE-ESE identifies candidate exonic splicing enhancers in vertebrate exons. *Nucleic Acids Res.* 32: 187-190 (2004).

Fairbrother WG, Yeh RF, Sharp PA, Burge CB. "Predictive identification of exonic splicing enhancers in human genes". *Science*, 297(5583):1007-1013 (2002).

Fairbrother WG, Chasin L. "Human genomic sequences that inhibit splicing." *Molecular Cell Biology*: 20(18): 6816-6825 (2000)

Ackermann MN, **Fairbrother WG**, Amin NS, Deodene CJ, Lamborg CM, Martin PT. "Tetracarbonylmolybdenum complexes of 2-(phenylazo)-pyridine ligands: Correlations of molybdenum-95 chemical shifts with electronic, infrared, and electrochemical properties." *J. Organometal. Chem.* 523: 145-151 (1996)

d. Non-refereed journal articles

Fairbrother WG. "Sunny Days for Solar Cells" *Chemical Business* (1990)

Fairbrother WG. “Difficult R&D Interface” *Chemical Business* (1991)

e. Book Reviews

Not applicable

f. Abstracts

Fairbrother WG, Chasin L “Human Genomic Sequences that Inhibit Splicing”, Eukaryotic mRNA Processing Conference, Cold Spring Harbor Laboratories, (1997).

Fairbrother WG, Chasin L “Human Genomic Sequences that Inhibit Splicing”, Eukaryotic mRNA Processing Conference, Cold Spring Harbor Laboratories, (1999).

Fairbrother WG, Yeh RF, Sharp PA, Burge CB. “Predictive Identification of Exonic Splicing Enhancers in Human Genes”, Eukaryotic mRNA Processing Conference, North Cold Spring Harbor Laboratories, (2001)

g. Invited lectures

2004 New York University: “Discovery and Characterization of Splicing Elements”

Georgia Institute of Technology “Discovery and Characterization of Splicing Elements”

Emory University: “Discovery and Characterization of Splicing Elements”

University of Michigan: “Discovery and Characterization of Splicing Elements”

Albert Einstein College of Medicine: “Discovery and Characterization of Splicing Elements”

The Hutchinson Cancer Institute: “Identification and Evolution of Gene Processing Signals”

Haverford College: “Identification and Evolution of Gene Processing Signals”

2005 Boston College: "Identification and Evolution of Gene Processing Signals"

McLaughlin Research Institute: "Identification and Evolution of Gene Processing Signals"

University of North Carolina at Charlotte: "Identification and Evolution of Gene Processing Signals"

Georgia Institute of Technology: "Identification and Evolution of Gene Processing Signals"

Brown University: "Identification and Evolution of Gene Processing Signals"

UMDNJ at New Brunswick: "Identification and Evolution of Gene Processing Signals"

2006 Institute for Advanced Studies, Princeton University: "Identification and Evolution of Gene Processing Signals"

2007 University of Rochester, Rochester: "Uncovering the Regulatory Code of in Stem Cells"

2008 McMaster University, Ontario: "High-Throughput Biochemical Interrogation of Genomic Regions of Human Variation" 4/26/08

Williams College, Williamstown MA: "Mapping Cis-Elements in the Genome: Development of high-throughput binding assays to query nucleic acid/protein interactions" - 2/22/08

Carnegie Mellon University: "Identifying Splicing Elements by Clustered Word Distributions"

h. Papers read

* an abstract of this talk was included in the meeting's proceedings

* "Predictive Identification of Exonic Splicing Enhancers in Human Genomic Sequences", Genome Sequencing and Biology Conference, Cold Spring Harbor Laboratories, 2002.

* "Natural Selection and Exonic Splicing Enhancers" Eukaryotic mRNA Processing Conference, Cold Spring Harbor Laboratories, 2003.

* "High-throughput Biochemical profiling of DNA/protein complexes at Oct4 bound genomic regions" 1st Midwest Conference on Stem Cell Biology and Therapy, Oakland University Rochester, MI, May 9-11 2008.

i. Work in review

j. Work in progress

Lim KL, **Fairbrother W** "Discovering Splicing Elements by Genomic Distribution", in preparation

Levin J, Gemberling M., **Fairbrother W** "Profiling high affinity ASF/SF2 binding sites in alternatively spliced pre-mRNAs", in preparation

k. Electronic publication

Fairbrother WG. "RESCUE-ESE Web server"
<http://genes.mit.edu/burgelab/rescue-ese/>

i. Patents

"Methods for Identifying Nucleotide Ligands". US Application No.: 61/007,863

6. Research Grants

a. Awarded

Richard B Salomon Award, PI, 2006

b Completed grants

N/A

c Proposals submitted

Searle Scholar Award "Computational Prediction of Cis-Regulatory Elements" 2006 P.I.

R21 GCAT 1R21HG004524-01 "Discovering and Validating Functional Elements in the Genome" submitted 6/04/2007

R01 GCAT 1R01HG004668-01 "Megashift:Development of a high throughput method of enhancer identification" submitted 10/05/07

ACS-Research Scholar Grant "High Throughput Interrogation of p53 responsive regions of the human genome." submitted 10/15/07

Brown University Seed Fund

7. Service

a. Service to the university

2005-2007	CCMB Advisory Committee
2005-2006	CCMB Faculty Search Committee
2006-2007	MCB Curriculum Committee
2006-2007	CCMB Computing Hardware Committee
2007-2008	MCB Graduate Program Admission Committee

b. Service to the profession

Program Committee Invited Member for 13th Annual Intelligent Systems in Molecular Biology Conference - International Society for Computational Biology 2005

Peer Review for Plos Computational Biology 2006

Peer Review for Genome Research 2005

Peer Review for European Journal of Human Genetics 2006

Peer Review for Plos Genetics 2007

Peer Reviewed for Genome Biology 2008

8. Honors

BP Research Experience Fellowship, Oberlin College, 1989

James Howard McGregor Teaching Award , Columbia University, 2000.

Informatics Postdoctoral Fellowship, PhRMA Foundation, 2003-2005

Richard B Salomon Award, 2006

CCMB Scholarship Innovator Award, 2007

9. Teaching**Regular Courses**

Spring 2004	Genetics of Human Susceptibility to Infection (course 7.347) Massachusetts Institute of Technology (12 students)
Fall 2006	Genetics (Bio 47), Brown University (220 students) Taught 50% of course (with M. McKeown)
Fall 2007	Genetics (Bio0470) Brown University (220 students) Taught 50% of course (with M. McKeown)
Spring 2008	Current Topics in Biochemistry and Molecular Biology (Bio2200)
Spring 2008	Directed Study (B00228490)

Independent Study

Spring 2006	4 undergraduate students (Bio196)
Summer 2006 fellowship)	4 undergraduate students (team UTRA)
Fall 2006	1 undergraduate student (Bio195)
Spring 2007	1 undergraduate student (Bio 196)
Summer 2007	1 undergraduate student (individual UTRA) 1 graduate student (Bio 295)
Fall 2007	1 undergraduate student 1 graduate student (Bio 295)

Thesis

2007 Tito Jankowski, Senior Design Project, Biomedical Engineering

Academic Advising

Thesis Committee for the Neuroscience Graduate program (1 student)

Thesis Committees for the MCB Graduate Program (3 students)