

Juan I. Fuxman Bass, Ph.D.

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Department of Biology
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EDUCATION

- 2006-2010 Ph.D. Biology.
University of Buenos Aires and National Academy of Medicine, Argentina.
Advisor: Dr. Analia S. Trevani
- 1999-2005 Lic. in Biology (equivalent to B.S./M.S.). Summa cum laude.
University of Buenos Aires, Argentina.
Specialization: Molecular Biology and Biotechnology.

POSTDOCTORAL TRAINING

- 2011-2016 Postdoctoral fellow
University of Massachusetts Medical School, Worcester, MA.
Advisor: Dr. A.J. Marian Walhout

APPOINTMENTS

- 2023-present Associate Professor
Biology Department
Boston University, Boston, MA.
- 2019-2023 Director of Graduate Admissions and Associate Program Director
Molecular Biology, Cell Biology & Biochemistry Program
Boston University, Boston, MA.
- 2016-2023 Assistant Professor
Biology Department
Boston University, Boston, MA.
- 2003-2011 Teaching Assistant
University of Buenos Aires, Buenos Aires, Argentina.
- 1999-2005 Elementary and high-school mathematics teacher
Mary Graham, North Hills, and Pilar's Parish schools.
Pilar and Buenos Aires, Argentina

PROGRAMATIC APPOINTMENTS

- 2023-present Core member of the Biological Design Center (Boston University).
- 2020-present Member of the PhD Program in Biomedical Sciences (Boston University).
- 2018-present Member of the BU-BMC Cancer Center (Boston University).
- 2017-present Member of the Bioinformatics Program (Boston University).
- 2017-present Member of the Genome Sciences Institute (Boston University).
- 2017-present Member of the Molecular Biology, Cell Biology and Biochemistry Program (Boston University).
- 2016-present Member of the Center for Cancer Systems Biology (Dana-Farber Cancer Institute).

AWARDS AND HONORS

- 2022 Keystone Symposia Early Career Investigator Award
- 2019 Milstein Young Investigator Award, International Cytokine & Interferon Society.
- 2007 “Leonardo Satz” Award, Argentine Immunology Society (award to the best oral presentation).
- 2005 Bronze Medal in the 8th Iberoamerican Mathematical Olympiad for University Students.
- 2004 National Academy of Medicine Award (best original work in immunology developed in Argentina).
- 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.
- 2004-2006 Undergraduate Fellowship for research Initiation. School of Medicine, University of Buenos Aires, Argentina.
- 2002-2003 Undergraduate Scholarship “Paulo D. Barroso Mastronardi” in Biological Sciences. National Academy of Exact, Physics and Natural Sciences, Argentina.
- 2002 Bronze Medal in the 5th Iberoamerican Mathematical Olympiad for University Students.
- 2000 Bronze Medal in the 3rd Iberoamerican Mathematical Olympiad for University Students.
- 1999 Bronze Medal in the 2nd Iberoamerican Mathematical Olympiad for University Students.
- 1999 Silver Medal in the XI Asian Pacific Mathematics Olympiad.
- 1998-2000 Undergraduate scholarship in mathematics, Bernardo Houssay Foundation, Argentina.
- 1998 Presidential Silver Medal in mathematics.
- 1998 Silver Medal in the VII Rioplatense Mathematical Olympiad.
- 1998 Silver Medal in the 13th Iberoamerican Mathematical Olympiad.

- 1998 Bronze Medal in the 39th International Mathematical Olympiad.
- 1998 Bronze Medal in the X Asian Pacific Mathematical Olympiad.
- 1998 First place in the Buenos Aires Province Mathematical Olympiad.
- 1998 Second place in the Argentinean Mathematical Olympiad.
- 1997 Bronze Medal in the VI Rioplatense Mathematical Olympiad.
- 1997 Silver Medal in the 12th Iberoamerican Mathematical Olympiad.
- 1997 Bronze Medal in the 38th International Mathematical Olympiad
- 1997 Third place in the Argentinean Mathematical Olympiad.
- 1996 First place in the Buenos Aires Province Mathematical Olympiad.

PRESENT FUNDING

- 2023-2028 NIH Maximizing Investigator's Research Award (R35), R35-GM128625: *Structure and function of immune gene regulatory networks*. \$2,227,500 total cost (direct cost to my lab = \$1,350,000, indirect cost to BU = \$ 877,500). **PI: JI Fuxman Bass.**
- 2023-2024 NIH National Cancer Institute, R21-CA279630: *Spatio-temporal mechanistic modeling of whole-cell tumor metabolism*. \$192,844 total cost (direct cost to my lab = \$24,525, indirect cost to BU = \$15,940). PIs: Daniel Segre, Ilika Dukovski, Kirill Korolov. **Co-I: JI Fuxman Bass.**
- 2023-2024 NSF, "REU Site: Control of Gene Expression for Biological Effect", Diversity supplement. PI: Thomas D. Gilmore. **Role: mentor.** Total Costs to BU \$84,348 (direct cost to my lab: \$51,120).
- 2022-2027 NIH National Institute of Child Health and Human development, R01-HD104971: *Characterization of the gene regulatory network governing the first cell fate decision in mammalian embryonic development*. \$2,613,240 total cost (direct cost to my lab = \$635,282, indirect cost to BU = \$412,933). **Co-Pis: JI Fuxman Bass (BU), Thomas Fazzio (UMass Medical School).**
- 2022-2025 NSF, "REU Site: Control of Gene Expression for Biological Effect", PI: Thomas D. Gilmore. **Role: mentor.** Total Costs to BU \$453,726. Total cost to my lab ~\$9,000.

PAST FUNDING

- 2018-2023 NIH National Cancer Institute, U01-CA232161: *Rewiring of regulatory networks in breast cancer by transcription factor isoforms*. \$3,736,932 total cost (direct cost to my lab = \$718,000, indirect cost to BU = \$ 466,700). **Co-Pis: JI Fuxman Bass (BU), Marc Vidal (DFCI), Martha Bulyk (Harvard Medical School).**

- 2018-2023 NIH Maximizing Investigator's Research Award (R35), R35-GM128625: *Structure and function of immune gene regulatory networks*. \$2,062,500 total cost (direct cost to my lab = \$1,250,000, indirect cost to BU = \$ 812,500). **PI: JI Fuxman Bass**.
- 2021-2022 NIH National Cancer Institute, U01-CA232161 (supplement): *Functional roles of the intrinsically disordered regions of ESR1 on its transcriptional regulatory properties*. \$316,000 total cost (direct cost to my lab = \$53,071, indirect cost to BU = \$ 34,496). **Co-PIs: JI Fuxman Bass (BU)**, Martha Bulyk (Harvard Medical School), Haribabu Arthanari (DFCI).
- 2017-2022 NSF, BIO-1659605, "REU Site: Control of Gene Expression for Biological Effect." PI: Thomas D. Gilmore. **Role: mentor**. Total Costs \$477,763 (DC, 432,480; IDC, 45,283).
- 2016-2018 NIH Pathway to Independence Award (K99/R00), R00-GM114296: *Delineation of a cytokine gene regulatory network and rewiring in disease*. \$505,931 total cost (direct cost = \$307,557, indirect cost = \$198,374). PI: **JI Fuxman Bass**.
- 2015-2016 NIH Pathway to Independence Award (K99/R00), K99-GM114296: *Delineation of a cytokine gene regulatory network and rewiring in disease*. \$90,000 total cost (direct cost = \$83,333, indirect cost = \$6,667). PI: **JI Fuxman Bass**.
- 2012-2014 Pew Latin American Postdoctoral Fellowship. \$60,000 total cost (direct cost = \$60,000, indirect cost = \$0). PI: **JI Fuxman Bass**.
- 2006-2011 Graduate Fellowship from CONICET (National Council of Scientific and Technical Investigations, Argentina).

PUBLICATIONS

Peer-reviewed publications

postdocs, graduate students, undergraduate students, and technicians mentored

Faculty research

1. Patalano SD, Fuxman Bass P, **Fuxman Bass JI**. Transcription factors in the development and treatment of immune disorders. *Transcription*. 2023 Dec 15:1-23.
2. He X, **Berenson A**, Bernard M, Weber C, Fuxman Bass JI, Fisher S. Identification of conserved skeletal enhancers associated with craniosynostosis risk genes. *Hum Mol genet*. 2023 Oct 26:ddad182.
3. **Berenson A**, Lane R, Soto LF, Patel M, Ciausu C, Li Z, Chen Y, Shah S, Santoso CS, Liu X, Spirohn K, Hao T, Hill DE, Vidal M, **Fuxman Bass JI**. Paired yeast one-hybrid assays to detect DNA-binding cooperativity and antagonism across transcription factors. *Nature Communications*. 2023 Oct 18;14(1):6570.
4. Nora EP, Aerts S, Wittkopp PJ, Bussemaker HJ, Bulyk M, Sinha S, Zeitlinger J, Crocker J, **Fuxman Bass JI**. Emerging questions in transcriptional regulation. *Cell Systems*. 2023 Apr 19;14(4):247-251. doi: 10.1016/j.cels.2023.03.005.

5. Carrasco Pro S, Hook H, Bray D, Moyer D, Yin M, Labadorf A, Tewhey R, *Siggers T, *Fuxman Bass J. Widespread perturbation of ETS factor binding sites in cancer. *Nature Communications*. 2023 Feb 17;14(1):913. Doi: 10/1038/s41467-023-36535-8. (*co-corresponding authors)
6. Berenson A, Fuxman Bass JI. Enhanced yeast one-hybrid assays to study protein-DNA interactions *Methods Mol Biol*. 2023;2599:11-20.
7. *Soto LF, *Requena D, *Fuxman Bass JI. Epitope Evaluator: an interactive web application to study predicted T-cell epitopes. *PLoS One*. 2022 Aug 26;17(8):e0273577 (*co-corresponding author)
8. Soto L, Li Z, Santoso CS, Berenson A, Ho I, Shen VX, Yuan S, Fuxman Bass JI. Compendium of human transcription factor effector domains. *Molecular Cell*. 2022 Feb 3;82(3):514-526.
9. Kuniholm J, Armstrong E, Bernabe B, Coote C, Berenson A, Drinan SD, Olson A, He X, Lin N, Fuxman Bass JI, Henderson AJ. Intragenic proviral elements support transcription of defective HIV-1 proviruses. *PloS Pathogens*. 2021 Dec 28;17(12):e1009982.
10. Santoso CS, Li Z, Rottenberg JT, Liu X, Shen V, Fuxman Bass JI. Therapeutic targeting of transcription factors to control the cytokine release syndrome in COVID-19. *Frontiers in Pharmacology*. 2021 Jun 7;12:673485.
11. Rasekh ME, Hernandez Y, Drinan SD, Fuxman Bass JI, Benson G. Genome-wide characterization of human minisatellite VNTRs: population-specific alleles and gene expression differences. *Nucleic Acids Res*. 2021 May 7;49(8):4308-4324.
12. Pedro KD, Agosto LM, Sewell JA, Eberenz KA, He X, *Fuxman Bass JI, *Henderson AJ. An unbiased functional screen identifies transcriptional networks that regulate HIV-1 and HIV-2. *Proc Natl Acad Sci USA*. 2021 Mar 16;118(11):e2012835118. (*co-corresponding and co-senior author).
13. Santoso CS, Li Z, Lal S, Yuan S, Gan KA, Agosto LM, Liu X, Carrasco Pro S, Sewell JA, Henderson A, Atianand MK, Fuxman Bass JI. Comprehensive mapping of the human cytokine gene regulatory network. *Nucleic Acids Research* 2020 Dec 2;48(21):12055-12073.
14. Carrasco Pro S, Bulekova K, Gregor B, Labadorf L, Fuxman Bass JI. Prediction of genome-wide effects of single nucleotide variants on transcription factor binding. *Scientific Reports*. 2020 Oct 19; 10, 1-11.
15. Liu X, Hong T, Parameswaran S, Ernst K, Marazzi I, *Weirauch MT, *Fuxman Bass JI. Human Virus Transcriptional Regulators. *Cell*. 2020 Jul 9;182(1):24-37. (*co-corresponding and co-senior author)
16. Shrestha S, Sewell JA, Santoso CS, Forchielli E, Carrasco Pro S, Martinez M, Fuxman Bass JI. Discovering human transcription factor physical interactions with genetic variants, novel DNA motifs, and repetitive elements using enhanced yeast one-hybrid assays. *Genome Research*. 2019 Sep 29: 1533-1544; doi:10.1101/gr.248823.119
17. Shrestha S, Liu X, Santoso CS, Fuxman Bass JI. Enhanced yeast one-hybrid screens to identify transcription factor binding to human DNA sequences. *J Vis Exp*. 2019 Feb 11;(144). doi: 10.3791/59192
18. Carrasco Pro S, Dafonte Imedio A, Santoso CS, Gan KA, Sewell JA, Martinez M, Sereda R, Mehta S, Fuxman Bass JI. Global landscape of mouse and human cytokine transcriptional regulation. *Nucleic Acids Res*. 2018 Sep 3. doi: 10.1093/nar/gky787.
19. Demchak B, Kreisberg JF, Fuxman Bass JI. Theory and Application of Network Biology Toward Precision Medicine. *J Mol Biol*. 2018 Jul 18. pii: S0022-2836(18)30811-8.

20. Gan KA, Carrasco Pro S, Sewell JA, and Fuxman Bass JI. Identification of Single Nucleotide Non-coding Driver Mutations in Cancer. *Frontiers in Genetics*. 2018 Feb 2;9:16. doi: 10.3389/fgene.2018.00016.
21. Sewell JA, Fuxman Bass JI. Options and considerations when using a yeast one-hybrid system. *Methods Mol Biol*. 2018;1794:119-130.
22. Sewell JA, Fuxman Bass JI. Cellular network perturbations by disease-associated variants. *Curr Opin Sys Biol*. 2017 June; 3: 60–66.

Postdoctoral research

23. Basu J, Zha J, Reis BS, Hua X, Ge L, Ferchen K, Nicolas E, Czyzewicz P, Cai KQ, Tan YF, Peri S, Fuxman Bass, JI, Walhout AJM, Grimes HL, Grivennikov SI, Mucida D, Kappes DJ. Essential role of ThPOK autoregulatory loop in maintenance of mature CD4 T cell identity and function. *Nature Immunology*. 2021 Aug;22(8):969-982.
24. Mookerjee-Basu J, Hua X, Ge L, Nicolas E, Li Q, Czyzewicz P, Zhongping D, Peri S, Fuxman Bass JI, Walhout AJM, Kappes DJ. Functional conservation of a developmental switch in mammals since the Jurassic age. *Mol Biol Evol*. 2018 Oct 8. doi: 10.1093/molbev/msy191
25. #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).
26. #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).
27. #Fuxman Bass JI, Reece-Hoyes JS, #Walhout AJ. Colony Lift Colorimetric Assay for β -Galactosidase Activity. *Cold Spring Harb Protoc*. 2016 Dec 1;2016(12):pdb.prot088963. (#co-corresponding author).
28. #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).
29. #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).
30. 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.
31. 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.
32. *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, Charlotheaux 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).

33. 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.
34. **#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).
35. **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.
36. 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.

Graduate and undergraduate research

37. 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 β secretion but not in inflammasome activation. *Eur J Immunol*. 2013 Dec;43(12):3324-35.
38. 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.
39. 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.
40. **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.
41. 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.
42. **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.
43. **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.

44. 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.

INVITED SEMINARS AND PRESENTATIONS

- 2024 Department seminar Microbiology Department, Icahn School of Medicine at Mount Sinai, New York City, NY.
- 2023 Jackson Laboratories Seminar, Bar Harbor, ME.
- 2023 Institute of Physiology, Molecular Biology and Neurosciences Seminar, University of Buenos Aires, Argentina.
- 2023 Leloir Institute Seminar, Buenos Aires, Argentina.
- 2023 New England Biolabs seminar, Ipswich, MA.
- 2023 STEM Pathways Seminar, Boston University, Boston, MA.
- 2023 Biological Design Center Faculty Seminar, Boston University Boston, MA.
- 2023 Cold Spring Harbor Laboratory meeting “Systems Biology: Networks”, Huntington, NY.
- 2023 Department of Epigenetics and Molecular Carcinogenesis Seminar, MD Anderson Cancer Center, Houston, TX.
- 2023 5th annual “Precision Genomics Midwest” Conference, Cincinnati, OH.
- 2023 “Rules of protein-DNA recognition” workshop, Cancun, Mexico.
- 2023 Center for Cell Analysis and Modeling and Genomics Department Seminar, University of Connecticut Medical School, Hartford, CT.
- 2022 Cell and Experimental Biology Conference, Boston, MA.
- 2022 Department of Innate Immunity, UMass Chan Medical School, Worcester, MA.
- 2021 Center for Autoimmune Genomics and Etiology, Cincinnati Children’s Hospital, Cincinnati, OH.
- 2021 Department of Systems Biology, UMass Chan Medical School, Worcester, MA.
- 2021 Cell and Experimental Biology Conference, Houston, TX.

2021 BIRS meeting: Rules of protein-DNA recognition: computational and experimental advances. Oaxaca, Mexico. (cancelled because of COVID-19)

2021 Developmental Biology Center Andalucia, Pablo de Olavide University, Seville, Spain.

2020 Cell and Experimental Biology Conference, Boston, MA.

2019 Biology Department, University at Albany, Albany, NY.

2019 International Cytokine & Interferon Society, Vienna, Austria.

2019 Center for Cancer Systems Biology annual retreat, Gloucester, MA.

2019 Center for Autoimmune Genomics & Etiology, Cincinnati Children's Hospital, Cincinnati, OH.

2019 Tertulia, Boston University, Boston, MA.

2018 Genome Science Institute, Boston University, Boston, MA.

2018 Center for Cancer Systems Biology annual retreat, Gloucester, MA.

2018 BIRS meeting: Rules of protein-DNA recognition: computational and experimental advances. Oaxaca, Mexico.

2017 Center for Cancer Systems Biology annual retreat, Gloucester, MA.

2017 Cold Spring Harbor Laboratory meeting "Systems Biology: Networks", Huntington, NY.

2017 Microbiology Department, Boston University School of Medicine, Boston, MA.

2016 Worcester Area Worm Meeting, Worcester, MA.

2016 Program in Systems Biology, UMass Medical School, Worcester, MA.

2016 BioFrontiers Institute, Colorado University, Boulder, CO.

2016 Bioengineering Department, University of Washington, Seattle, WA.

2016 Molecular, Cell and Developmental Biology Department, University of California, Santa Cruz, CA.

2016 Biochemistry Department, Boston University School of Medicine, Boston, MA.

2016 Biology Department, Boston University, Boston, MA.

2015 Center of Cancer Systems Biology meeting, Rockport, MA.

2015 Microbiology and Physiological Systems Department, UMass Medical School, Worcester, MA.

2015 Molecular, Cell and Cancer Biology Department, UMass Medical School, Worcester, MA.

2015 20th International *C. elegans* Meeting, Genetics Society of America, Los Angeles, CA.

2015 Leloir Foundation Institute, Buenos Aires, Argentina.

- 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.
- 2014 Lewis-Sigler Institute of Integrative Genomics, Princeton University, Princeton, NJ.
- 2014 Program in Bioinformatics and Integrative Biology, UMass Medical School, Worcester, MA.
- 2012 Center of Cancer Systems Biology meeting, Rockport, MA
- 2007 Argentinean Immunology Society meeting, Mar del Plata, Argentina.
- 2006 Argentinean Immunology Society meeting, Mar del Plata, Argentina.

STUDENT PRESENTATIONS

Poster presentations

postdocs, graduate students, undergraduate students, technicians mentored
Underlined name indicates poster presenter

- 2024 Mar Uncovering the functions of human viral transcriptional regulators.
Jaice T. Rottenberg, Xing Liu, Anna Berenson, Clarissa Santoso, David E. Hill, Ryan Lane, Lucia Martinez Cuesta, Marc Vidal, Juan I. Fuxman Bass.
CSHL meeting – Systems Biology: Global Regulation of Gene Expression, Huntington, NY
- 2024 Mar Identification and functional characterization of viral Cis-regulatory elements
Tommy H Taslim, Susan Kales, Yossef A Finkelberg, Luis Soto-Ugaldi, Jaice T Rottenberg, Elvis Morara, Jacob Purinton, Harshpreet Chandok, Rodrigo Castro, Kelian Bonhomme, Lucia Martinez Cuesta, Ryan Tewhey, **Juan I Fuxman Bass**.
CSHL meeting – Systems Biology: Global Regulation of Gene Expression, Huntington, NY
- 2024 Mar Widespread variation in molecular interactions and regulatory properties among transcription factor isoforms.
Luke Lambourne, Kaia Mattioli, Clarissa S. Santoso, Gloria Sheynkman, Sachi Inukai, Anna Berenson, Elisabeth Rothman, Kerstin Spirohn, Tong Hao, Josh Riback, Nidhi Sahni, Nathan Salomonis, Michael A. Calderwood, David E. Hill, Marc Vidal, Martha L. Bulyk, **Juan I. Fuxman Bass**.
CSHL meeting – Systems Biology: Global Regulation of Gene Expression, Huntington, NY
- 2023 Nov Paired yeast one-hybrid assays to detect DNA-binding cooperativity and antagonism across transcription factors.
Berenson A, Lane R, Soto LF, Patel M, Ciausiu C, Li Z, Chen Y, Shah S, Santoso CS, Liu X, Spirohn K, Hao T, Hill DE, Vidal M, **Fuxman Bass JI**.
CSHL meeting – Immune regulation, Huntington, NY

- 2023 Mar Paired yeast one-hybrid assays to detect DNA-binding cooperativity and antagonism across transcription factors.
Berenson A, Lane R, Soto LF, Patel M, Ciausiu C, Li Z, Chen Y, Shah S, Santoso CS, Liu X, Spirohn K, Hao T, Hill DE, Vidal M, **Fuxman Bass JI**.
CSHL meeting – Systems Biology: Networks, Huntington, NY
- 2022 Nov Virus-host cross-transcriptional regulation
Xing Liu, Ted Hong, Kyle Pedro, Anna Berenson, Sreeja Parameswaran, Kevin Ernst, Jared Sewell, Luis Agosto, Andrew Henderson, Matthew Weirauch, **Juan Fuxman Bass**.
CSHL meeting – Immune regulation, Huntington, NY
- 2022 Jun Compendium of human transcription factor effector domains
Soto L, Li Z, Santoso CS, Berenson A, Ho I, Shen VX, Yuan S, **Fuxman Bass JI**.
Keystone meeting: Gene regulation – from mechanisms to disease, Santa Fe, NM
- 2022 Apr Comprehensive mapping of heterodimer-DNA binding using a novel yeast based method.
Anna Berenson, Ryan Lane, Yilin Chen, Sakshi Shah, Mahir Patel, Cosmin Ciausiu, Luis Soto, Clarissa Santoso, David Hill, Marc Vidal, **Juan I. Fuxman Bass**.
Cell and Experimental Biology conference, Boston, MA
- 2021 Mar Comprehensive Mapping of the Human Cytokine Gene Regulatory Network.
Santoso CS, Li Z, Lal S, Yuan S, Gan KA, Agosto LM, Liu X, Carrasco Pro S, Sewell JA, Henderson A, Atianand MK, **Fuxman Bass JI**.
CSHL meeting - Systems biology: networks, Huntington, NY
- 2020 Nov Human Virus Transcriptional Regulators
Liu X, Hong T, Parameswaran S, Ernst K, Marazzi I, Weirauch MT, **Fuxman Bass JI**.
EMBL Conference: From Functional Genomics to Systems Biology, Heidelberg, Germany
- 2020 Nov Comprehensive Mapping of the Human Cytokine Gene Regulatory Network.
Santoso CS, Li Z, Lal S, Yuan S, Gan KA, Agosto LM, Liu X, Carrasco Pro S, Sewell JA, Henderson A, Atianand MK, **Fuxman Bass JI**.
EMBL Conference: From Functional Genomics to Systems Biology, Heidelberg, Germany
- 2019 Nov Rewiring of regulatory networks in breast cancer by transcription factor isoforms
Lambourne L, Santoso CS, Sheynkman G, Inukai S, Bhattacharjee A, Mattioli K, Berenson A, Calderwood MA, Hill DE, Salomonis N, Bulyk ML, Vidal M, **Fuxman Bass JI**.
Systems Approaches in Cancer Biology, Woodhole, MA
- 2019 Oct Modulation of IL10 Production by Targeting Synergistic Transcription Factor Combinations.
Yuan S, Santoso CS, **Fuxman Bass JI**.
UROF 22nd annual undergraduate research symposium, Boston, MA
- 2019 Sep Rewiring of regulatory networks in breast cancer by transcription factor isoforms
Sheynkman G, Inukai S, Santoso CS, Phanor S, Calderwood MA, Hill DE, Salomonis N, Bulyk ML, Vidal M, **Fuxman Bass JI**.
Cancer Systems Biology Consortium meeting, Irvine, CA
- 2019 Apr The Role of ZF-DHHC Proteins in ALU Element Regulation
Lobos G, Forchielli E, Shretha S, Thapa B, Liu X, **Fuxman Bass JI**.
Showcase of Undergraduate Research Excellence, Orlando, FL
- 2019 Mar Comprehensive Mapping of the Human Cytokine Gene Regulatory Network.

Santoso CS, Carrasco Pro S, Dafonte Imedio A, Gan KA, Sewell J, Martinez M, Sereda R, Mehta S, Liu X, Bloom J, Agosto L, Henderson A, **Fuxman Bass JI**.
CSHL meeting: Systems Immunology, Huntington, NY

- 2018 Oct Comprehensive Mapping of the Human Cytokine Gene Regulatory Network.
[Santoso CS](#), [Gan KA](#), [Carrasco Pro S](#), [Bloom J](#), Agosto LM, Henderson AJ, and **Fuxman Bass JI**.
6th Annual Meeting of the International Cytokine and Interferon Society, Boston, MA
- 2018 Oct Global Landscape of Mouse and Human Cytokine Transcriptional Regulation.
[Carrasco Pro S](#), [Dafonte Imedio A](#), [Santoso CS](#), [Gan KA](#), [Sewel JA](#), [Martinez M](#), [Sereda R](#), [Mehta S](#), and **Fuxman Bass JI**.
6th Annual Meeting of the International Cytokine and Interferon Society, Boston, MA
- 2018 Oct The Role of ZF-DHHC Proteins in ALU Element Regulation
[Lobos G](#), [Forchielli E](#), [Shretha S](#), [Thapa B](#), [Liu X](#), **Fuxman Bass JI**.
UROP 21st annual undergraduate research symposium, Boston, MA
- 2018 Sep Rewiring of regulatory networks in breast cancer by transcription factor isoforms
Sheynkman G, Inukai S, Calderwood MA, Hill DE, Salomonis N, **Fuxman Bass JI**, Bulyk ML, Vidal M.
Cancer Systems Biology Consortium meeting, Bethesda, MD
- 2017 Mar Delineation of a cytokine protein-DNA interaction network
[Sewell J](#), [Rodriguez-Sastre N](#), [Forchielli E](#), [Carrasco Pro S](#), [Gan KA](#), **Fuxman Bass JI**.
CSHL meeting - Systems biology: networks, Huntington, NY

Oral presentations

- 2023 Aug Boston College, Science on Tap invited talk
Presenter: Anna Berenson (Ph.D. graduate student)
- 2022 Mar Comprehensive characterization of human transcription factor heterodimers as regulators of immune genes.
9th Annual Biology Graduate Student Symposium, Boston, MA
Presenter: Anna Berenson (Ph.D. graduate student)
Award: best oral presentation
- 2021 Nov Comprehensive characterization of human transcription factor heterodimers as regulators of immune genes.
13th Annual Genome Science Institute Research Symposium, Boston, MA
Presenter: Anna Berenson (Ph.D. graduate student)
Award: research supply award
- 2020 Nov Rewiring of Gene Regulatory Networks by Transcription Factor Isoforms

8th Annual Biology Graduate Student Symposium, Boston, MA

Presenter: Clarissa Santoso (Ph.D. graduate student)

Award: best oral presentation

- 2019 Aug Uncovering the Combinatorial Transcriptional Regulation of IL10.
New England Biolabs invited talk, Ipswich, MA
Presenter: Samson Yuan (undergraduate student)
- 2019 Sep Rewiring of Gene Regulatory Networks by Transcription Factor Isoforms
Annual Program in Systems Biology Retreat, Gloucester, MA
Presenter: Clarissa Santoso (Ph.D. graduate student)
- 2018 Sep Gene Regulatory Network Wiring and Re-wiring in Disease
Annual Program in Systems Biology Retreat, Gloucester, MA
Presenter: Clarissa Santoso (Ph.D. graduate student)
- 2018 Nov Comprehensive Mapping of the Human Cytokine Gene Regulatory Network
10th Annual Genome Science Institute Research Symposium, Boston, MA
Presenter: Clarissa Santoso (Ph.D. graduate student)

TEACHING

- 2023 Biology Department, Boston University
Course: BI 565 (Functional Genomics).
Students: 31 (graduate and undergraduate)
- 2022 Biology Department, Boston University
Course: BI 565 (Functional Genomics).
Students: 37 (graduate and undergraduate)
- 2022 Guest lecture, Boston University
Course: BI 697 (A Bridge to Knowledge: A Practical Seminar for First-Year Graduate Students in Biology).
Students: ~20 (graduate)
- 2022 Guest lecture, Boston University
Course: BI 385 (Immunology).
Students: ~150 (undergraduate)
- 2021 Biology Department, Boston University
Course: BI 565 (Functional Genomics).
Students: 25 (graduate and undergraduate)

- 2021 Guest lecture, Boston University
Course: BI 697 (A Bridge to Knowledge: A Practical Seminar for First-Year Graduate Students in Biology).
Students: ~20 (graduate)
- 2021 Guest lecture, Boston University
Course: BI 522 (Molecular Biology Laboratory).
Students: ~50 (undergraduate)
- 2020 Biology Department, Boston University
Course: BI 565 (Functional Genomics).
Students: 25 (graduate and undergraduate)
- 2020 Guest lecture, Boston University
Course: BI 697 (A Bridge to Knowledge: A Practical Seminar for First-Year Graduate Students in Biology).
Students: ~20 (graduate)
- 2019 Biology Department, Boston University
Course: BI 565 (Functional Genomics).
Students: 13 (graduate and undergraduate)
- 2018 Biology Department, Boston University
Course: BI 594 (Topics in Biology).
Students: 17 (graduate and undergraduate)
- 2017 Biology Department, Boston University
Course: BI 553 (Molecular Biology II).
Students: 24 (graduate and undergraduate)
- 2014 Guest lecturer, Lewis-Sigler Institute of Integrative Genomics.
 Princeton University.
Course: Introduction to Genomics and Computational Biology.
Students: ~60 (undergraduate and graduate)
- 2010 Organizer and lecturer of the “Solving math problems” course for High School teachers 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.
Students: 30-50 in each course (undergraduate)
- 2004-2006 Teaching assistant, Department of Microbiology, Parasitology and Immunology.
 School of Medicine, University of Buenos Aires.
Course: Immunology.
Students: ~200 (undergraduate)
- 2004-2005 Teaching assistant, Department of Immunology.
 National Academy of Medicine, Argentina.
Course: Update in the acute inflammatory response.
Students: ~30 (graduate)

- 2003-2004 Teaching assistant, Department of Biochemistry.
School of Exact and Natural Sciences, University of Buenos Aires, Argentina.
Course: Biochemistry.
Students: ~40 (undergraduate)
- 1999-2005 Mathematics Olympiad instructor in Elementary and High School. Mary Graham School, North Hills School and Pilar's Parish Institute, Argentina.

MENTORING EXPERIENCE

Postdoctoral Fellows

- 2018-2022 Dr. Xing Liu. Now Principal Scientist – Seed Therapeutics, Philadelphia, PA.
- 2016-2017 Dr. Jared Sewell. Now Senior Scientist – Recursion Pharmaceuticals, Salt Lake City, UT.

Graduate students

- 2022-present Tommy Taslim (MCBB PhD student)
- 2022-present Yunwei Lu (Biology PhD student – co-mentored with Ana Fiszbein)
- 2022-2023 Justin Reimertz (Bioinformatics MA student)
- 2021-2022 Isabelle Guelin (Biology MA student)
- 2021-present Zhaorong Li (Bioinformatics PhD student)
- 2020-present Devlin Moyer (Bioinformatics PhD student)
- 2020-present Jaice Rottenberg (Biology PhD student)
- 2019-present Samantha Patalano (MCBB PhD student)
- 2019-present Anna Berenson (MCBB PhD student)
- 2018-2021 Clarissa Santoso (MCBB PhD). Now Scientist II at Takeda.
- 2017-2020 Sebastian Carrasco-Pro (Bioinformatics PhD). Now Senior Computational Biologist at Tempus Labs.

Post-bacs

- 2023 Elvis Morara

Undergraduate students

- 2023 Deeow Munkong (Biology student)
- 2023 Srinidhi Senapathi (Biology student)
- 2023 Elvis Morara (Biology student)
- 2023 Jake Purinton (UROP student)
- 2023 Jordyn Choe (UROP student)
- 2023 Valentin Vigeant (Polytech'Nice Sophia - University Côte d'Azur, France)

2023 Kelian Bonhomme (Polytech'Nice Sophia - University Côte d'Azur, France)

2022 Nina Gonzalez (NSF-REU student)

2022-present Dithmi Vithana (Biology student)

2022-present Kevin Li (Biology student)

2022-present Francisco Figueiras (UROP student)

2021-present Sakshi Shah (UROP student)

2021-2022 Vikram Srinath (Biology student)

2021-present Ryan Lane (UROP student)

2021 Kimberly Tran (UROP student)

2020-2021 Zachary Nelson (UROP student)

2020-2022 Vivian Shen (UROP student)

2020-2021 Yilin Chen (Nutritional sciences student)

2020 Fernanda De la Rosa (work study student)

2019-2022 Isabella Ho (UROP student)

2019-2021 Cheng-Che Lee (UROP student)

2019 Xeila Cendan (work study student)

2019 Andrew Munoz (NSF-REU student)

2019 Mary Gao (work study student)

2019 Mano Harada (work study student)

2018-2021 Samson Yuan (UROP student). Now MS in Genetic Counseling at Columbia University.

2018-2020 Amisha Gandhi (BME student). Now quality and Regulatory Affairs Specialist at Relay Response Inc.

2018-2019 Nicholas Hahn (work study student). Now laboratory assistant at BU.

2018 Luiza Damotta (work study student)

2018 Mary Rolfes (work study student)

2018 Heejoo Kang (work study student)

2018 Giuliano Lobos (NSF-REU undergraduate student). Now Research assistant at Kindbody.

2017-2018 Alvaro Dafonte Imedio. Now PhD candidate at Boston College.

2017 Melissa Martinez (NSF-REU undergraduate student). Now Pharmacy school student at University of Southern California.

2016-2017 Rebecca Sereda. Now PhD candidate at Albert Einstein College of Medicine.

2016-2017 Shivani Mehta (BMB student). Clinical Research Coordinator at Beth Israel Deaconess Medical Center

Research technicians and associates

2020-present Luis Soto (bioinformatics research assistant). Now PhD student at Rockefeller University.

2019-2020 Zhaorong Li (bioinformatics research assistant). Now PhD student at BU.

2018-2020 Dr. Meimei Yin (Lab manager). Now research scientist at BU.

2017-2018 Shaleen Shrestha (Senior research technician). Now Molecular Biologist at Isolere Bio.

Student committees

2023 Thesis Defense Committee member for Dr. Kritika Kari, Boston University.

2023 Thesis Defense Committee member for Dr. Dakota Hawkins, Boston University.

2022 Thesis Defense Committee member for Dr. Meghan Bragdon, Boston University.

2022 Thesis Defense Committee member for Dr. Boting Ning, Boston University.

2022 Thesis Defense Committee member for Dr. Joshua Aguirre, Boston University.

2022 Thesis Defense Committee member for Dr. Aaron Chevalier, Boston University.

2022 Thesis Defense Committee member for Dr. Binita Basukala, Boston University.

2021 Thesis Defense Committee member for Dr. Kian Hong Kock, Harvard Medical School.

2021 Thesis Defense Committee member for Dr. Xingyi Shi, Boston University.

2021 Thesis Defense Committee member for Dr. Marzieh Rasekh, Boston University.

2021 Thesis Defense Committee member for Dr. Natalie Vaisman, Boston University.

2020 Thesis Defense Committee member for Dr. David Bray, Boston University.

2019 External examiner for Dr. Kelly Biette graduate thesis dissertation, Harvard Medical School.

2019 Thesis Defense Committee member for Dr. Bryan Matthews, Boston University.

2019 Thesis Defense Committee member for Dr. Jessica Keenan, Boston University.

2019 Thesis Defense Committee member for Dr. Kellan Andrienas, Boston University.

2018 Thesis Defense Committee member for Dr. Alexandre Palagi, University of Nice Sophia Antipolis (France) and Harvard Medical School.

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 Thesis Defense Committee member for Dr. Pengying Hao, Boston University.

2017-present Thesis committee member: Jessica Keenan (Bioinformatics), David Bray (Bioinformatics), Marzieh Rasekh (Bioinformatics), Aaron Chevalier (Bioinformatics), Boting Ning (Bioinformatics), Xingyi Shi (Bioinformatics), Meghan Bragdon (MCBB), Binita Basukala (MCBB), Patrick Lally (BME), Kellan Andrienas (Biology), Christopher Thomas (Biology), Christopher DiRusso (Biology), Natalie Vaisman (Biology), Heather Hook (Biology), Alexandra Lion (Biology), Sita Ramaswamy (BMC), Hannah Lords (Bioinformatics), Natasha Gurevich (Bioinformatics), Alex Lion (Biology), Jaehoon Choi (BME), Christine Carroll (Biology), Gyeong Yun (MCBB), Imron Chaudhry (MCBB), Mengze Li (Biology).

PROFESSIONAL SERVICE

External service

2023 Reviewer for K99 (special emphasis panel) NIH panel.

- 2023 Organizer of the meeting “Rules of protein-DNA recognition: computational and experimental advances.” Cancun, Mexico.
- 2023 Reviewer for R15 (special emphasis panel) NIH panel.
- 2022 Reviewer for K99 (special emphasis panel) NIH panel.
- 2021 Organizer of the BIRS meeting “Rules of protein-DNA recognition: computational and experimental advances.” Oaxaca, Mexico. (cancelled due to COVID-19)
- 2021 Reviewer for K99 (special emphasis panel) NIH panel.
- 2021 Reviewer for Genomics, Computational Biology and Technology NIH study section.
- 2021 Reviewer for NIH R01 special emphasis panel study section.
- 2020 European Research Council (ERC) grant reviewer.
- 2017-2023 Associate Editor, *Systems Biology* section (*Frontiers* journals)
- 2017-2018 Guest Editor, *The Journal of Molecular Biology*. Special issue on “Theory and Application of Network Biology Toward Precision Medicine.”
- 2017-2018 NSF ad hoc reviewer.
- 2015-2021 Member, Advisory Editorial Board of *Genomics*.
- 2014-present Reviewer for *Nature Microbiology*, *Nature Methods*, *Cell Systems*, *Nature Communications*, *Nucleic Acids Research*, *G3 (Genes, Genomes, Genetics)*, *BMC Biology*, *Current Opinions in Systems Biology*, *Journal of Visualized Experiments*, *Scientific Reports*, *Genome Research*, *Frontiers in Immunology*, *Genes and Immunity*.

University service

- 2020 Member of the Tertulia Organization Committee.
- 2019-present Director of Graduate Admissions of the MCBB Program.
- 2017-present MCBB Program committee member and member of graduate student selection committee.
- 2017 Responsible Conduct of Research training mentor.
- 2016-2019 Poster judge at the Genome Science Institute Symposium.

Biology Department service

- 2021-2022 Biology Department faculty search committee member.
- 2021 Advisory committee to select Biology Department Chair.
- 2020 BI 583 (Friday seminar series) organizer.
- 2019-2020 Biology Department faculty search committee member.
- 2018-2019 Biology Department annual retreat committee.
- 2018 Biology Department representative to the SACNAS conference, San Antonio, TX.
- 2016-present Cell and Molecular Biology graduate student admissions committee.
- 2017-present Biology Department Seminar Series (co-organizer).

PATENTS

Title: ASSAYS USEFUL FOR DETECTION AND TREATMENT OF CANCER

U.S. Provisional Application No.: 63/057,429

Filed: July 28, 2020

Inventor(s): Juan Ignacio FUXMAN BASS, Sebastian Carrasco Pro, Trevor Siggers

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