

# Evgeny Kvon

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## EDUCATION

- 03/2009 – 01/2013 **Ph.D. in Molecular Biology**, University of Vienna, Vienna, Austria  
*Thesis title: From DNA sequence to expression: dissecting the regulatory potential of the Drosophila genome*
- 07/2003 – 07/2008 **M.Sc. in Biology**, Novosibirsk State University (NSU), Novosibirsk, Russia

## POSITIONS

- 04/2020 – present **Assistant Professor**, University of California, Irvine CA, USA  
Department of Developmental and Cell Biology
- 09/2017 – 03/2020 **Project Scientist**, Lawrence Berkeley National Lab, Berkeley CA, USA  
Laboratory of [Axel Visel](#), [Diane Dickel](#) and [Len Pennacchio](#)
- 03/2015 – 08/2017 **HHMI Fellow of the Helen Hay Whitney Foundation**,  
Lawrence Berkeley National Lab, Berkeley, CA  
Laboratory of [Axel Visel](#), [Diane Dickel](#) and [Len Pennacchio](#)
- 05/2014 – 02/2015 **Postdoctoral Fellow**, Lawrence Berkeley National Lab, Berkeley CA, USA  
Laboratory of [Axel Visel](#), [Diane Dickel](#) and [Len Pennacchio](#)
- 10/2008 – 03/2014 **Ph.D. Student**, Institute of Molecular Pathology (IMP), Vienna, Austria  
Laboratory of [Alexander Stark](#)

## HONORS, AWARDS & FELLOWSHIPS

- 2017 [NIH Pathway to Independence Award \(K99/R00\)](#)  
*National Institute of Health (NIH/NHGR)*
- 2015 [HHWF Postdoctoral Fellowship](#) funded by the [Howard Hughes Medical Institute](#)  
*Helen Hay Whitney Foundation*
- 2015 [HFSP Long-Term Postdoctoral Fellowship](#) (gratefully declined)  
*Human Frontier Science Program Organization*
- 2013 [VBC Ph.D. Award](#) (for the most successful Ph.D. theses)  
*Vienna Biocenter*

\* equal contribution

† corresponding author

1. Osterwalder, M., Tran, S., Hunter, R. D., Meky, E. M., von Maydell, K., Harrington, A. N., Godoy, J., Novak, C. S., Plajzer-Frick, I., Zhu, Y., Akiyama, J. A., Afzal, V., Kvon, E. Z., Pennacchio, L. A., Dickel, D. E., & Visel, A. (2022). Characterization of Mammalian In Vivo Enhancers Using Mouse Transgenesis and CRISPR Genome Editing. **Methods in Molecular Biology**, 2403:147–186. PMID: [34913122](#)
2. Snetkova, V., Ypsilanti, A.R., Mannion, B.J., Plajzer-Frick, I., Novak, C.S., Harrington, A.N., Pham, Q., Kato, M., **Kvon, E.Z.**, Zhu, Y., Shi, M., Hunter, R.D., Godoy, J., Meky, E., Akiyama, J.A., Afzal, V., Tran, S., Rubenstein, J.L.R., Visel A., Pennacchio, L.A., Dickel, D.E. (2021). Ultraconserved Enhancer Function Does Not Require Perfect Sequence Conservation. **Nature Genetics**, 53:521–8. PMID: [33782603](#)
3. **Kvon, E.Z.**†, Waymack, R., Elabd, M.G., Wunderlich, Z.† (2021). Enhancer redundancy in development and disease. **Nature Reviews Genetics**, 22:324–36. PMID: [33442000](#)
4. Orr, B.O., Hauswirth, A.G., Celona, B., Fetter, R.D., Zunino, G., **Kvon, E.Z.**, Zhu, Y., Pennacchio, L.A., Black, B.L., and Davis, G.W. (2020). Presynaptic Homeostasis Opposes Disease Progression in Mouse Models of ALS-Like Degeneration: Evidence for Homeostatic Neuroprotection. **Neuron**, 107:95–111.e6. PMID: [32380032](#)
5. **Kvon, E.Z.**, Zhu, Y., Novak, C.S., Plajzer-Frick, I., Kelman, G., Kato, M., Garvin, T.H., Pham, Q., Harrington, A.N., Hunter, R.D., Godoy, J., Meky, E., Akiyama, J.A., Afzal, V., Tran, S., Escande, F., Gilbert-Dussardier, B., Jean-Marçais, N., Hudaiberdiev, S., Ovcharenko, I., Dobbs, M.B., Gurnett, C.A., Manouvrier-Hanu, S., Petit, F., Visel A., Dickel, D.E., Pennacchio, L.A. (2020). Comprehensive *In Vivo* Interrogation Reveals Phenotypic Impact of Human Enhancer Variants. **Cell**, 180(6):1262–1271. PMID: [32169219](#)

Featured in: 1) Deciphering the impact of enhancer variation. *Nature Reviews Genetics* (2020)

6. Li, S., **Kvon, E.Z.**, Visel, A., Pennacchio, L.A. & Ovcharenko, I. (2019). Stable enhancers are active in development, and fragile enhancers are associated with evolutionary adaptation. **Genome Biology**, 20, 1178. PMID: [31307522](#)
7. **Kvon, E.Z.**, Kamneva, O., Melo, U.S., Barozzi, I., Osterwalder, M., Mannion, B.J., Tissières, V., Pickle, C., Plajzer-Frick, I., Lee, E.A., Kato, M., Garvin, T.H., Akiyama, J.A., Afzal, V., Lopez-Rios, J., Rubin, E.M., Dickel, D.E., Pennacchio, L.A., Visel A. (2016). Progressive Loss of Function in a Limb Enhancer During Snake Evolution. **Cell**, 167(3):633-642. PMID: [27768887](#)

Featured in: 1) Unwinding Limb Development. *Cell* (2016)

2) Evolution: How snakes lost their legs. *Nature* (2016)

3) Tiny DNA tweaks made snakes legless. *Science* (2016)

4) Sonic snakes and regulation of limb formation. *Nature Reviews Genetics* (2016)

5) Evolution: Enhanced Footing for Snake Limb Development. *Current Biology* (2016)

6) News: Scientific American, The Atlantic, The Washington Post, CBS News, Der Spiegel

8. Rickels, R., Hu, D., Collings, C., Woodfin, A., Piunti, A., Mohan, M., Herz, H., **Kvon, E.Z.**, Shilatifard, A. (2016). A Trx/MLL/COMPASS-dependent chromatin modification marking polycomb response elements. **Molecular Cell**, 63 (2):318-328. [PMID: 27447986](#)
9. **Kvon, E.Z.**<sup>†</sup> (2015). Using transgenic reporter assays to functionally characterize enhancers in animals. **Genomics**, 106(3):185-92. [PMID: 26072435](#)
10. **Kvon, E.Z.**, Kazmar, T., Stampfel, G., Yáñez-Cuna, J.O., Pagani M., Schernhuber K., Dickson, B.J., Stark, A. (2014). Genome-scale functional characterization of *Drosophila* developmental enhancers *in vivo*. **Nature**, 512(7512):91-5. [PMID: 24896182](#)  
  
Featured in: 1) Gene expression: An atlas of fruit fly enhancer activity. *Nature Methods* (2014)
11. Yáñez-Cuna, J.O.\* , **Kvon, E.Z.\***, Stark, A. (2013). Deciphering the transcriptional *cis*-regulatory code. **Trends in Genetics**, 29(1):11-22. [PMID: 23102583](#)
12. Kazmar, T., **Kvon, E.Z.**, Stark, A., Lampert, C. (2013). *Drosophila* embryo stage annotation using label propagation. **ICCV 2013**, Springer. 1089–1096. [Link](#)
13. Yáñez-Cuna, J.O., Dinh, H.Q.\* , **Kvon, E.Z.\***, Shlyueva, D.\* , Stark, A. (2012). Uncovering *cis*-regulatory sequence requirements for context specific transcription factor binding. **Genome Research**, 22(10):2018-2030. [PMID: 22534400](#)
14. **Kvon, E.Z.\***, Stampfel, G.\* , Yáñez-Cuna, J.O., Dickson, B.J., Stark, A. (2012). HOT regions function as patterned developmental enhancers and have a distinct *cis*-regulatory signature. **Genes & Development**, 26(9):908-13. [PMID: 22499593](#)  
  
Featured in: 1) HOT DNAs: a novel class of developmental enhancers. *Genes & Development* (2012)  
2) Faculty of 1000 Biology
15. **Kvon, E.Z.**, Demakov, S.A., Zhimulev, I.F. (2011). [Chromatin decompaction in the interbands of *Drosophila* polytene chromosomes does not correlate with high transcription level]. **Genetika**, 47(6):765-73. [PMID: 21866857](#)
16. Belyakin, S.N., Babenko, V.N., Maksimov, D.A., Shloma, V.V., **Kvon, E. Z.**, Belyaeva, E. S., Zhimulev, I. F. (2010). Gene density profile reveals the marking of late replicated domains in the *Drosophila melanogaster* genome. **Chromosoma**, 119(6):589-600. [PMID: 20602235](#)
17. Demakov, S.A., Andreenkov, O.V., Berkaeva, M.B., Vatolina, T.I., Volkova, E.I., **Kvon, E.Z.**, Semeshin, V.F., and Zhimulev, I.F. (2010). [Functional organization of interbands in *Drosophila* polytene chromosomes]. **Genetika**, 46(10):1421-3. [PMID: 21254569](#)