

THIRUVARANGAN RAMARAJ

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EDUCATION

Montana State University, USA	Computer Science	Ph.D.	2010
Ball State University, USA	Computer Science	M.Sc.	2005
Annamalai University, INDIA	Computer Science & Engineering	B.E	2001

CURRENT AND PREVIOUS APPOINTMENTS

• Assistant Professor, SoC, CDM	DePaul University	Sep 2019 - Present
• Bioinformatics Research Scientist	NCGR	Nov 2013 – Aug 2019
• Bioinformatics Team Lead	NCGR	Nov 2012 – Aug 2019
• Senior Bioinformatics Analyst	NCGR	Nov 2012 – Oct 2013
• Bioinformatics Analyst	NCGR	Jun 2010 – Oct 2012

ADJUNCT APPOINTMENT

- Adjunct Assistant Professor, Department of Biology, University of New Mexico, Albuquerque, March 2015 – Present
- Research Fellow, Center for Comparative Genomics, Murdoch University, Murdoch, Western Australia, Australia, May 2013 – April 2016

TEACHING

Courses

Data Analysis Courses

- DSC 323/423: Data Analysis and Regression
 - Winter and Spring 2019 – 2020

Data Mining and Machine Learning Courses

- DSC 441: Fundamentals of Data Science
 - Autumn 2019 – 2020, 2020 – 2021; Spring 2019 – 2020

Independent Study

Graduate Independent Study & Research Credits

- CSC 695 Masters Research (Spring & Summer 2019 – 2020: Bo Wen Liu)

Other Teaching Activities

- Successfully completed Summer 2019 – 2020 DOTS program

ACTIVE GRANTS

- **AGIF – DePaul University** - Computational Biology and Applied Bioinformatics (CoBaAB) Laboratory.” July 01, 2020 – June 30, 2022. Role: PI.
- **NSF DBI 1660822** – “Collaborative Research: ABI Development: Graph-based Analysis Tools for Pangenomics.” July 2017 – June 2020. **Role: Co-PI.**
- **NSF DBI 1661527** – “Collaborative Research: ABI Innovation: Biofilm Resource and Information Database (BRaID): A Tool to Fuse Diverse Biofilm Data Types.” August 2017 – July 2020. **Role: PI.**
- **NSF 1445014** - ABR-PG. “Sequence Resources for Cotton, a model system for allopolyploid crops” 2016 – 2019. **Role: Co-PI.**

COMPLETED GRANTS

- **NSF IOS 1339412** – Plant Genome Research Project (PGRP). “*Structural variation in polyploid genomes*” June 1st 2014 – May 31st 2018. **Role: Co-PI.**
- **NSF ABI EAGER** - “*Assembly and Pan- Genomics Across Phylogenetic Space*” 2015 – 2018. **Role: Co-PI.**

AWARDS & RECOGNITION

- Best Paper Award – ACM-BCB 2017 - “*Exploring Frequented Regions in Pan-Genomic Graphs.*”
- Nominated Associate Member, 2014, Sigma Xi, Scientific Research Society
- Visiting Pre-doctoral Fellow, NCGR, Jan 2009 – Aug 2009
- Graduate (Doctoral) Fellow, Montana Idea Networks for **Biomedical Research Excellence (INBRE)**, 2005 - 2007
- Ruby Newhall Scholar, 2003 – 2004

PROFESSIONAL CERTIFICATIONS

- Professional Grant Development Workshop, University of New Mexico, July 17 – 19, 2013

JOURNAL PUBLICATIONS

40. Udall JA, Long E, **Ramaraj T**, Conover JL, Yuan D, Grover CE, Gong L, Arick MA 2nd, Masonbrink RE, Peterson DG, Wendel JF. *The Genome Sequence of Gossypioides kirkii Illustrates a Descending Dysploidy in Plants.* **Front Plant Sci.** 2019 Nov 27;10:1541. doi: 10.3389/fpls.2019.01541. eCollection 2019.
39. Dieser M, Smith HJ, **Ramaraj T**, Foreman CM. *Janthinobacterium CG23_2: Comparative Genome Analysis Reveals Enhanced Environmental Sensing and Transcriptional Regulation for Adaptation to Life in an Antarctic Supraglacial Stream.* **Microorganisms.** 2019 Oct 15;7(10). pii: E454. doi: 10.3390/microorganisms7100454.
38. Udall JA, Long E, Hanson C, Yuan D, **Ramaraj T**, Conover JL, Gong L, Arick MA, Grover CE, Peterson DG, Wendel JF. *De Novo Genome Sequence Assemblies of Gossypium raimondii and Gossypium turneri.* Udall JA, Long E, Hanson C, Yuan D, Ramaraj T, Conover JL, Gong L, Arick MA, Grover CE, Peterson DG, Wendel JF. **G3 (Bethesda).** 2019 Oct 7;9(10):3079-3085. doi: 10.1534/g3.119.400392.
37. Sun X, Chen W, Ivanov S, MacLean AM, Wight H, **Ramaraj T**, Mudge J, Harrison MJ, Fei Z. *Genome and evolution of the arbuscular mycorrhizal fungus Diversispora epigaea (formerly Glomus versiforme) and its bacterial endosymbionts.* **New Phytol.** 2019 Feb;221(3):1556-1573. doi: 10.1111/nph.15472. Epub 2018 Oct 13.
36. Cleary, Alan, **Ramaraj, Thiruvarangan**, Kahanda, Indika, Mudge, Joann, Mumey, Brendan. “*Exploring Frequented Regions in Pan-Genomic Graphs.*” **IEEE-ACM Transactions on Computational Biology and Bioinformatics** TCBBSI-2017-11-0457.R1
35. Anitha Sundararajan, Hallie S Rane, **Thiruvarangan Ramaraj**, Johnny Sena, Amy B Howell, Stella M Bernardo, Faye D Schilkey, Samuel A Lee. "Cranberry-derived proanthocyanidins induce a differential transcriptomic response within Candida albicans urinary biofilms." **PloS one** 13 (8), e0201969
34. Erika A. Keshishian, H. Tucker Hallmark, **Thiruvarangan Ramaraj**, Lenka Plačková, Anitha Sundararajan, Faye Schilkey, Ondřej Novák, Aaron M. Rashotte. “*Salt and oxidative stresses uniquely regulate tomato cytokinin levels and transcriptomic response.*” **Plant Direct** 19 July 2018
33. DeVore SB, Young CH, Li G, Sundararajan A, **Ramaraj T**, Mudge J, Schilkey F, Muth A, Thompson PR, Cherrington BD. “*Histone citrullination represses miRNA expression resulting in*

- increased oncogene mRNAs in somatolactotrope cells.*" **Mol Cell Biol.** 2018 Jul 9. pii: MCB.00084-18. doi: 10.1128/MCB.00084-18.
32. Tran HTM, **Ramaraj T**, Furtado A, Lee LS, Henry RJ. "Use of a draft genome of coffee (*Coffea arabica*) to identify SNPs associated with caffeine content." **Plant Biotechnol J.** 2018 Mar 6. doi: 10.1111/pbi.12912.
 31. Corrinne E Grover, Mark A Arick II, Justin L Conover, Adam Thrash, Guanqing Hu, William S, Sanders, Chuan-Yu Hsu, Rubab Zahra Naqvi, Muhammad Farooq, Xiaochong Li, Lei Gong, Joann Mudge, **Thiruvarangan Ramaraj**, Joshua A Udall, Daniel G Peterson, and Jonathan F Wendel. "Comparative genomics of an unusual biogeographic disjunction in the cotton tribe (*Gossypieae*), yields insights into genome downsizing." **Genome Biol Evol.** 2017 Nov 27. doi: 10.1093/gbe/evx248.
 30. Damien Lightfoot, David Jarvis, **Thiruvarangan Ramaraj**, Rebekah Lee, Eric Jellen, and Peter Jeff Maughan. "Single molecule sequencing and Hi-C based proximity-guided assembly of amaranth (*Amaranthus hypochondriacus*) chromosomes provides insights into genome evolution." **BMC Biology** 15 (1), 74
 29. Jason Rafe Miller, Peng Zhou, Joann Mudge, James Gurtowski, Hayan Lee, **Thiruvarangan Ramaraj**, Brian P. Walenz, Junqi Liu, Robert Stupar, Roxanne Denny, Li Song, Namrata Singh, Lyza G. Maron, Susan R McCouch, W. Richard McCombie, Michael C. Schatz, Peter Tiffin, Nevin D. Young, Kevin A. T. Silverstein. "Hybrid Assembly with Long and Short Reads Improves Discovery of Gene Family Expansions." **BMC genomics** 18 (1), 541
 28. Karen M. Moll, Peng Zhou, **Thiruvarangan Ramaraj**, Diego Fajardo, Nicholas P. Devitt, Michael J. Sadowsky, Robert M. Stupar, Peter Tiffin, Jason R. Miller, Nevin D. Young, Kevin A.T. Silverstein, Joann Mudge. "Better Strategies for Utilizing BioNano and Dovetail Resources Revealed in a Second Reference Quality Assembly of the Nitrogen-Fixing Plant Model, *Medicago truncatula*." **BMC Genomics** 18 (1), 578
 27. Keith M Bayha, Natalie Ortell, Caitlin N Ryan, Kimberly J Griffitt, Michelle Krasnec, Johnny Sena, **Thiruvarangan Ramaraj**, Ryan Takeshita, Gregory D Mayer, Faye Schilkey, Robert J Griffitt. "Crude oil impairs immune function and increases susceptibility to pathogenic bacteria in southern flounder." **PLoS One** 12 (5), e0176559
 26. Durga Prasad Neupane, Belkis Jacquez, Anitha Sundararajan, **Thiruvarangan Ramaraj**, Faye D Schilkey, Erik Thomas Yukl. "Zinc-dependent Transcriptional Regulation in *Paracoccus denitrificans*". **Frontiers in Microbiology** 8, 569.
 25. Peng Zhou, Kevin AT Silverstein, **Thiruvarangan Ramaraj**, Joseph Guhlin, Roxanne Denny, Junqi Liu, Andrew D Farmer, Kelly P Steele, Robert M Stupar, Jason R Miller, Peter Tiffin, Joann Mudge, Nevin D Young. "Exploring structural variation and gene family architecture with De Novo assemblies of 15 *Medicago* genomes." **BMC Genomics.** 2017 Mar 27;18(1):261. doi: 10.1186/s12864-017-3654-1
 24. Chaney L, Mangelson R, **Ramaraj T**, Jellen EN, Maughan PJ. "The complete chloroplast genome sequences for four *Amaranthus* species (*Amaranthaceae*)." **Appl Plant Sci.** 2016 Sep 19;4(9). pii: apps.1600063. doi: 10.3732/apps.1600063. eCollection 2016 Sep.
 23. Sundararajan A, Dukowic-Schulze S, Kwicklis M, Engstrom K, Garcia N, Oviedo OJ, **Ramaraj T**, Gonzales MD, He Y, Wang M, Sun Q, Pillardy J, Kianian SF, Pawlowski WP, Chen C, Mudge J. "Gene Evolutionary Trajectories and GC Patterns Driven by Recombination in *Zea Mays*." **Front Plant Sci.** 2016 Sep 22;7:1433.
 22. Vishwanathan N, Bandyopadhyay AA, Fu HY, Sharma M, Johnson KC, Mudge J, **Ramaraj T**, Onsongo G, Silverstein KA, Jacob NM, Le H, Karypis G, Hu WS. "Augmenting Chinese hamster genome assembly by identifying regions of high confidence." **Biotechnol J.** 2016 Jul 4. doi: 10.1002/biot.201500455

21. Deschamps S, Mudge J, Cameron C, **Ramaraj T**, Anand A, Fengler K, Hayes K, Llaca V, Jones TJ, May G. "Characterization, correction and de novo assembly of an Oxford Nanopore genomic dataset from *Agrobacterium tumefaciens*." **Sci Rep**. 2016 Jun 28;6:28625. doi: 10.1038/srep28625.
20. Horn RL, **Ramaraj T**, Devitt NP, Schilkey FD, Cowley DE. "De novo assembly of a tadpole shrimp (*Triops newberryi*) transcriptome and preliminary differential gene expression analysis." **Mol Ecol Resour**. 2016 Jun 13. doi: 10.1111/1755-0998.12555. [Epub ahead of print]
19. Stefanie Dukowic-Schulze, Anitha Sundararajan, **Thiruvarangan Ramaraj**, Shahryar Kianian, Wojciech P Pawlowski, Joann Mudge, Changbin Chen. "Novel meiotic miRNAs and indications for a role of phasiRNAs in meiosis" **Front Plant Sci**. 2016 Jun 2;7:762. doi: 10.3389/fpls.2016.00762. eCollection 2016.
18. Jingxuan He, Anitha Sundararajan, Nicholas P Devitt, Faye D Schilkey, **Thiruvarangan Ramaraj**, Charles E Melançon. "Complete genome sequence of *Streptomyces venezuelae* ATCC 15439, producer of the methymycin/pikromycin family of macrolide antibiotics, using PacBio technology." **Genome Announcements** 2016 4 (3), e00337-16
17. Heidi J Smith, Christine M Foreman, Tatsuya Akiyama, Michael J Franklin, Nicolas P Devitt, **Thiruvarangan Ramaraj**. "Genome Sequence of *Janthinobacterium* sp. CG23_2, a Violacein-Producing Isolate from an Antarctic Supraglacial Stream." **Genome Announcements** 2016 4 (1), e01468-15
16. SM Lambeth, T Carson, J Lowe, **T Ramaraj**, JW Leff, L Luo, CJ Bell, VO Shah. "Composition, Diversity and Abundance of Gut Microbiome in Prediabetes and Type 2 Diabetes." **Journal of diabetes and obesity** 2 (3), 1-7 2015
15. JW Clouse, D Adhikary, JT Page, **T Ramaraj**, MK Deyholos, JA Udall, DJ Fairbanks, EN Jellen, PJ Maughan. "The Amaranth Genome: Genome, Transcriptome, and Physical Map Assembly." **The Plant Genome Journal** 2015
14. Yasushi Ogasawara, Norah Torrez-Martinez, Anthony Aragon, Jessica Weber, Anitha Sundararajan, **Thiruvarangan Ramaraj**, Jeremy Edwards, and Charles Melancon. "High Quality Draft Genome Sequence of the Actinobacterium *Kibdelosporangium* sp. MJ126-NF4, Producer of the Type II Polyketide Azicemicins, Using Illumina and PacBio Technologies." **Genome Announcements** 2015 3(2), e00114-15
13. Erin E Schirtzinger, Christy C Andrade, Nicholas Devitt, **Thiruvarangan Ramaraj**, Jennifer L Jacobi, Faye D Schilkey and Kathryn Hanley. "Repertoire of virus-derived small RNAs produced by mosquito and mammalian cells in response to dengue virus infection". **Virology** 2015 476, 54 - 60
12. Heidi J. Smith, Christine M. Foreman and **Thiruvarangan Ramaraj**. "Draft Genome Sequence of a metabolically diverse Antarctic Supraglacial Stream Organism: *Polaromonas* sp. Strain CG9_12 determined using Pacific Biosciences Single-Molecule Real Time (SMRT) sequencing technology". **Genome Announcements** 2014 2 (6), e01242-14
11. **Thiruvarangan Ramaraj**, Stephanie Matyi, Anitha Sundararajan, Ingrid Lindquist, Nicolas Devitt, Faye Schilkey, Reena Lamichhane-Khadka, Peter Hoyt, Joann Mudge, and John Gustafson. "Draft Genomes of Vancomycin-Susceptible *Staphylococcus aureus* related to Hetero-Vancomycin-Intermediate *S. aureus*". **Genome Announcements** 2014 2 (5) e01033-14
10. Stephanie A. Matyi, **Thiruvarangan Ramaraj**, Anitha Sundararajan, Ingrid E. Lindquist, Nicolas P. Devitt, Faye D. Schilkey, Lamichhane-Khadka R, Peter R. Hoyt, Joann Mudge and John E. Gustafson. "Draft Genomes of Heterogeneous Vancomycin-Intermediate *Staphylococcus aureus* Strain MM66 and MM66 Derivatives with Altered Vancomycin Resistance Levels". **Genome Announcements** 2014 2 (4), e00688-14
9. Stefanie Dukowic-Schulze, Anitha Sundararajan, Joann Mudge, **Thiruvarangan Ramaraj**, Andrew Farmer, Minghui Wang, Qi Sun, Jaroslaw Pillardy, Shahryar Kianian, Ernest Retzl, Wojciech P Pawlowski, Changbin Chen. "The transcriptome landscape of early maize meiosis". **BMC Plant Biology** 2014 14 (1), 118

8. **Thiruvarangan Ramaraj**, Anitha Sundararajan, Faye D. Schilkey, Vito G. Delvecchio, Mildred Donlon, Cherie Ziemer, and Joann Mudge. “Improved hybrid genome assemblies of 2 strains *Bacteroides xyloxylophilus* SD CC 1b and SD CC 2a using Illumina and 454 sequencing technologies”. *Genome Announcements* 2014 2 (2) e00237-14
7. Lyndel W Meinhardt, Gustavo G L Costa, Daniela PT Thomazella, Paulo J P L Teixeira, Marcelo F Carazzolle, Stephen C Schuster, John E Carlson, Mark J Guiltinan, Piotr Mieczkowski, Andrew Farmer, **Thiruvarangan Ramaraj**, Jayne Crozier, Robert E Davis, Jonathan Shao, Rachel L Melnick, Goncalo A G Pereira and Bryan A Bailey. “Genome and Secretome analysis of the Hemibiotrophic Fungal Pathogen, *Moniliophthora roreri*, which causes Frosty Pod Rot Disease of Cacao: Mechanisms of the Biotrophic and Necrotrophic Phases”. *BMC Genomics* 2014, 15:164
6. Stefanie Dukowic-Schulze, Anitha Sundararajan, **Thiruvarangan Ramaraj**, Joann Mudge, and Changbin Chen. “Sequencing-based large-scale genomics approaches with small numbers of isolated maize meiocytes”. *Frontiers in Plant Science* 2014 Feb 05 5:57.
5. Mark R. Schleiss, Shane McAllister, Anibal G. Armien, Nelmary Hernandez-Alvarado, Claudia Fernandez, Jason Zabeli, **Thiruvarangan Ramaraj**, and John A. Crow. “Molecular and Biological Characterization of a Novel Isolate of Guinea Pig Cytomegalovirus (GPCMV), the CIDMTR Strain”. *Viruses* 2014, 6(2), 448-475; doi:10.3390/v6020448
4. Mark R. Schleiss, Nelmary Hernandez-Alvarado, **Thiruvarangan Ramaraj**, and John A. Crow. “Genome Sequence of a Novel, Newly Isolated Strain of Guinea Pig Cytomegalovirus”. *Genome Announcements* 2013 1 (6), e01052-13
3. Felix Francis, Joohyun Kim, **Thiruvarangan Ramaraj**, Andrew Farmer, Milton C. Rush, and Jong Hyun Ham “Comparative genomic analysis of two *Burkholderia glumae* strains from different geographic origins reveals a high degree of plasticity in genome structure associated with genomic islands” *Molecular Genetics and Genomics* April 2013 288(3-4): 195-203
2. **Thiruvarangan Ramaraj**, Thomas Angel, Edward Dratz, Algirdas Jesaitis, and Brendan Mumey. “Properties of antigen-antibody interfaces: Composition, residue interactions, and features of 53 non-redundant structures” *Biochimica et Biophysica Acta* 1824 (2012) 520-532
1. Sergio E. Baranzini, Joann Mudge, Jennifer C. van Velkinburgh, Pouya Khankhanian, Irina Khrebtukova, Neil A. Miller, Lu Zhang, Andrew D. Farmer, Callum J. Bell, Ryan W. Kim, Gregory D. May, Jimmy E. Woodward, Stacy J. Caillier, Joseph P. McElroy, Refujia Gomez, Marcelo J. Pando, Leonda E. Clendenen, Elena E. Ganusova, Faye D. Schilkey, **Thiruvarangan Ramaraj**, Omar A. Khan, Jim J. Huntley, Shujun Luo, Pui-yan Kwok, Thomas D. Wu, Gary P. Schroth, Jorge R. Oksenberg, Stephen L. Hauser and Stephen F. Kingsmore. “Genome, epigenome and RNA sequences of monozygotic twins discordant for multiple sclerosis” *Nature* 464, 1351-1356 (29 April 2010)

PEER REVIEWED CONFERENCE PUBLICATIONS

3. Buwani Manuweera, Brendan Mumey, Indika Kahanda, Alan Cleary, Joann Mudge, **Thiruvarangan Ramaraj**. *Pangenome-Wide Association Studies with Frequented Regions*. **BCB '19: Proceedings of the 10th ACM International Conference on Bioinformatics, Computational Biology and Health Informatics**. September 2019 Pages 627–632 <https://doi.org/10.1145/3307339.3343478>
 2. Alan Cleary, **Thiruvarangan Ramaraj**, Indika Kahanda, Joann Mudge and Brendan Mumey. “Exploring Frequented Regions in Pan-Genomic Graphs.” *ACM-BCB 2017*
 1. Alan Cleary, **Thiruvarangan Ramaraj**, Joann Mudge and Brendan Mumey. “Approximate Frequent Subpath Mining Applied to Pangenomics.” *BICOB 2017*
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OUTREACH ACTIVITIES

- **High School, Under-Graduate, Graduate and Post-Doc Summer Internship Program:** For the past few summers, I was part of the summer internship-mentoring program organized by NCGR. Upto 20 students spend two weeks in classroom environment followed by six weeks of self-directed bioinformatics research, working with their own data if possible. This effort is funded by the Gordon Betty Moore Foundation Marine Micro-Eukaryote Transcriptome Sequencing Project, the New Mexico INBRE Sequencing and Bioinformatics core and by other individual research grants.
- **2007 MAP Fellow:** As a Montana Apprenticeship Program (MAP) fellow, I worked with diverse highly motivated students that possess strong interest in science and math over a period of six weeks in summer of 2007 to provide pre-college experience including hands on research in a science and/or engineering laboratory.

TEACHING EXPERIENCE

- Part Time Faculty (Temporary), Spring 2017: BIOL 519/CHEM 587: Genome Technology & Bioinformatics – Topics in interdisciplinary Science
- Teaching High School, Under-Graduate, Graduate and Post-Docs during the yearly summer internship-mentoring program organized by NIH-NMINBRE & NCGR
- Teaching Assistant (MS:2002 – 2005; PhD: 2005 – 2010)

PROFESSIONAL SERVICE

- **MEMBERSHIPS**
 - Associate Member, Sigma Xi, Scientific Research Society (Present)
 - Active Member, IEEE (Present)
 - Active Member, IEEE Communications Society (Present)
- **REVIEW EDITOR**
 - Frontiers in Genetics Journal, Bioinformatics and Computational Biology
- **MANUSCRIPT REVIEW FOR JOURNALS**
 - BMC Genomics
 - Frontiers in Genetics, Bioinformatics and Computational Biology
 - Briefings in Bioinformatics
 - Frontiers in Genetics, Statistical Genetics and Methodology
 - Frontiers in Genetics, Focused Review
 - Frontiers in Plant Science, Plant Genetics and Genomics, Data Report
 - The Plant Genome Journal
 - Frontiers in Bioengineering and Biotechnology, Bioinformatics and Computational Biology
 - Frontiers in Microbiology, Food Microbiology
 - Proteomics
- **AD-HOC REVIEWER, NSF PGRP PROGRAM**

TALKS IN SCIENTIFIC CONFERENCES

- 2016 Amer. Society for Plant Biologists (ASPB), Western Section Meeting, BYU, Provo, Utah, USA
*Title: High Quality Draft Genome of *Gossypium herbaceum* (A₁) cv Wagad*
- 2016 Plant and Animal Genome (PAG) XXIV Conference, San Diego, USA
*Title: High Quality Draft Genomes of *Medicago truncatula* & *Gossypium herbaceum* using NGS, Dovetail & BioNano Technologies (Sequencing Complex Genomes Workshop)*
*Title: High Quality Draft Genome of *Gossypium herbaceum* cv Wagad (International Cotton Genome Initiative)*
- 2015 Utah Plant Genetics Conference, BYU, Provo, Utah, USA

Title: De Novo Assembly of Plant Genomes: Hybrid Approaches for Heterogeneous NGS Data

- 2015 Plant and Animal Genome (PAG) XXIII Conference, Jan 10th – 14th, San Diego, USA
Title: De Novo Assembly of Plant Genomes: Hybrid Approaches for Heterogeneous NGS Data
- 2014 The IInd Plant Genomics Congress USA, Sep 11th – 12th, St Louis, MO, USA
Title: Assembling (Hybrid Strategies) Complex Plant Genomes, Using Data from 2nd & 3rd Generation Sequencing, Technologies, Physical/Optical Maps and Other Upcoming Technologies
- 2014 Sequencing Finishing and Analysis in the Future (SFAF) Meeting, Santa Fe, NM, USA
Title: De novo assembly of Medicago truncatula lines using Illumina and PacBio seq. technologies
- 2013 Plant and Animal Genome (PAG) Asia Conference, Singapore
Title: PacBio RS SMRT sequencing: Hybrid exercises towards achieving high quality de novo genome assemblies and incorporating workflows into YABI environment
- 2009 Western COBRE – INBRE Scientific Conference, Sep 16th – 18th, Big Sky, MT, USA
Title: Short read assembly – Technology, tools and bioinformatics challenges
- 2009 New Mexico Bioinformatics Symposium, Mar 19th – 20th, Santa Fe, NM, USA
Title: Short DNA reads de novo assembly – Tech., tools, bioinf. challenges and some prelim. analysis

INVITED GUEST SEMINARS

- Department of Biology, New Mexico Tech, Socorro, New Mexico (October 5th 2015)
Title: Assembling (Hybrid Strategies) Complex Plant Genomes & Pan Genomics
- Bioscience Division, Los Alamos National Laboratory, Los Alamos, New Mexico (March 04th 2015)
Title: Advanced sequencing technologies & genome informatics to investigate biological systems.
- Plant & Wildlife Science Department, Brigham Young University, Provo, Utah (Dec. 11th 2014)
Title: Assembling (Hybrid Strategies) Complex Plant Genomes Using Data from 2nd & 3rd Generation Sequencing Technologies, Physical Maps and Other Upcoming Technologies
- Center for Biofilm Engineering, Montana State University – Bozeman (October 31 2013)
Title: Advanced sequencing technologies & genome informatics to investigate biological systems.

UNDERGRADUATE/GRADUATE LECTURES

- Undergraduate/Graduate Class in Bioinformatics, University of New Mexico (UNM), Fall 2014 & Spring 2016: Bioinformatics Lecture