

Stanford



Dmitri Petrov

Michelle and Kevin Douglas Professor in the School of Humanities and Sciences
Biology

 Curriculum Vitae available Online

Bio

ACADEMIC APPOINTMENTS

- Professor, Biology
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)
- Affiliate, Stanford Woods Institute for the Environment

LINKS

- My Lab Site: <http://petrov.stanford.edu>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Evolution of genomes and population genomics of adaptation and variation

Teaching

COURSES

2020-21

- Evolution: BIO 85 (Win)
- Fundamentals of Molecular Evolution: BIO 113, BIO 244 (Win)

2018-19

- Evolution: BIO 85 (Win)
- Fundamentals of Molecular Evolution: BIO 113, BIO 244 (Win)

2017-18

- Reading the Origin of Species in the Age of Genomics: OSPPARIS 58 (Win)

STANFORD ADVISEES

Nicholas Hughes

Doctoral Dissertation Reader (AC)

Roy Ang, Shi-An Chen, Elora López-Nandam, Katherine McNamara, Jordana Meyer, Thomas Silvers

Postdoctoral Faculty Sponsor

Clare Abreu, Mark Bitter, Gabor Zoltan Boross, Marianthi Karageorgi, Bernard Kim, Chuan Li, Katie Solari, Katherine Xue

Doctoral Dissertation Advisor (AC)

Ellie Armstrong, Grant Kinsler, Nicole Nova, Jess Rhodes

Doctoral Dissertation Co-Advisor (AC)

Emily Shuldiner, Susanne Tilk

Doctoral (Program)

Ellie Armstrong, Grant Kinsler, Nicole Nova, Emily Shuldiner, Susanne Tilk

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biology (School of Humanities and Sciences) (Phd Program)
- Biomedical Informatics (Phd Program)

Publications

PUBLICATIONS

- **The clarifying role of time series data in the population genetics of HIV.** *PLoS genetics*
Feder, A. F., Pennings, P. S., Petrov, D. A.
2021; 17 (1): e1009050
- **Machine learning reveals bilateral distribution of somatic L1 insertions in human neurons and glia.** *Nature neuroscience*
Zhu, X., Zhou, B., Pattni, R., Gleason, K., Tan, C., Kalinowski, A., Sloan, S., Fiston-Lavier, A. S., Mariani, J., Petrov, D., Barres, B. A., Duncan, L., Abyzov, et al
2021
- **Ancient RNA virus epidemics through the lens of recent adaptation in human genomes.** *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*
Enard, D., Petrov, D. A.
2020; 375 (1812): 20190575
- **Genetic Adaptation in New York City Rats.** *Genome biology and evolution*
Harpak, A., Garud, N., Rosenberg, N. A., Petrov, D. A., Combs, M., Pennings, P. S., Munshi-South, J.
2020
- **Multiplexed functional cancer genomics.**
Cai, H., Li, C., Chew, S., Yousefi, M., Foggetti, G., Lin, W., Rogers, Z. N., Winters, I. P., McFarland, C. D., Politi, K., Swanton, C., Petrov, D. A., Winslow, et al
AMER ASSOC CANCER RESEARCH.2020: 23
- **Long live the king: chromosome-level assembly of the lion (*Panthera leo*) using linked-read, Hi-C, and long-read data.** *BMC biology*
Armstrong, E. E., Taylor, R. W., Miller, D. E., Kaelin, C. B., Barsh, G. S., Hadly, E. A., Petrov, D.
2020; 18 (1): 3
- **Fitness variation across subtle environmental perturbations reveals local modularity and global pleiotropy of adaptation.** *eLife*
Kinsler, G., Geiler-Samerotte, K., Petrov, D. A.
2020; 9
- **Accurate Allele Frequencies from Ultra-low Coverage Pool-Seq Samples in Evolve-and-Resequencing Experiments.** *G3 (Bethesda, Md.)*
Tilk, S., Bergland, A., Goodman, A., Schmidt, P., Petrov, D., Greenblum, S.
2019
- **Single nucleotide mapping of trait space reveals Pareto fronts that constrain adaptation.** *Nature ecology & evolution*
Li, Y., Petrov, D. A., Sherlock, G.
2019
- **Microbiome composition shapes rapid genomic adaptation of *Drosophila melanogaster*.** *Proceedings of the National Academy of Sciences of the United States of America*

- Rudman, S. M., Greenblum, S., Hughes, R. C., Rajpurohit, S., Kiratli, O., Lowder, D. B., Lemmon, S. G., Petrov, D. A., Chaston, J. M., Schmidt, P.
2019
- **Evolutionary Dynamics in Structured Populations Under Strong Population Genetic Forces.** *G3 (Bethesda, Md.)*
Feder, A. F., Pennings, P. S., Hermisson, J., Petrov, D. A.
2019
 - **Exploiting selection at linked sites to infer the rate and strength of adaptation** *NATURE ECOLOGY & EVOLUTION*
Uricchio, L. H., Petrov, D. A., Enard, D.
2019; 3 (6): 977–84
 - **Empowering conservation practice with efficient and economical genotyping from poor quality samples** *METHODS IN ECOLOGY AND EVOLUTION*
Natesh, M., Taylor, R. W., Truelove, N. K., Hadly, E. A., Palumbi, S. R., Petrov, D. A., Ramakrishnan, U.
2019; 10 (6): 853–59
 - **Exploiting selection at linked sites to infer the rate and strength of adaptation.** *Nature ecology & evolution*
Uricchio, L. H., Petrov, D. A., Enard, D.
2019
 - **Cost-effective assembly of the African wild dog (*Lycaon pictus*) genome using linked reads** *GIGASCIENCE*
Armstrong, E. E., Taylor, R. W., Prost, S., Blinston, P., van der Meer, E., Madzikanda, H., Mufute, O., Mandisodza-Chikerema, R., Stuelpnagel, J., Sillero-Zubiri, C., Petrov, D.
2019; 8 (2)
 - **Stress response, behavior, and development are shaped by transposable element-induced mutations in *Drosophila*.** *PLoS genetics*
Rech, G. E., Bogaerts-Marquez, M., Barron, M. G., Merenciano, M., Villanueva-Canas, J. L., Horvath, V., Fiston-Lavier, A., Luyten, I., Venkataram, S., Quesneville, H., Petrov, D. A., Gonzalez, J.
2019; 15 (2): e1007900
 - **Stress response, behavior, and development are shaped by transposable element-induced mutations in *Drosophila*** *PLOS GENETICS*
Rech, G. E., Bogaerts-Marquez, M., Barron, M. G., Merenciano, M., Luis Villanueva-Canas, J., Horvath, V., Fiston-Lavier, A., Luyten, I., Venkataram, S., Quesneville, H., Petrov, D. A., Gonzalez, J.
2019; 15 (2)
 - **Pervasive Strong Selection at the Level of Codon Usage Bias in *Drosophila melanogaster*.** *Genetics*
Machado, H. E., Lawrie, D. S., Petrov, D. A.
2019
 - **Empowering conservation practice with efficient and economical genotyping from poor quality samples.** *Methods in ecology and evolution*
Natesh, M., Taylor, R. W., Truelove, N. K., Hadly, E. A., Palumbi, S. R., Petrov, D. A., Ramakrishnan, U.
2019; 10 (6): 853–59
 - **MACHINE LEARNING ANALYSIS OF ULTRA-DEEP WHOLE-GENOME SEQUENCING IN HUMAN BRAIN REVEALS SOMATIC GENOMIC RETROTRANSPOSITION IN GLIA AS WELL AS IN NEURONS**
Urban, A., Zhu, X., Zhou, B., Sloan, S., Pattni, R., Fiston-Lavier, A., Snyder, M., Petrov, D., Abyzov, A., Vaccarino, F., Barres, B., Vogel, H., Tamminga, et al
ELSEVIER.2019: 1240
 - **Tissue-Specific cis-Regulatory Divergence Implicates *eloF* in Inhibiting Interspecies Mating in *Drosophila*** *CURRENT BIOLOGY*
Combs, P. A., Krupp, J. J., Khosla, N. M., Bua, D., Petrov, D. A., Levine, J. D., Fraser, H. B.
2018; 28 (24): 3969–+
 - **Tissue-Specific cis-Regulatory Divergence Implicates *eloF* in Inhibiting Interspecies Mating in *Drosophila*.** *Current biology : CB*
Combs, P. A., Krupp, J. J., Khosla, N. M., Bua, D., Petrov, D. A., Levine, J. D., Fraser, H. B.
2018
 - **Cost-effective assembly of the African wild dog (*Lycaon pictus*) genome using linked reads.** *GigaScience*
Armstrong, E. E., Taylor, R. W., Prost, S., Blinston, P., van der Meer, E., Madzikanda, H., Mufute, O., Mandisodza-Chikerema, R., Stuelpnagel, J., Sillero-Zubiri, C., Petrov, D.
2018
 - **Evidence that RNA Viruses Drove Adaptive Introgression between Neanderthals and Modern Humans** *CELL*

- Enard, D., Petrov, D. A.
2018; 175 (2): 360+
- **Spatiotemporal dynamics and genome-wide association genome-wide association analysis of desiccation tolerance in *Drosophila melanogaster*** *MOLECULAR ECOLOGY*
Rajpurohit, S., Gefen, E., Bergland, A. O., Petrov, D. A., Gibbs, A. G., Schmidt, P. S.
2018; 27 (17): 3525–40
 - **Functional lung cancer genomics through in vivo genome editing**
Winters, I. P., Rogers, Z. N., McFarland, C. D., Lalgudi, P. V., Chiou, S., Kay, M. A., Petrov, D., Winslow, M. M.
AMER ASSOC CANCER RESEARCH.2018
 - **Tripolar chromosome segregation drives the association between maternal genotype at variants spanning *PLK4* and aneuploidy in human preimplantation embryos** *HUMAN MOLECULAR GENETICS*
McCoy, R. C., Newnham, L. J., Ottolini, C. S., Hoffmann, E. R., Chatzimeletiou, K., Cornejo, O. E., Zhan, Q., Zaninovic, N., Rosenwaks, Z., Petrov, D. A., Demko, Z. P., Sigurjonsson, S., Handyside, et al
2018; 27 (14): 2573–85
 - **Quantitative and multiplex analysis of the genomic determinants of tumorigenesis.**
Winters, I., Rogers, Z., McFarland, C., Petrov, D., Winslow, M. M.
AMER ASSOC CANCER RESEARCH.2018: 15–16
 - **Mapping the in vivo fitness landscape of lung adenocarcinoma tumor suppression in mice** *NATURE GENETICS*
Rogers, Z. N., McFarland, C. D., Winters, I. P., Seoane, J. A., Brady, J. J., Yoon, S., Curtis, C., Petrov, D. A., Winslow, M. M.
2018; 50 (4): 483+
 - **Hidden Complexity of Yeast Adaptation under Simple Evolutionary Conditions** *CURRENT BIOLOGY*
Li, Y., Venkataram, S., Agarwala, A., Dunn, B., Petrov, D. A., Sherlock, G., Fisher, D. S.
2018; 28 (4): 515+
 - **Rapid seasonal evolution in innate immunity of wild *Drosophila melanogaster*** *PROCEEDINGS OF THE ROYAL SOCIETY B-BIOLOGICAL SCIENCES*
Behrman, E. L., Howick, V. M., Kapun, M., Staubach, F., Bergland, A. O., Petrov, D. A., Lazzaro, B. P., Schmidt, P. S.
2018; 285 (1870)
 - **Seasonally fluctuating selection can maintain polymorphism at many loci via segregation lift** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Wittmann, M. J., Bergland, A. O., Feldman, M. W., Schmidt, P. S., Petrov, D. A.
2017; 114 (46): E9932–E9941
 - **High rate of adaptation of mammalian proteins that interact with *Plasmodium* and related parasites** *PLOS GENETICS*
Ebel, E. R., Telis, N., Venkataram, S., Petrov, D. A., Enard, D.
2017; 13 (9): e1007023
 - **A quantitative and multiplexed approach to uncover the fitness landscape of tumor suppression in vivo.** *Nature methods*
Rogers, Z. N., McFarland, C. D., Winters, I. P., Naranjo, S., Chuang, C., Petrov, D., Winslow, M. M.
2017
 - **A spatio-temporal assessment of simian/human immunodeficiency virus (SHIV) evolution reveals a highly dynamic process within the host.** *PLoS pathogens*
Feder, A. F., Kline, C., Polacino, P., Cottrell, M., Kashuba, A. D., Keele, B. F., Hu, S., Petrov, D. A., Pennings, P. S., Ambrose, Z.
2017; 13 (5)
 - **Soft Selective Sweeps in Evolutionary Rescue.** *Genetics*
Wilson, B. A., Pennings, P. S., Petrov, D. A.
2017
 - **Seeking Goldilocks During Evolution of Drug Resistance.** *PLoS biology*
Sherlock, G., Petrov, D. A.
2017; 15 (2)
 - **Extremely Rare Polymorphisms in *Saccharomyces cerevisiae* Allow Inference of the Mutational Spectrum.** *PLoS genetics*

- Zhu, Y. O., Sherlock, G., Petrov, D. A.
2017; 13 (1)
- **Deep sequencing of natural and experimental populations of *Drosophila melanogaster* reveals biases in the spectrum of new mutations.** *Genome research*
Assaf, Z. J., Tilk, S., Park, J., Siegal, M. L., Petrov, D. A.
2017; 27 (12): 1988–2000
 - **Multiplexed in vivo homology-directed repair and tumor barcoding enables parallel quantification of *Kras* variant oncogenicity.** *Nature communications*
Winters, I. P., Chiou, S. H., Paulk, N. K., McFarland, C. D., Lalgudi, P. V., Ma, R. K., Lisowski, L., Connolly, A. J., Petrov, D. A., Kay, M. A., Winslow, M. M.
2017; 8 (1): 2053
 - **Adaptive dynamics of cuticular hydrocarbons in *Drosophila*** *JOURNAL OF EVOLUTIONARY BIOLOGY*
Rajpurohit, S., Hanus, R., Vrkoslav, V., Behrman, E. L., Bergland, A. O., Petrov, D., Cvacka, J., Schmidt, P. S.
2017; 30 (1): 66-80
 - **Adaptive dynamics of cuticular hydrocarbons in *Drosophila*.** *Journal of evolutionary biology*
Rajpurohit, S., Hanus, R., Vrkoslav, V., Behrman, E. L., Bergland, A. O., Petrov, D., Cvacka, J., Schmidt, P. S.
2016
 - **Development of a Comprehensive Genotype-to-Fitness Map of Adaptation-Driving Mutations in Yeast.** *Cell*
Venkataram, S., Dunn, B., Li, Y., Agarwala, A., Chang, J., Ebel, E. R., Geiler-Samerotte, K., Hérissant, L., Blundell, J. R., Levy, S. F., Fisher, D. S., Sherlock, G., Petrov, et al
2016; 166 (6): 1585-1596 e22
 - **An Intrinsically Disordered Region of the DNA Repair Protein Nbs1 Is a Species-Specific Barrier to Herpes Simplex Virus 1 in Primates.** *Cell host & microbe*
Lou, D. I., Kim, E. T., Meyerson, N. R., Pancholi, N. J., Mohni, K. N., Enard, D., Petrov, D. A., Weller, S. K., Weitzman, M. D., Sawyer, S. L.
2016; 20 (2): 178-188
 - **Whole Genome Analysis of 132 Clinical *Saccharomyces cerevisiae* Strains Reveals Extensive Ploidy Variation** *G3-GENES GENOMES GENETICS*
Zhu, Y. O., Sherlock, G., Petrov, D. A.
2016; 6 (8): 2421-2434
 - **Heterozygote Advantage Is a Common Outcome of Adaptation in *Saccharomyces cerevisiae*** *GENETICS*
Sellis, D., Kvitek, D. J., Dunn, B., Sherlock, G., Petrov, D. A.
2016; 203 (3): 1401-?
 - **Elevated Linkage Disequilibrium and Signatures of Soft Sweeps Are Common in *Drosophila melanogaster*** *GENETICS*
Garud, N. R., Petrov, D. A.
2016; 203 (2): 863-?
 - **Viruses are a dominant driver of protein adaptation in mammals** *ELIFE*
Enard, D., Cai, L., Gwennap, C., Petrov, D. A.
2016; 5
 - **Effects of maternal age on euploidy rates in a large cohort of embryos analyzed with 24-chromosome single-nucleotide polymorphism-based preimplantation genetic screening** *FERTILITY AND STERILITY*
Demko, Z. P., Simon, A. L., McCoy, R. C., Petrov, D. A., Rabinowitz, M.
2016; 105 (5): 1307-1313
 - **Global Transcriptional Profiling of Diapause and Climatic Adaptation in *Drosophila melanogaster*.** *Molecular biology and evolution*
Zhao, X., Bergland, A. O., Behrman, E. L., Gregory, B. D., Petrov, D. A., Schmidt, P. S.
2016; 33 (3): 707-720
 - **Secondary contact and local adaptation contribute to genome-wide patterns of clinal variation in *Drosophila melanogaster*.** *Molecular ecology*
Bergland, A. O., Tobler, R., González, J., Schmidt, P., Petrov, D.
2016; 25 (5): 1157-1174
 - **Comparative population genomics of latitudinal variation in *Drosophila simulans* and *Drosophila melanogaster*.** *Molecular ecology*
Machado, H. E., Bergland, A. O., O'Brien, K. R., Behrman, E. L., Schmidt, P. S., Petrov, D. A.
2016; 25 (3): 723-740

- **More effective drugs lead to harder selective sweeps in the evolution of drug resistance in HIV-1.** *eLife*
Feder, A. F., Rhee, S., Holmes, S. P., Shafer, R. W., Petrov, D. A., Pennings, P. S.
2016; 5
- **Evidence of Selection against Complex Mitotic-Origin Aneuploidy during Preimplantation Development** *PLOS GENETICS*
McCoy, R. C., Demko, Z. P., Ryan, A., Banjevic, M., Hill, M., Sigurjonsson, S., Rabinowitz, M., Petrov, D. A.
2015; 11 (10)
- **Investigation of the prevalence of antagonistic pleiotropy**
Herissant, L., Yuan, D., Jerison, E., Agarwala, A., Fisher, D., Desai, M., Petrov, D., Sherlock, G.
WILEY-BLACKWELL.2015: S263–S264
- **Exploring the adaptive mutation spectrum in massively tagged populations of experimentally evolving yeast**
Dunn, B., Venkataram, S., Levy, S., Blundell, J., Herissant, L., Li, Y., Chang, J., Geiler-Samerotte, K., Agarwala, A., Fisher, D., Petrov, D., Sherlock, G.
WILEY-BLACKWELL.2015: S89
- **Quantification of GC-biased gene conversion in the human genome** *GENOME RESEARCH*
Glemin, S., Arndt, P. F., Messer, P. W., Petrov, D., Galtier, N., Duret, L.
2015; 25 (8): 1215-1228
- **Imperfect drug penetration leads to spatial monotherapy and rapid evolution of multidrug resistance** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Moreno-Gamez, S., Hill, A. L., Rosenbloom, D. I., Petrov, D. A., Nowak, M. A., Pennings, P. S.
2015; 112 (22): E2874-E2883
- **Obstruction of adaptation in diploids by recessive, strongly deleterious alleles.** *Proceedings of the National Academy of Sciences of the United States of America*
Assaf, Z. J., Petrov, D. A., Blundell, J. R.
2015; 112 (20): E2658-66
- **Common variants spanning PLK4 are associated with mitotic-origin aneuploidy in human embryos** *SCIENCE*
McCoy, R. C., Demko, Z., Ryan, A., Banjevic, M., Hill, M., Sigurjonsson, S., Rabinowitz, M., Fraser, H. B., Petrov, D. A.
2015; 348 (6231): 235-238
- **Quantitative evolutionary dynamics using high-resolution lineage tracking.** *Nature*
Levy, S. F., Blundell, J. R., Venkataram, S., Petrov, D. A., Fisher, D. S., Sherlock, G.
2015; 519 (7542): 181-186
- **T-lex2: genotyping, frequency estimation and re-annotation of transposable elements using single or pooled next-generation sequencing data.** *Nucleic acids research*
Fiston-Lavier, A., Barrón, M. G., Petrov, D. A., González, J.
2015; 43 (4)
- **Recent selective sweeps in North American *Drosophila melanogaster* show signatures of soft sweeps.** *PLoS genetics*
Garud, N. R., Messer, P. W., Buzbas, E. O., Petrov, D. A.
2015; 11 (2)
- **Genomic Evidence of Rapid and Stable Adaptive Oscillations over Seasonal Time Scales in *Drosophila*** *PLOS GENETICS*
Bergland, A. O., Behrman, E. L., O'Brien, K. R., Schmidt, P. S., Petrov, D. A.
2014; 10 (11)
- **Genomic evidence of rapid and stable adaptive oscillations over seasonal time scales in *Drosophila*.** *PLoS genetics*
Bergland, A. O., Behrman, E. L., O'Brien, K. R., Schmidt, P. S., Petrov, D. A.
2014; 10 (11)
- **Soft Selective Sweeps in Complex Demographic Scenarios** *GENETICS*
Wilson, B. A., Petrov, D. A., Messer, P. W.
2014; 198 (2): 669-684
- **Soft selective sweeps in complex demographic scenarios.** *Genetics*

- Wilson, B. A., Petrov, D. A., Messer, P. W.
2014; 198 (2): 669-684
- **Reply to Chen and Zhang: On interpreting genome-wide trends from yeast mutation accumulation data** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Zhu, Y. O., Siegal, M. L., Hall, D. W., Petrov, D. A.
2014; 111 (39): E4063
 - **Precise estimates of mutation rate and spectrum in yeast** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Zhu, Y. O., Siegal, M. L., Hall, D. W., Petrov, D. A.
2014; 111 (22): E2310-E2318
 - **Genome-wide signals of positive selection in human evolution.** *Genome research*
Enard, D., Messer, P. W., Petrov, D. A.
2014; 24 (6): 885-895
 - **Comparative population genomics: power and principles for the inference of functionality** *TRENDS IN GENETICS*
Lawrie, D. S., Petrov, D. A.
2014; 30 (4): 133-139
 - **Genomic inference accurately predicts the timing and severity of a recent bottleneck in a nonmodel insect population.** *Molecular ecology*
McCoy, R. C., Garud, N. R., Kelley, J. L., Boggs, C. L., Petrov, D. A.
2014; 23 (1): 136-150
 - **Illumina TruSeq Synthetic Long-Reads Empower De Novo Assembly and Resolve Complex, Highly-Repetitive Transposable Elements.** *PloS one*
McCoy, R. C., Taylor, R. W., Blauwkamp, T. A., Kelley, J. L., Kertesz, M., Pushkarev, D., Petrov, D. A., Fiston-Lavier, A.
2014; 9 (9)
 - **Population genomics of transposable elements in Drosophila.** *Annual review of genetics*
Barrón, M. G., Fiston-Lavier, A., Petrov, D. A., González, J.
2014; 48: 561-581
 - **Illumina TruSeq synthetic long-reads empower de novo assembly and resolve complex, highly-repetitive transposable elements.** *PloS one*
McCoy, R. C., Taylor, R. W., Blauwkamp, T. A., Kelley, J. L., Kertesz, M., Pushkarev, D., Petrov, D. A., Fiston-Lavier, A.
2014; 9 (9)
 - **Population genomics of rapid adaptation by soft selective sweeps** *TRENDS IN ECOLOGY & EVOLUTION*
Messer, P. W., Petrov, D. A.
2013; 28 (22): 659-669
 - **Host Species and Environmental Effects on Bacterial Communities Associated with Drosophila in the Laboratory and in the Natural Environment** *PLOS ONE*
Staubach, F., Baines, J. F., Kuenzel, S., Bik, E. M., Petrov, D. A.
2013; 8 (8)
 - **Frequent adaptation and the McDonald-Kreitman test.** *Proceedings of the National Academy of Sciences of the United States of America*
Messer, P. W., Petrov, D. A.
2013; 110 (21): 8615-8620
 - **Strong purifying selection at synonymous sites in D. melanogaster.** *PLoS genetics*
Lawrie, D. S., Messer, P. W., Hershberg, R., Petrov, D. A.
2013; 9 (5)
 - **Strong Purifying Selection at Synonymous Sites in D. melanogaster.** *PLoS genetics*
Lawrie, D. S., Messer, P. W., Hershberg, R., Petrov, D. A.
2013; 9 (5)
 - **Evaluating methods of demographic inference and testing for balancing selection using genomic data from the checkerspot butterfly Euphydryas gillettii** *Annual Meeting of the Society-for-Integrative-and-Comparative-Biology (SICB)*
Mccoy, R. C., Boggs, C. B., Petrov, D. A.

OXFORD UNIV PRESS INC.2013: E329–E329

- **Host species and environmental effects on bacterial communities associated with *Drosophila* in the laboratory and in the natural environment.** *PLoS one*
Staubach, F., Baines, J. F., Künzel, S., Bik, E. M., Petrov, D. A.
2013; 8 (8)
- **Population genomics of rapid adaptation by soft selective sweeps.** *Trends in ecology & evolution*
Messer, P. W., Petrov, D. A.
2013; 28 (11): 659–69
- **Evolutionary Biology for the 21st Century** *PLOS BIOLOGY*
Losos, J. B., Arnold, S. J., Bejerano, G., Brodie, E. D., Hibbett, D., Hoekstra, H. E., Mindell, D. P., Monteiro, A., Moritz, C., Orr, H. A., Petrov, D. A., Renner, S. S., Ricklefs, et al
2013; 11 (1)
- **Evolutionary biology for the 21st century.** *PLoS biology*
Losos, J. B., Arnold, S. J., Bejerano, G., Brodie, E. D., Hibbett, D., Hoekstra, H. E., Mindell, D. P., Monteiro, A., Moritz, C., Orr, H. A., Petrov, D. A., Renner, S. S., Ricklefs, et al
2013; 11 (1)
- **On the Limitations of Using Ribosomal Genes as References for the Study of Codon Usage: A Rebuttal** *PLOS ONE*
Hershberg, R., Petrov, D. A.
2012; 7 (12)
- **LDx: Estimation of Linkage Disequilibrium from High-Throughput Pooled Resequencing Data** *PLOS ONE*
Feder, A. F., Petrov, D. A., Bergland, A. O.
2012; 7 (11)
- **Genome Patterns of Selection and Introgression of Haplotypes in Natural Populations of the House Mouse (*Mus musculus*)** *PLOS GENETICS*
Staubach, F., Lorenc, A., Messer, P. W., Tang, K., Petrov, D. A., Tautz, D.
2012; 8 (8)
- **Empirical Validation of Pooled Whole Genome Population Re-Sequencing in *Drosophila melanogaster*** *PLOS ONE*
Zhu, Y., Bergland, A. O., Gonzalez, J., Petrov, D. A.
2012; 7 (7)
- **Origins and rates of aneuploidy in human blastomeres** *FERTILITY AND STERILITY*
Rabinowitz, M., Ryan, A., Gemelos, G., Hill, M., Baner, J., Cinnioglu, C., Banjevic, M., Potter, D., Petrov, D. A., Demko, Z.
2012; 97 (2): 395-401
- **Evolution of genome content: population dynamics of transposable elements in flies and humans.** *Methods in molecular biology (Clifton, N.J.)*
González, J., Petrov, D. A.
2012; 855: 361-383
- **Heterozygote advantage as a natural consequence of adaptation in diploids** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Sellis, D., Callahan, B. J., Petrov, D. A., Messer, P. W.
2011; 108 (51): 20666-20671
- **High sensitivity to aligner and high rate of false positives in the estimates of positive selection in the 12 *Drosophila* genomes** *GENOME RESEARCH*
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