

**Yi Yin, Ph.D.**

Damon Runyon Postdoctoral Fellow

Dr. Jay Shendure Lab

Department of Genome Sciences, University of Washington

[yy224@uw.edu](mailto:yy224@uw.edu)**\*starting as Assistant Professor in 2020 @ Department of Human Genetics, University of California, Los Angeles****EDUCATION**

2009.8 - 2015.9	Ph.D.	University Program in Genetics and Genomics	Duke University
2013.8 - 2015.9	M.S.	Statistical Science	Duke University
2011.8 - 2013.5	Certificate	Computational Biology and Bioinformatics	Duke University
2005.9 - 2009.7	B.S.	Biotechnology	Beijing Normal University

**RESEARCH EXPERIENCE**

**2016.8 - present** **Damon Runyon Postdoctoral Fellow**, University of Washington  
Department of Genome Sciences (Advisor: Dr. Jay Shendure)

- Developed sci-L3, a high-throughput, high-coverage single-cell sequencing platform with combinatorial indexing, linear amplification by *in vitro* transcription, and generalizability to whole-genome sequencing (WGS), targeted sequencing and DNA/RNA co-assay
- Mapped meiotic crossover and chromosome mis-segregation with sci-L3-WGS in fertile and infertile hybrid mice and found cell-autonomous equational chromosome segregation in meiosis I

**2015.7 - 2016.7** **Damon Runyon Postdoctoral Fellow**, Harvard University  
Department of Chemistry and Chemical Biology (Advisor: Dr. Sunney Xie)

- Worked on developing single-cell ChIP-seq

**2010.5 - 2015.9** **Doctoral Student**, Duke University  
University Program in Genetics and Genomics (Advisor: Dr. Tom Petes)

- Mapped genome-wide UV-induced mitotic recombination events in *S. cerevisiae*
- Studied the roles of structural nucleases and post-replication repair in UV-induced recombination in nucleotide excision repair-deficient strains
- Analyzed loss-of-heterozygosity and aneuploidy in DNA end resection, helicase and polymerase mutants
- Mapped heteroduplex DNA in spontaneous and UV-induced mitotic recombination events in mismatch repair deficient strains

**2013.8 - 2015.9** **Master Student**, Duke University  
Department of Statistical Science (Advisor: Dr. Sayan Mukherjee)

- Constructed predictive models of loss-of-heterozygosity Events in Yeast
- Modeled mitotic recombination pathway contributions in recombination maps

**2006.9 - 2009.7** **Undergraduate Research Assistant**

- Studied targeted deletion of microRNAs by homologous recombination in *D. melanogaster* (Advisor: Dr. Stephen Cohen at Temasek Life Sciences Laboratory, National University of Singapore)
- Studied engulfment signals on apoptotic cells in *C. elegans* (Advisor: Dr. Xiaochen Wang at National Institute of Biological Sciences, Beijing)
- Studied roles of miR-106a in cellular senescence (Advisor: Dr. Yusheng Cong at Beijing Normal University)

## AWARDS & FELLOWSHIPS

<b>2020</b>	Damon Runyon Dale F. Frey Award for Breakthrough Scientists
<b>2019</b>	Finalist (21/281), Burroughs Wellcome Fund (BWF) Career Award at the Scientific Interface
<b>2016-2019</b>	Damon Runyon Fellowship Award
<b>2018</b>	Outstanding Poster Presentation Award, Meiosis - Gordon Research Seminars (GRS)
<b>2015</b>	Certificate of Outstanding Contribution in Reviewing, Mutation Research-Fundamental and Molecular Mechanisms of Mutagenesis
<b>2013</b>	Chairman's Travel Awards, Duke University Medical Center
<b>2006, 2008</b>	First-class scholarship (top 3%), Beijing Normal University, China
<b>2007</b>	Second-class scholarship (top 6%), Beijing Normal University, China

## PUBLICATIONS (reverse chronological order, \*co-first authors, †co-corresponding authors)

- Yin Y<sup>†</sup>**, Jiang Y, Lam KG, Berletch JB, Disteche CM, Noble WS, Steemers FJ, Camerini-Otero RD, Adey AC, Shendure JA<sup>†</sup>. High-throughput single cell sequencing with linear amplification. *Mol. Cell.* 2019; pii: S1097-2765(19) 30618-5. PMID: [31495564](#).
- Chen W, McKenna A, Schreiber J, Haeussler M, **Yin Y**, Agarwal V, Noble WS, Shendure JA. Massively parallel profiling and predictive modeling of the outcomes of CRISPR/Cas9-mediated double-strand break repair. *Nucleic Acids Res.* 2019; pii: gkz487. PMID: [31165867](#).
- Klein HL<sup>†</sup>, Bačinskaja G, Che J, Cheblal A, Elango R, Epshtein A, Fitzgerald DM, Gómez-González B, Khan SR, Kumar S, Leland BA, Marie L, Mei Q, Miller KM, Miné-Hattab J, Piotrowska A, Polleys EJ, Putnam CD, Radchenko EA, Saada AA, Sakofsky CJ, Shim EY, Stracy M, Xia J, Yan Z, **Yin Y**, Aguilera A, Argueso JL, Freudenreich CM, Gasser SM, Gordenin DA, Haber JE, Ira G, Jinks-Robertson S, King MC, Kolodner RD, Kuzminov A, Lambert SAE, Lee SE, Mirkin SM, Petes TD, Rosenberg SM, Rothstein R, Symington LS, Zawadzki P, Kim N<sup>†</sup>, Lisby M<sup>†</sup>, Malkova A<sup>†</sup>. Guidelines for DNA recombination and repair studies: cellular assays of DNA repair pathways. *Microbial Cell* 2018; 6(1): 1-64. PMID: [30652105](#) PMCID: [PMC6334234](#).
- Guo X\*, Chavez A\*, Tung A\*, Chan Y, Kaas C, **Yin Y**, Cecchini R, Lopez-Garnier S, Kelsic E, Schubert M, DiCarlo J, Collins JJ, Church GM. High-throughput creation and functional profiling of DNA sequence variant libraries using CRISPR–Cas9 in yeast. *Nat Biotechnol.* 2018; 36(6): 540-546. PMID: [29786095](#) PMCID: [PMC5990468](#).
- Yin Y**, Dominska M, Yim E, Petes T. High-resolution mapping of heteroduplex DNA formed during UV-induced and spontaneous mitotic recombination events in yeast. *eLife.* 2017; 6. pii: e28069. PMID: [28714850](#) PMCID: [PMC5531827](#).
- Deng SK, **Yin Y**, Petes TD, Symington LS. Mre11-Sae2 and RPA Collaborate to Prevent Palindromic Gene Amplification. *Mol Cell.* 2015; 60(3): 500-8. PMID: [26545079](#) PMCID: [PMC4636734](#).
- Yin Y**, Petes TD. Recombination between homologous chromosomes induced by unrepaired UV-generated DNA damage requires Mus81p and is suppressed by Mms2p. *PLoS Genet.* 2015; 11(3): e1005026. PMID: [25738287](#) PMCID: [PMC4349867](#).
- Yin Y**, Petes TD. The role of Exo1p exonuclease in DNA end resection to generate gene conversion tracts in *Saccharomyces cerevisiae*. *Genetics.* 2014; 197(4): 1097-109. PMID: [24835424](#) PMCID: [PMC4125386](#).
- Yin Y**, Petes TD. Genome-wide high-resolution mapping of UV-induced mitotic recombination events in *Saccharomyces cerevisiae*. *PLoS Genet.* 2013; 9(10): e1003894. PMID: [24204306](#) PMCID: [PMC3814309](#).
- St Charles J\*, Hazkani-Covo E\*, **Yin Y**, Andersen SL, Dietrich FS, Greenwell PW, Malc E, Mieczkowski P, Petes TD. High-resolution genome-wide analysis of irradiated (UV and  $\gamma$ -rays) diploid yeast cells reveals a high frequency of genomic loss of heterozygosity (LOH) events. *Genetics.* 2012; 190(4): 1267-84. PMID: [22267500](#) PMCID: [PMC3316642](#).

## PATENT APPLICATIONS

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| <b>2018</b> | Yi Yin, Frank Steemers, Jay Shendure. High-throughput single-cell mapping of meiotic crossover and chromosome mis-segregation events (US 62/673,023) |
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## TEACHING & PROFESSIONAL EXPERIENCE

- 2019** Organizer of Career Development Workshops, FASEB, Genetic Recombination and Genome Rearrangements, Steamboat Springs, CO
- 2017** Lecturer (GENOME541, independently taught Bayesian Statistics session, graded homework and held office hours; lectures include introduction to Bayesian statistics with conjugate and non-conjugate priors, Gibbs sampling and Metropolis), University of Washington, Department of Genome Sciences
- 2015 -** Ad hoc reviewer for Nature Genetics, PNAS, Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, FEMS Yeast Research, Mutagenesis, Applied Microbiology and Biotechnology
- 2013 -** Undergraduate and graduate students supervised: Sarah Jaslow (Duke MGM graduate student), Eunice Yim (Duke undergraduate student), Wenting Cai (Harvard CCB graduate student), Shawn Fayer (UW GS graduate student)
- 2013-2015** Member, Genetics Society of America
- 2013** Teaching assistant, Genetic and Genomics Solutions to Biological Problems (Computational Approaches to Identify Protein Binding Sites session, tutored coding in Perl), Duke University, University Program in Genetics and Genomics
- 2012** Teaching assistant, Genetic and Genomics Solutions to Biological Problems (*C.elegans* session, led journal club discussions), Duke University, University Program in Genetics and Genomics
- 2011-2013** Certificate in Computational Biology and Bioinformatics, Duke University

## INVITED TALKS & POSTERS

- 2019** Damon Runyon Fellows Retreat (Southbridge, MA). *Talk*
- 2019** National Institute of Environmental Health Sciences. Stadtman Tenure-Track Investigator Candidate Seminar (Durham, NC). *Invited talk*
- 2019** National Institute of Aging. Stadtman Tenure-Track Investigator Candidate Seminar (Baltimore, MD). *Invited talk*
- 2019** Molecular Biology Program, Sloan Kettering Institute, MSKCC (New York, NY). *Invited talk*
- 2019** Department of Human Genetics Faculty Search Symposium. University of California, Los Angeles (UCLA) (Los Angeles, CA). *Invited talk*
- 2018** Illumina Sequencing Symposium. (Seattle, WA). *Invited talk*
- 2018** Molecular Mechanisms and Regulation of Meiosis Across Species. Gordon Research Conference & Seminar (New London, NH). *Poster*
- 2017** Petes-Fest, Tom Petes 70<sup>th</sup> Birthday Symposium, Duke University (Durham, NC). *Invited talk*
- 2017** DNA Replication and Recombination. Keystone Symposium (Santa Fe, NM). *Poster*
- 2016** Damon Runyon Fellows Retreat (San Jose, CA). *Poster*
- 2016** University of Washington Department of Genome Sciences Retreat (Leavenworth WA). *Poster*
- 2014** Duke University Department of Molecular Genetics and Microbiology Retreat (Wilmington, NC). *Talk*
- 2013** Genetic Recombination and Genome Rearrangements, FASEB (Steamboat Springs, CO). *Poster*
- 2012** Yeast Chromosome Structure, Replication & Segregation Conference, FASEB (Steamboat Springs, CO). *Poster*
- 2011** Small Eukaryote Group Meeting, North Carolina Biotechnology Center (Durham, NC). *Talk*
- 2011** Duke DNA Repair Group Meeting, Duke University (Durham, NC). *Talk*

**STATISTICS COURSEWORK** (all listed are PhD level courses, passed the First Year Exam for Duke Department of Statistical Science Ph.D. students in 2014)

<b>2014</b>	STA944	Spatial Statistics
<b>2014</b>	STA863	Advanced Modeling and Scientific Computing
<b>2014</b>	STA841	Categorical Data
<b>2014</b>	STA831	Probability and Statistical Models (Time Series)
<b>2014</b>	STA732	Statistical Inference
<b>2014</b>	STA711	Probability and Measure Theory
<b>2013</b>	STA721	Linear Models
<b>2013</b>	STA601	Bayesian and Modern Statistics
<b>2013</b>	STA561/COMPSCI571	Probabilistic Machine Learning
<b>2012</b>	STA613	Statistical Methods for Computational Biology