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Jocelyn (Josie) Kishi, Ph.D.

Wyss Technology Development Fellow, Dr. Peng Yin lab *6/2019 – 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

Postdoctoral Fellow, Dr. Peng Yin lab *9/2018 – 5/2019*

- Wyss Institute for Biologically Inspired Engineering, Harvard University
- Department of Systems Biology, Harvard Medical School

Education

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

- Department of Systems Biology, Adviser: Dr. Peng Yin
- Thesis: "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

Saka, S.K.*, Wang, Y.*, **Kishi, J.Y.**, Zhu, A., Zeng, Y., Xie, W., Kirli, K., Yapp, C., Cicconet, M., Beliveau, B. J., Lapan, S. W., Yin, S., Lin, M., Boyden, E. S., Kaeser, P. S., Pihan, G., Church, G. M., Yin, P. Amplified and multiplexed *in situ* protein imaging with SABER. *Nature Biotechnology* (in press). *These authors contributed equally.

Kishi, J. Y.*, Lapan, S. W.*, Beliveau, B. J.*, West, E. R.*, Zhu, A., Sasaki, H. M., Saka, S. K., Wang, Y., Cepko, C. L., Yin, P. SABER amplifies FISH: enhanced multiplexed imaging of RNA and DNA in cells and tissues. *Nature Methods*, 2019. *These authors contributed equally.

Minev, D.*, Guerra, R.*, **Kishi, J.Y.****, Smith, C.**, Krieg, E., Said, K., Hornick, A., Filsinger, G., Sasaki, H. M., Beliveau, B. J., Yin, P., Church, G. M., Shih, W. M. Rapid and scalable production of single-stranded DNA. *In prep* (2019). *These authors contributed equally. **Denotes equal (secondary) contribution.

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., Wu, C.. Walking along chromosomes with super-resolution imaging, contact maps, and integrative modeling. *PloS Genetics*, 2018. *These authors contributed equally.

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

Poster, Systems Biology at Harvard Medical School Retreat	*Sebasco., 6/2019*
Talk, EMBO Single Cell meeting	*Tokyo., 5/2019*
Poster, Human Biomolecular Atlas Program (HuBMAP) kickoff meeting	*Washington D.C., 11/2018*
Talk, Systems Biology Department at Harvard Medical School	*Boston, 10/2018*
Talk, Wyss Institute Synthetic Biology Platform Meeting	*Boston, 8/2018*
Poster, Systems Biology at Harvard Medical School Retreat	*Sebasco., 6/2018*
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, Wyss Institute Synthetic Biology Platform Meeting	*Boston, 3/2017*
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

Wyss Technology Development Fellowship	*Harvard, 6/2019*
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*
hack_dif Hackathon, Cisco Prize Winning Team	*MIT, 3/2016*
National Science Foundation Graduate Research Fellowship	*NSF, 2014-2017*
Lucy Guernsey Service Award	*Caltech Y, 2014*
Thomas J. Watson Memorial Scholarship	*IBM, 2010-2014*
Google Glass Hackathon, Winning Team	*Google, 8/2013*
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 academic 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*