

# Juan I. Fuxman Bass, Ph.D.

Boston University  
Department of Biology  
24 Cummington mall, room 703  
Boston, MA 02215  
[fuxman@bu.edu](mailto:fuxman@bu.edu)  
(617) 353-2432

## EDUCATION

---

- 2006-2010 Ph.D. Biology.  
University of Buenos Aires, Argentina.
- 1999-2005 Lic. in Biology (equivalent to B.Sc. and M.Sc.). Summa cum laude.  
University of Buenos Aires, Argentina.  
Specialization: Molecular Biology and Biotechnology.

## POSITIONS

---

- 2017- Affiliated member of the Bioinformatics Program (Boston University), the Genome Sciences Institute (Boston University), and the Center for Cancer Systems Biology (Dana-Farber Cancer Institute).
- 2016- Assistant Professor  
Biology Department  
Boston University, Boston, MA.
- 2011-2016 Postdoctoral fellow  
University of Massachusetts Medical School, Worcester, MA.  
Advisor: Dr. A.J. Marian Walhout
- 2006-2010 Ph.D. candidate  
University of Buenos Aires, Argentina.  
Advisor: Dr. Analía Trevani
- 2003-2006 Undergraduate researcher  
National Academy of Medicine, Buenos Aires, Argentina.  
Supervisor: Dr. Analía Trevani
- 2003-2011 Teaching Assistant  
University of Buenos Aires, Buenos Aires, Argentina.

## AWARDS AND HONORS

---

- 2016-2019 NIH Pathway to Independence Award (K99/R00), R00 Phase \$249,000/yr.

- 2015-2016 NIH Pathway to Independence Award (K99/R00), K99 Phase \$90,000/yr.
- 2011-2014 Pew Latin American Postdoctoral Fellowship (\$95,000).  
\* *Featured in Worcester Telegram&Gazette (6/25/2015) and La Nacion (6/14/2012).*
- 2007 “Leonardo Satz” Award, Argentine Immunology Society (award to best oral presentation).
- 2006-2011 Graduate Fellowship from CONICET (National Council of Scientific and Technical Investigations, Argentina).
- 2004-2006 Undergraduate Fellowship for research Initiation. School of Medicine, University of Buenos Aires, Argentina.
- 2004 National Academy of Medicine Award (best original work developed in Argentina in immunology).
- 2004 Argentine Council for the Information and Development of Biotechnology Award (best research and development project). Declared project of national interest by the Argentine Parliament.
- 2002-2003 Undergraduate Scholarship “Paulo D. Barroso Mastronardi” in Biological Sciences. National Academy of Exact, Physical and Natural Sciences, Argentina.
- 1999-2005 Bronze Medal in the Iberoamerican Mathematics Olympiad for University Students.
- 1998-2000 Undergraduate scholarship in mathematics, Bernardo Houssay Foundation, Argentina.
- 1997-1999 Argentinean National Team in Mathematics:  
  - Silver Medal in the XII and XIII Iberoamerican Mathematics Olympiads.
  - Bronze Medal in the XXXVII and XXXVIII International Mathematics Olympiads.
  - Second prize in the Argentinean Mathematics Olympiads.
  - Silver Medal awarded by the President of Argentina.
  - Bronze Medal in the X Asian-Pacific Mathematics Olympiads
  - Silver Medal in the XI Asian-Pacific Mathematics Olympiads.

\* *Featured in La Nacion newspaper (7/7/1997, 7/22/1997, 7/26/1997, 7/28/1997, 8/8/1997, 7/22/1998), Clarin newspaper (7/19/1997, 7/20/1997, 7/23/1997) and People’s magazine (September, 1997).*

## ORAL PRESENTATIONS

---

- 2017 Center for Cancer Systems Biology annual retreat, Gloucester, MA (invited speaker).
- 2017 Cold Spring Harbor Laboratory meeting “Systems Biology: Networks”, Huntington, NY (invited speaker).
- 2017 Boston University School of Medicine, Microbiology Department (invited speaker).
- 2016 Worcester Area Worm Meeting, Worcester, MA (invited speaker).
- 2016 Program in Systems Biology, UMass Medical School (invited speaker).
- 2016 BioFrontiers Institute, Colorado University, Boulder, CO (invited speaker).

|      |                                                                                                                              |
|------|------------------------------------------------------------------------------------------------------------------------------|
| 2016 | Bioengineering Department, University of Washington, Seattle, WA (invited speaker).                                          |
| 2016 | Molecular, Cell and Developmental Biology Department, University of California, Santa Cruz, CA (invited speaker).            |
| 2016 | Biochemistry Department, Boston University School of Medicine (invited speaker).                                             |
| 2016 | Biology Department, Boston University (invited speaker).                                                                     |
| 2015 | Center of Cancer Systems Biology meeting, Rockport, MA.                                                                      |
| 2015 | Microbiology and Physiological Systems Department, UMass Medical School (invited speaker).                                   |
| 2015 | Molecular, Cell and Cancer Biology Department, UMass Medical School (invited speaker).                                       |
| 2015 | 20 <sup>th</sup> International <i>C. elegans</i> Meeting, Genetics Society of America, Los Angeles, CA.                      |
| 2015 | Leloir Foundation Institute, Buenos Aires, Argentina (invited speaker).                                                      |
| 2014 | Center of Cancer Systems Biology meeting, Rockport, MA.                                                                      |
| 2014 | Systems Biology: Global Regulation of Gene Expression Meeting, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.        |
| 2014 | Pew Annual Meeting. Costa Rica.                                                                                              |
| 2014 | National Academy of Medicine, Buenos Aires, Argentina (invited speaker).                                                     |
| 2014 | Lewis-Sigler Institute of Integrative Genomics, Princeton University, Princeton, NJ (invited speaker).                       |
| 2014 | Program in Bioinformatics and Integrative Biology, UMass Medical School (invited speaker).                                   |
| 2012 | Center of Cancer Systems Biology meeting, Rockport, MA                                                                       |
| 2007 | Argentinean Immunology Society meeting, Mar del Plata, Argentina.<br><i>*Leonardo Satz Award for best oral presentation.</i> |
| 2006 | Argentinean Immunology Society meeting, Mar del Plata, Argentina.                                                            |

## TEACHING AND MENTORING EXPERIENCE

---

### Teaching experience

|      |                                                                                                   |
|------|---------------------------------------------------------------------------------------------------|
| 2018 | Instructor, Biology Department, Boston University<br><i>Course: BI 594 (Topics in Biology)</i>    |
| 2017 | Instructor, Biology Department, Boston University<br><i>Course: BI 553 (Molecular Biology II)</i> |
| 2014 | Guest lecturer, Lewis-Sigler Institute of Integrative Genomics.                                   |

Princeton University.

*Course: Introduction to Genomics and Computational Biology.*

- 2010 Organizer and lecturer at the “Solving math problems” course for High School professors organized by the Argentine Mathematics Olympiad, Mar del Plata, Argentina.
- 2005-2011 Teaching assistant, Department of Physiology, Molecular and Cell Biology.  
School of Exact and Natural Sciences, University of Buenos Aires, Argentina.  
*Courses: Introduction to Molecular and Cell Biology, Genetics, Cell Biology, Biological Chemistry IIA.*
- 2004-2006 Teaching assistant, Department of Microbiology, Parasitology and Immunology.  
School of Medicine, University of Buenos Aires.  
*Course: Immunology.*
- 2004-2005 Teaching assistant, Department of Immunology.  
National Academy of Medicine, Argentina.  
*Course: Update in the acute inflammatory response.*
- 2003-2004 Teaching assistant, Department of Biochemistry.  
School of Exact and Natural Sciences, University of Buenos Aires, Argentina.  
*Course: Biochemistry.*
- 1999-2005 Mathematics Olympiad instructor at Elementary and High School. Mary Graham School, North Hills School and Pilar’s Parochial Institute, Argentina.

## **Mentoring experience**

- 2016-2017 Mentor of undergraduate, graduate students and postdoc a BU
- Jared Sewell, Ph.D (Postdoc)
  - Kok Ann Gan (MCBB Ph.D. candidate)
  - Sebastian Carrasco-Pro (Bioinformatics Ph.D. candidate)
  - Elena Forchielli (MCBB Ph.D. candidate)
  - Rebecca Sereda (Biology undergraduate student)
  - Alvaro Dafonte (BA/MA student)
  - Shivani Mehta (BMB undergraduate student)
  - Roberto Campos Santos (Biology undergraduate student)
  - Mellisa Martinez (NSF-REU undergraduate student)
- 2011-2016 Student mentor in the Walhout lab, UMass Medical School.
- Aurian Garcia-Gonzalez (M.D./Ph.D. candidate): Study of non-coding mutations using the eY1H system. Co-author in *Cell*. 2015 Apr 23;161(3):661-73.
  - Numana Bhat (Ph.D. candidate): Study of mutations in the limb enhancer of sonic hedgehog. Co-author in *Cell*. 2015 Apr 23;161(3):661-73.
  - Nathan Beittel (undergraduate student): Comparative analysis of transcription factor binding to *C. elegans* first introns and promoters. Co-author in *Nucleic Acids Res*. 2014 Jan;42(1):153-62
- 2001 Mentor of Carlos di Fiore in a Mathematics Scholarship from the Bernardo Houssay Foundation (currently finishing his Ph.D. at University of Chicago).

## JOURNAL REVIEWER

---

- 2017- Associate Editor, *Bioinformatics and Computational Biology (Frontiers in Genetics)*
- 2017- Guest Editor, *The Journal of Molecular Biology*
- 2015- Member, Advisory Editorial Board of *Genomics*.
- 2014- Reviewer for *Cell Systems*, *Nature Communications*, *Nucleic Acids Research*, *G3 (Genes, Genomes, Genetics)*, *BMC Biology*, *Current Opinions in Systems Biology*, *Journal of Visualized Experiments*.
- 2013-2015 Co-reviewer with Dr. Marian Walhout: *Cell*, *Science*, *Genome Research*, *Genes and Development*, *Developmental Cell* and *Nucleic Acids Research*.

## SERVICE

---

- 2017-2018 Cell and Molecular Biology graduate student selection committee (BU).
- 2017-2018 MCBB graduate student selection committee (BU).
- 2017 Reviewer for Career Award (NSF)
- 2017 Reviewer for Career Award (NSF)
- 2017 Thesis Defense Committee member for Dr. Pengying Hao, Boston University.
- 2017 External examiner for Dr. Benjamin Vincent graduate thesis dissertation, Harvard Medical School.
- 2017 Thesis Defense Committee member for Dr. Xu Yang, University of Massachusetts Medical School.
- 2017 Qualifying exam committee member for David Bray.
- 2017 Qualifying exam committee member for Natalie Vaisman.
- 2017 Graduate committee member for Jessica Keenan and Patrick Stoiber.
- 2017 Honors thesis defense committee member for Mr. Camron Davies, Boston University.
- 2016-2017 Cell and Molecular Biology graduate student selection committee (BU).

## PUBLICATIONS

---

1. Gan KA, Carrasco Pro S, Sewell JA, and **Fuxman Bass JI**. Identification of Single Nucleotide Non-coding Driver Mutations in Cancer. ***Frontiers in Genetics***. 02 February 2018 | <https://doi.org/10.3389/fgene.2018.00016>.
2. Sewell JA, **Fuxman Bass JI**. Options and considerations when using a yeast one-hybrid system. ***Methods Mol Biol*** (in press).

3. Sewell JA, **Fuxman Bass JI**. Cellular network perturbations by disease-associated variants. *Curr Opin Sys Biol*. 2017 June; 3: 60–66.
4. #Fuxman Bass JI, Reece-Hoyes JS, #Walhout AJ. Gene-Centered Yeast One-Hybrid Assays. *Cold Spring Harb Protoc*. 2016 Dec 1;2016(12):pdb.top077669. (#co-corresponding author).
5. #Fuxman Bass JI, Reece-Hoyes JS, #Walhout AJ. Zymolyase-Treatment and Polymerase Chain Reaction Amplification from Genomic and Plasmid Templates from Yeast. *Cold Spring Harb Protoc*. 2016 Dec 1;2016(12):pdb.prot088971. (#co-corresponding author).
6. #Fuxman Bass JI, Reece-Hoyes JS, #Walhout AJ. Colony Lift Colorimetric Assay for  $\beta$ -Galactosidase Activity. *Cold Spring Harb Protoc*. 2016 Dec 1;2016(12):pdb.prot088963. (#co-corresponding author).
7. #Fuxman Bass JI, Reece-Hoyes JS, #Walhout AJ. Performing Yeast One-Hybrid Library Screens. *Cold Spring Harb Protoc*. 2016 Dec 1;2016(12):pdb.prot088955. (#co-corresponding author).
8. #Fuxman Bass JI, Reece-Hoyes JS, #Walhout AJ. Generating Bait Strains for Yeast One-Hybrid Assays. *Cold Spring Harb Protoc*. 2016 Dec 1;2016(12):pdb.prot088948. (#co-corresponding author).
9. **Fuxman Bass JI**, Pons C, Kozlowski L, Reece-Hoyes JS, Shrestha S, Holdorf AD, Mori A, Myers CL, Walhout AJ. A gene-centered *C. elegans* protein-DNA interaction network provides a framework for functional predictions. *Mol Syst Biol*. 2016 Oct 24;12(10):884.
10. **Fuxman Bass JI**, Sahni N, Shrestha S, Garcia-Gonzalez A, Mori A, Bhat N, Yi S, Hill DE, Vidal M, Walhout AJ. Human Gene-Centered Transcription Factor Networks for Enhancers and Disease Variants. *Cell*. 2015 Apr 23;161(3):661-73.
11. \*Sahni N, \*Yi S, \*Taipale M, \***Fuxman Bass JI**, \*Coulombe-Huntington J, Yang F, Peng J, Weile J, Karras GI, Wang Y, Kovács IA, Kamburov A, Krykbaeva I, Lam MH, Tucker G, Khurana V, Sharma A, Liu YY, Yachie N, Zhong Q, Shen Y, Palagi A, San-Miguel A, Fan C, Balcha D, Dricot A, Jordan DM, Walsh JM, Shah AA, Yang X, Stoyanova AK, Leighton A, Calderwood MA, Jacob Y, Cusick ME, Salehi-Ashtiani K, Whitesell LJ, Sunyaev S, Berger B, Barabási AL, Charleatoux B, Hill DE, Hao T, Roth FP, Xia Y, Walhout AJ, Lindquist S, Vidal M. Widespread Perturbation of Disease-Specific Macromolecular Interactions in Human Genetic Disorders. *Cell*. 2015 Apr 23;161(3):647-60. (\*co-first author).
12. Narasimhan K, Lambert SA, Yang AW, Riddell J, Mnaimneh S, Zheng H, Albu M, Najafabadi HS, Reece-Hoyes JS, **Fuxman Bass JI**, Walhout AJ, Weirauch MT, Hughes TR. Mapping and analysis of *Caenorhabditis elegans* transcription factor sequence specificities. *Elife*. 2015 Apr 23;4.
13. \***Fuxman Bass JI**, Diallo A, Nelson J, Soto JM, Myers CL, \*Walhout AJ. Using networks to measure similarity between genes: association index selection. *Nature Methods*. 2013 Dec. 10(12):1169-76. (\*co-corresponding author).
14. **Fuxman Bass JI**, Tamburino AM, Mori A, Beittel N, Weirauch MT, Reece-Hoyes JS, Walhout AJ. Transcription factor binding to *Caenorhabditis elegans* first introns reveals lack of redundancy with gene promoters. *Nucleic Acids Res*. 2014 Jan;42(1):153-62.
15. Gabelloni ML, Sabbione F, Jancic C, **Fuxman Bass JI**, Keitelman I, Iula L, Oleastro M, Geffner JR, Trevani AS. NADPH oxidase derived reactive oxygen species are involved in human neutrophil IL-1 $\beta$  secretion but not in inflammasome activation. *Eur J Immunol*. 2013 Dec;43(12):3324-35.
16. Ritter AD, Shen Y, **Fuxman Bass J**, Jeyaraj S, Deplancke B, Mukhopadhyay A, Xu J, Driscoll M, Tissenbaum HA, Walhout AJ. Complex expression dynamics and robustness in *C. elegans* insulin networks. *Genome Research*. 2013 Jun;23(6):954-65.

17. Traglia GM, Sala CD, **Fuxman Bass JI**, Soler-Bistué AJ, Zorreguieta A, Ramírez MS, Tolmasky ME. *Internalization of Locked Nucleic Acids/DNA Hybrid Oligomers into Escherichia coli*. **Biores Open Access**. 2012 Oct;1(5):260-3.
18. Nahmod K, Walther T, Cambados N, Fernandez N, Meiss R, Tappenbeck N, Wang Y, Raffo D, Simian M, Schwiebs A, Pozner R, **Fuxman Bass J**, Geffner J, Kordon E, Schere Levy C. *AT1 receptor blockade delays post-lactational mammary gland involution: a novel role for the renin angiotensin system*. **FASEB J**. 2012 May;26(5):1982-94.
19. **Fuxman Bass J**, Russo D, Gabelloni M, Geffner J, Giordano M, Catalano M, Zorreguieta A, Trevani A. *Extracellular DNA: A Major Proinflammatory Component of P. aeruginosa Biofilms*. **J Immunol**. 2010 Jun 1;184(11):6386-95.
20. Salamone G, Petracca Y, **Fuxman Bass J**, Rumbo M, Geffner J, Trevani A. *Flagellin delays spontaneous human neutrophil apoptosis*. **Lab Invest**. 2010 Jul;90(7):1049-59.
21. **Fuxman Bass J**, Alvarez M, Gabelloni M, Geffner J, Vermeulen M, Amaral M, Trevani A. *GM-CSF enhances a CpG-independent pathway of neutrophil activation triggered by bacterial DNA*. **Mol Immunol**. 2008 Nov;46(1):37-44.
22. **Fuxman Bass J**, Gabelloni M, Alvarez M, Vermeulen M, Russo D, Zorreguieta A, Geffner J, Trevani A. *Characterization of bacterial DNA binding to human neutrophil surface*. **Lab Invest**. 2008 Sep;88(9):926-37.
23. Alvarez M, **Fuxman Bass J**, Geffner J, Fernández Calotti P, Costas M, Coso O, Gamberale R, Vermeulen M, Salamone G, Tanos T, Trevani A. *Neutrophil signaling pathways activated by bacterial DNA stimulation*. **J Immunol**. 2006 Sep 15;177(6):4037-46.

## Books

1. **Fuxman Bass JI**. *Solving math problems*. Buenos Aires: Red Olímpica (2010). 252 pages. ISBN 978-987-9072-66-0.