

Oliver Medvedik, Ph.D.

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Professional Experience

The Cooper Union, School of Engineering, New York, NY 2013-Present
Sandholm Visiting Assistant Professor of Biology and Bioengineering
Assistant Director of the Kanbar Center for Biomedical Engineering

Genspace, Brooklyn, NY. 2010-Present
Scientific Director, Co-Founder, Board Member.
Design and teach laboratory and lecture based courses that are available to the public on a variety of biotechnology topics, such as synthetic biology and genotyping.

School of Visual Arts, New York, NY 2013-Present
Scientist-in-Residence

Sirtris Pharmaceuticals, Cambridge, MA. 2006
Research Consultant.
Designed and performed budding yeast assays, testing the effectiveness of small-molecule drug candidates on genome stability and lifespan. Sirtris Pharmaceuticals develops novel therapeutics that activate the sirtuin class of NAD-dependent histone deacetylases.

Hunter College, City University of New York, NY. 1998-99
Research Technician.
Principal Investigator: Dr. Marie Philbin.
Performed antibody purifications, spectrophotometric analyses of protein concentrations, plasmid cloning, isolation of primary rat neurons for growth assays in tissue culture.

Education

Ph.D., Harvard University, Cambridge, MA. 1999-06
Biological and Biomedical Sciences Program.
Dissertation: "Mechanisms of replicative lifespan extension during calorie restriction in *S. cerevisiae*."
Principal Investigator: Dr. David A. Sinclair.

B.A., Hunter College, City University of New York. 1991-98
magna cum laude.
Major: Biology, Minor: Chemistry.

Teaching Experience

- The Cooper Union, School of Engineering, New York, NY.** 2013-Present
Visiting Assistant Professor of Biology and Bioengineering
Assistant Director of the Kanbar Center for Biomedical Engineering
EID320: Bacteria for Engineers, Bio102: Anatomy and Physiology, EID325: Eukaryotes for Engineers, Bio101: Molecular and Cellular Biology
- The Cooper Union, School of Art, New York, NY.** 2012-13
Adjunct Instructor.
RS201f: Current Issues in Biology, Spring.
Designed and taught an introductory molecular biology course for undergraduates, covering the central dogma, cell biology, genetics and developmental biology.
- School of Visual Arts, New York, NY.** 2013
Scientist-in-Residence
Biomaterials: Project based course, Fall.
- New York University, Gallatin School of Individualized Study, New York, NY.** 2013
Mentor
Individual Study Course in Biosemiotics, Spring.
- Harvard University, Extension School, Cambridge, MA.** 2011-12
Teaching Assistant.
BIOS E1b: Introduction to Organismic and Evolutionary Biology, Spring.
- Harvard University, Extension School, Cambridge, MA.** 2010-11
Teaching Assistant.
BIOS E1a: Introduction to Molecular and Cellular Biology, Fall.
- Harvard University, Cambridge, MA.** 2010
Instructor.
100R: Life Sciences, Spring.
Designed and taught an independent research level synthetic biology course where students genetically engineered budding yeast to regulate gene expression in response to light stimuli.
- IGEM Competition (International Genetically Engineered Machines).** 2009-12
Instructor.
NYU-Gallatin School, The Cooper Union, Columbia University, Harvard University.
- Harvard University, Cambridge, MA.** 2007-10
Teaching Assistant.
MCB54: Molecular and Cellular Biology, Spring.
- Harvard University, Cambridge, MA.** 2006-09
Teaching Assistant.
LS1A: Life Sciences 1A, Fall.
- Harvard Medical School, Boston, MA.** 2005
Teaching Fellow.

MFS-8: Mentoring for Science, Spring.

Sponsored by the Minority Faculty Development Program of the Office for Diversity and Community Partnership, Harvard Medical School, mentoring for Science is an after-school program that links Boston Public Schools' underrepresented 8th and 9th grade students and their teachers with Harvard medical school graduate students who serve as role models/mentors.

Harvard University, Cambridge, MA.

2000

Teaching Fellow.

BS52: Biological Sciences, Fall.

Awards and Honors

TED Fellow

2012

Certificate of Distinction in Teaching, Spring.

2008-09

Harvard University, Molecular and Cellular Biology: MCB54.

Theodore Salmon Award in Biological Excellence.

1998

Hunter College: City University of New York.

Howard Hughes Undergraduate Fellowship.

1996-98

Hunter College: City University of New York.

Principal Investigator: Dr. Laurel Eckhardt.

Scientific Memberships

Sigma Xi, Associate Member. 1998

Publications

A BioBrick compatible strategy for genetic modification of plants. Boyle PM, Burrill DR, Inniss MC, Agapakis CM, Deardon A, Dewerd JG, Gedeon MA, Quinn JY, Paull ML, Raman AM, Theilmann MR, Wang L, Winn JC, Medvedik O, Schellenberg K, Haynes KA, Viel A, Brenner TJ, Church GM, Shah JV, Silver PA. **Journal of Biological Engineering.** Jun 20;6(1):8. (2012).

MSN2 and MSN4 link calorie restriction and TOR to sirtuin-mediated lifespan extension in *Saccharomyces cerevisiae*. Medvedik, O., Lamming, D.W., Kim, K.D., Sinclair, D.A.. **PLoS Biology.** Oct 2; 5(10):e261. (2007).

Small molecule activators of SIRT1 as therapeutics for the treatment of type 2 diabetes. Milne JC, Lambert PD, Schenk S, Carney DP, Smith JJ, Gagne DJ, Jin L, Boss O, Perni RB, Vu CB, Bemis JE, Xie R, Disch JS, Ng PY, Nunes JJ, Lynch AV, Yang H, Galonek H, Israelian K, Choy W, Iffland A, Lavu S, Medvedik O, Sinclair DA, Olefsky JM, Jirousek MR, Elliott PJ, Westphal CH. **Nature.** Nov 29; 450(7170) pp712-6. (2007).

HST2 mediates *SIR2*-independent life-span extension by calorie restriction. Lamming, D. W., Latorre-Esteves, M., Medvedik, O., Wong, S. N., Tsang, F. A., Wang, C., Lin, S. J., Sinclair, D. A. **Science.** Sep 16; 309(5742) pp1861-4 (2005).

Nicotinamide and *PNC1* govern lifespan extension by calorie restriction in *Saccharomyces cerevisiae*. Anderson, R. M., Bitterman, K. J., Wood, J. G., Medvedik, O. Sinclair, D. A. **Nature**. 423:6936 pp181-5 (2003).

Yeast life-span extension by calorie restriction is independent of NAD fluctuation. Anderson, R. M., Latorre-Esteves, M., Neves, A. R., Lavu, S., Medvedik, O., Taylor, C., Howitz, K. T., Santos, H., Sinclair, D. A. **Science**. 302:5653 pp2124-6. (2003).

Manipulation of a nuclear NAD⁺ salvage pathway delays aging without altering steady-state NAD⁺ levels. Anderson, R. M., Bitterman, K. J., Wood, J. G., Medvedik, O., Cohen, H., Lin, S. S., Manchester, J. K., Gordon, J. I., Sinclair, D. A. **Journal of Biological Chemistry**. 277:21 pp18881-90 (2002).

Longevity regulation in *Saccharomyces cerevisiae*: linking metabolism, genome stability, and heterochromatin. Bitterman, K. J., Medvedik, O. and Sinclair, D.A. **Microbiological and Molecular Biology Reviews**. 67:3 pp376-99 (2003). (Review)

Book Chapters:

Living Watch. Medvedik, O. **Bio Design: Nature+Science+Creativity**. By William Myers. MoMA Publications. (2012).

Caloric restriction and life span determination of yeast cells. Medvedik, O. and Sinclair, D.A. **Methods in Molecular Biology**. Vol. 371. Biological Aging Methods and Protocols. Humana Press. (2007).

Conferences (Speaker and Workshops)

Zhejiang Museum of Science and Technology: Hangzhou, China. 2013

Ideas City: New York, NY. 2013

Maker Faire: Newcastle, UK. 2013

Science Foo Camp, Google: Mountainview, CA. 2013

Digital Life Design: Munich, Germany. 2013

TED Global: Edinburgh, UK. 2013

IWF World Leadership Conference: San Francisco, CA. 2012

World Science Festival: Brooklyn, NY 2012

Digital Life Design: Munich, Germany. 2012

Science Foo Camp, Google: Mountainview, CA. 2012

TED: Long Beach, CA. 2012

Maker Faire Africa: Lagos, Nigeria. 2012

Biodetection2031: Innovative Concepts in Biodetection Workshop: Santa Barbara, CA. 2011

AAAS, US Science and Engineering Fair: Washington, DC. 2011

Maker Faire Africa: Cairo, Egypt. 2011

FBI-Synthetic Biology III Biosecurity Workshop: Crystal City, VA. 2011

Ideas City: New York, NY. 2011

PICNIC Conference: Amsterdam, Netherlands. 2011

PICNIC Conference: Amsterdam, Netherlands. 2010

Institute of Biological Engineering (IBE), 15th Annual Conference: Cambridge, MA. 2010

XXII International Conference on Yeast Genetics and Molecular Biology: 2005

Bratislava, Slovak Republic.

Poster Presentations

Keystone Symposia: Snowbird, UT; Chromatin Modification Pathways. 2005 Molecular Genetics of Aging Conference: NY, Cold Spring Harbor Laboratories. 2004
Keystone Symposia: Keystone, CO; Genetics and Genomics of Senescence and Cancer. 2002
Molecular Genetics of Aging Conference: NY, Cold Spring Harbor Laboratories. 2002

Film/Media/Featured Articles

“Generating Community.” By Allyn Hughes. **Volume**. Vol.35. April 2013.
“DIYbio: Low Risk, High Potential.” By Todd Kuiken. **The Scientist**. Vol.27:3. pp26-27. March, 2013.
“Invent your own anything.” By Katherine E. Bagely. **Popular Science**. June 18, 2012.
“When Breakthroughs Begin at Home.” By Ritchie S. King. **New York Times, Science Section**. Jan. 12, 2012.
“Collaborations Welcome: Bacteria at work.” By William Myers. **Metropolis**. Nov. 2011.
“Dawn of the Biohackers.” By Delthia Ricks. **Discover**. Oct.5, 2011.
“A Lab of Their Own.” By Sam Kean. **Science**. Vol. 333. pp1240-41. Sep.2, 2011.
“DIY Biotech Hackerspace Opens in Brooklyn”. By Dave Mosher. **Wired**. Dec. 16, 2010.
“Alive and ticking: The watch made out of skin.” By Giorgia Scaturro. **Wired UK**. Mar. 27, 2009.
“Ideas City: Genspace.” By Lauren Hawker. **Blip**. May 4, 2013.
“Cutting Edge.” **Dan Rather Reports**. Episode 805. Feb. 7, 2013.
“A Visit to Genspace: DIY Genomics in Brooklyn.” By Tracy Vence. **New York Genome Center (Blog)**. Nov. 30, 2012.
“Genspace: New York City’s Community Biolab: It’s like a makerspace for biologists.” By Timothy Lord. **Slashdot TV**. Nov. 20, 2012.
“DIY Biohack!: Fellows Friday with Oliver Medvedik.” By Karen Eng. **TED (Blog)**. Sep. 14, 2012.
“Brooklyn’s community biotech lab, a place for experimentation and learning.” **Cool Hunting**. Aug. 31, 2012.
“Downloadable Gun Parts, Personalized Bioterror: the Downside of Innovation.”
By Paul Solman. **PBS NewsHour**. April 26, 2012.
“Biology hackers create laboratory in New York City.” **BBC News, US and Canada**. Feb 14, 2012.
“Watch this: Genspace.” **Nature Video**. Feb. 23, 2011.