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)
- Member, Stanford Cancer Institute
- 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

2024-25

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

2023-24

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

2022-23

- Evolution: BIO 85 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Tristram Dodge, Egor Lappo, Jay Yeam

Postdoctoral Faculty Sponsor

Stefan Bassler, Mark Bitter, Shreyas Gopalakrishnan, Alexandra Khristich, Jean Vila, Haiqing Xu

Doctoral Dissertation Advisor (AC)

Tatiana Bellagio, Sofia Beskid, Hannah Gellert, James Hemker, Nicholas Hoeffner, Jess Rhodes, Karen Shih, Alan Su, Sophie Walton

Doctoral Dissertation Co-Advisor (AC)

Olivia Ghosh, Victoria Grant, Christopher Kirby, Anastasia Lyulina, Shaili Mathur

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

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

Publications

PUBLICATIONS

- **Inactivation of CDKN2AARF Promotes p53-Independent Remodeling of the PDAC Tumor Microenvironment.** *Cancer research*
  Ferreira, S., Flowers, B. M., Choi, W. Y., Farina-Morillas, M., Gatto, A., Bhattacharyya, S., Boross, G., Hassan, G., Mulligan, A. S., Vogel, H., Wood, L. D., Weaver, V. M., Winslow, et al
  2026
- **Manual validation finds ultra-long-read sequencing best enables faithful, population-level structural variant calling in Drosophila melanogaster euchromatin with nanopore.** *G3 (Bethesda, Md.)*
  Hemker, J. A., Gellert, H. R., Smiley-Rhodes, J. A., Kim, B. Y., Petrov, D. A.
  2026
- **Integrating noninvasive genetics and SECR to estimate snow leopard population in Pakistan** *BIOLOGICAL CONSERVATION*
  Ahmad, S., Solari, K. A., Durbach, I., Ali, H., Hameed, S., Din, J., Asif, M., Petrov, D. A., Nawaz, M.
  2026; 315
- **EMBO Press co-evolves with molecular ecology and evolutionary biology.** *The EMBO journal*
  Moran, Y., Coelho, S. M., Ettema, T. J., Feschotte, C., Kaltenpoth, M., Khila, A., Laine, A. L., Liow, L. H., Petrov, D., Ramakrishnan, U., Sarkies, P., Srivastava, M., Voolstra, et al
  2026
- **Comparative gene annotation and orthology assignments across 301 species of Drosophilidae.** *PLoS biology*
  Dhakad, P., Kim, B. Y., Petrov, D. A., Obbard, D. J.
  2026; 24 (2): e3003663
- **Comparative gene annotation of 301 species of Drosophilidae.** *bioRxiv : the preprint server for biology*
  Dhakad, P., Kim, B., Petrov, D., Obbard, D. J.
  2026
- **Variation in the resource environment affects patterns of seasonal adaptation at phenotypic and genomic levels in Drosophila melanogaster.** *Evolution letters*
  Beltz, J. K., Bitter, M. C., Goldfischer, A., Petrov, D. A., Schmidt, P.
  2025; 9 (6): 663-674
- **Community coalescence reveals strong selection and coexistence within species in complex microbial communities.** *bioRxiv : the preprint server for biology*
  Walton, S. J., Xu, Q., Sharma, R., Gellert, H. R., Yeh, C. F., Cremer, J., Xue, K. S., Petrov, D. A., Good, B. H.
  2025
- **Aging represses oncogenic KRAS-driven lung tumorigenesis and alters tumor suppression.** *Nature aging*
  Shuldiner, E. G., Karmakar, S., Tsai, M. K., Hebert, J. D., Tang, Y. J., Andrejka, L., Robertson, M. R., Wang, M., Detrick, C. R., Cai, H., Tang, R., Kunder, C. A., Feldser, et al
  2025

- **Exceedingly low genetic diversity in snow leopards due to persistently small population size.** *Proceedings of the National Academy of Sciences of the United States of America*

  Solari, K. A., Morgan, S., Poyarkov, A. D., Weckworth, B., Samelius, G., Sharma, K., Ostrowski, S., Ramakrishnan, U., Kubanychbekov, Z., Kachel, S., Johansson, Ö., Lkhagvajav, P., Hemmingmoore, et al

  2025; 122 (41): e2502584122

- **An empirical long-term competition among natural yeast isolates reveals that short-term fitness largely but not entirely predicts long-term outcomes.** *bioRxiv : the preprint server for biology*

  Khristich, A. N., Ghosh, O. M., Vila, J. C., Mathur, S., Dutta, A., Garin, M., Schacherer, J., Petrov, D. A.

  2025

- **Inactivation of CDKN2A ^{ARF} promotes p53-independent remodeling of the PDAC tumor microenvironment**

  Ferreira, S., Flowers, B. M., Choi, W., Farina-Morillas, M., Gatto, A., Bhattacharyya, S., Boross, G., Hassan, G., Mulligan, A. S., Vogel, H., Wood, L. D., Weaver, V. M., Winslow, et al

  AMER ASSOC CANCER RESEARCH.2025

- **Functional mapping of epigenomic regulators uncovers coordinated tumor suppression by the HBO1 and MLL1 complexes.** *Cancer discovery*

  Tang, Y. J., Xu, H., Hughes, N. W., Ruiz, P., Kim, S. H., Shuldiner, E. G., Lopez, S. S., Hebert, J. D., Karmakar, S., Andrejka, L., Dolcen, D. N., Boross, G., Chu, et al

  2025

- **EML4-ALK variant-specific genetic interactions shape lung tumorigenesis.** *Cancer discovery*

  Diaz-Jimenez, A., Shuldiner, E. G., Somogyi, K., Shih, K., Gonzalez-Velasco, O., Najajreh, M., Kim, S., Akkas, F., Murray, C. W., Andrejka, L., Tsai, M. K., Brors, B., Hofmann, et al

  2025

- **Variation in the resource environment affects patterns of seasonal adaptation at phenotypic and genomic levels in Drosophila melanogaster** *EVOLUTION LETTERS*

  Beltz, J. K., Bitter, M., Goldfischer, A., Petrov, D. A., Schmidt, P.

  2025

- **Beneficial reversal of dominance maintains a large-effect resistance polymorphism under fluctuating insecticide selection.** *Nature ecology & evolution*

  Karageorgi, M., Lyulina, A. S., Bitter, M. C., Lappo, E., Greenblum, S. I., Mouza, Z. K., Tran, C. T., Huynh, A. V., Oken, H., Schmidt, P., Petrov, D. A.

  2025

- **Drosophila melanogaster pigmentation demonstrates adaptive phenotypic parallelism over multiple spatiotemporal scales.** *Evolution letters*

  Berardi, S., Rhodes, J. A., Berner, M. C., Greenblum, S. I., Bitter, M. C., Behrman, E. L., Betancourt, N. J., Bergland, A. O., Petrov, D. A., Rajpurohit, S., Schmidt, P.

  2025; 9 (4): 408-420

- **Footprints of Worldwide Adaptation in Structured Populations of Drosophila melanogaster Through the Expanded DEST 2.0 Genomic Resource.** *Molecular biology and evolution*

  Nunez, J. C., Coronado-Zamora, M., Gautier, M., Kapun, M., Steindl, S., Ometto, L., Hoedjes, K., Beets, J., Wiberg, R. A., Mazzeo, G. R., Bass, D. J., Radionov, D., Kozeretska, et al

  2025; 42 (8)

- **RIT1 Drives Oncogenic Transformation and is an Actionable Target in Lung Adenocarcinoma.** *Cancer research*

  Mozzarelli, A. M., Cuevas-Navarro, A., Shuldiner, E. G., Vega, M., Chatila, W. K., Xu, J., Walch, H. S., Niu, Y., Petrov, D. A., Schultz, N., Urisman, A., Rudin, C. M., Winslow, et al

  2025

- **Efficient and multiplexed somatic genome editing with Cas12a mice.** *Nature biomedical engineering*

  Hebert, J. D., Xu, H., Tang, Y. J., Ruiz, P. A., Detrick, C. R., Wang, J., Hughes, N. W., Donosa, O., Siah, V. P., Andrejka, L., Karmakar, S., Aboiralor, I., Tang, et al

  2025

- **Integrative multiomic approaches reveal ZMAT3 and p21 as conserved hubs in the p53 tumor suppression network.** *Cell death and differentiation*

  Boutelle, A. M., Mabene, A. R., Yao, D., Xu, H., Wang, M., Tang, Y. J., Lopez, S. S., Sinha, S., Demeter, J., Cheng, R., Benard, B. A., McCrea, E. M., Valente, et al

2025

- **Low-dimensional genotype-fitness mapping across divergent environments suggests a limiting functions model of fitness.** *bioRxiv : the preprint server for biology*
  Ghosh, O. M., Kinsler, G., Good, B. H., Petrov, D. A.
  2025

- **Drosophila melanogaster pigmentation demonstrates adaptive phenotypic parallelism over multiple spatiotemporal scales** *EVOLUTION LETTERS*
  Berardi, S., Rhodes, J. A., Berner, M., Greenblum, S., Bitter, M. C., Behrman, E. L., Betancourt, N. J., Bergland, A. O., Petrov, D. A., Rajpurohit, S., Schmidt, P.
  2025

- **Parameterizing Pantherinae: de novo mutation rate estimates from Panthera and Neofelis pedigrees.** *Genome biology and evolution*
  Armstrong, E. E., Carey, S. B., Harkess, A., Zenato Lazzari, G., Solari, K. A., Maldonado, J. E., Fleischer, R. C., Aziz, N., Walsh, P., Koepfli, K. P., Eizirik, E., Petrov, D. A., Campana, et al
  2025

- **Competition for shared resources increases dependence on initial population size during coalescence of gut microbial communities.** *Proceedings of the National Academy of Sciences of the United States of America*
  Goldman, D. A., Xue, K. S., Parrott, A. B., Lopez, J. A., Vila, J. C., Jeeda, R. R., Franzese, L. R., Porter, R. L., Gray, I. J., DeFelice, B. C., Petrov, D. A., Good, B. H., Relman, et al
  2025; 122 (11): e2322440122

- **Combinatorial in vivo genome editing identifies widespread epistasis and an accessible fitness landscape during lung tumorigenesis.** *Molecular biology and evolution*
  Hebert, J. D., Tang, Y. J., Szamecz, M., Andrejka, L., Lopez, S. S., Petrov, D. A., Boross, G., Winslow, M. M.
  2025

- **Next-Generation Snow Leopard Population Assessment Tool: Multiplex-PCR SNP Panel for Individual Identification From Faeces.** *Molecular ecology resources*
  Solari, K. A., Ahmad, S., Armstrong, E. E., Campana, M. G., Ali, H., Hameed, S., Ullah, J., Khan, B. U., Nawaz, M. A., Petrov, D. A.
  2025: e14074

- **A STAG2-PAXIP1/PAGR1 axis suppresses lung tumorigenesis.** *The Journal of experimental medicine*
  Ashkin, E. L., Tang, Y. J., Xu, H., Hung, K. L., Belk, J. A., Cai, H., Lopez, S. S., Dolcen, D. N., Hebert, J. D., Li, R., Ruiz, P. A., Keal, T., Andrejka, et al
  2025; 222 (1)

- **A high-resolution two-step evolution experiment in yeast reveals a shift from pleiotropic to modular adaptation.** *PLoS biology*
  Kinsler, G., Li, Y., Sherlock, G., Petrov, D. A.
  2024; 22 (12): e3002848

- **A Pipeline and Recommendations for Population and Individual Diagnostic SNP Selection in Non-Model Species.** *Molecular ecology resources*
  Armstrong, E. E., Li, C., Campana, M. G., Ferrari, T., Kelley, J. L., Petrov, D. A., Solari, K. A., Mooney, J. A.
  2024: e14048

- **Cancers adapt to their mutational load by buffering protein misfolding stress.** *eLife*
  Tilk, S., Frydman, J., Curtis, C., Petrov, D. A.
  2024; 12

- **Genomics of a sexually selected sperm ornament and female preference in Drosophila.** *Nature ecology & evolution*
  Syed, Z. A., Gomez, R. A., Borziak, K., Asif, A., Cong, A. S., O'Grady, P. M., Kim, B. Y., Suvorov, A., Petrov, D. A., Lüpold, S., Wengert, P., McDonough-Goldstein, C., Ahmed-Braimah, et al
  2024

- **Massively parallel experimental interrogation of natural variants in ancient signaling pathways reveals both purifying selection and local adaptation.** *bioRxiv : the preprint server for biology*
  Aguilar-Rodríguez, J., Vila, J., Chen, S. A., Razo-Mejia, M., Ghosh, O., Fraser, H. B., Jarosz, D. F., Petrov, D. A.
  2024

- **Unraveling the genomic diversity and admixture history of captive tigers in the United States.** *Proceedings of the National Academy of Sciences of the United States of America*
  Armstrong, E. E., Mooney, J. A., Solari, K. A., Kim, B. Y., Barsh, G. S., Grant, V. B., Greenbaum, G., Kaelin, C. B., Panchenko, K., Pickrell, J. K., Rosenberg, N., Ryder, O. A., Yokoyama, et al
  2024; 121 (39): e2402924121
- **Continuously fluctuating selection reveals fine granularity of adaptation.** *Nature*
  Bitter, M. C., Berardi, S., Oken, H., Huynh, A., Lappo, E., Schmidt, P., Petrov, D. A.
  2024
- **Improving the accuracy of bulk fitness assays by correcting barcode processing biases.** *Molecular biology and evolution*
  McGee, R. S., Kinsler, G., Petrov, D., Tikhonov, M.
  2024
- **Environmental memory alters the fitness effects of adaptive mutations in fluctuating environments.** *Nature ecology & evolution*
  Abreu, C. I., Mathur, S., Petrov, D. A.
  2024
- **Single-fly genome assemblies fill major phylogenomic gaps across the Drosophilidae Tree of Life.** *PLoS biology*
  Kim, B. Y., Gellert, H. R., Church, S. H., Suvorov, A., Anderson, S. S., Barmina, O., Beskid, S. G., Comeault, A. A., Crown, K. N., Diamond, S. E., Dorus, S., Fujichika, T., Hemker, et al
  2024; 22 (7): e3002697
- **Bayesian inference of relative fitness on high-throughput pooled competition assays.** *PLoS computational biology*
  Razo-Mejia, M., Mani, M., Petrov, D.
  2024; 20 (3): e1011937
- **Combinatorialin vivogenome editing identifies widespread epistasis during lung tumorigenesis.** *bioRxiv : the preprint server for biology*
  Hebert, J. D., Tang, Y. J., Andrejka, L., Lopez, S. S., Petrov, D. A., Boross, G., Winslow, M. M.
  2024
- **Competition for shared resources increases dependence on initial population size during coalescence of gut microbial communities.** *bioRxiv : the preprint server for biology*
  Goldman, D. A., Xue, K. S., Parrott, A. B., Jeeda, R. R., Franzese, L. R., Lopez, J. G., Vila, J. C., Petrov, D. A., Good, B. H., Relman, D. A., Huang, K. C.
  2023
- **Evolution of haploid and diploid populations reveals common, strong, and variable pleiotropic effects in non-home environments.** *eLife*
  Chen, V., Johnson, M. S., Hérissant, L., Humphrey, P. T., Yuan, D. C., Li, Y., Agarwala, A., Hoelscher, S. B., Petrov, D. A., Desai, M. M., Sherlock, G.
  2023; 12
- **Bayesian inference of relative fitness on high-throughput pooled competition assays.** *bioRxiv : the preprint server for biology*
  Razo-Mejia, M., Mani, M., Petrov, D.
  2023
- **Oncogenic context shapes the fitness landscape of tumor suppression.** *Nature communications*
  Blair, L. M., Juan, J. M., Sebastian, L., Tran, V. B., Nie, W., Wall, G. D., Gerceker, M., Lai, I. K., Apilado, E. A., Grenot, G., Amar, D., Foggetti, G., Do Carmo, et al
  2023; 14 (1): 6422
- **Single-fly assemblies fill major phylogenomic gaps across the Drosophilidae Tree of Life.** *bioRxiv : the preprint server for biology*
  Kim, B. Y., Gellert, H. R., Church, S. H., Suvorov, A., Anderson, S. S., Barmina, O., Beskid, S. G., Comeault, A. A., Crown, K. N., Diamond, S. E., Dorus, S., Fujichika, T., Hemker, et al
  2023
- **Prolonged delays in human microbiota transmission after a controlled antibiotic perturbation.** *bioRxiv : the preprint server for biology*
  Xue, K. S., Walton, S. J., Goldman, D. A., Morrison, M. L., Verster, A. J., Parrott, A. B., Yu, F. B., Neff, N. F., Rosenberg, N. A., Ross, B. D., Petrov, D. A., Huang, K. C., Good, et al
  2023

- **Strong environmental memory revealed by experimental evolution in static and fluctuating environments.** *bioRxiv : the preprint server for biology*
  Abreu, C. I., Mathur, S., Petrov, D. A.
  2023
- **Fully accessible fitness landscape of oncogene-negative lung adenocarcinoma.** *Proceedings of the National Academy of Sciences of the United States of America*
  Yousefi, M., Andrejka, L., Szamecz, M., Winslow, M. M., Petrov, D. A., Boross, G.
  2023; 120 (38): e2303224120
- **Author Correction: 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
  2023
- **In Vitro Reconstitution and Analysis of SARS-CoV-2/Host Protein-Protein Interactions.** *ACS omega*
  Moradi, S. V., Wu, Y., Walden, P., Cui, Z., Johnston, W. A., Petrov, D., Alexandrov, K.
  2023; 8 (28): 25009-25019
- **Extreme Sensitivity of Fitness to Environmental Conditions: Lessons from #1BigBatch.** *Journal of molecular evolution*
  Kinsler, G., Schmidlin, K., Newell, D., Eder, R., Apodaca, S., Lam, G., Petrov, D., Geiler-Samerotte, K.
  2023
- **Fully accessible fitness landscape of oncogene-negative lung adenocarcinoma.** *bioRxiv : the preprint server for biology*
  Yousefi, M., Andrejka, L., Winslow, M. M., Petrov, D. A., Boross, G.
  2023
- **Antigenic diversity in malaria parasites is maintained on extrachromosomal DNA.** *bioRxiv : the preprint server for biology*
  Ebel, E. R., Kim, B. Y., McDew-White, M., Egan, E. S., Anderson, T. J., Petrov, D. A.
  2023
- **A multiplexed in vivo approach to identify driver genes in small cell lung cancer.** *Cell reports*
  Lee, M. C., Cai, H., Murray, C. W., Li, C., Shue, Y. T., Andrejka, L., He, A. L., Holzem, A. M., Drainas, A. P., Ko, J. H., Coles, G. L., Kong, C., Zhu, et al
  2023; 42 (1): 111990
- **Multiplexed screens identify RAS paralogues HRAS and NRAS as suppressors of KRAS-driven lung cancer growth.** *Nature cell biology*
  Tang, R., Shuldiner, E. G., Kelly, M., Murray, C. W., Hebert, J. D., Andrejka, L., Tsai, M. K., Hughes, N. W., Parker, M. I., Cai, H., Li, Y. C., Wahl, G. M., Dunbrack, et al
  2023
- **Genome Report: Chromosome-level draft assemblies of the snow leopard, African leopard, and tiger (Panthera uncia, Panthera pardus pardus, and Panthera tigris).** *G3 (Bethesda, Md.)*
  Armstrong, E. E., Campana, M. G., Solari, K. A., Morgan, S. R., Ryder, O. A., Naude, V. N., Samelius, G., Sharma, K., Hadly, E. A., Petrov, D. A.
  2022
- **Most cancers carry a substantial deleterious load due to Hill-Robertson interference.** *eLife*
  Tilk, S., Tkachenko, S., Curtis, C., Petrov, D. A., McFarland, C. D.
  2022; 11
- **Dissecting the role of Stag2 in lung adenocarcinoma**
  Ashkin, E. L., Cai, H., Tang, Y. J., Li, C., Chew, S., Hung, K., Belk, J., Karmakar, S., Hebert, J., Yousefi, M., Swanton, C., Petrov, D. A., Winslow, et al
  AMER ASSOC CANCER RESEARCH.2022
- **A journey to deconvolute the multifaceted functions and context-dependency of cancer driver genes**
  Cai, H., Chew, S., Li, C., Murray, C. W., Andrejka, L., Hebert, J. D., Tsai, M. K., Tang, R., Hughes, N. W., Shuldiner, E. G., Ashkin, E. L., Lee, S. C., Yousefi, et al
  AMER ASSOC CANCER RESEARCH.2022
- **A quantitative in vivo pharmacogenomics platform uncovers biomarkers of therapy response**
  Rosen, M., Amar, D., Winters, I., Rizvi, H., Nie, W., Wall, G., Petrov, D., Winslow, M., Rudin, C., Juan, J.

AMER ASSOC CANCER RESEARCH.2022

- **Combinatorial Inactivation of Tumor Suppressors Efficiently Initiates Lung Adenocarcinoma with Therapeutic Vulnerabilities.** *Cancer research*
  Yousefi, M., Boross, G., Weiss, C., Murray, C. W., Hebert, J. D., Cai, H., Ashkin, E. L., Karmakar, S., Andrejka, L., Chen, L., Wang, M., Tsai, M. K., Lin, et al
  2022; 82 (8): 1589-1602

- **Direct observation of adaptive tracking on ecological time scales in Drosophila.** *Science (New York, N.Y.)*
  Rudman, S. M., Greenblum, S. I., Rajpurohit, S., Betancourt, N. J., Hanna, J., Tilk, S., Yokoyama, T., Petrov, D. A., Schmidt, P.
  2022; 375 (6586): eabj7484

- **Revisiting the malaria hypothesis: accounting for polygenicity and pleiotropy.** *Trends in parasitology*
  Ebel, E. R., Uricchio, L. H., Petrov, D. A., Egan, E. S.
  1800

- **Tumor suppressor pathways shape EGFR-driven lung tumor progression and response to treatment.** *Molecular & cellular oncology*
  Foggetti, G., Li, C., Cai, H., Petrov, D. A., Winslow, M. M., Politi, K.
  2022; 9 (1): 1994328

- **Tumor suppressor pathways shape EGFR-driven lung tumor progression and response to treatment** *MOLECULAR & CELLULAR ONCOLOGY*
  Foggetti, G., Li, C., Cai, H., Petrov, D. A., Winslow, M. M., Politi, K.
  2021

- **The Tetragnatha kauaiensis genome sheds light on the origins of genomic novelty in spiders.** *Genome biology and evolution*
  Cerca, J., Armstrong, E. E., Vizueta, J., Fernandez, R., Dimitrov, D., Petersen, B., Prost, S., Rozas, J., Petrov, D., Gillespie, R. G.
  2021

- **Common host variation drives malaria parasite fitness in healthy human red cells.** *eLife*
  Ebel, E. R., Kuypers, F. A., Lin, C., Petrov, D. A., Egan, E. S.
  2021; 10

- **Common host variation drives malaria parasite fitness in healthy human red cells** *ELIFE*
  Ebel, E. R., Kuypers, F. A., Lin, C., Petrov, D. A., Egan, E. S.
  2021; 10

- **Richard C. Lewontin (1929-2021).** *Science (New York, N.Y.)*
  Berry, A., Petrov, D. A.
  2021; 373 (6556): 745

- **Highly contiguous assemblies of 101 drosophilid genomes.** *eLife*
  Kim, B. Y., Wang, J., Miller, D. E., Barmina, O., Delaney, E. K., Thompson, A., Comeault, A. A., Peede, D., D'Agostino, E. R., Pelaez, J., Aguilar, J. M., Haji, D., Matsunaga, et al
  2021; 10

- **Quantitative in vivo analyses reveal a complex pharmacogenomic landscape in lung adenocarcinoma.** *Cancer research*
  Li, C., Lin, W., Rizvi, H., Cai, H., McFarland, C. D., Rogers, Z. N., Yousefi, M., Winters, I. P., Rudin, C. M., Petrov, D. A., Winslow, M. M.
  2021

- **Broad geographic sampling reveals the shared basis and environmental correlates of seasonal adaptation in Drosophila.** *eLife*
  Machado, H. E., Bergland, A., Taylor, R. W., Tilk, S., Behrman, E., Dyer, K., Fabian, D. K., Flatt, T., Gonzalez, J., Karasov, T. L., Kim, B. Y., Kozeretska, I., Lazzaro, et al
  2021; 10

- **Functional biology in its natural context: A search for emergent simplicity.** *eLife*
  Bergelson, J., Kreitman, M., Petrov, D. A., Sanchez, A., Tikhonov, M.
  2021; 10

- **The cis-regulatory effects of modern human-specific variants.** *eLife*
  Weiss, C. V., Harshman, L., Inoue, F., Fraser, H. B., Petrov, D. A., Ahituv, N., Gokhman, D.

2021; 10

- **The AMBRA1 E3 ligase adaptor regulates the stability of cyclinD.** *Nature*
  Chaikovsky, A. C., Li, C., Jeng, E. E., Loebell, S., Lee, M. C., Murray, C. W., Cheng, R., Demeter, J., Swaney, D. L., Chen, S., Newton, B. W., Johnson, J. R., Drainas, et al
  2021
- **Historical trends and new surveillance of Plasmodium falciparum drug resistance markers in Angola.** *Malaria journal*
  Ebel, E. R., Reis, F., Petrov, D. A., Beleza, S.
  2021; 20 (1): 175
- **Genetic determinants of EGFR-Driven Lung Cancer Growth and Therapeutic Response In Vivo.** *Cancer discovery*
  Foggetti, G., Li, C., Cai, H., Hellyer, J. A., Lin, W., Ayeni, D., Hastings, K., Choi, J., Wurtz, A., Andrejka, L., Maghini, D. G., Rashleigh, N., Levy, et al
  2021
- **Detection of hard and soft selective sweeps from Drosophila melanogaster population genomic data.** *PLoS genetics*
  Garud, N. R., Messer, P. W., Petrov, D. A.
  2021; 17 (2): e1009373
- **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
- **Widespread introgression across a phylogeny of 155 Drosophila genomes.** *Current biology : CB*
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