

Curriculum Vitae

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ACADEMIC & PROFESSIONAL POSITIONS

2015 -	Senior Investigator (with tenure)	National Institutes of Health (NIH), NIEHS, Epigenetics & Stem Cell Biology Laboratory, Research Triangle Park, NC.
2009 - 2015	Investigator (tenure-track)	National Institutes of Health (NIH), NIEHS, Epigenetics & Stem Cell Biology Laboratory, Research Triangle Park, NC
2007 - 2009	Research Fellow	National Institutes of Health (NIH), NHLBI, Laboratory of Molecular Immunology, Bethesda, MD (Mentor: Keji Zhao)
2004 - 2007	Research Associate	National Institutes of Health (NIH), NCBI/NLM, Computational Biology Branch, Bethesda, MD (Mentor: Teresa Przytycka)
2001 - 2004	Research Assistant	University of Texas at Dallas, Department of Computer Science, Richardson, TX
2000 - 2001	Software Engineer	Westwave Communications (acquired by Alcatel), Richardson, TX
1998 - 1999	Database Engineer	P'Four Software and Marketing Services, Chennai, India

HONORS AND AWARDS

2019	Paper of the Year Award, NIEHS, NIH
2018	Khairallah Lecture, University of Connecticut
2018	NIH Director's Seminar Series Lecture
2017	NIH Award of Merit
2017	Paper of the Year Award, NIEHS, NIH
2016	Ruth L. Kirschstein Mentoring Award, NIH
2014	Paper of the Year Award, NIEHS, NIH
2009	Early Career "Rising Star" Award, NIEHS, NIH

EDUCATION

- 2001 - 2004 **Ph.D., Computer Science**, University of Texas at Dallas, Richardson, Texas, USA
2000 **M.S., Computer Science**, University of Texas at Dallas, Richardson, Texas, USA
1994 - 1998 **B.E., Computer Science & Engineering**, University of Madras, Chennai, India

PROFESSIONAL SERVICES

NIEHS Institutional Service

- 2022 - Co-Chair, Diversity Equity Inclusion & Accessibility Working Group, DIR, NIEHS
2022 Chair, 2022 DIR Retreat Planning Committee
2020 - 2021 President, Assembly of Scientists, NIEHS
2021 - 2022 Search Committee for Tenure-Track Investigator in Biostatistics and Computational Biology Branch, NIEHS
2021 Organizer, Epigenetics & Stem Cell Biology Laboratory Retreat, NIEHS
2020 Search Committee for Assistant Scientific Director, DIR, NIEHS
2020 Search Committee for the Chief of Comparative Medicine Branch, NIEHS
2020 Subject Matter Expert, Search for Computer Scientist (Data Architect), Office of Data Science, NTP, NIEHS
2018 - 2019 Chair, Search Committee for Staff Scientist, Stem Cell Biology, ESCBL, NIEHS
2018 - 2019 Search Committee for Staff Scientist, Structural Cell Biology, GISBL, NIEHS
2018 Selection Committee for the NIEHS Fellow of the Year Award
2018 Search Committee for GISBL Structural Cell Biology Staff Scientist, NIEHS2017 - Elected Councilor, Assembly of Scientists, NIEHS, NIH
2017 - 2018 Elected Councilor, Assembly of Scientists, NIEHS
2017 Search Committee for Tenure-Track Investigator in Transcription, Epigenetics, or Chromatin Biology, NIEHS
2017 Search Committee for Biostatistics Staff Scientist, NIEHS
2017 Organizer, Epigenetics & Stem Cell Biology Laboratory Retreat, NIEHS
2016 - Oversight Committee for the Viral Vector Core, NIEHS
2016 Organizing Committee, Division of Intramural Research Retreat, NIEHS
2016 Organizer, Epigenetics & Stem Cell Biology Laboratory Retreat, NIEHS
2015 - 2018 IT Management Committee, NIEHS
2015 - 2017 Committee on Promotions IV to review appointment, tier advancement, and renewal requests of Title 42 Staff Scientists, NIEHS, NIH
2013 - 2014 Search Committee for Tenure-Track/Tenure-Eligible Investigator in Biostatistics/Computational Biology, NIEHS, NIH
2014 Organizer, Laboratory of Molecular Carcinogenesis Retreat

- 2013 - 2015 Member, NIEHS Scientific Director's DIR General Council
- 2012 Stem Cells Committee, NIEHS Cross-Divisional Strategic Plan Implementation
- 2012 Epigenetics Committee, NIEHS Cross-Divisional Strategic Plan Implementation
- 2009 - 2013 Review Committee, Next Generation Sequencing Projects, NIEHS, NIH
- 2009 - 2010 Search Committee for Bioinformatics Staff Scientist, NIEHS, NIH

NIH Institutional Service

- 2021 - 2022 Co-Chair, Search Committee for NIH Earl Stadtman Investigator in Chromosome Biology/Epigenetics/Transcription
- 2020 - 2021 Search Committee for NIH Earl Stadtman Investigator in Chromosome Biology/Epigenetics/Transcription
- 2017 - 2018 Search Committee for NIH Earl Stadtman Investigator in Chromosome Biology/Epigenetics/Transcription
- 2017 Review Panel, NIDDK/NIDDK Joint Fellowship Program
- 2016 - 2017 Search Committee for NIH Earl Stadtman Investigator in Chromosome Biology/Epigenetics/Transcription
- 2015 - 2016 Search Committee for NIH Earl Stadtman Investigator in Chromosome Biology/Epigenetics/Transcription
- 2013 - 2014 Search Committee for NIH Earl Stadtman Investigator in Stem Cells
- 2014 Review panel, NIH Fellows Award for Research Excellence
- 2012 - 2013 Search Committee for NIH Earl Stadtman Investigator in Stem Cells
- 2013 Review panel, NIH Fellows Award for Research Excellence
- 2012 Review panel, NIH Fellows Award for Research Excellence
- 2011 Review panel, NIH Fellows Award for Research Excellence
- 2010 Review panel, applications for the NIH National Graduate Student Research Festival
- 2010 Review panel, NIH Fellows Award for Research Excellence

Conference/Symposium Organizing Committee

- 2017 Organizing Committee - NIEHS/NIH Symposium on Epigenetics & Stem Cells, RTP, NC, June 1-2, 2017
- 2015 Program Committee - International Conference on Bioinformatics and Biomedicine (BIBM), Washington DC, Nov 9-12, 2015.
- 2014 Program Committee - International Symposium on Network Enabled Health Informatics, Biomedicine and Bioinformatics, Beijing, China, Aug 18-19, 2014.
- 2013 Program Committee - Workshop on Epigenomics and Cell Function, ACM Conference on Bioinformatics, Computational Biology and Biomedical Informatics, Washington D.C., Sep 22-25, 2013.

- 2013 Program Committee - International Symposium on Network Enabled Health Informatics, Biomedicine and Bioinformatics, Niagara Falls, Canada, Aug 25-28, 2013.
- 2013 Co-chair - NIEHS/NIH Symposium on Unlocking the Promise of Stem Cells, RTP, NC, April 11-12, 2013.
- 2012 Organizing Committee - Toxicology 2012, San Antonio, TX, Sep 17-19 2012.
- 2012 Program Committee - International Symposium on Network Enabled Health Informatics, Biomedicine and Bioinformatics Istanbul, Turkey, Aug 2012.
- 2011 Workshop Co-chair - IEEE International Conference on Computational Advances in Bio and medical Sciences, Orlando, FL, Feb 2011
- 2010 Co-chair - Symposium on "Epigenetics, Chromatin, and Gene Regulation", NIH Research Festival, Bethesda, MD, Oct 2010.
- 2010 Program Committee - ACM International Conference on Bioinformatics and Computational Biology (ACM-BCB), Niagara Falls, NY, Aug 2-4, 2010
- 2010 Program Committee - The 8th International Bioinformatics Workshop (IBW), Wuhan, China, June 4-6, 2010
- 2009 Chair - Symposium on "Epigenetics, Chromatin, and Gene Regulation", NIH Research Festival, Bethesda, MD, Oct 2009.
- 2009 Program Committee - The IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Washington DC, Nov 1-4, 2009
- 2008 Vice-chair - The IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Philadelphia, PA, Nov 7-9, 2008.
- 2007 Program Committee - 15th Annual International Conference on Intelligent Systems for Molecular Biology (ISMB) & 6th European Conference on Computational Biology (ECCB), Vienna, Austria, Jul 21-25, 2007.
- 2007 Program Committee - The IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Silicon Valley, CA, Nov 2-4, 2007.
- 2004 Session Chair, 7th INFORMS Telecommunications Conference, Boca Raton, FL, 2004.
- 2004 Session Chair, 3rd IEEE International Conference on Networking, 2004.
- 2003 Session Chair, 15th IASTED International Conference on Parallel and Distributed Computing and Systems, Las Vegas, NV, 2003.

Ad-hoc Reviewer

- Grants** Wellcome Trust
The Biotechnology and Biological Sciences Research Council (BBSRC) – UK
- Journals** *Nature Genetics*
Nature Communications
Nature Methods
Nature Protocols
PNAS
Science Advances
Cell Reports
Cell Systems

Genome Research
Genome Biology
Nucleic Acids Research
eLife
Bioinformatics
Trends in Genetics
PLoS Genetics
PLoS Computational Biology
PLoS ONE
Molecular Biology and Evolution
Stem Cells and Development
Proteins
Oncotarget
Molecular Biosystems
BMC Bioinformatics
BMC Genomics
BMC Systems Biology
Toxicological Sciences
Toxicology and Applied Pharmacology
IEEE/ACM Transactions on Computational Biology and Bioinformatics
IEEE Transactions on NanoBioscience
Pattern Recognition Letters
Discrete and Computational Geometry
Networks
Journal of Graph Algorithms and Applications

Journal Editorial Board

2011 - Frontiers in Bioinformatics and Computational Biology
2010 – 2017 PLoS ONE

INVITED TALKS

Mar 2020 **Keystone Symposium on Systems Biology: Global Regulation of Gene Expression**, NY – Bivalent chromatin does not poise genes for rapid activation
Jan 2020 **Keystone Symposium on Chromatin and Epigenetics**, Keystone, CO – Bivalent chromatin does not poise genes for rapid activation
Nov 2019 **Society for Scientific Advancement**, 8th Annual Conference, Kingston, Jamaica – Transcriptional and epigenetic control of cell fate decisions
Nov 2019 **North Carolina State University**, NC – Uncovering unknown unknowns of gene regulation
Nov 2018 **Wake Forest University**, NC – Uncovering unknown unknowns of gene regulation

- Oct 2018 **Khairallah Lecture, University of Connecticut, CT** – Uncovering unknown unknowns of gene regulation
- Sep 2018 **CSHL Meeting on Meeting on Epigenetics & Chromatin, NY** – Crm1 promotes the formation of broad H3K27me3 repressive domains at developmental genes (presenter: Conway AE)
- May 2018 **CSHL Meeting on Nuclear Organization & Function, NY** – Crm1 promotes the formation of broad H3K27me3 repressive domains at developmental genes (presenter: Conway AE) Apr 2018 **NIH Director's Seminar Series Lecture, NIH, MD** – Uncovering unknown unknowns of Gene Regulation
- Oct 2017 **University of North Carolina, NC** – Uncovering unknown unknowns of Gene Regulation
- Oct 2017 **NCBI Retreat Keynote, NLM, NIH, MD** – Uncovering unknown unknowns of Gene Regulation
- Sep 2017 **CSHL Meeting on Mechanisms of Eukaryotic Transcription, NY** – Transcription at intragenic enhancers attenuate gene expression
- May 2016 **CSHL Meeting on Nuclear Organization & Function, NY** – A non-canonical role for nuclear export receptor CRM1 in developmental gene regulation (presenter: Conway AE)
- May 2016 **NAEHS Council Meeting, NIEHS, NIH, NC** –Why not to look under the lamppost?
- Mar 2016 **Keystone Symposium on Chromatin and Epigenetics, Whistler, Canada** – Transcription at intragenic enhancers attenuates gene expression.
- Mar 2015 **Symposium on Systems Biology of Stem Cells, Oberstdorf, Germany**– Gene networks controlling ES cell identity and homeostasis.
- Oct 2014 **Systems Biology Forum, NIH, Bethesda, MD** – Gene networks controlling embryonic stem cell identity and homeostasis.
- Sep 2014 **NHGRI, NIH, Bethesda, MD** – Gene networks controlling embryonic stem cell identity and homeostasis.
- Apr 2013 **Symposium on Unlocking the Promise of Stem Cells, RTP, NC** – ES cell identity and homeostasis.
- Sep 2012 **Genomics Day Lecture, NIEHS, NIH, RTP, NC** – Meta-analysis identifies determinants of embryonic stem cell identity.
- Aug 2012 **FASEB Meeting on Biological Methylation: From DNA and Histones to Disease, Snowmass, CO** – Tet1-dependent 5hmC is required for maintaining pluripotency.
- Oct 2011 **Laboratory of Toxicology and Pharmacology (LTP), NIEHS, NIH, RTP, NC** – Embryonic stem cells and gene regulation.
- Sep 2011 **Bertinoro Computational Biology Meeting on Computational Methods in Functional Genomics, Bertinoro, Italy** – Embryonic stem cells and gene regulation.

- Sep 2011 **Laboratory of Molecular Carcinogenesis (LMC), NIEHS, NIH, RTP, NC** – esBAF facilitates pluripotency by conditioning the genome for LIF/STAT3 signaling and by regulating Polycomb function.
- Apr 2011 **University of Texas at Dallas, Richardson, TX** – Embryonic stem cells and gene regulation.
- Mar 2011 **New York University, New York, NY** – Embryonic stem cells and gene regulation.
- Feb 2011 **University of Michigan, Ann Arbor, MI** - Embryonic stem cells and gene regulation.
- Oct 2010 **Duke University, Institute for Genome Sciences & Policy, Durham, NC** – Embryonic stem cells and gene regulation
- Oct 2010 **Symposium on Epigenetics, Chromatin, and Gene Regulation, Bethesda, MD** - esBAF conditions the pluripotent genome for LIF/STAT3 signaling by opposing polycomb
- Mar 2010 **Keystone Meeting** on Biomolecular Interaction Networks: Function and Disease, Quebec, Canada – Genomic analysis reveals a tight link between transcription factor dynamics and regulatory network architecture.
- Feb 2010 **North Carolina State University, Department of Environmental and Molecular Toxicology, Raleigh, NC** – Systems biology and epigenetics of gene regulation
- Dec 2009 **RECOMB Conference on Regulatory Genomics, Cambridge, MA** – Genomic analysis reveals a tight link between transcription factor dynamics and regulatory network architecture.
- Nov 2009 **Laboratory of Signal Transduction (LST), NIEHS, NIH, RTP, NC** – Seeing the forest for the trees: stories on Brg1 and CTCF.
- Nov 2009 **NIEHS Early Career Award Lecture, NIH, RTP, NC** – Seeing the forest for the trees: a systems level understanding of differential cell-fate outcome.
- Oct 2009 **Indian Institute of Technology, Chennai, India** – Systems biology and epigenetics of gene regulation.
- Oct 2009 **Center for Cellular and Molecular Biology (CCMB), Hyderabad, India** – Systems biology and epigenetics of gene regulation.
- Oct 2009 **Center for DNA Finger Printing and Diagnostics (CDFD), Hyderabad, India** – Systems biology and epigenetics of gene regulation.
- Oct 2009 **Indian Institute of Science, Bangalore, India** – Systems biology and epigenetics of gene regulation.
- Sep 2009 **Biostatistics Branch, NIEHS, NIH, RTP, NC** – Systems biology and epigenetics of gene regulation.
- Nov 2008 **RECOMB Conference on Regulatory Genomics, Cambridge, MA** – Genome-wide identification of in vivo protein-DNA binding sites from ChIP-Seq data.
- Jun 2008 **NIEHS, NIH, RTP, NC** – Chromatin modifications, gene expression, and regulatory networks.

- May 2008 **NCBI/NLM, NIH**, Bethesda, MD – Chromatin modifications, gene expression, and regulatory networks.
- Jan 2008 **Rutgers University**, Camden, NJ - Regulatory proteins within a hierarchical framework have distinct dynamic properties.
- Aug 2007 **Department of Defense Biotechnology HPC Software Applications Institute (BHS AI)**, Fort Detrick, Frederick, MD - Inferring protein and domain interactions using sequence co-evolution and combinatorial optimization approaches.
- May 2007 **NCBI/NLM, National Institutes of Health (NIH)**, Bethesda, MD - Inferring molecular interactions using sequence co-evolution and co-inheritance: biases, strengths and weaknesses
- Apr 2007 **George Mason University**, Fairfax, VA – Co-evolution (correlated mutations) as an indicator of protein and domain interactions.
- Mar 2007 **Philips Research**, Briarcliff Manor, NY– Co-evolution as an indicator of protein and domain interactions.
- Feb 2007 **University of Connecticut**, Storrs, CT – Co-evolution as an indicator of protein and domain interactions.
- Oct 2006 **9th Annual Computational Genomics Conference**, Baltimore, MD – Co-evolutionary analysis of domains in interacting proteins reveals insights into domain-domain interactions mediating protein-protein interactions.
- Sep 2005 **NCBI/NLM, National Institutes of Health (NIH)**, Bethesda, MD - A new phylogenetic approach to delineate orthologous groups
- Jun 2005 **International Conference on Intelligent Systems for Molecular Biology (ISMB)**, Detroit, MI –Predicting protein-protein interaction by searching evolutionary tree automorphism space.
- May 2005 **DIMACS Workshop on Biomolecular Networks: Topological Properties and Evolution**, Rutgers University, New Brunswick, NJ – An Evolution-Based Clustering Method to Separate Orthologous Genes from Out-Paralogs.
- Dec 2004 **University of Maryland**, College Park, MD – The effects of evolutionary tree topology on predicting protein interaction specificity.
- Dec 2004 **Georgetown University**, Washington D.C – The effects of evolutionary tree topology on predicting protein interaction specificity.
- Apr 2004 **NCBI/NLM, National Institutes of Health (NIH)**, Bethesda, MD – Protein folding in the Hydrophobic-Hydrophilic Model.
- Mar 2004 **7th INFORMS Telecommunications Conference**, Boca Raton, FL – Survivable Network design: the capacitated minimum spanning network problem.
- Nov 2003 **International Conference on Parallel and Distributed Computing and Systems**, Marina del Rey, CA – Design of local access networks.

- May 2003 **DIMACS Workshop on Geometric Optimization**, Rutgers University, New Brunswick, NJ – Leave no stones unturned: improved approximation algorithms for degree-bounded minimum spanning trees.
- Apr 2003 **University of Maryland**, College Park, MD – Approximation algorithms for capacitated minimum spanning tree problem and its variants in network design.
- Jan 2003 **14th ACM-SIAM Symposium on Discrete Algorithms**, Baltimore, MD – A 5/4-approximation algorithm for minimum 2-edge-connectivity.

MENTORING

Trainees

Name	Type	Duration	Current Position
Sailu Yellaboina*	Postdoctoral Fellow	2009 – 2011	Associate Professor (with tenure), All India Institute of Medical Sciences, Hyderabad, India
Johannes Freudenberg*	Postdoctoral Fellow	2010 – 2011	Director, Clinical Biomarker Analytics at GlaxoSmithKline, USA
Leelavati Narlikar*	Special Volunteer	2009 – 2013	Associate Professor and Deputy Chair, Indian Institute of Science Education and Research (IISER), Pune, India
Viju Mathew†	High School Student Summer Intern	2010, 2011	Software Engineer, Funding Circle US
Swati Ghosh*	Postdoctoral Fellow	2010 – 2012	Postdoctoral Fellow, University of Colorado, Denver
Pengyi Yang*	Postdoctoral Fellow	2013 – 2015	Associate Professor (with tenure), University of Sydney, Australia
Senthilkumar Cinghu*	Postdoctoral Fellow & Staff Scientist	2011 – 2021	Senior Scientist, Life Edit Therapeutics, NC, USA
Andrew Oldfield*	Postdoctoral Fellow	2012 – 2016	Staff Scientist (with tenure), CNRS, France
Rajneesh Pathania*	Postdoctoral Fellow	2015 – 2019	Veterinarian, Banfield Hospital, Greensboro, NC
Brian Deskin*	Postdoctoral Fellow	2016 – 2019	Assistant Professor, Tulane University, LA, USA
Wilfred Wong	Undergraduate Summer Intern	2018	Doctoral Student, Weill Cornell
Julie Dickerson	Undergraduate Summer Intern	2018, 2019	MD, PhD Student, Medical University of South Carolina
Amanda Conway*	Postdoctoral Fellow	2013 – 2020	Medical Writer & Consultant,

Dhirendra Kumar* Postdoctoral Fellow 2016 – 2020 Staff Scientist, NIEHS, USA
Megan Justice Postdoctoral Fellow 2021 –

*Recipient, NIH Fellows Award for Research Excellence (FARE)

† High school student; contributing author on a manuscript published in *Nucleic Acids Research* (2013), >100 citations

AWARDS/HONORS TO TRAINEES

- Dhirendra Kumar, Ph.D., Postdoctoral Fellow (2016 – 2020)
 - ✓ NIH Fellows Award for Research Excellence (2019-2020)
 - ✓ Winner, “Big Picture, Small Talk” competition, NIEHS (2018)
- Brian Deskin, Ph.D., Postdoctoral Fellow (2016 – 2019)
 - ✓ NIH Fellows Award for Research Excellence (2017-2018)
- Rajneesh Pathania, Ph.D., Postdoctoral Fellow (2015 - 2019)
 - ✓ NIH Fellows Award for Research Excellence (2016-2017)
 - ✓ NIEHS Science Day Best Poster Award (2017)
- Amanda Conway, Ph.D., Postdoctoral Fellow (2013 - 2020)
 - ✓ Oral Presentation, CSHL Meeting on Chromatin & Epigenetics (2018)
 - ✓ Oral Presentation, CSHL Meeting on Nuclear Function & Organization (2018)
 - ✓ NIGMS PRAT Fellowship (2014 - 2017)
 - ✓ NIH Fellows Award for Research Excellence (2017-2018)
 - ✓ Oral Presentation, CSHL Meeting on Nuclear Function & Organization (2016)
 - ✓ NIH Fellows Award for Research Excellence (2015-2016)
- Pengyi Yang, Ph.D., Postdoctoral Fellow, Ph.D., (2013 - present)
 - ✓ NIH Fellows Award for Research Excellence (2015-2016)
 - ✓ NIH Fellows Award for Research Excellence (2014-2015)
- Andrew Oldfield, Ph.D., Postdoctoral Fellow (2012 - 2016)
 - ✓ NIH Fellows Award for Research Excellence (2014-2015)
 - ✓ Intramural Research Paper of the Year (2014)
 - ✓ Best Scientific Presentation, LMC Retreat (2014)
 - ✓ Intramural Research Paper of the Month (Oct 2014)
- Senthilkumar Cinghu, Ph.D., Postdoctoral Fellow (2011 - 2016)
 - ✓ Intramural Research Paper of the Year (2017)
 - ✓ Intramural Research Paper of the Month (Dec 2017)
 - ✓ NIH Fellows Award for Research Excellence (2014-2015)
 - ✓ NIH Fellows Award for Research Excellence (2013-2014)
 - ✓ Intramural Research Paper of the Month (June 2014)
- Swati Ghosh, Ph.D., Postdoctoral Fellow (2010 - 2012)
 - ✓ NIH Fellows Award for Research Excellence (2012-2013)
- Johannes Freudenberg, Ph.D., Postdoctoral Fellow (2010 - 2011)
 - ✓ NIH Fellows Award for Research Excellence (2011-2012)

- ✓ Invited Oral Presentation, NIH Research Festival, Bethesda, MD (2011)
- ✓ Intramural Research Paper of the Month (June 2014)
- Leelavati Narlikar, Ph.D., Special Volunteer (2009 - 2013)
 - ✓ NIH Fellows Award for Research Excellence (2011-2012)
 - ✓ Wellcome Trust/DBT Early Career Fellowship (2012 - 2016)
 - ✓ Ramanujan Fellowship (2010 - 2011)
- Sailu Yellaboina, Ph.D., Postdoctoral Fellow (2009 - 2011)
 - ✓ NIH Fellows Award for Research Excellence (2010-2011)
 - ✓ Young Investigator Fellowship, IndiaBioScience.org (2011)
 - ✓ Invited Oral Presentation, NIH Research Festival, Bethesda, MD (2010)

PUBLICATIONS

Peer-Reviewed Articles (in reverse chronological order)

† Co-first author

* Corresponding/Co-corresponding author

1. Kumar D, Cinghu S, Oldfield AJ, Yang P, **Jothi R*** (2021). Decoding the function of bivalent chromatin in development and cancer. [Genome Research](#), 31:2170-2184. (4 citations)
2. Kim HJ, Osteil P, Humphrey SJ, Cinghu S, Oldfield AJ, Patrick E, Wilkie EE, Peng G, Suo S, **Jothi R**, Tam PPL, Yang P (2020). Transcriptional Network Dynamics During the Progression of Pluripotency Revealed by Integrative Statistical Learning. [Nucleic Acids Research](#), 48(4):1828-1842. (8 citations)
3. Oldfield AJ, Henriques T, Burkholder AB, Kumar D, Agirre E, Paulet D, Scruggs, BS, Lavender CA, Yang P, Bennett B, Adelman K, **Jothi R*** (2019). NF-Y controls fidelity of transcription initiation at gene promoters through maintenance of the nucleosome-depleted region. [Nature Communications](#), 10(1):3072. (23 citations)
 - Paper of the Year, NIEHS Intramural Research (2019)
4. Yang P[†], Humphrey SJ[†], Cinghu S[†], Pathania R, Oldfield AJ, Kumar D, Perera KD, Yang JYH, James DE, Mann M, **Jothi R*** (2019). Multi-omic profiling reveals dynamics of the phased progression of pluripotency. [Cell Systems](#), 8(5):427-445. (>65 citations)
 - Recommended by Faculty of 1000 Biology
5. Jeon K, Kumar D, Conway AE, Park K, **Jothi R**, Jetten AM (2019). GLIS3 Transcriptionally Activates WNT Genes to Promote Differentiation of Human Embryonic Stem Cells into Posterior Neural Progenitors. [Stem Cells](#), 37(2):202-215. (14 citations)
6. Cinghu S[†], Yang P[†], Kosak J, Conway AE, Kumar D, Oldfield AJ, Adelman K, **Jothi R*** (2017). Intragenic enhancers attenuate gene expression. [Molecular Cell](#), 68(1):104-117. (>60 citations)
 - Commentary in Nature Reviews in Genetics, doi:10.1038/nrg.2017.90
 - Commentary in Nature Reviews in Molecular Cell Biology, doi:10.1038/nrm.2017.111

- Paper of the Year, NIEHS Intramural Research (2017)
7. Kang HS, Kumar D, Liao G, Lichti-Kaiser K, Gerrish K, Liao X-H, Refetoff S, **Jothi R**, Jetten AM (2017). GLIS3 is indispensable for TSH/TSHR-dependent thyroid hormone biosynthesis and follicular cell proliferation. [The Journal of Clinical Investigation](#), 127(12):4326-4337 (>30 citations)
 - Paper of the Year, NIEHS Intramural Research (2017)
 8. Zheng X, Yang P, Lackford B, Bennett B, Wang L, Li H, Miao Y, Fargo D, Jin Y, Williams CJ, **Jothi R**, Hu G (2016). CNOT3-dependent mRNA deadenylation safeguards the pluripotent state. [Stem Cell Reports](#), 7(5):897-910. (>20 citations)
 9. Yang P, Humphrey SJ, James DE, Yang YH, **Jothi R*** (2016). Positive-unlabeled ensemble learning for kinase substrate prediction from phosphoproteomics data. [Bioinformatics](#), 32(2):252-9. (>30 citations)
 10. Minard AY, Tan S-X, Yang P, Fazakerley DJ, Domanova W, Parker BL, Humphrey SJ, **Jothi R**, Stockli J, James DE (2016). mTORC1 is a major regulatory node of the FGF21 signaling network. [Cell Reports](#), 17(1):29-36. (>70 citations)
 11. Yang P, Ellis P, Humphrey SJ, James DE, **Jothi R**, Yang YH (2016). KinasePA: Phosphoproteomics data annotation using hypothesis driven kinase perturbation analysis. [Proteomics](#), 16(130):1868-71. (18 citations)
 12. Yang P, Zheng X, Jayaswal, V, Hu G, Yang YH, **Jothi R*** (2015). Knowledge-based analysis for detecting key signaling events from time-series phosphoproteomics data. [PLoS Computational Biology](#) 11(8):e1004403. (23 citations)
 13. Hoffman NJ, Parker BL, Chaudhuri R, Fisher-Wellman KH, Kleinert M, Humphrey SJ, Yang P, Holliday M, Trefely S, Fazakerley DJ, Stöckli J, Burchfield JG, Jensen TE, **Jothi R**, Kiens B, Wojtaszewski JF, Richter EA, James DE (2015). Global Phosphoproteomic Analysis of Human Skeletal Muscle Reveals a Network of Exercise-Regulated Kinases and AMPK Substrates. [Cell Metabolism](#), 22(5):922-35 (>270 citations).
 - Recommended by Faculty of 1000 Biology
 14. Pathania R, Ramachandran S, Elangovan S, Padia R, Yang P, Cinghu S, Veeranan-Karmegam R, Arjunan P, Gnana-Prakasam JP, Sadanand F, Pei L, Chang CS, Choi JH, Shi H, Manicassamy S, Prasad PD, Sharma S, Ganapathy V, **Jothi R**, Thangaraju M. (2015) DNMT1 is essential for mammary and cancer stem cell maintenance and tumorigenesis. [Nature Communications](#) 6:6910 (>190 citations).
 - Recommended by Faculty of 1000 Biology
 15. Oldfield AJ[†], Yang P[†] (†Co-first authors), Conway AE, Cinghu S, Freudenberg JM, Yellaboina S, **Jothi R*** (2014). Histone-fold domain protein NF-Y promotes chromatin accessibility for cell type-specific master transcription factors. [Molecular Cell](#) 55(5):708-722 (>135 citations).
 - Paper of the Year, NIEHS Intramural Research (2014)
 16. Takeda Y, Kang HS, Freudenberg JM, DeGraff LM, **Jothi R**, Jetten AM (2014) Retinoic Acid-Related Orphan Receptor γ (ROR γ): A Novel Participant in the Diurnal Regulation of Hepatic Gluconeogenesis and Insulin Sensitivity. [PLoS Genetics](#) 10(5), e1004331 (>65 citations).

17. Wang L, Du Y, Ward JM, Shimbo T, Lackford B, Zheng X, Miao Y, Zhou B, Fargo DC, **Jothi R**, Williams CJ, Wade PA, Hu G (2014) An essential role of INO80 in the core pluripotency transcription circuitry. [Cell Stem Cell](#) 14(5):575-91 (>145 citations).
18. Cinghu S[†], Yellaboina S[†] (†Co-first authors), Freudenberg JM, Ghosh S, Zheng X, Oldfield AJ, Lackford B, Zaykin DV, Hu G, **Jothi R*** (2014). Integrative framework for identification of key cell identity genes uncovers determinants of ES cell identity and homeostasis. [PNAS](#) 111(16):E1581-90 (>20 citations).
19. Li R, Mav D, Grimm S, **Jothi R**, Shah R, Wade PA (2014). Fine-tuning of epigenetic regulation with respect to promoter CpG content in a cell type-specific manner. [Epigenetics](#) 9(5):747-49 (14 citations).
20. Lackford B, Yao C, Charles G, Weng L, Zheng X, Choi E-A, Xie X, Wan J, Xing Y, Freudenberg JM, Yang P, **Jothi R**, Hu G, Shi Y (2014) Fip1 regulates mRNA alternative polyadenylation to promote stem cell self-renewal. [EMBO J](#) 33(8):878-89 (>135 citations).
21. Li L[†], Freudenberg JM[†] (†Co-first author), Cui K, Dean A, Zhao K, **Jothi R*** (***Co-corresponding author**), Love PE* (2013). Ldb1-nucleated transcription complexes function as primary mediators of global erythroid gene activation. [Blood](#) 121(22):4575-85 (>80 citations).
22. Menedez D[†], Nguyen TA[†], Freudenberg JM[†] (†Co-first authors), Mathew VJ, Anderson C, **Jothi R*** (***Corresponding author**), Resnick MA (2013). Diverse stresses dramatically alter genome-wide p53 binding and transactivation landscape in human cancer cells. [Nucleic Acids Research](#) 41(15):7286-7301 (>140 citations).
23. Freudenberg JM[†], Ghosh S[†], Lackford B[†], Yellaboina S, Zheng X, Li R, Cuddapah S, Wade PA, Hu G, **Jothi R*** (2012). Acute depletion of Tet1-dependent 5-hydroxymethylcytosine levels impairs LIF/Stat3 signaling and results in loss of embryonic stem cell identity. [Nucleic Acids Research](#), 40:3364-77 (>100 citations).
 - Highlighted as one of journal's featured articles representing "top 5% of papers in terms of originality, significance and scientific excellence".
24. Takeda Y, **Jothi R**, Birault V, Jetten A (2012). RORγ directly regulates the circadian expression of clock genes and downstream targets in vivo. [Nucleic Acids Research](#) 40(17):8519-35 (>115 citations).
25. Agarwal SK* and **Jothi R*** (2012). Genome-wide characterization of menin-dependent H3K4me3 reveals a specific role for menin in the regulation of genes implicated in MEN-1 associated tumors. [PLoS ONE](#), 7(5):e37952 (>45 citations).
 - Recommended as "Must Read" by Faculty of 1000 Biology
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