

SRIKAR CHAMALA

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EDUCATION

DOCTOR OF PHILOSOPHY (PH.D)

AUG 2011 - AUG 2014

Department of Biology, University of Florida (UF), Gainesville, FL.

MASTER OF SCIENCE IN BIOINFORMATICS

AUG 2007 - OCT 2008

Department of Computer Science, University of Illinois at Urbana-Champaign (UIUC), IL.

BACHELOR OF SCIENCE WITH HONORS IN BIOINFORMATICS

JAN 2005 - DEC 2006

Department of Integrative Biology, Brigham Young University (BYU), Provo, UT.

ACTIVE GRANTS

NIH/NCI U54 CA233444 (ODEDINA)

\$5,273,965

SEP 2018 – AUG 2023

Core Leader, University of Florida, Gainesville, FL.

1.56 calendar \$108,342

2/3 Florida-California Cancer Research, Education & Engagement (CaRE2) Health Equity Center – The overarching goals of the Florida-California CaRE2 Health Equity Center will be to address cancer health disparities in Black and Latino populations in Florida and California through cutting-edge translational science, training and education of URM scientists and students, and development of culturally-sensitive tools and programs for community initiatives tailored to the needs of Black and Latino populations.

NSF 1838316 (LELE)

\$300,000

AUG 2018 – JUL 2020

Co-Investigator, University of Florida, Gainesville, FL.

0.72 calendar \$19,118

Rules for cellular adaptation to the mechanical properties of their environment – The goals of this proposal are to use experimental evolution to uncover evolutionary rules underlying the adaptation of eukaryotic somatic cells to the mechanical properties of their environment.

NIH/NIAID P01 AI042288 (ATKINSON)

\$1,366,867

JUN 2018 – MAY 2023

Co-Investigator, University of Florida, Gainesville, FL

1.20 calendar \$83,339

Immune Function and the Progression to Type 1 Diabetes – The proposed studies of this P01 are designed to better understand the contributions of the immune system and genetics to T1D development.

HELMSLEY CHARITABLE TRUST 2018PG-T1D071 (BRUSKO)

\$882,273

JAN 2018 – DEC 2021

Co-Investigator, University of Florida, Gainesville, FL.

0.36 calendar \$19,701

Human Atlas of Neonatal Development and Early-Life Immunity – The goal is to acquire key insights into immune system development in peripheral tissues, ultimately leading to novel interventional strategies.

PENDING GRANTS

NIH/NIGMS PRO00024739 (LELE)

OCT 2019 – SEP 2024

My lab's budget is **\$221,391**

Cellular Evolution on a Soft Biomaterial – The purpose of this project is to develop a new line of research by establishing the concept of cellular evolution in soft environments. If successful, this research will reveal the genomic basis of cellular adaptation to the rigidity of the ECM, and will promote an appreciation for experimental evolution on biomaterials as a tool to engineer somatic cells.

Role: Co-Investigator

LEIDOS BIOMEDICAL RESEARCH INC. (ODEDINA)

JUL 2019 – JUN 2024

My lab's budget is **\$10,000**

Prostate Cancer Transatlantic Consortium (CaPTC) CPTAC Tissue Source Sites – The purpose of this project is to provide high-quality, clinically annotated primary, untreated tumor specimens and whole or processed blood specimens from prostate cancer patients in West Africa.

Role: Co-Investigator

TEACHING EXPERIENCE

COURSE DIRECTOR, INFORMATICS FOR PATHOLOGY PRACTICE AND RESEARCH SERIES **SPRING 2018 & 2019**

Department of Pathology, Immunology, and Laboratory Medicine, University of Florida, Gainesville, FL

- Designed, developed, and taught informatics courses – Unix, Python, and Advanced Data Manipulation and Visualisation.

GENETICS, GRADUATE TEACHING ASSISTANT

FALL 2011 & SPRING 2013

Department of Biology, University of Florida, Gainesville, FL.

- Lead discussion and tutoring sections.
- Schedule and maintain regular office hours to meet with students.
- Evaluate and grade examinations, assignments, and papers, and record grades.
- Fill-in lectures in case of instructor's absence.

RESEARCH EXPERIENCE

DIRECTOR OF BIOMEDICAL INFORMATICS | CLINICAL ASSISTANT PROFESSOR

JULY 2017 TO PRESENT

Department of Pathology, Immunology, and Laboratory Medicine, University of Florida, Gainesville, FL

Precision Medicine Informatics: I am leading clinical bioinformatics efforts at UF Health Pathology Laboratories in developing custom genotyping and next-generation sequencing (NGS) clinical assays, bioinformatics data analysis & management workflows, and solutions for integrating genomic data into lab information systems (LIS) and electronic health records (EHR). Our precision medicine assays include detection of SNVs, Translocations, CNVs, and MSIs in clinical oncology and pharmacogenomics tests. We have developed and currently adding new functionalities to our in-house web application called "DNAVault", which holds and retrieve genomic variant data from UF Health precision oncology care. DNAVault is currently being used for clinical quality control by our molecular pathologists and clinical staff, but have future plans to expand for research purposes after appropriate consenting and de-identification of the data.

Clinical Informatics: I provide informatics leadership in development and optimization of informatics processes and workflows at UF Health Pathology Laboratories. These workflows involving interaction between laboratory instrumentation, lab information systems (LIS), and electronic health records (EHR). We are creating centralized interactive dashboards and data investigation and analytics tools which consolidate data from various UF Health data sources like EPIC (EHR), EPIC Beaker (LIS), and others.

Research: Ongoing research in my lab is focused on uncovering the genetic basis for cancer and type 1 diabetes, using genomic, transcriptomic, clinical data. My scientific contributions have been published in high-impact journals, including Science, Nature, and Genome Biology, and highlighted by news outlets across the globe. Other research areas include building novel informatics and statistics strategies for identifying over/under utilization of clinical lab tests by physicians at various medical divisions at UF Health.

Teaching: My goal is to build informatics skills among pathology/medical students, residents, fellows, staff, and faculty in both clinical and experimental divisions. I have recently created and implemented an Informatics for Pathology Practice and Research (IPPR) course series in the department of Pathology, Immunology and Laboratory Medicine at the University of Florida. IPPR course series classes currently cover – Python Programming Language, Advanced Data Analysis & Visualization, and Unix Operating Systems with plans to include other key informatics courses.

CLINICAL BIOINFORMATICS FACULTY (ASSISTANT SCIENTIST) MAY 2016 TO JULY 2017
Department of Pathology, Immunology, and Laboratory Medicine, University of Florida, Gainesville, FL

Developed next-generation sequencing clinical assays and data management for **personalized cancer medicine**. Additionally, I conducted research for understating genetic basis for **cancer** and **Type 1 diabetes** using sequencing and array based genomics technologies.

BIOINFORMATICS SCIENTIST JANUARY 2014 TO MAY 2016
Dr. Patrick Concannon's Lab, University of Florida, Gainesville, FL

As a Bioinformatics Scientist at University of Florida Genetics Institute in Dr. Patrick Concannon's lab, my research involves bioinformatic analyses of array and sequence-based data sets from several different projects in the laboratory. Below are brief details of the some of the main projects that I impacted.

Identification of genomic sequence variants associated with contralateral breast cancer in WECARE Study

The Women's Environment, Cancer, and Radiation Epidemiology (WECARE) Study was designed to identify genetic and environmental determinants of contralateral breast cancer (CBC). The study I am working on currently involves 1,536 WECARE Study participants, who underwent full mutation screening for cancer related genes *ATM* and *PPM1D* using targeted re-sequencing of these genes. Studying these genetic variations in *ATM* and *PPM1D* will help understand their interactions with cancer treatments and the association with second primary cancers.

Expression quantitative trait loci (e-QTL) to identify associations between genotype and gene expression in human Type 1 diabetes (T1D)

Most of the top SNPs that are associated with human Type 1 diabetes (T1D) in previously published GWAS studies are not located in coding regions. In this project we attempt to identify possible regulatory roles for these mutations. One of these regulatory roles that I am investigating is associations between genotype and gene expression in T1D using genotype and expression arrays derived from various cell types isolated from T1D human patients and controls.

Human exome sequencing in T1D families

In this study we are searching for rare, highly penetrant risk variants by sequencing exomes of 114 probands of high-risk T1D families defined as having three or more siblings diagnosed with T1D at early ages.

Responsibilities include:

- Developed quality control methods and pipelines for NGS, array based genotyping and microarray-based gene expression datasets.
- Performed NGS data alignments using BWA-MEM and implemented post-alignment QC methods.
- Explored and evaluated various variant callers like GATK, FreeBayes, VarScan and bcftools for their effectiveness.
- Developed high-throughput variant calling computational pipelines (in **Python**) for targeted and exome sequencing.
- Implemented variant filtering and annotation pipelines using ANNOVAR, SnpEff, and VEP software.
- Genetic variations and their annotations were explored using integrated database framework called GEMINI.
- Explored and evaluated various e-QTL computational frameworks like eQtlBma, eQTLA, and Matrix eQTL.
- Developed R software programming based visualization scripts.

LEAD BIOINFORMATICIAN (PART-TIME)

AUGUST 2014 TO MAY 2016

RAPiD Genomics, Gainesville, FL

RAPiD Genomics is a DNA genotyping and genetic data analysis company. They provide the full suite of tools and analytical methods to researchers and breeders that wish to characterize genetic variation and/or advance breeding.

Responsibilities include:

- Lead bioinformatics related projects.
- Develop and improve high-throughput and efficient bioinformatics methodologies and pipelines for cost-effective DNA genotyping and probe design.

GRADUATE RESEARCH ASSISTANT

JULY 2011 TO AUGUST 2014

Dr. Brad Barbazuk Lab, University of Florida, Gainesville, FL

Project: Examine the evolutionary conservation and divergence of alternative splicing (AS)

This study investigated the evolutionary conservation and divergence of AS patterns in genes duplicated by independent whole genome duplication events during the evolutionary histories of flowering plants.

Responsibilities include:

- Transcriptome sequence collection and quality filtering.
- Transcriptome assembly using Trinity, Cufflinks, and Newbler.
- Global AS events identification using PASA.
- Gene orthogrouping using OrthoMCL.
- Investigated correlation between gene methylation patterns and AS events in plants.
- Developed software pipeline for identifying conserved cross species AS events.
- Developed software pipeline for analyzing fate of AS events in duplicated genes from recent WGD.

Project: The *Amborella* Genome Project: Generating a reference sequence for angiosperm evolutionary analysis

This project generated a high-quality genome sequence for the non-model plant *Amborella*, using a **novel and relatively inexpensive genome assembly and validation strategy** facilitated by next-generation sequencing (NGS) technologies, *fluorescence in situ hybridization* (FISH), and Whole Genome Mapping. Until now, extensive genomic resources like genetic and physical maps were essential for generating high-quality genome sequences of species with large and complex genomes, which is a expensive and labor intensive

process. Results from these studies were published as two publications at *Science* journal and are listed above under peer-reviewed publications as *Chamala et al., 2013* and *Amborella Genome Consortium 2013*.

Responsibilities include:

- **Quality filtering and screening** of sequenced data, for organellar contaminants, short read lengths, poor quality, artificial duplicates, and chimeras.
- *De novo* sequence assembly using **Newbler**.
- Monitoring assembly progress.
- Super-scaffolding of *de novo* assembled scaffolds using **OpGen's Genome-Builder™**.
- Evaluation of fidelity of assembly mainly using combination of chromosomal **FISH** (fluorescence in situ hybridization) analysis and **OpGen's whole genome mapping** (optical mapping).
- Evaluating the potential of OpGen's Genome-Builder™ to serve as a surrogate to using long-range PE libraries (like BAC ends) to increase the contiguity of a genome assembly.
- To construct a highly comprehensive training set of well annotated *Amborella* genes, and then use this set to re-train **TWINSKAN *ab initio* gene finder** to accurately identify genes in the *Amborella* whole genome sequence.

BIOINFORMATICS RESEARCH SCIENTIST (PART-TIME)

AUGUST 2013 TO DECEMBER 2013

RAPiD Genomics, Gainesville, FL

RAPiD Genomics is a DNA genotyping and genetic data analysis company. They provide the full suite of tools and analytical methods to researchers and breeders that wish to characterize genetic variation and/or advance breeding.

Responsibilities include:

- Developed high-throughput and efficient bioinformatics methodologies and pipelines for cost-effective DNA genotyping and probe design.
- Improved methods for sequence variant discovery.

BIOLOGICAL SCIENTIST (COMPUTATIONAL BIOLOGY)

FEBRUARY 2009 TO JUNE 2011

Dr. Brad Barbazuk Lab, University of Florida, Gainesville, FL

As a Biological Scientist in computational biology at UF's Genetics Institute in Dr. Brad Barbazuk's lab, I was involved in wide variety of genomic and transcriptomic projects. Below are brief details of the some of the main projects that I impacted.

Project: Computational gene prediction in Tomato Whole Genome

A computational pipeline was developed to construct a highly comprehensive training set of well annotated tomato genes, and then used this set to re-train TWINSKAN *ab initio* gene finder to accurately identify genes in the tomato whole genome sequence. The tomato specific version of TWINSKAN is integrated into the tomato whole genome sequencing project annotation pipeline. This work is published and listed above under peer-reviewed publications as *Tomato Genome Consortium, 2012*.

Project: Strawberry global gene expression

A novel computational approach was developed to obtain comprehensive coverage of the cultivated strawberry (*Fragaria × ananassa* Duchesne) transcriptome. This study led to the identification of large number of **novel expressed genes**, and thus substantially increasing the available expressed sequence information in the genus. Predictions of **cellular localization and function** were made for these expressed genes by using tissue pool tags sequencing information. This information allows the design of molecular markers that can speed development of new cultivars to meet challenges, such as emerging pathogens, high labor and fuel costs, and diminishing water resources, to name a few. This work was published and listed above under peer-reviewed publications as *Folta et al., 2010*.

Project: Genome evolution in natural populations and synthetic lines of *Tragopogon*

This project involved understanding the impact of polyploidization on **genome evolution** and gene function using *Tragopogon* (sunflower family) as a model organism. Computational pipelines were developed to accelerate the identification of differential gene expression, gene loss, and gene gain events in a high-throughput manner in the polyploids compared to their diploid parent. This work was published and listed above under peer-reviewed publications as *Buggs et al., 2010* and *Buggs et al., 2012*.

Responsibilities include:

- **Genome and transcript sequence assemblies.**
- Characterization and **annotation** of genomes and transcriptomes.
- **Polymorphism discovery** and **gene expression analysis.**
- Develop computational pipelines to automate various biological data analysis.
- Review genome annotation, bioinformatics research procedures, literature, and evaluate their impact on research goals.
- Perform scientific experiments for analysis and standardization.
- Prepare written reports of research findings for publication and presentation.
- **Train graduate students** and biologists at UF in the use of new bioinformatics methods.
- Identifying, implementing and maintaining available software packages that will aid our research projects and developing software and analysis methods when required to complete the research.

FUNCTIONAL ARCHITECT (INTERNSHIP)

JUNE TO DECEMBER 2008

Monsanto, Technology Pipeline Solutions, St. Louis, MO

Monsanto is a leading multinational agricultural biotechnology corporation. I worked in Pipeline Management Team (PMT) of **LEADS** project; it's a joint Biotechnology and IT project aimed to develop Integrated Pipeline Reporting (IPR) tool, automate process tracking, and optimize work flow process for Monsanto's Biotechnology pipeline.

Responsibilities include:

- As part of PMT team, served as liaison between Biotechnology and software application development teams to enhance Biotechnology pipeline process.
- Captured and analyzed "**As Is**" business process and proposed improved "**To Be**" business processes using **BEA AquaLogic BPM** suite.
- Calculated **business value** metrics for **Gap Analysis** between "As Is" and "To Be" processes.
- Developed **user interface** (UI) screen flow prototypes using **Axure RP Pro** and presented to end users and development team for feasibility and feedback.
- Translated business requirements into **Test Driven Requirements** (TDR), which were then passed on to software development and testing teams.
- Participated in **Bug bash** meetings and helped in analyzing bugs and prioritizing bug fixes.

BIOINFORMATICS RESEARCH ASSISTANT

AUGUST 2007 TO MAY 2008

Dr. Matthew Hudson Laboratory, University of Illinois, Urbana-Champaign, IL

Responsibilities include:

- Assembly **simulation** of genomic reads produced by Sanger, 454, and Solexa sequencing technologies for **quality** and **cost efficiencies.**
- Short read sequence analysis and functional annotation in *Polistes metricus* (Paper Wasp).
- Developing Sequence annotation pipelines using **distributed processing** and web-based interfaces using Perl, MySQL, PHP.

PROGRAMMER ANALYST

FEBRUARY TO AUGUST 2007

Regal Computer Systems, Consultant for Michigan Information Technology Dept, Lansing, MI

Goal of **BRIDGES** project is to automate eligibility and benefit determination for Michigan's Cash, Medical, Food, and Child Day Care Assistance programs.

Responsibilities include:

- Developed Multi-Tier Web applications using **Java, J2EE, JSP, Servlets, EJB 2.1, JDBC, XML, HTML, JavaScript.**
- Used software revision control tool **Rational ClearCase** and work-flow automation tool **Rational ClearQuest.**
- Worked on **Oracle 10g/9i, SQL, PL/SQL, Stored Procedures, TOAD, PL/SQL Developer.**
- Developed Financial Management reports using **Crystal Report 11.**
- Developed **Shell Scripts** for Batch Programs in **UNIX** environment.
- Scheduled and managed batch jobs using **OPCON 3.11.05** scheduler.

RESEARCH ASSISTANT

JANUARY TO DECEMBER 2006

Dr. David Belnap Laboratory, Dept of Chemistry and Biochemistry, BYU, Provo, UT

Responsibilities include:

- Examined the **conserved secondary structure** in RNA of poliovirus.
- This information will help to develop a model for **RNA folding** and also to identify those nucleotides involved in RNA folding. This will be used in conjunction to another project to determine RNA fold by 3D electron microscopy.

RESEARCH ASSISTANT

JANUARY 2005 TO DECEMBER 2006

Dr. David McClellan Laboratory, Dept of Integrative Biology, Brigham Young University, Provo, UT

Responsibilities include:

- Examined specific **single nucleotide polymorphisms (SNPs)** in the **mtDNA** of the Pima Indian population of the Sonora desert, focusing on genes coding for electron transport chain proteins which affect efficiency of energy metabolism, thereby affecting survival during historical famines and resulting in obesity during extended times of plenty.
- Determined the effect of **natural selection** acting on these residues, and made inferences regarding these mutations as selective adaptations in particular dietary environments.

SOFTWARE PROGRAMMER

NOVEMBER 2005 TO MARCH 2006

Office of Information Technology - Engineering, Brigham Young University, Provo, UT

Responsibilities include:

- Developed web applications in **C** with embedded **SQL.**
- Debugged and maintained software code written by other software developers.
- Developed web pages using **HTML, DHTML, PHP, CSS.**

RESEARCH TRAINEE

JUNE TO AUGUST 2004

Dr. Satyabrata Nandi Laboratory, Cancer Research Laboratory, University of California, Berkeley, CA

Responsibilities include:

- **RNA extraction** from frozen mammary tissues of various rat groups.
- RNA amplification using real-time **RT-PCR.**
- Staining and labeling of mammary tissue using **Immunocytochemistry** technique.

PEER-REVIEWED PUBLICATIONS

† Indicates equal contributions

Citations: 2500+

- [22] Roach, K., Yao, Y., Chamala, S., Black, V., Ahn, H., Fillingim, R., Ezenwa, M., Schlaeger, J., Suarez, M., Molokie, R., Wang, Z., & Wilkie, D. (2019). (128) Haplotype Analysis of COMT SNPs Associated with Pain Intensity and Acute Care Utilization in Adults with Sickle Cell Disease. *The Journal of Pain*, 20(4), S8.
- [22] Ardissona, A. N., Kemppainen, K. M., Chamala, S., Conesaa, A., Concannon, P., Triplett, E. W., & the TEDDY Study Group. Association of the gut microbiota with genetic risk factors for T1D. *In Preparation*.
- [21] Balzano-Nogueira, L., Ramirez, R., Zamkovaya, T., Dailey, J., Ardissona, A.N., Chamala, S., Schatz, D., Haller, M., Concanon, P., Triplett, E. W., Conesa1 Ana., & the TEDDY Study Group. Integrative Omics data analysis of TEDDY data reveal ROS, lipid metabolism impairment and inflammatory abnormalities prior to onset of islet autoimmunity Association of the gut microbiota with genetic risk factors for T1D. *Under Review*.
- [20] García, N., Folk, R.A., Meerow, A.W., Chamala, S., Gitzendanner, M.A., de Oliveira, R.S., Soltis, D.E., & Soltis, P.S. (2017). Deep reticulation and incomplete lineage sorting obscure the diploid phylogeny of rain-lilies and allies (Amaryllidaceae tribe Hippeastreae). *Molecular Phylogenetics and Evolution*, 111, pp.231-247.
- [19] Patel, V., Wilkinson, E. J., Chamala, S., Lu, X., Costagno, J., and Rush D. (2016). Endometrial thickness as measured by transvaginal ultrasound and the corresponding histopathologic diagnosis in women with postmenopausal bleeding. *International Journal of Gynecological Pathology*.
- [18] Alam, S. G., Zhang, Q., Prasad, G., Li, Yuan., Chamala, S., Kuchibhotla, R., Birendra, K.C., Aggarwal, V., Shrestha, S., Jones, A., Levy S., Roux, K., Nickerson, J., & Lele, T. P. (2016). The mammalian LINC complex regulates genome transcriptional responses to substrate rigidity. *Scientific Reports*, 6:38063.
- [17] Westbrook, J. W., Chhatre, V. E., Wu, L. S., Chamala, S., Neves, L. G., Muñoz, P., Martínez-García. P. J., Neale, D.B., Kirst, M., Mockaitis, K., Nelson, C.D., Peter, G.F., Davis, J. M., & Echt, C. S. (2015). A consensus genetic map for *Pinus taeda* and *Pinus elliottii* and extent of linkage disequilibrium in two genotype-phenotype discovery populations of *P. taeda*. **G3: Genes| Genomes| Genetics**, g3-115.3.
- [16] Chamala, S., García, N., Godden, G. T., Krishnakumar, V., Jordon-Thaden, I. E., De Smet, R., Barbazuk, W. B., Soltis, D. E., & Soltis, P. S. (2015). MarkerMiner 1.0: A new application for phylogenetic marker development using angiosperm transcriptomes. *Applications in Plant Sciences*, 3(4).
- [15] Chamala, S., Feng, G., Chavarro, C., & Barbazuk, W. B. (2015). Genome-wide identification of evolutionarily conserved alternative splicing events in flowering plants. *Frontiers in Bioengineering and Biotechnology*, 3, 33.
- [14] Pillon, Y., Johansen, J., Sakishima, T., Chamala, S., Barbazuk, W. B., & Stacy, E. A. (2014). Primers for low-copy nuclear genes in *Metrosideros* and cross-amplification in Myrtaceae. *Applications in Plant Sciences*, 2(10).
- [13] †Chamala, S., †Chanderbali, A. S., Der, J. P., Lan, T., Walts, B., Albert, V. A., dePamphilis, C. W., Leebens-Mack, J., Rounsley, S., Schuster, S., Wing, R. A., Xiao, N., Moore, R., Soltis, P. S., Soltis, D.

E., & Barbazuk, W. B (2013). Assembly and validation of the genome of the nonmodel basal angiosperm *Amborella*. **Science**, 342(6165), 1516–1517.

- [12] Amborella Genome Consortium (Chamala, S. is listed as one of the four major contributors) (2013). The *Amborella* genome and the evolution of flowering plants. **Science**, 342(6165), 1241089.
- [11] Clancy, M. A., Rosli, H. G., Chamala, S., Barbazuk, W. B., Civello, P. M., & Folta, K. M. (2013). Validation of reference transcripts in strawberry (*Fragaria* spp.). **Molecular Genetics and Genomics**, 288(12), 671-681.
- [10] Pillon, Y., Johansen, J., Sakishima, T., Chamala, S., Barbazuk, W. B., & Stacy, E. A. (2013). Primers for Low-Copy Nuclear Genes in the Hawaiian Endemic *Clermontia* (Campanulaceae) and Cross-Amplification in Lobelioideae. **Applications in Plant Sciences**, 1(6).
- [9] Pillon, Y., Johansen, J., Sakishima, T., Chamala, S., Barbazuk, W. B., Roalson, E. H., Price, D.K., & Stacy, E. A. (2013). Potential use of low-copy nuclear genes in DNA barcoding: a comparison with plastid genes in two Hawaiian plant radiations. **BMC Evolutionary Biology**, 13(1), 35.
- [8] Chambers, A., Carle, S., Njuguna, W., Chamala, S., Bassil, N., Whitaker, V., Barbazuk, W. B., & Folta, K. (2013). A genome-enabled, high-throughput, and multiplexed fingerprinting platform for strawberry (*Fragaria* L.). **Molecular Breeding**, 1-15.
- [7] Ruzicka, D., Chamala, S., Barrios-Masias, F. H., Martin, F., Smith, S., Jackson, L. E., Barbazuk, W. B., & Schachtman, D. P. (2012). Inside arbuscular mycorrhizal roots – molecular probes to understand the symbiosis. **The Plant Genome**, 6(0),1-13.
- [6] Tomato Genome Consortium. (2012). The tomato genome sequence provides insights into fleshy fruit evolution. **Nature**, 485(7400), 635-641.
- [5] Buggs, R. J., Chamala, S., Wu, W., Tate, J. A., Schnable, P. S., Soltis, D. E., Soltis, P. S., & Barbazuk, W. B. (2012). Rapid, repeated, and clustered loss of duplicate genes in allopolyploid plant populations of independent origin. **Current Biology**, 22(3), 248-252.
- [4] Zuccolo, A., Bowers, J. E., Estill, J. C., Xiong, Z., Luo, M., Sebastian, A., Goicoechea, J. L., Collura, K., Yu, Y., Jiao, Y., Duarte, J., Tang, H., Ayyampalayam, S., Rounsley, S., Kudrna, D., Paterson, A. H., Pires, J. C., Chanderbali, A., Soltis, D. E., Chamala, S., Barbazuk, B., Soltis, P. S., Albert, V. A., Ma, H., Mandoli, D., Banks, J., Carlson, J. E., Tomkins, J., dePamphilis, C. W., Wing, R. A., & Leebens-Mack, J. (2011). A physical map for the *Amborella trichopoda* genome sheds light on the evolution of angiosperm genome structure. **Genome Biology**, 12(5), R48.
- [3] Folta, K. M., Clancy, M. A., Chamala, S., Brunings, A. M., Dhingra, A., Gomide, L., Kulathinal, R. J., Peres, N., Davis, T. M., & Barbazuk, W. B. (2010). A transcript accounting from diverse tissues of a cultivated strawberry. **The Plant Genome**, 3(2), 90-105.
- [2] †Buggs, R. J., †Chamala, S., Wu, W., Gao, L., May, G. D., Schnable, P. S., Soltis, D. E., Soltis, P. S., & Barbazuk, W. B. (2010). Characterization of duplicate gene evolution in the recent natural allopolyploid *Tragopogon miscellus* by next-generation sequencing and Sequenom iPLEX MassARRAY genotyping. **Molecular ecology**, 19 Suppl 1, 132-146.
- [1] Chamala, S., Beckstead, W. A., Rowe, M. J., & McClellan, D. A. (2007). Evolutionary selective pressure on three mitochondrial SNPs is consistent with their influence on metabolic efficiency in Pima Indians. **International Journal of Bioinformatics Research and Applications**, 3(4), 504-522.

BOOK CHAPTERS AND REVIEWS

- [5] Walton, N., Johnson, D., Person, T., & Chamala, S. Genomic Data in the Electronic Health Record. *Submitted to Advances in Molecular Pathology*.
- [4] Soltis, D. E., Gitzendanner, M. A., Stull, G., Chester, M., Chanderbali, A., Chamala, S., Jordon-Thaden, I., Soltis, P. S., Schnable, P. S., & Barbazuk, W. B. (2013). The potential of genomics in plant systematics. *Taxon*, 62(5), 886-898.
- [3] Godden, G. T., Jordon-Thaden, I. E., Chamala, S., Crawl, A. A., García, N., Germain-Aubrey, C. C., Heaney, J. M., Latvis, M., Qi, X., & Gitzendanner, M. A. (2012). Making next-generation sequencing work for you: approaches and practical considerations for marker development and phylogenetics. *Plant Ecology & Diversity*, 5(4), 427-450.
- [2] Soltis, D. E., Buggs, R. J. A., Barbazuk, W. B., Chamala, S., Chester, M., Gallagher, J. P., Schnable, P. S., & Soltis, P. S. (2012). The Early Stages of Polyploidy: Rapid and Repeated Evolution in Tragopogon. *Polyploidy and Genome Evolution* (pp. 271-292): Springer Berlin Heidelberg.
- [1] Buggs, R. J., Renny-Byfield, S., Chester, M., Jordon-Thaden, I. E., Viccini, L. F., Chamala, S., Leitch, A. R., Schnable, P. S., Barbazuk, W. B., Soltis, P. S., & Soltis, D. E. (2012). Next-generation sequencing and genome evolution in allopolyploids. *American Journal of Botany*, 99(2), 372-382.

SCHOLARLY PRESENTATIONS

* Primary presenter

- [52] * Powell-Roach, K.L., Yao, Y., Chamala, S., Black, V., Ahn, H., Fillingim, R., Ezenwa, M.O., Jhun, E., Schlaeger, J.M., Suarez, M.L., Molokie, R.E., Wang, Z.J., & Wilkie, D.J. (2019, April 3-6). Haplotype Analysis of COMT SNPs Associated with Pain Intensity and Acute Care Utilization in Adults with Sickle Cell Disease. Presentation Abstract submitted to the American Pain Society (APS) Scientific Meeting 2019. Milwaukee, Wisconsin, USA.
- [51] * Jinping, L., Chamala, S., Yin, F., Liu, X., Starostik, S., & Trevino, J. (2019, March 16-21). Identification of racial-specific novel mutations in pancreatic ductal adenocarcinoma by whole-exome sequencing: comparison of African American patients to Caucasian patients. Presentation Abstract submitted to the United States and Canadian Academy of Pathology (USCAP) Annual Meeting 2019. National Harbor, Maryland, USA..
- [50] * Kim, J. T., Jahn, S. C., Newsom, K. J., Wang, H. Y., Chamala, S., & Starostik, P. (2016, November 10-12). NGS-Based Evaluation of Enteropathy-Associated T-Cell Lymphoma Mutation Profile. Poster presented at the Association for Molecular Pathology (AMP) 2016 Annual Meeting. Charlotte, North Carolina, USA.
- [49] * Jordon-Thaden, I., Gilman, I., Uribe-Convers, S., Chamala, S., Tank, D., & Martine, C. (2015, July 25-29). Selection and validation of transcriptome-mined intronic primers for Fluidigm PCR and Illumina sequencing. Poster presented at the Botany 2015 Conference. Edmonton, Alberta, Canada.
- [48] * Chamala, S., García, N., Godden, G. T., Krishnakumar, V., Jordon-Thaden, I. E., De Smet, R., Barbazuk, W. B., Soltis, D. E., & Soltis, P. S. (2015, April 23). Phylogenetic Marker Development Using MarkerMiner 1.0. Invited Talk presented at the Smithsonian National Museum of Natural History. Washington DC, USA.

- [47] Chamala, S., * Godden, G. T., Garcia, N., Jordon-Thaden, I., Soltis, D. E., & Soltis, P. S. (2014, July 26-30). MarkerMiner 1.0: A New Pipeline and Tool for Phylogenetic Marker Development Using Angiosperm Transcriptomes. Talk presented at the Botany 2014 Conference. Boise, ID, USA.
- [46] * Jordon-Thaden, I., Uribe-Convers, S., Godden, G. T., Chamala, S., Tank, D. C., & Martine, C. T. (2014, July 26-30). A Research Workflow for Development of Single-Copy Nuclear Loci and High-throughput Targeted Enrichment for Two or More Phylogenetic Studies. Talk presented at the Botany 2014 Conference. Boise, ID, USA.
- [45] * Godden, G. T., Chamala, S., Soltis, D. E., & Soltis, P. S. (2014, July 26-30). 85 Nuclear Genes Largely Resolve the Phylogeny of Lamiales. Talk presented at the Botany 2014 Conference. Boise, ID, USA.
- [44] * Garcia, N., Meerow, A. W., Gitzendanner, M. A., Chamala, S., Soltis, D. E., & Soltis, P. S. (2014, July 26-30). Exploration of reticulate evolution in Amaryllidaceae tribe Hippeastreae (Asparagales) using sequence capture and NGS of low-copy nuclear markers. Talk presented at the Botany 2014 Conference. Boise, ID, USA.
- [43] * Chamala, S., Jackson, S., Schmutz, J., Town, C., & Barbazuk, B. (2014, January 12). Evolution of Alternative Splicing Across Legumes Using *Amborella* as a Reference. Poster presented at the Plant and Animal Genome XXII, San Diego, CA, USA.
- [42] * Chamala, S., Jackson, S. A., Schmutz, J., & Barbazuk, B. (2014, January 11-15). Evolution of Alternative Splicing Patterns After Whole-genome Duplication. Invited talk presented at the Plant and Animal Genome XXII, San Diego, CA, USA.
- [41] * Kirst, M., Resende Jr, M. F., Chamala, S., & Neves, L. G. (2014, January 11-15). Maize Genotyping Using Rapid-Seq (Randomly-Amplified Polymorphic DNA Sequencing). Poster presented at the Plant and Animal Genome XXII, San Diego, CA, USA.
- [40] Chamala, S., Walts, B., Chanderbali, A., Albert, V., Ayyampalayam, S., Burnette, J., dePamphilis, C., Der, J., Estill, J., Lan, T., Leebens-Mack, J., Lee, S., Ma, H., Moore, R., Palmer, J., Ralph, P., Rice, D., Rounsley, S., Schuster, S., Tomsho, L., Wessler, S., Wing, R., Yu, Y., Jiao, Y., Xiao, N., Soltis, D., Soltis, P., & Barbazuk, B. (2013, October 9-10). Assembly and validation of an evolutionary reference genome for flowering plants (*Amborella trichopoda*). Poster presented at the Florida Genetics 2013, Gainesville, FL, USA.
- [39] * Chamala, S., Jackson, S., Schmutz, J., Town, C., & Barbazuk, B. (2013, October 9-10). Evolution of Alternative Splicing Across Legumes Using *Amborella* as a Reference. Poster presented at the Florida Genetics 2013, Gainesville, FL, USA.
- [38] * Jordon-Thaden, I., Viccini, L., Buggs, R., Chester, M., Silva, A. V. C. D., Chamala, S., Davenport, R., Wu, W., Schnable, P. S., Barbazuk, W. B., Soltis, D., & Soltis, P. (2013, July 27-31). Differential gene expression and loss in two natural and synthetic allotetraploid *Tragopogon* species (*Asteraceae*) and their diploid progenitors. Talk presented at the Botany 2013 Conference, New Orleans, LA, USA.
- [37] * Ibarra-Laclette, E., Chamala, S., Barbazuk, B., Perez-Torres, C.-A., Méndez-Bravo, A., Hernandez, G., Albert, V. A., & Herrera-Estrella, L. (2013, January 12-16). Avocado Genome Sequencing Project. Talk presented at the Plant and Animal Genome XXI, San Diego, CA, USA.
- [36] * Chamala, S., Walts, B., Chanderbali, A., Albert, V. A., Ayyampalayam, S., Burnette, J., dePamphilis, C., Der, J. P., Estill, J., Lan, T., Leebens-Mack, J., Lee, S., Ma, H., Moore, R., Palmer, J., Ralph, P., Rice, D., Rounsley, S., Schuster, S. C., Tomsho, L. P., Wessler, S., Yu, Y., Jiao, Y., Xiao, N., Soltis, D. E.,

Soltis, P. S., & Barbazuk, B. (2013, January 12-16). Assembly and Validation of an Evolutionary Reference Genome for Flowering Plants (*Amborella trichopoda*). Poster presented at the Plant and Animal Genome XXI, San Diego, CA, USA.

- [35] * Chamala, S., Walts, B., Chanderbali, A., Albert, V., Ayyampalayam, S., Burnette, J., dePamphilis, C., Der, J., Estill, J., Lan, T., Leebens-Mack, J., Lee, S., Ma, H., Moore, R., Palmer, J., Ralph, P., Rice, D., Rounsley, S., Schuster, S., Tomsho, L., Wessler, S., Wing, R., Yu, Y., Jiao, Y., Xiao, N., Soltis, D., Soltis, P., & Barbazuk, B. (2012, November 28-29). Assembly and validation of an evolutionary reference genome for flowering plants (*Amborella trichopoda*). Poster presented at the Florida Genetics 2012, Gainesville, FL, USA.
- [34] * Mei, W., * Chamala, S., & Barbazuk, B. (2012, November 28-29). Evolution of alternative splicing across land plants. Poster presented at the Florida Genetics 2012, Gainesville, FL, USA.
- [33] * Jordon-Thaden, I. E., Viccini, L. F., Buggs, R., Silva, A. V. C., Chamala, S., Davenport, R., Wu, W., Schnable, P., Barbazuk, B., Soltis, D., & Soltis, P. (2012, July 7-11). Further exploration of genome evolution and gene expression in natural and synthetic polyploids (*Tragopogon*, Asteraceae). Talk presented at the Botany 2012 Conference, Columbus, Ohio, USA.
- [32] * Der, J., Ayyampalayam, S., Burnett, J., Chamala, S., Chanderbali, A., Estill, J., Jiao, Y., Liu, K., Ralph, P., Lan, T., Lyons, E., Tang, H., Tomsho, L. P., Wafula, E., Walts, B., Albert, V., Barbazuk, B., Ma, H., Leebens-Mack, J., Palmer, J., Rounsley, S., Sankoff, D., Schuster, S. C., Soltis, D., Soltis, P., Wessler, S., Wing, R., & dePamphilis, C. (2012, July 7-11). The draft genome sequence of *Amborella trichopoda* sheds light on the ancestral angiosperm genome. Talk presented at the Botany 2012 Conference, Columbus, Ohio, USA.
- [31] * Chanderbali, A., Lan, T., Powell, A., Chang, T.-H., Albert, V., Chamala, S., dePamphilis, C., Leebens-Mack, J., Barbazuk, B., Walts, B., Der, J., Ma, H., santiago, N., Traub, G., Cellinese, N., Estill, J., Lee, S., Palmer, J., Ralph, P., P. Tomsho, L., Yu, Y., Rounsley, S., Schuster, S. C., Wessler, S., Wing, R., Soltis, P., & Soltis, D. (2012, July 7-11). Fluorescence In Situ Hybridization (FISH) in the Evolutionary Reference Plant *Amborella* to Verify Genome Sequence Assembly and Generate a Karyotype. Talk presented at the Botany 2012 Conference, Columbus, Ohio, USA.
- [30] * Estill, J., Leebens-Mack, J., Ayyampalayam, S., Soltis, D. E., Soltis, P. S., Barbazuk, B., Albert, V. A., Ma, H., Wessler, S., Burnett, J., Chamala, S., Jiao, Y., Wafula, E., Walts, B., Schuster, S. C., Der, J. P., & dePamphilis, C. (2012, January 14-18). A genome browser for the basal angiosperm, *Amborella trichopoda*. Poster presented at the Plant & Animal Genome XX, San Diego, CA, USA.
- [29] * Lan, T., Chanderbali, A., Chang, T.-H., Powell, A., Santiago, N., Traub, G., Cellinese, N., Chamala, S., Estill, J., Lee, S., Ralph, P., Tomsho, L. P., Walts, B., Yu, Y., Der, J. P., dePamphilis, C., Leebens-Mack, J., Ma, H., Palmer, J., Rounsley, S., Schuster, S. C., Wessler, S., Wing, R. A., Soltis, D. E., Soltis, P. S., & Albert, V. A. (2012, January 14-18). Using Fluorescence In Situ Hybridization (FISH) in the Evolutionary Reference Plant *Amborella* to Verify Genome Sequence Assembly and Generate a Karyotype. Poster presented at the Plant & Animal Genome XX, San Diego, CA, USA.
- [28] * Der, J. P., Ayyampalayam, S., Burnett, J., Chamala, S., Chanderbali, A., Chang, T.-H., Estill, J., Jiao, Y., Liu, K., Lee, S., Ralph, P., Lan, T., Tomsho, L. P., Wafula, E., Walts, B., Yu, Y., Albert, V. A., Barbazuk, B., Leebens-Mack, J., Ma, H., Palmer, J., Rounsley, S., Schuster, S. C., Soltis, D. E., Soltis, P. S., Wessler, S., Wing, R. A., & dePamphilis, C. (2012, January 14-18). The *Amborella* Genome Sequencing Project: Generating An Evolutionary Reference Sequence for Flowering Plants. Poster presented at the Plant & Animal Genome XX, San Diego, CA, USA.

- [27] *Estill, J., Leebens-Mack, J., Ayyampalayam, S., Soltis, D. E., Soltis, P. S., Barbazuk, B., Albert, V. A., Ma, H., Wessler, S., Burnett, J., Chamala, S., Jiao, Y., Wafula, E., Walts, B., Schuster, S. C., Der, J. P., & dePamphilis, C. (2012, January 14-18). A genome browser for the basal angiosperm, *Amborella trichopoda*. Talk presented at the Plant & Animal Genome XX, San Diego, CA, USA.
- [26] *Chamala, S., Walts, B., Estill, J., Lee, S., Ralph, P., Tomsho, L. P., Yu, Y., Der, J. P., Albert, V. A., dePamphilis, C., Leebens-Mack, J., Ma, H., Palmer, J., Rounsley, S., Schuster, S. C., Soltis, D. E., Soltis, P. S., Wessler, S., Wing, R. A., & *Barbazuk, B. (2012, January 14-18). A Whole Genome Reference Sequence of *Amborella*. Poster presented at the Plant & Animal Genome XX, San Diego, CA, USA.
- [25] *Jordon-Thaden, I., Viccini, L. F., Buggs, R., Chester, M., Chamala, S., Wu, W., Barbazuk, B., Schnable, P. S., Soltis, D. E., & Soltis, P. S. (2012, January 14-18). Using Sequenom to study gene expression and gene loss in natural and synthetic polyploid generations (*Tragopogon, Asteraceae*). Poster presented at the Plant & Animal Genomes XX Conference, San Diego, CA, USA.
- [24] *Chambers, A., Carle, S., Chamala, S., Barbazuk, W. B., Whitaker, V. M., & Folta, K. M. (2011, November 09-10). Multiplexing eight SSR molecular markers to fingerprint diverse *Fragaria* germplasm. Poster presented at the Florida Genetics 2012, Gainesville, FL, USA.
- [23] *Neves, L. G., Chamala, S., Davis, J. M., Barbazuk, W. B., & Kirst, M. (2011, November 09-10). Exploring the megagenome of pine by targeted resequencing. Poster presented at the Florida Genetics 2011, Gainesville, FL, USA.
- [22] *Chamala, S., Walts, B., Chanderbali, A., Albert, V., Ayyampalayam, S., Burnette, J., dePamphilis, C., Der, J., Estill, J., Lan, T., Leebens-Mack, J., Lee, S., Ma, H., Rounsley, S., Schuster, S., Soltis, D., Soltis, P., Tomsho, L., Wessler, S., Wing, R., Yu, Y., & Barbazuk, B. (2011, November 09-10). The Amborella Genome Project: generating a reference sequence for angiosperm evolutionary analysis. Poster presented at the Florida Genetics 2011, Gainesville, FL, USA.
- [21] Chamala, S., *Walts, B., Albert, V., dePamphilis, C., Der, J., Estill, J., Leebens-Mack, J., Lee, S., Ma, H., Rounsley, S., Schuster, S., Soltis, D., Soltis, P., Tomsho, L., Wessler, S., Wing, R., Yu, Y., & Barbazuk, W. B. (2011, November 2-5). The Amborella genome project: generating a reference sequence for angiosperm evolutionary analysis. Poster presented at the Genome Informatics 2011, Cold Spring Harbor, New York, USA.
- [20] Brunings, A., Clancy, M. A., Rosli, H. G., Chamala, S., Carle, S., Varn, F., Civello, M., Babazuk, W. B., Davis, T. M., & *Folta, K. M. (2011, September 23-30). Genome-enabled development of new tools to accelerate strawberry (*Fragaria spp*) research. Poster presented at the American Society for Horticultural Science (ASHS) Annual Conference 2011, Waikoloa, Hawaii, USA.
- [19] *Soltis, D., Buggs, R., Chamala, S., Chester, M., Symonds, V., Tate, J., Mavrodiev, E., Schnable, P., Barbazuk, W. B., & Soltis, P. (2011 July 9-13). *Tragopogon* - A model for recent and recurring allopolyploidy. Talk presented at the Botany 2011 Conference, St. Louis, MO, USA.
- [18] *Jordon-Thaden, I., Facio, L. V., Buggs, R., Chester, M., Silva, A. V., Chamala, S., Davenport, R., Wu, W., Schnable, P., Barbazuk, B., Soltis, D., & Soltis, P. (2011 July 9-13). Exploring genome evolution and gene expression in natural and synthetic polyploids (*Tragopogon, Asteraceae*) based on growth chamber experiments. Talk presented at the Botany 2011 Conference, St. Louis, MO, USA.
- [17] *Buggs, R. J., Renny-Byfield, S., Chamala, S., Jordon-Thaden, I. E., Viccini, L. F., Leitch, A. R., Schnable, P. S., Barbazuk, W. B., Soltis, P. S., & Soltis, D. E. (2011 July 4-8). Ongoing evolution in allopolyploid

genomes examined using next-generation sequencing. Invited Talk presented at the 8th Biennial Meeting of the Systematics Association, Queen's University, Belfast, UK.

- [16] *Soltis, D. E., Soltis, P. S., Buggs, R. J., Viccini, L. F., Chester, M., Jordon-Thaden, I.E., Silva, A. V. C. D., Tate, J. A., Symonds, V. V., Wu, W., Schnable, P. S., Chamala, S., Davenport, R., & Barbazuk, W. B. (2011 July 23-30). Genetic, karyotypic and genomic evolution in *Tragopogon* allotetraploids. Invited Talk presented at the *International Botanical Congress XVIII*, Melbourne, Australia.
- [15] *Chamala, S., Walts, B., Albert, V., dePamphilis, C., Der, J., Estill, J., Leebens-Mack, J., Lee, S., Ma, H., Rounsley, S., Schuster, S., Soltis, D., Soltis, P., Tomsho, L., Wessler, S., Wing, R., Yu, Y., & Barbazuk, W. B. (2011, May 18-21). The *Amborella* genome project: generating a reference sequence for angiosperm evolutionary analysis. Poster presented at the 18th Plant Biology Symposium, University Park, Pennsylvania, USA.
- [14] *Chamala, S., Walts, B., Albert, V., dePamphilis, C., Der, J., Estill, J., Leebens-Mack, J., Lee, S., Ma, H., Rounsley, S., Schuster, S., Soltis, D., Soltis, P., Tomsho, L., Wessler, S., Wing, R., Yu, Y., & Barbazuk, W. B. (2011, January 15-19). The *Amborella* genome project: generating a reference sequence for angiosperm evolutionary analysis. Poster presented at the Plant & Animal Genomes XIX Conference, San Diego, CA, USA.
- [13] *Barbazuk, W. B., Chamala, S., Brent, M. R., Mueller, L., & Giovannoni, J. (2011, January 15-19). Tomato trained TWINSKAN and *ab initio* gene finding in tomato. Poster presented at the Plant & Animal Genomes XIX Conference, San Diego, CA, USA.
- [13] *Neves, L. G., Chamala, S., Davis, J. M., Barbazuk, W. B., & Kirst, M. (2011, January 15-19). Whole-Exome Sequencing And Genotyping In The Loblolly Pine (*Pinus taeda*) Megagenome. Talk presented at the Plant & Animal Genomes XIX Conference, San Diego, CA, USA.
- [12] *Jordon-Thaden, I. E., Viccini, L. F., Buggs, R., Chester, M., Silva, A. V., Chamala, S., Davenport, R., Wu, W., Schnable, P. S., Barbazuk, W. B., Soltis, D. E., & Soltis, P. S. (2011, January 15-19). Exploring Genome Evolution And Gene Expression In Natural And Synthetic Polyploids (*Tragopogon*). Poster presented at the Plant & Animal Genomes XIX Conference, San Diego, CA, USA.
- [11] *Zuccolo, A., Bowers, J. E., Estill, J. C., Xiong, Z., Luo, M., Sebastian, A., Goicoechea, J. L., Collura, K., Yu, Y., Jiao, Y., Tang, H., Duarte, J., Rounsley, S., Kudrna, D., Paterson, A. H., Pires, J. C., Soltis, D., Chamala, S., Barbazuk, B., Soltis, P., Albert, V. A., Ma, H., Der, J. P., Mandoli, D., Banks, J., Carlson, J., Tomkins, J., dePamphilis, C., Wing, R. A., & Leebens-Mack, J. (2011, January 15-19). A Physical Map For The *Amborella* Genome Sheds Light On The Evolution Of Angiosperm Genome Structure. Poster presented at the Plant & Animal Genomes XIX Conference, San Diego, CA, USA.
- [10] *Chambers, A., Chamala, S., Barbazuk, W. B., Whitaker, V. M., & Foltá, K. M. (2010, October 27-28). Universal fingerprinting platform for strawberry (*Fragaria* species). Poster presented at the Florida Genetics 2010, Gainesville, FL, USA.
- [9] *Clancy, M. A., Brunings, A. M., Chamala, S., Barbazuk, W. B., Davis, T. M., & Foltá, K. M. (2010, October 27-28). Empirically-designed tools for molecular biology: exploiting a deeply-sequenced transcriptome of octoploid strawberry. Poster presented at the Florida Genetics 2010, Gainesville, FL, USA.
- [8] *Neves, L. G., Chamala, S., Davis, J. M., Barbazuk, W. B., & Kirst, M. (2010, October 27-28). Towards genome-wide association studies in forest trees. Poster presented at the Florida Genetics 2010, Gainesville, FL, USA.

- [7] *Clancy, M. A., Brunings, A. M., Chamala, S., Barbazuk, W. B., & Folta, K. M. (2010, July 31-August 4). Empirically-designed tools for molecular biology: exploiting a deeply-sequenced strawberry transcriptome. Poster presented at the Plant Biology 2010 Annual Conference, Montreal, Quebec, Canada.
- [6] *Folta, K. M., Chamala, S., Barbazuk, W. B., Dhingra, A., Brunings, A., Clancy, M. A., Rosli, H. G., Pombo, M., Civello, M., & Davis, T. M. (2010, August 2–5). Tissue and Developmental Transcriptome Differences in strawberry revealed with Next-Gen Technology. Talk presented at the American Society for Horticultural Science (ASHS) Annual Conference 2010, Palm Desert, California, USA.
- [5] *Chamala, S. (2008, April 4). Developing assembly Strategies for emerging sequencing technologies. Talk presented at the Advanced Seminar in Biomedical Informatics, UIUC, Urbana, IL, USA.
- [4] *Chamala, S., Beckstead, W. A., Rowe, M. J., & McClellan, D. A. (2006, October 20-21). Evolutionary selective pressure on three mitochondrial SNPs is consistent with their influence on metabolic efficiency in Pima Indians. Talk presented at the Biotechnology and Bioinformatics Symposium, Brigham Young University, Provo, Utah, USA.
- [3] *Chamala, S., Beckstead, W. A., Rowe, M. J., & McClellan, D. A. (2006, June 23-27). Evolutionary selective pressure on three mitochondrial SNPs is consistent with their influence on metabolic efficiency in Pima Indians. Poster presented at the Evolution 2006, Society of Systematic Biology, State University of New York-Stony Brook, Stony Brook, New York, USA.
- [2] *Chamala, S., Beckstead, W. A., Rowe, M. J., & McClellan, D. A. (2006, May 24-28). Evolutionary selective pressure on three mitochondrial SNPs is consistent with their influence on metabolic efficiency in Pima Indians. Poster presented at the Genomes, Evolution, and Bioinformatics 2006, Society for Molecular Biology and Evolution, Arizona State University, Tempe, Arizona, USA.
- [1] *Chamala, S. (2006, March 18). Contribution of conserved nucleotides for the RNA folding in picornaviruses. Talk presented at the 20th Annual Spring Research Conference 2006, Brigham Young University, Provo, Utah, USA.

TECHNICAL SKILLS & EXPERTISE

BIOINFORMATICS SOFTWARES

Genome Annotation: MAKER, FGENESH, TWINSKAN, TWINSKAN_EST

Microarray and Pathway Analysis: Affymetrix Expression and Transcriptome Analysis Console, Bioconductor, DAVID, GSEA, KEGG, GeneSpring, PathVisio

Phylogeny Software: ClustalW, MAFFT, MEGA, MUSCLE, PHYLIP, PAUP*, RAxML

Sequence Assemblers: Arachne, Celera, Newbler, TGICL, Trinity, Phrap, EULER-SG, Velvet, ABySS

Sequence Alignment: BLAT, BowTie, TopHat, FASTA, GMAP, GSNAP, HMMER, MOSAIK, NCBI-BLAST, SOAP WU-BLAST

Variant Discovery and Annotation: BCFtools, FreeBayes, GATK, GEMINI, GigaBayes, Hydra, Lumpy, VarScan, ANNOVAR, SnpEff, and VEP

PROGRAMMING AND SCRIPTING LANGUAGES

Java, JSP, Servlets, EJB 2.1, JDBC, C, C++, Perl, CGI programming with Perl, Python, PHP, Korn Shell Script, Bourne Shell Script, SQL, SAS, R.

APPLICATION/WEB SERVERS

IBM Websphere, Tomcat

DESIGN/VERSION/WORK-FLOW CONTROL TOOLS

BEA AuaLogic BPM, Axure RP Pro, TeamTrack, MS Visio, UML, Rational ClearCase & ClearQuest, CVS, GIT.

DATABASES

MySQL, Oracle, MongoDB, Elasticsearch.

WEB RELATED

XML, HTML, JavaScript, CSS.

SOFTWARE TECHNOLOGIES

Crystal Report 11, FindBugs, OPCON, Microsoft Office, OpenOffice.

OPERATING SYSTEMS

Linux, Mac OSX, Rocks Cluster Distribution, Windows, Sun Grid Engine, TORQUE Resource Manager, SLURM Resource Manager, UNIX

REFEREE/REVIEW EDITOR

Applications in Plant Sciences – www.bioone.org/loi/apps
BMC Genomics – www.biomedcentral.com
Frontiers in Bioinformatics and Computational Biology – www.journal.frontiersin.org
Frontiers in Plant Science – www.journal.frontiersin.org
Horticulture Research – www.nature.com
Molecular BioSystems – www.rsc.org
Molecular Ecology Resources – www.wiley.com
Molecular Plant – www.cell.com
Nucleic Acids Research – www.nar.oxfordjournals.org
PlosOne – www.plosone.org
The Scientific World Journal – www.hindawi.com

MEMBERSHIPS

Sigma Xi The Scientific Research Society (Nominated Full Membership) - www.sigmaxi.org
Association for Molecular Pathology (AMP) - www.amp.org
Health Level Seven (HL7) International - www.hl7.org

SCHOLARSHIPS & AWARDS

Best graduate student paper award (Honorable Mention), UF, Gainesville, FL	2013
UT-Austin Symposium and Workshop on New Methods for Phylogenomics and Metagenomics	2013
Grinter Fellowship, UF, Gainesville, FL	2011 TO 2013
Travel Award from Graduate Student Council, UF, Gainesville, FL	2012
Travel Award from Celera Assembler User Group Meeting	2012
Travel Award from 18 th Plant Biology Symposium at Penn State	2011
Graduate Student Research Assistant Grant, UIUC, Urbana, IL	2007 AND 2008
Honors Thesis Research Grant, BYU, Provo, UT	2006
Integrative Biology Research Travel Grant, BYU, Provo, UT	2006
Clarence Cottam Memorial Scholarship, BYU, Provo, UT	2005 AND 2006
Brigham Young Academic Scholarship, BYU, Provo, UT	2005

VOLUNTEER

CO-PROJECT LEAD, IT Education Project, Monsanto, St. Louis, MO

JUNE TO DECEMBER 2008

ACTIVE VOLUNTEER, Food & Care Coalition, Provo, UT

JUNE TO DECEMBER 2006

TREASURER, Molecular Evolution Research Club, BYU, UT

JANUARY TO DECEMBER 2006

TREASURER, Amnesty International USA, BYU, UT

JANUARY 2005 TO DECEMBER 2006