

# Elena Yavorska Harris

PHONE: +1(760) 948-5939

E-MAIL: [elenayharris@gmail.com](mailto:elenayharris@gmail.com)

URL: <http://www.cs.ucr.edu/~elenah>

RESEARCH INTERESTS      Bioinformatics, Algorithms, Machine Learning, Data mining

EDUCATION

- **University of California, Riverside, CA.**  
*Doctor of Philosophy, Computer Science, 2005-2010.*
- **California State University, San Bernardino, CA.**  
*Master of Arts, Mathematics, 2003-2005.*
- **California State University, San Bernardino, CA.**  
*Master of Science, Computer Science, 2000-2003.*
- **Odessa Polytechnic State University, Ukraine.**  
*Bachelor of Science, Nuclear Engineering, 1983-1988.*

PROFESSIONAL EXPERIENCE

August 2019 – present: Associate Professor, Computer Science Department, California State University, Chico.

August 2013 – 2019: Assistant Professor, Computer Science Department, California State University, Chico.

March 2012 – June 2013: Temporary Faculty, Computer Science Department and Engineering Technology Department, Cal Poly Pomona

August 2011 – July 2013: Visiting postdoc, Algorithms and Computational Biology Lab, Computer Science Department, University of California, Riverside.

July 2010 – July 2011: Research Associate, Molecular and Computational Biology section, Division of Biological Sciences, University of Southern California.

January 2008 – June 2010: Graduate Research Assistant, Department of Computer Science and Engineering, University of California, Riverside.

September – December 2007: Associate Instructor, Department of Computer Science and Engineering, University of California, Riverside.

May – June 2007: Associate Instructor, Department of Computer Science and Engineering, University of California, Riverside.

[J10] A. Berrun, **E. Harris**, D. L. Stachura, “*Isthmin 1 (ism1)* is required for normal hematopoiesis in developing zebrafish”, *PLoS ONE* 13(5): e0196872, May 14 2018. (Impact factor: 2.806)

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0196872>

[J9] **Elena Y. Harris**, Rachid Ounit, and Stefano Lonardi, “BRAT-nova: Fast and accurate mapping of bisulfite-treated reads”, *Bioinformatics*, 32 (17), pp. 2696-2698, 2016.

DOI: 10.1093/bioinformatics/btw226 (Impact factor: 5.766)

<http://bioinformatics.oxfordjournals.org/content/32/17/2696>

[J8] C. Campbell, T. Su, R. P. Lau, A. Shah, P. C. Laurie, B. Avalos, J. Aggio, **E. Harris**, D. Traver, D. L. Stachura, “Zebrafish embryonic stromal trunk (ZEST) cells support hematopoietic stem and progenitor cell (HSPC) proliferation, survival, and differentiation”, *Experimental Hematology*, pii: S0301-472X(15)00662-1, 2015.

DOI: 10.1016/j.exphem.2015.09.001 (Impact factor: 2.475)

<http://www.ncbi.nlm.nih.gov/pubmed/26391449>

[J7] N. Pons, L. Fu, **E. Y. Harris**, J. Zhang, D. Chung, M. Cervantes, J. Prudhomme, V. Atanasova-Penichon, E. Zehraoui, E. Bunnik, E. Rodrigues, S. Lonardi, G. Hicks, Y. Wang and K. Le Roch, “Genome-wide mapping of DNA methylation in the human malaria parasite *Plasmodium falciparum*”, *Cell Host & Microbe*, 14(6), pp. 696-706, 2013.

DOI:10.1016/j.chom.2013.11.007. (Impact factor: 12.609)

<http://www.sciencedirect.com/science/article/pii/S1931312813004083>

[J6] C.O. dos Santos, C. Rebbeck, E. Rozhkova, A. Valentine, A. Samuels, L.R. Kadiri, P. Osten, **E.Y. Harris**, P. J. Uren, A. D. Smith and G. J. Hannon, “Molecular hierarchy of mammary differentiation yields refined markers of mammary stem cells”, *PNAS*, 2013.

DOI:10.1073/pnas.1303919110. (Impact factor: 9.737)

<http://www.pnas.org/content/early/2013/04/10/1303919110.abstract>

[J5] **E. Y. Harris**, N. Pons, K. Le Roch and S. Lonardi, “BRAT-BW: efficient and accurate mapping of bisulfite-treated reads”, *Bioinformatics*, 28(13), pp. 1795-1796, 2012.

DOI:10.1093/bioinformatics/bts264. (Impact factor: 5.468)

<http://bioinformatics.oxfordjournals.org/content/28/13/1795.abstract>

[J4] **E. Y. Harris**, N. Pons, K. G. Le Roch, S. Lonardi, “Chromatin-driven *de novo* discovery of DNA binding motifs in the human malaria parasite.” *BMC Bioinformatics*, 12:601, 2011.

DOI:10.1186/1471-2164-12-601. (Impact factor: 4.4).

<http://www.biomedcentral.com/1471-2164/12/601/abstract>

[J3] N. Pons\*, **E. Y. Harris\***, J. Prudhomme, I. Wick, C. Eckhardt, G. Hicks, G. Hardiman, S. Lonardi, and K. Le Roch, “Nucleosome landscape and control of transcription in the human malaria parasite”, *Genome Research*, 20, pp. 228-238, 2010. DOI:10.1101/gr.101063.109. (Impact factor: 13.608).

<http://bioinformatics.oxfordjournals.org/cgi/content/abstract/btp706?>

[J2] N. Pons, **E. Y. Harris**, S. Lonardi, K. G. Le Roch, “Nucleosome occupancy at transcription start sites in the human malaria parasite: A hard-wired evolution of

virulence?" *Infection, Genetics and Evolution*, 11(4), pp. 716-724, 2010.  
DOI:10.1016/j.meegid.2010.08.002. (Impact factor: 3.166).  
<http://linkinghub.elsevier.com/retrieve/pii/S1567134810002145>

[J1] **E. Y. Harris**, N. Ponts, A. Levchuk, K. Le Roch and S. Lonardi, "BRAT: Bisulfite-treated Reads Analysis Tool", *Bioinformatics*, 26(4), pp. 572-573, 2009.  
DOI:10.1093/bioinformatics/btp706. (Impact factor: 5.468)  
<http://genome.cshlp.org/content/early/2010/01/05/gr.101063.109.abstract?cited-egid=gby=yes&lenome;gr.101063.109v1>

PEER  
REVIEWED  
CONFERENCE  
PAPERS

[C6] Hassan Aldarwish, David Keller, **Elena Y. Harris**, "Identifying DNA Sequence Motifs of Pdx-1 and NeuroD1 Transcription Factors." BICOB 2019 – 11th International Conference on Bioinformatics and Computational Biology. Honolulu, HI, March 2019. Proceedings. (Acceptance Rate: NA).  
<https://easychair.org/publications/paper/W7XF>

[C5] **Elena Y. Harris**, "Practical Space-efficient Linear Time Construction of FM-index for Large Genomes." BICOB 2018 – 10th International Conference on Bioinformatics and Computational Biology. Las Vegas, CA, March 2019. Proceedings, vol 60, pages 27-35.  
ISBN: 978-1-943436-11-8. (Acceptance Rate: NA).  
<https://www.searchdl.org/PagesPublic/ConfDetails.aspx?ConfID=7f98a920-fa57-e811-80d2-0cc47a83fb77>

[C4] **Elena Y. Harris**, David Keller, David Stachura, Gordon Wolfe, "Bioinformatics Sister Courses - An Interdisciplinary Collaborative: Learning Framework to Teach Bioinformatics." CSCI-ISED 2016 – The 2016 International Symposium on Education. Las Vegas, CA, December 2016, Proceedings.  
(Acceptance Rate: 26%).  
<http://americancse.org/events/csci2016/Symposiums/csci-ised>

[C3] N. Pokhriyal, N. Ponts, **E. Y. Harris**, K. G. Le Roch, S. Lonardi, "Novel Gene Discovery in the Human Malaria Parasite using Nucleosome Positioning Data." CSB 2010 - Computational Systems Bioinformatics Conference, pp. 124-135, Stanford, CA, 2010, Proceedings.  
(Acceptance Rate: 27%).  
<http://www.lifesciencessociety.org/CSB2010/toc/124.2010.html>

[C2] E. B. Fernandez, **E. Harris**, W. Najjar, S. Lonardi, "Exploration of short reads mapping in hardware." FPL 2010 - International Conference on Field Programmable Logic and Applications, pp. 360-363, Milano, Italy, 2010. Proceedings.  
<http://www.lifesciencessociety.org/CSB2010/toc/>

[C1] **E. Y. Harris**, T. Lecroq, G. Kucherov and S. Lonardi, "CPM's 20th Anniversary: A Statistical Retrospective." CPM 2009 - Annual Symposium on Combinatorial Pattern Matching, pp.1-11, Lille, France, 2009, Proceedings.  
(Acceptance Rate: 42.9%).  
<http://www.springerlink.com/content/dj5211416833017g/>

OTHER  
PUBLICATIONS

[1] **Elena Harris** and Stefano Lonardi, "Analysis of genome-scale DNA methylation sequencing data." Chapter 10 the Wiley Book "Computational Methods for Next Generation Sequencing Data Analysis", pp. 227-244, October 2016.  
ISBN: 978-1-118-16948-3  
<http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118169484.html>

CONFERENCE  
TALKS AND  
SEMINARS

[C4] CSCI-ISED, International Conference on Education. 15-17 December, 2016, Las Vegas, CA.

<http://americancse.org/events/CSCI2016/Symposiums/csci-ised>

[C3] "Next generation sequencing for solving biological problems." Biological Sciences Seminars, 31 January, 2014, Cal State University, Chico, CA.

<http://rce.csuchico.edu/professional-development/connect-learn-engage/forums/biological-sciences>

[C2] "Analysis of high-resolution and genome-scale DNA methylation data." X-Gen Congress & Expo, 14-18 March, 2011, San Diego, CA.

[C1] "Novel Gene Discovery in the Human Malaria Parasite using Nucleosome Positioning Data." CSB 2010 - Computational Systems Bioinformatics Conference, 16-18 August, 2010, Stanford, CA.

CONFERENCE,  
WORKSHOPS,  
AND  
CONTESTS  
ATTENDED

[C4] NGS Data Analysis and Informatics Conference, 18-19 February, 2016, San Diego, CA.

[C3] ACM Pacific Northwest Regional Programming Contest, November 2016, Berkeley, CA.

[C2] 26<sup>th</sup> Annual CSU Biotechnology Symposium, 9-11 January, 2014, Santa Clara, CA.

[C1] ACM Pacific Northwest Regional Programming Contest, November 2013, Santa Cruz, CA.

UNIVERSITY  
COURSES  
TAUGHT AT  
CSU, CHICO

[13] Numerical and Parallel Programming, CSCI-551

[12] Design and Analysis of Algorithms, CSCI-550

[11] Algorithms and Data Structures, CSCI-311

[10] Programming and Algorithms II, CSCI-211

[9] Programming and Algorithms I, CSCI-111

[8] Conquering Coding Interviews, CSCI-398

[7] Foundations of Computing, CSCI-217

[6] Bioinformatics, CSCI-582 (new course)

- [5] Advanced Topics in Computer Science, Bioinformatics, CSCI-598
- [4] Theory of Computation, CSCI-550
- [3] Artificial Intelligence, CSCI-580
- [2] Research Methods, CSCI-693 (graduate)
- [1] Design and Analysis of Algorithms, CSCI-650 (graduate)

GRANTS

[G6] Co-PI: “Coding Community: Inclusive Space for Programming Tutorials and Adaptive Learning.”

California Education Learning Lab

Amount Requested: \$100,000.00

Submitted: January 2019

Funded.

[G5] Senior/Key Personnel: “Genetic Control of Hematopoietic Progenitor Cell Generation and Differentiation”

National Institutes of Health

Amount Requested: \$414,540.00

Submitted: 10/24/2016

Funded.

[G4] Internal RSCA grant.

California State University, Chico

Amount Requested: \$6,000.00

Submitted: 04/2017

Funded.

[G3] Co-PI: “Acquiring a Fluorescence-Activated Cell Sorter (FACS) to Enhance High-Impact Learning”

NSF Major Research Instrumentation (MRI)

Amount Requested: \$544,343

Submitted: 01/22/2016

Funded.

[G2] Co-PI: “Acquiring a Fluorescence-Activated Cell Sorter (FACS) to Enhance High-Impact Learning”

NSF Major Research Instrumentation (MRI)

Amount Requested: \$544,343

Time frame: 07/1/15-06/30/16

Not funded. Rated “Highly Meritorious” (one step away from the fundable “Outstanding” ranking)

[G1] PI: “Educational Teaching Grant”

AWS

Amount Requested: \$2100

Time frame: 1/20/15-7/20/15

Funded

SERVICE  
ACTIVITIES

- University Lantis Award Committee 2018/19, 2019/20
- University Scholarship Committee 2019-2020
- ECC college the Dean Search Committee 2019-2020
- Department Hiring Committee 2019-2020
- Department RTP Committee (Chair) 2019-2020
- Department Curriculum Committee 2019-2020
- Department Chair Selection Committee 2019-2020
- Faculty Recognition and Support Committee, 2017-2018, 2018-2019
- Hiring Committee, 2017-2018, 2018-2019
- Curriculum Committee, 2016-2017, 2017-2018, 2018-2019
- Hiring Committee, Fall 2016
- ACM club co-advisor, 2016-2017
- Marshall of Master's Commencement Ceremony , Spring 2016
- Department Chair Selection Committee, Spring 2016
- Hiring Committee, Spring 2016
- ACM club co-advisor, 2015-2016
- ECC Scholarship Committee, 2015-2016
- Marshall of Master's Commencement Ceremony , Spring 2015
- Marshall of College of ECC Graduation Ceremony, Spring 2015
- Department Curriculum Committee, 2013-present
- Academic Advising, 2013-present
- CSU Chico Department of Computer Science Industry Advisory Board. Participated in the meeting in 2013, 2014, and 2015
- Participated in the Bioinformatics Cohort meetings, 2014-2015

PROFESSIONAL  
REVIEWER

- NSF Information & Intelligent Systems Division, panel grant reviewer (2017)
- NSF HBCU-UP RIA, grant reviewer (2016)
- BMC Bioinformatics (2015, 2016)
- Bioinformatics (2014, 2018, 2020)
- Nucleic Acid Research (2013, 2018, 2019)
- Human Mutation (2013)
- Asia Pacific Bioinformatics Conference (APBC 2013)
- Conference on Research in Computational Molecular Biology (RECOMB 2013)
- ACM SIGKDD conference on Knowledge Discovery and Data Mining (KDD 2012)

- International conference on Intelligent Systems for Molecular Biology (ISMB 2012)
- IEEE International conference on Bioinformatics and Bioengineering (BIBE 2010)
- BMC Bioinformatics (2009, 2010, 2012)
- Transactions on Knowledge and Data Engineering (2009)
- International Symposium on Bioinformatics Research and Applications (ISBRA 2009)
- Combinatorial Pattern Matching (CPM 2008)
- SIAM Data Mining (SDM 2008)
- IEEE International Conference on Data Mining (ICDM 2008)
- Workshop on Algorithms in Bioinformatics (WABI 2008, 2009)
- Computational Systems Bioinformatics (CSB 2008)