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Jocelyn (Josie) Kishi, Ph.D.

Postdoctoral Fellow, Dr. Peng Yin lab *9/2018 – Present*

- Wyss Institute for Biologically Inspired Engineering, Harvard University
- Department of Systems Biology, Harvard Medical School
- Research interests: DNA reading and writing, DNA computing, molecular robotics, DNA data storage

Education

Ph.D., Harvard University *8/2014 – 8/2018*

- Department of Systems Biology. Adviser: Dr. Peng Yin.
- Thesis title: "Programming molecular behavior: development and applications of autonomous DNA synthesis cascades"

B.S., California Institute of Technology (Caltech) *9/2010 - 6/2014*

- Bachelor of Science with honor, Computer Science option (cumulative GPA: 4.0).

Publications

Kishi, J. Y.*, Beliveau, B. J*., Lapan, S. W.*, West, E. R., Zhu, A., Sasaki, H. M., Saka, S. K., Wang, Y., Cepko, C. L., Yin, P. SABER enables highly multiplexed and amplified detection of DNA and RNA in cells and tissues. *Submitted* (2018). *These authors contributed equally.

Nir, G., Farabella, I. Pérez Estrada, C., Ebeling, C. G., Beliveau, B. J., Sasaki, H. M., Lee, S. H., Nguyen, S. C., McCole, R. B., Chattoraj, S., Erceg, J., AlHaj Abed, J., Martins, N. M. C., Nguyen, H. Q. Hannan, M. A., Russell, S., Durand, N. C., Rao, S. S. P., **Kishi, J. Y.**, Soler-Vila, P., Di Pierro, M., Onuchic, J. N., Callahan, S., Schreiner, J., Stuckey, J., Yin, P., Lieberman Aiden, E., Marti-Renom, M. A. Walking along chromosomes with super-resolution imaging, contact maps, and integrative modeling. *Submitted*, 2018.

Beliveau, B. J., **Kishi, J. Y.**, Nir, G., Sasaki, H. M., Saka, S. K., Nguyen, S. C., Wu, C. T., and Yin, P. OligoMiner: A rapid, flexible environment for the design of genome-scale oligonucleotide in situ hybridization probes. *PNAS*, 2018.

Kishi J. Y., Schaus, T. E., Gopalkrishnan, N., Xuan, F., and Yin, P. Programmable autonomous synthesis of single-stranded DNA. *Nature Chemistry* (2017).

Ong, L.L., Hanikel, N., Yaghi, O.K., Grun, C., Strauss, M.T., Bron, P., Lai-Kee-Him,J., Schueder, F., Wang, B., Wang, P., **Kishi, J.Y**., Myhrvold, C., Zhu, A., Bellot, G., Ke, Y., and Yin, P. Programmable self-assembly of three-dimensional nanostructures from 10^4 unique components. *Nature*, 2017.

Presentations

Talk, Wyss Institute for Biologically Inspired Engineering Annual Retreat *Boston, 11/2017*
Talk, Northeast Regional Chromosome Pairing Conference *Bowdoin College, 10/2017*
Talk, 23rd Intl. Conference on DNA Computing and Molecular Programming *UT Austin, 9/2017*
Talk, Molecular Programming Project Workshop *Harvard Medical School, 12/2016*
Poster, Wyss Institute for Biologically Inspired Engineering Annual Retreat *Boston, 11/2016*
Poster, Synthetic Biology: Engineering, Evolution & Design (SEED) *Boston, 6/2015*
Poster, Molecular Programming Project Workshop *UCSF, 1/2015*

Honors and Awards

Graduate School of Arts and Sciences Merit Fellowship (declined)	*Harvard, 5/2018*
Best student speaker award, DNA23 conference	*UT Austin, 9/2017*
Certificate of Distinction in Teaching	*Harvard, 2016*
National Science Foundation Graduate Research Fellowship	*NSF, 2014-2017*
Lucy Guernsey Service Award	*Caltech Y, 2014*
Thomas J. Watson Memorial Scholarship	*IBM, 2010-2014*
Intel Women in Science Scholarship	*Caltech, 2011-2012*
Honeywell International Inc. Scholarship	*SWE, 2010-2011*

Other Work Experience

Google Software Engineering (SWE) Intern	*Google, 6/2013 - 9/2013*
Google Engineering Practicum Intern	*Google, 6/2012 - 9/2012*
SIP Technical Undergrad Summer Student Intern	*Sandia Labs, 6/2011 - 9/2011*

Patent Applications

Multiplexed in situ signal amplification	*2017*
Programmable nucleic acid synthesis cascade	*2016*
Amplification of target sequences for ultrasensitive toehold switch activation	*2016*
Isothermal nucleic acid amplification	*2016*
Molecular programming tools	*2016*

Teaching

Instructor, Clubes de Ciencia Colombia (Universidad de los Andes, Bogotá)	*6/2017 - 7/2017*
Teaching Fellow, Biomolecular Engineering and Synthetic Biology (SB204, Harvard)	*8/2015 - 12/2015*
Writing Teaching Assistant, Principles of Biology (Bi001, Caltech)	*4/2014 - 6/2014*
Teaching Assistant, Biomolecular Computation (BE/CS/CNS/Bi191a, Caltech)	*1/2014 - 3/2014*
Teaching Assistant, Introduction to Computer Programming (CS1, Caltech)	*9/2013 - 12/2013*
Teaching Assistant, Computer Language Shop (CS11, Caltech)	*4/2013 - 6/2013*
Teaching Assistant, Principles of Biology (Bi001, Caltech)	*4/2012 - 6/2012*
Teaching Assistant, Introduction to Computer Programming (CS1, Caltech)	*9/2011 - 12/2011*
Volunteer tutor with Enroot, Cambridge MA	*10/2017 - Present*
Mentor for high school science fair project, Philadelphia PA	*1/2018 - Present*
Volunteer tutor at Hathaway-Sycamores, Los Angeles CA	*1/2012 - 6/2014*

Technical Proficiencies

Languages, Software, and Technology:
Python, Java, Javascript, C, C++, Prolog, Haskell, PHP, Matlab, Android Development, MySQL, NUPACK scripting, Visual DSD, Git, Google Closure, HTML, CSS

Example Projects:

hack_dif Hackathon, Cisco Prize Winning Team	*MIT, 3/2016*
Google Glass Hackathon, Winning Team	*Google, 8/2013*