Edward Stallknecht Rice

Senior Research Scientist
Bond Life Sciences Center
University of Missouri

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Education

Doctor of Philosophy in Bioinformatics, University of California, Santa Cruz, June 2018
Adviser: Richard (Ed) Green, Department of Biomolecular Engineering
Dissertation title: "Long-range assembly and transcriptomics elucidate the regulatory architecture of three vertebrate genomes"

Bachelor of Arts in Computer Science, Brown University, May 2012
Academic/Research Adviser: Ben Raphael, Center for Computational Molecular Biology

Thomas Jefferson High School for Science and Technology, Alexandria, Virginia, June 2008
Senior research mentor: Alejandro Schaffer, National Center for Biotechnology Information

Research

June 2019 - present	Senior Research Scientist in lab of Prof. Wes Warren University of Missouri
August 2018 - May 2019	Postdoctoral Research Associate in lab of Prof. Jessica Petersen University of Nebraska - Lincoln
January 2014 - June 2018	Ph.D. student in lab of Prof. Richard (Ed) Green University of California, Santa Cruz
November 2013 - January 2014	Rotation student in lab of Prof. David Haussler, UC Santa Cruz
September - November 2013	Rotation student in lab of Prof. Josh Stuart, UC Santa Cruz
July 2012 - July 2013	Post-baccalaureate fellow in lab of Dr. Richa Agarwala National Center for Biotechnology Information
Summer 2009 - Spring 2012	Research assistant to Prof. Ben Raphael Brown University Center for Computational Molecular Biology
Summer 2007 - Spring 2008	Research assistant to Dr. Alejandro Schäffer National Center for Biotechnology Information
Summer 2006	Research assistant to Dr. Alejandro Schäffer

National Center for Biotechnology Information

Teaching

Teaching assistant for The Human Genome
UC Santa Cruz Dept. of Biomolecular Engineering; Spring 2017

Teaching assistant and guest lecturer, Technical Writing and Communication in Computer Science
UC Santa Cruz Dept. of Computer Science; Winter 2017

Teaching assistant and guest lecturer, Bioinformatics Models and Algorithms
UC Santa Cruz Dept. of Biomolecular Engineering; Fall 2016

Teaching assistant for The Human Genome
UC Santa Cruz Dept. of Biomolecular Engineering; Spring 2016

Teaching assistant for The Human Genome
UC Santa Cruz Dept. of Biomolecular Engineering; Winter 2016

Teaching assistant for The Human Genome
UC Santa Cruz Dept. of Biomolecular Engineering; Fall 2015

Head teaching assistant for Computational Molecular Biology
Brown University Department of Computer Science; Spring 2012

Head teaching assistant for Computational Molecular Biology
Brown University Department of Computer Science; Fall 2010

Awards

Horse Genome Coordinators' Travel Award, Plant and Animal Genome Conference, 2018
ARCS Foundation Scholarship, 2017-2018
Baskin Dissertation Year Fellowship, 2017-2018
Genome 10K Conference Presenter's Fellowship, 2015
UC Santa Cruz Chancellor's Fellowship, 2013
NIH Intramural Research Training Award, 2012
Karen T. Romer Undergraduate Teaching and Research Award, 2009

Publications

Rice, E. S., Koren, S., Rhie, A., Heaton, M. P., Kalbfleisch, T. S., Hardy, T., Hackett, P. H., Bickhart, D. M., Rosen, B. D., Vander Ley, B., Maurer, N. W., Green, R. E., Phillippy, A. M., Petersen, J. L., Smith, T. P. L. (in press). "Continuous chromosome-scale haplotypes assembled from a single interspecies F1 hybrid of yak and cattle." *GigaScience*.

Rice, E. S. & Green, R. E (2019). "New approaches for genome assembly and scaffolding." *Annual Review of Animal Biosciences*. 7, 17-40

Kalbfleisch, T.S.†, **Rice, E. S.†**, DePriest, Jr., M. S., Walenz, B. P., Hestand, M. S., Vermeesch, J. R., O'Connell, B.L, Fiddes, I. T., Vershinina, A. O., Saremi, N. F., Petersen, J. L., Finno, C. J., Bellone, R. R., McCue, M. E., Brooks, S. A., Bailey, E., Orlando, L., Green, R. E., Miller, D. C., Antczak, D. F., & MacLeod, J. N. (2018). "Improved reference genome for the domestic horse increases assembly contiguity and composition." *Communications Biology,* 1(1), 197.

Murray, G. G. R., Soares, A. E. R., Novak, B. J., Schaefer, N. K., Cahill, J. A., Baker, A. J, Demboski, J. R., Doll, A., Fonseca, R. R. D., Fulton, T. L., Gilbert, M. T. P., Heintzman, P. D., Letts, B., McIntosh, G., O'Connell, B., Peck, M., Pipes, M., **Rice, E. S.**, Santos, K. M., Sohrweide, A. G., Vohr, S. H., Corbett-Detig, R. B., Green, R. E., & Shapiro, B. (2017). "Natural selection shaped the rise and fall of passenger pigeon genomic diversity." *Science*, 358(6365), 951-954.

Rice, E. S., Kohno, S., St. John, J., Pham, S., Howard, J., Lareau, L. F., O'Connell, B. L., Hickey, G., Armstrong, J., Deran, A., Fiddes, I. T., Platt, R. N., Gresham, C., McCarthy, F., Kern, C., Haan, D., Phan, T., Schmidt, C., Sanford, J. R., Ray, D. A., Paten, B., Guillette, L. J. & Green, R.E. (2017). "Improved genome assembly of American alligator genome reveals conserved architecture of estrogen signaling." *Genome Research*, 27(5), 686-696.

Raudsepp, T., Gustafson-Seabury, A., Durkin, K., Wagner, M. L., Goh, G., Seabury, C. M., Brinkmeyer-Langford, C., Lee, E. J., Agarwala, R., **Rice, E. S.**, Schäffer, A. A., Skow, L. C., Tozaki, T., Yasue, H., Penedo, M. C., Lyons, L. A., Khazanehdari, K. A., Binns, M. M., MacLeod, J. N., Distl, O., Guérin, G., Leeb, T., Mickelson, J. R., & Chowdhary, B. P. (2008). "A 4,103 marker integrated physical and comparative map of the horse genome." *Cytogenetic and Genome Research*, 122(1), 28-36.

Schäffer, A. A., **Rice, E. S.**, Cook, W., & Agarwala, R. (2007). "rh_tsp_map 3.0: end-to-end radiation hybrid mapping with improved speed and quality control." *Bioinformatics*, 23(9), 1156-1158.

† These authors contributed equally to this work.

Presentations

"Chromosome-Length Haplotigs for Cattle and Yak from Trio Binning Assembly of an F1 Hybrid" (talk)
Advances in Genome Biology and Technology, 2019

"Chromosome-Length Haplotigs for Cattle and Yak from Trio Binning Assembly of an F1 Hybrid" (talk)
Plant and Animal Genome Conference, 2019

"EquCab3: A New Horse Reference Genome Assembled Using First-, Second-, and Third-Generation

Sequencing Data" (talk and poster)
Plant and Animal Genome Conference, 2018

"Sex-biased genes and temperature-dependent sex determination in the American alligator." (poster)
Genome 10K Conference, 2015

Skills

Programming experience in Python, Ruby, R, Java, C/C++, Rust, Perl (github.com/esrice)
Proficient with Unix environments and standard bioinformatics databases, file formats, and software

Volunteering

Naturalist Docent, Natural Bridges State Beach, June 2014 - present
County Correctional Facility outreach program, Santa Cruz Public Library, October 2018 - present