

Chittibabu (Babu) Guda, PhD.
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Education and Training

- 1999-2001 **University of California at San Diego**
San Diego Supercomputer Center
Post-doctoral Research Associate, *Computational Biology*
- 1997-1999 **Iowa State University at Ames**
Department of Genetics, Developmental & Cell Biology
Post-doctoral Research Associate, *Molecular Biology*
- 1997-1999 **Iowa State University at Ames**
Department of Computer Science
Non-degree student, *Computational Biology and Computer Science*
- 1992-1997 **Auburn University at Auburn**
Department of Biological Sciences (formerly, Botany & Microbiology)
Ph.D., *Molecular Biology*
- 1990-1992 **College of Agriculture (APAU), Rajendranagar, India**
Department of Genetics and Plant Breeding
M.Sc.(ag), *Genetics, Seed Science and Technology*
- 1986-1990 **Agricultural College, (APAU), Bapatla, India.**
B.Sc.(ag), *Agricultural Sciences*

Primary Academic Appointments

- 2016-present **Professor (tenured)**, Dept. of Genetics, Cell Biology & Anatomy (GCBA)
University of Nebraska Medical Center (UNMC)
- 2015-present **Chief Bioinformatics & Research Computing Officer**
Vice Chancellor for Research Office, UNMC
- 2010-present **Founding Director**, Bioinformatics and Systems Biology Core, UNMC
- 2010-2016 **Associate Professor (tenured)**, Dept. of Genetics, Cell Biology & Anatomy, UNMC
- 2004-2010 **Assistant Professor**, Dept. of Epidemiology & Biostatistics and Cancer Research
Center, State University of New York at Albany (SUNY-Albany)
- 2001-2004 **Project Scientist**, San Diego Supercomputer Center
University of California at San Diego (UCSD)
- 2000-2004 **Instructor of Bioinformatics Certification Program**
Department of Biosciences, UCSD Extension
- 1999-2001 **Post-doctoral Researcher**, San Diego Supercomputer Center, UCSD

- 1997-1999 **Post-doctoral Research Associate**, Department of Genetics, Developmental & Cell Biology (previously, Dept. of Botany), Iowa State University at Ames
- 1992-1997 **Graduate Teaching and Research Assistant**, Department of Biological Sciences Auburn University at Auburn
- 1990-1992 **Post-graduate Research Fellow**, Department of Genetics and Plant Breeding College of Agriculture, ANGRAU, Rajendranagar, India

Adjunct Academic Appointments

- 2016-present **Courtesy Professor**, Department of Biochemistry & Molecular Biology, UNMC
- 2010-present **Adjunct Faculty**, Fred & Pamela Buffett Cancer Center, UNMC
- 2010-2016 **Associate Professor (courtesy)**, Dept. of Biochemistry & Molecular Biology, UNMC
- 2006-2014 **Adjunct Faculty**, Department of Computer Science, SUNY-Albany
- 2005-2010 **Adjunct Assistant Professor**, Department of Biological Sciences, SUNY-Albany

Significant Academic Committees

- 2019-present **Member**, Internal Advisory Committee, Holland Computing Center, UNL
- 2018 **Advisor** to American Assoc. of Medical Colleges (AAMC) on RFI response to NIH
- 2018-present **Member**, Internal Advisory Board, SEPA grant, UNL
- 2018-present **Chair**, Bioinformatics Faculty Search Committee, GCBA, UNMC
- 2018-present **Member**, Research & Development Committee, COM Dean's office, UNMC
- 2016-present **Member**, Faculty Search Committee, GCBA Department, UNMC
- 2016-present **Senator**, Faculty Senate, University of Nebraska Medical Center
- 2016-2017 **Member**, Asst. Vice-Chancellor for IT Search Committee, Chancellor's Office, UNMC
- 2014-present **Director**, Bioinformatics track of Biomedical Informatics Graduate Program, UNMC
- 2014-present **Member**, Information Management Governance Cabinet, Chancellor's Office, UNMC
- 2014-present **Member**, Internal Advisory Committee, Protein Structure Core Facility, UNMC
- 2013-2016 **Member**, Internal Advisory Committee, RITO Core, UNMC
- 2011-present **Chair**, Information Technology and Communications Committee, GCBA, UNMC
- 2012-2013 **Member**, Search Committee for Research IT Office Director, UNMC
- 2006-2007 **Member**, Computational Physics Faculty Search Committee, SUNY-Albany

Honors and Awards

- 2017 **Innovator Award**, UNeMed, University of Nebraska Medical Center
- 2015 **Distinguished Scientist Award**, University of Nebraska Medical Center
- 2015 **Moderator**, Ebola Genomics Technical Interchange Meeting, Omaha, NE
- 2014 **Workshop Committee Chair, International Conference on Intelligent Biology and Medicine (ICIBM), San Antonio, TX.**
- 2012 **Keynote speaker**, International Conference & Exhibition on Metabolomics & Systems Biology, San Francisco, CA
- 2009 **Invited Speaker**, Third US-EU Workshop on Systems level understanding of DNA damage responses, Egmond aan Zee, The Netherlands
- 2009 **Distinguished Dissertation Award**, (Ph.D. student, Brian King), SUNY-Albany

- 2009 **Outstanding Publication Award**, (Ph.D. student, Brian King),
College of Computing and Informatics, SUNY-Albany
- 2007 **Invited Panelist**, New Investigator Research Orientation, SUNY-Albany
- 2007 **Invited Speaker**, NIH/NHLBI Workshop on Mitochondrial Proteomics, Bethesda
- 2007 **Invited Speaker**, *E. huxleyi* Genome Annotation Pre-Jamboree, Roscoff, France
- 2006 **Service Award for Leadership and Governance**, SUNY-Albany
- 2003 **Panelist**, Discussion on Challenges in Bioinformatics, at the International Conference
on Computer Science & Its Applications, National University, San Diego
- 2002 **Instructor of the Year Award**, Department of Biosciences, UCSD Extension
- 2001 **Post-doctoral Travel Award**, Department of Energy (DOE)
- 1995 **Certificate for Academic Excellence**, Auburn University
- 1994 **Student Travel Award**, UNIDO (United Nations Industrial Development Organization)
- 1990-92 **Graduate Student Fellowship**, Andhra Pradesh Agricultural University, India
- 1986-90 **Annual Awards for Academic Excellence in Professional Studies**, Andhra Pradesh State
Police Department, India

Selected Invited Presentations

- 2018 University of Nebraska at Omaha, NE
- 2018 University of Nebraska at Lincoln, NE
- 2017 AFRRI- Uniformed Services University, Bethesda, MD
- 2016 University of South Dakota, Vermillion, SD
- 2016 Creighton University, Department of Chemistry, Omaha, NE
- 2015 University of Alabama at Birmingham, AL
- 2014 University of Northern Iowa, Cedar Rapids, IA
- 2012 Session Chair and Speaker, International Conference and Exhibition on Proteomics and
Bioinformatics, Hyderabad, India.
- 2012 Department of Biomedical Informatics, Vanderbilt University, Nashville, TN
- 2012 Biotechnology and Life Sciences Seminar Series, University of Nebraska at Lincoln.
- 2010 Department of Internal Medicine, University of Nebraska Medical Center
- 2009 The *Emiliana huxleyi* Genome Annotation Jamboree, Falmouth, MA
- 2009 Cancer Research Center, Medical College of Georgia, Augusta, GA
- 2007 Department of Plant Sciences, University of Hyderabad, India
- 2007 Department of Neurology, Albert Einstein College of Medicine, Bronx, NY
- 2007 Bioinformatics & Computational Biology, George Mason University, Fairfax, VA
- 2005 Department of Biomedical Sciences, University of Central Florida, Orlando, FL
- 2004 Department of Biological Sciences, Cal State University, San Marcos, CA
- 2004 Department of Biostatistics, Purdue University, West Lafayette, IN.
- 2004 The Samuel Roberts Noble Foundation, Ardmore, OK
- 2003 Bioinformatics Tutorial presented at the International Conference on Computer Science
& Its Applications, at the National University, San Diego, CA
- 2002 Workshop on Computer Aided Drug Design (CADD), UCSD

Professional Service

Study Sections or Review Panels Served

- 2018 NIH Biomaterials and Biointerfaces (BMBI) Study Section (ZRG1 BST-M (30))
- 2017 NIH/NCI Informatics Technology for Cancer Research (ITCR) review panel (November)

- 2017 NIH/NCI Panelist, PDXNet Special Emphasis Panel, July 2017
- 2017 NIH/NCI Informatics Technology for Cancer Research (ITCR) review panel (March)
- 2016 NIH BDMA Study section
- 2016 DoD CDMRP study section, Pathobiology-5 Panel
- 2014 NIH/CSR Genomics, Comp. Biol. Technology (GCAT) Study Section
- 2014 NIH/NCI Special emphasis panel (ZCA1-SRLB-4-M1), Informatics Tech. for Cancer Res.
- 2014 NIH/NCI Special emphasis panel (ZCA1-SRLB-4-M2), Informatics Tech. for Cancer Res.
- 2013 NIH/NCI Special emphasis panel (ZCA1-SRLB-V-J1), Informatics Tech. for Cancer Res.
- 2013 NIH/NCI Special emphasis panel (ZCA1-SRLB-V-O1), Adv. Dev. of Information Tech.
- 2013 NIH/CSR Genomics, Comp. Biol. Technology (GCAT) Study Section
- 2013 MRC (Medical Research Council) Fellowships, *ad hoc* reviewer, UK
- 2011 NIH/NCI review panel, Cancer Target and Drug Development (CTDD) Network
- 2009 WOTRO Science for Global Development reviewer, The Netherlands
- 2009 NSF Advances in Biological Informatics review panel
- 2008 NSF Advances in Biological Informatics review panel
- 2008 NSF BIO Division, National Science Foundation (NSF)

Committees & Editorial Boards

- 2011-16 *Editorial Board Member*, Journal of Proteomics & Bioinformatics
- 2015 Guest Editor, Special issue on *Frontiers in Integrative Genomics and Translational Bioinformatics*, Hindawi Publishing Corporation
- 2012-16 *Program Committee Member*, International Conference on Intelligent Biology and Medicine (ICIBM), Vanderbilt University Medical Center
- 2012 *Program Committee Member*, IEEE International Conference on Bioinformatics & Biomedicine (BIBM'12), Philadelphia.
- 2011 *Program Committee Member*, IEEE BIBM Second Workshop Integrative Data Analysis in Systems Biology (IDASB), 2011, Atlanta
- 2004-05 Bioinformatics Consultant, NIH MARC USTAR Grant, CalState at San Marcos, CA
- 2003 *Bioinformatics Training Consultant*, Pfizer Global R&D, La Jolla, CA

Adhoc Reviewer

2003-present: Reviewed over 50 journal articles for the following journals
 Nature Scientific Reports, Nucleic Acids Research, PLoS Computational Biology, Bioinformatics, Cancer Informatics, BMC Bioinformatics, BMC Genomics, Advances in Bioinformatics, Pacific Symposium on Biocomputing (PSB proceedings), Open Systems Biology, PLoS ONE, FEBS Letters, IEEE Proceedings, ICIBM Conference Proceedings, Biomedical Research International Journal, Expert Review of Proteomics, Mitochondrion, Medical Science Monitor, Drug Discovery Today, Experimental Cell Research, Journal of Weed Science, Virology, UNMC MD Honors thesis.

Bioinformatics Tools and Software Development

Over the past 20 years, I have been developing bioinformatics software tools that include algorithms, software packages, web servers and databases. The following is the list of research projects and the deliverables from these projects, which were published in open-source journals and made freely accessible to the research community.

Project Period	Name of the Tool	Description
2013-18	RedPanda	A novel method for variant calling using single cell RNA-sequencing data
2012-17	ChimeRScope	A novel tool for predicting fusion genes using gene finger prints
2012-15	LocSigDB	A comprehensive database of protein localization signals
2011-15	ECemble	An enzyme classification algorithm and software tool
2011-13	MetaID	A method and tool for taxonomic profiling of metagenomic data
2012-13	Nebraska BioBank	Database and software to de-identify patient records and link blood samples to their Electronic Medical Record Data
2011-14	In-house Tool	Cancer protein interaction networks analysis using data mining
2007-09	In-house Tool	A method for predicting domain-domain interactions in proteins
2006-12	ngLOC	A novel method with validation, software and web server for predicting protein subcellular localization from sequence data
2005-06	DMAPS	A database of multiple alignments for protein structures
2004-06	pTARGET	A new method and web server for protein localization prediction
2003-04	SledgeHMMER	A web server for batch searching of Pfam database
2003-05	MITOPRED	A new method and web server for predicting mitochondrial proteins
1999-04	CE-MC	A novel method, software and web server for multiple protein structure alignment

Patents

US Patent Application 62/337,563 “ChimeRScope: A Fusion Gene Prediction Algorithm Using a Novel Alignment-Free approach with High Sensitivities”, Inventors: You Li and **Guda C**, filed May 17, 2016.

Mentoring Record

As the primary advisor or supervisor, I have mentored or currently mentor 6 junior faculty, 7 postdocs, 13 PhD, 5 MS, and 20 undergrad/high school students in my overall career. In addition, I also served on the advisory committees of 14 PhD or MS students at various institutions.

Junior Faculty and Postdocs			
Name	Period	Title	Current Position
Subbu Jagadeesan, PhD	2018-current	Postdoc	
Yuande Tan, PhD	2018-current	Postdoc	
Neetha Vellichirammal, PhD	2016-current	Instructor	
Peng Xiao, PhD	2014-current	Assistant Professor	
Nitish Mishra, PhD	2013-current	Instructor	
Yeong Kim, PhD	2015-2018	Assistant Professor	Seoul, South Korea
Joan Cui, PhD	2014-2015	Assistant Professor	UNL (COBRE project)
Xiaosheng Wang, PhD	2013-2015	Instructor	China Pharmaceutical University, Nanjing
Jasjit Banwait, PhD	2016-2017	Postdoc	Scientist at Baylor-Health at Dallas
Nitish Mishra, PhD	2013-current	Postdoc	Instructor at UNMC
Nagendra Chaturvedi, PhD	2012-14	Postdoc	Research Associate, UNMC

Satish Srinivasan, PhD	2011-13	Postdoc	Asst. Professor, Penn State at Great Valley
Purnima Ambati, PhD	2004-09	Postdoc	Director, Electronic Health Record Access Core, UNMC
Lipika Pal, Ph.D.	2005-07	Postdoc	Research Associate, UMBI/UMD
Visiting Scholars and Programmers			
Name	Period	Title	Current Position
Duc Le, BS	2016-current	Bioinformatics Programmer/Analyst	
Meng, Niu, PhD	2015-current	Bioinformatics Programmer/Analyst	
Sanjit Pandey, MS	2010-current	Bioinformatics Programmer/Analyst	
Jasjit Banwait, PhD	2017-2018	Bioinformatics Programmer/Analyst	Scientist at Baylor-Health at Dallas
Navodita Upadhyay, MS	2016-current	Bioinformatics Programmer/Analyst	Programmer at Mutual of Omaha, NE
Matyas Cserhati, PhD	2013-2018	Bioinformatics Programmer/Analyst	Postdoc, UTSAHC, San Antonio
Fei Pan, PhD	2015-2016	Bioinformatics Programmer/Analyst	Unknown
Smita Pawar, PhD	2012	BOYSCAST Fellow	Assoc. Professor, Osmania University, India
Nalin Goonesekhere, PhD	2011	Visiting Professor	Professor, U. Northern Iowa
Ashok Jangam, M.Sc.(ag)	2011	ICAR/NAIP Fellow	Senior Scientist, ICAR, India
Frank Doyle, MS	2005-06	Programmer	PhD student, SUNY-Albany
Graduate Students			
Name	Period	Degree/Program	Current Position
Abrar Albahrani	2018-current	PhD/Biomed. Informatics	PhD Student, UNMC
Siddesh Southekal, MS	2017-current	PhD/Biomed. Informatics	PhD Student, UNMC
Nagavardhini Avuthu, MS	2016-current	PhD/Biomed. Informatics	PhD Student, UNMC
Sanjit Pandey, MS	2014-current	PhD/Biomed. Informatics	Part-time PhD Student, UNMC
Tanwir Ahmad	2017-2018	MS/Biomed. Informatics	Research Technologist, UNMC
Adam Cornish, BS	2013-2018	PhD/Genetics, Cell Biol.	Bioinformatics Analyst, UNMC
Kristin Wipfler, BS	2013-2017	PhD/Genetics, Cell Biol.	Biotatistician, FORWARD, Omaha, NE
You Li, MS	2012-2016	PhD/Biomed. Informatics	Sr. Bioinformatics Scientist, HitGen Ltd., Chengdu, China
Simarjeet Negi, MS	2012-2016	PhD/Biomed. Informatics	Postdoc, NCI/NIH
Suleyman Vural, BS	2011-2015	PhD/Biomed. Informatics	Postdoc, NCI/NIH
Akram Mohammed, MS	2009-2014	PhD/Biomed. Informatics	Le Bonheur Children's Hospital, U. Tenn.
Ru Shen, MS	2009-2014	PhD/Computer Science	Software Developer, MarketAxess Inc.
Brian King, MS	2005-2008	PhD/Computer Science	Assoc. Professor, Bucknell University
Lance Latham, MS	2006-2008	PhD/Computer Science	Discontinued
Krupa Somasekhar, BS	2009-2010	MS/Computer Science	Software programmer
Chintan Mistry, BS	2009	MS/Computer Science	Software programmer
Nitant Patel, BS	2009	MS/Computer Science	Software programmer
Stacey Gaddis, BS	2006	MS/Computer Science	Software programmer

Student Interns and Volunteers:

2018

Srujana Maddipati

Univ. Nebraska at Omaha, NE

Student volunteer

2018	Sumit Kar	UNMC Graduate School	Rotation student
2018	Grace Maline	Univ. Nebraska at Omaha, NE	SURP Student intern
2018	Naman Nisheeth	Millard North High School	Student intern
2018	Eshu Senthil	Papillion-La Vista High school, NE	Student intern
2017-18	Surabhi Naik	U Nebraska at Lincoln	Volunteer
2017-18	Abrar Albahrani	Georgetown University	Student Intern
2016	Quinn Nelson	Univ. Nebraska, Omaha, NE	INBRE scholar
2015	Neil Band	Millard North High, Omaha, NE	Summer volunteer
2015	Jordan Proby	Brownell-Talbot High, Omaha, NE	Summer volunteer
2014-15	Naveen Mallipudi	Millard North High, Omaha, NE	Summer volunteer
2014	Bhargav Arimilli	Phillips Exeter Academy, NH	Summer volunteer
2011	Preetha Narayanan	UNMC	Volunteer
2009	Varun Vijay	Niskayuna High School, NY	High school intern
2009	Christina Salami	CUNY, NY	UASRP intern
2008-09	Calvin Yoon	Berkshire High School, MA	High school intern
2008	Chinmay Karanjkar	SUNY-Buffalo, NY	Summer intern
2006-07	Kavitha Siddi	Albany, NY	Volunteer
2006	Mike Galimore	Salem High School, NY	High school intern
2003	Sifang Lu	UC San Diego, CA	REU intern

Student Committees Served:

2018-current	Tylor Cambis	PhD	Cellular and Integrative Physiology
2017-current	Cassie Liu	MD/PhD	Surgery/Surgical Oncology
2014-current	Jian, Cui	Ph.D.	Genetics Cell Biol. Anatomy
2012-2016	Nicolas Griffin	Ph.D.	Genetics Cell Biol. Anatomy
2012-2016	Bradley Downs	Ph.D.	Genetics Cell Biol. Anatomy
2011-2015	Karla Otterpohl	Ph.D.	Genetics Cell Biol. Anatomy
2011-2016	Shiv Ram Krishn	Ph.D.	Biochem. Mol. Biol.
2011-2014	Fengxia Xiao	Ph.D.	Genetics Cell Biol. Anatomy
2011-2012	Lin Huang	Ph.D.	Pathology and Microbiology
2009	Indradev Sahu	Ph.D.	Physics
2009	Laxman Mainali	Ph.D.	Physics
2009	Xianong Lu	M.S.	Epidemiology/Biostatistics
2008-2010	Ben Carle	Ph.D.	Computer Science
2006-2010	Joshua Strauss	Ph.D.	Biomedical Sciences

Curriculum Development and Teaching Record

I have developed and taught a number of graduate-level courses in Bioinformatics at SUNY-Albany and UNMC. I also developed the core curriculum for a 'Bioinformatics Certification Program' in 2001 at University of California San Diego extension (UCSD Ext.) and I received the 'Instructor of the year' award in 2003 in this program. I worked as an independent Bioinformatics Consultant on a MARC-U*STAR grant from NIH, where I was involved with the incorporation of preparatory courses at the undergraduate level that lead to pursuing careers or graduate training in bioinformatics. I have played a key role in the development of Biomedical Informatics (BMI) graduate program at UNMC, which is a joint program between UNMC and University of Nebraska at Omaha campuses. Currently, I serve as the Director of the Bioinformatics Track for the BMI graduate program at UNMC.

REGULAR GRADUATE-LEVEL COURSES			
Course Name	Role	Terms	Institution
Tools and Algorithms in Bioinformatics	Course-Director	2013-current, Fall	UNMC
Current Methods in Neuroscience	Guest lecturer	2012-2014, every Spring	UNMC
Advanced Workshop on Bioinformatics	Course-Director	2012-2013, every Spring	UNMC
Introductory Workshop on Bioinformatics	Course-Director	2011-2012, every Fall	SUNY-Albany
Advanced Topics in Bioinformatics	Course-Director	2006-2010, every Spring	SUNY-Albany
Principles of Bioinformatics	Co-Instructor	2005-2009, every Fall	SUNY-Albany
Tools and Algorithms in Bioinformatics	Course-Director	2001-2004, every Fall	UCSD Extension
Adv. Tools & Algorithms in Bioinformatics	Course-Director	2002-2004, every Spring	UCSD Extension
Protein Data Analysis & Modeling in Bioinfo.	Co-Instructor	2000-2002	UCSD Extension
SHORT WORKSHOPS/TUTORIALS AND TRAINING SESSIONS			
Event/Conference	Year	Place	
Workshop on Metagenomic Data Analysis	2014	San Antonio, TX	
Bioinformatics On-site Training at Pfizer Pharmaceuticals	2004	La Jolla, CA	
Workshop on Bioinformatics at IES, Inc	2003	San Jose, CA	
Bioinformatics Tutorial at International Conference on Computers and its Applications	2003	San Diego, CA	
Workshop on Computer-Aided Drug Design, UCSD Ext.	2001	La Jolla, CA	

Publications

(total 84 that include 75 research articles, and 9 book chapters)

Original Research Articles

1. Vishweswaraiah S, Swierkowska J, Ratnamala U, Mishra NK, **Guda C**, Johar KR, Mrugacz M, Karolak JA, Gajecka M, Radhakrishna U. (2019) Epigenetically dysregulated genes and pathways implicated in the pathogenesis of non-syndromic high myopia. *Scientific Reports* (in press).
2. Heithoff AJ, Totusek SA, Le D, Barwick L, Gensler G, Franklin DR, Dye AC, Pandey S, Sherman S, **Guda C**, Fox HS. (2019) The integrated national neuroAIDS tissue consortium (NNTC) database: A rich platform for neuroHIV research. *Database* doi: 10.1093/database/bay134. PMID: 30624650.
3. Radhakrishna U, Veerappa AV, Vishweswaraiah S, Zafra R, Albayrak S, Sitharam PH, Saiyed NM, Mishra NK, **Guda C**, Bahado-Singh R. (2018) Newborn blood DNA epigenetic variations and signaling pathway genes associated with Tetralogy of Fallot (TOF). *PLoS One* 13:e0203893. PMID: 30212560.
4. Roy S, Bag AK, Dutta S, Polavaram NS, Islam R, Schellenburg S, Banwait JK, **Guda C**, Ran S, Hollingsworth MA, Singh RK, Talmadge JE, Muders MH, Batra SK, Datta K. (2018) Macrophage-derived Neuropilin-2

- exhibits novel tumor-promoting functions. **Cancer Research**. doi: 10.1158/0008-5472.CAN-18-0562. PMID: 30111533
5. Wipfler K, Cornish A, **Guda C**. (2018) Comparative molecular characterization of typical and exceptional responders in Glioblastoma. **Oncotarget**, 9:28421-33. PMID: 29983870.
 6. Cserhati M, Mooter ME, Peterson L, Wicks B, Pauley M and **Guda C**. (2018) Motifome comparison between modern human, Neanderthal and Denisova. **BMC Genomics**, 19:472. PMID: 29914355.
 7. Luan H, Mohapatra B, Bielecki T, Mushtaq I, Mirza S, Bailey T, Clubb R, An W, Ahmed D, Ansari R, Storck M, Mishra NK, **Guda C**, Sheinin Y, Meza J, Raja S, Rakha E, Band V, Band H. (2018) Loss of the nuclear pool of ubiquitin ligase CHIP/STUB1 in breast cancer unleashes the MZF1-cathepsin pro-oncogenic program. **Cancer Research** doi: 10.1158/0008-5472.CAN-16-2140. PMID: 29510992
 8. Lopez W, Page AM, Carlson DJ, Ericson BL, Cserhati MF, **Guda C**, Carlson KA. (2018) Analysis of immune-related genes during Nora virus infection of *Drosophila melanogaster* using next-generation sequencing. **AIMS Microbiology**, 4:123-139 PMID: 29707694
 9. Talbott H, Hou X, Qiu F, Zhang P, **Guda C**, Yu F, Cushman RA, Wood JR, Wang C, Cupp AS, Davis JS. (2017) Transcriptomic and Bioinformatics Analysis of Short Prostaglandin F2 alpha Time-course in Bovine Corpus Luteum. **Data in Brief** 14:695-706.
 10. Talbott H, Hou X, Qiu F, Zhang P, **Guda C**, Yu F, Cushman RA, Wood JR, Wang C, Cupp AS, Davis JS. (2017) Early transcriptome responses of the bovine midcycle corpus luteum to prostaglandin F2 α include cytokine signaling. **Molecular and Cellular Endocrinology**, 452:93-109
 11. Mishra N, **Guda C**. (2017) Integrative analysis of genome-wide methylation and expression in pancreatic adenocarcinoma, **Oncotarget**, 8:28990-29012. PMID: 28423671
 12. Negi SK, **Guda C**. (2017) Global gene expression profiling of healthy human brain and its application in studying neurological disorders, **Scientific Reports**, 7:897 PMID: 28420888
 13. Li Y, Heavican TB, Vellichirammal NN, Iqbal J, **Guda C**. (2017) ChimeRScope: a novel alignment-free algorithm for fusion gene prediction using paired-end RNA-Seq data, **Nucleic Acids Res**. 45:e120. PMID: 28472320
 14. Massilamany C, Nandakumar R, Madayiputhiya, Pandey S, **Guda C**, Reddy J. Gender-differences in the expression of proteins in autoreactive T cells specific to central nervous system myelin proteolipid protein (2017) *Journal of Autoimmune Diseases*, 3 (1) 30
 15. Stauch KL, Villeneuve LM, Purnell, PR, Pandey S, **Guda C**, and Fox HS. (2016) SWATH-MS proteome profiling data comparison of DJ-1, Parkin, and PINK1 knockout rat striatal mitochondria. **Data in Brief**, 9:589-593
 16. Wang X, **Guda C**. (2016) Integrative Exploration of Genomic Profiles for Triple Negative Breast Cancer Identifies Potential Drug Targets, **Medicine** 95:e4321
 17. Vural S, Wang X, **Guda C**. (2016) Classification of breast cancer patients using somatic mutation profiles and machine learning approaches, **BMC Systems Biology** 10 Suppl 3:62.
 18. Massilamany C, Mohammed A, Loy JD, Purvis T, Krishnan B, Basavalingappa RH, Kelley CM, **Guda C**, Barletta RG, Moriyama EN, Smith TPL, Reddy J. (2016) Whole genomic sequence analysis of *Bacillus infantis*: defining the genetic blueprint of strain NRRL B-14911, an emerging cardiopathogenic microbe. **BMC Genomics** 17 Suppl 7:511.
 19. Cserhati MF, Pandey S, Beaudoin JJ, Baccaglini L, **Guda C**, Fox HS. The National NeuroAIDS Tissue Consortium (NNTC) Database: an integrated database for HIV-related studies. **Database**, 2015:bav074
 20. Lakshmanan I, Seshacharyulu P, Haridas D, Rachagani S, Gupta S, Joshi S, **Guda C**, Jain M, Ganti AK, Ponnusamy, MP and Batra, SK. (2015) Novel HER3/MUC4 oncogenic signaling aggravates the tumorigenic phenotypes of pancreatic cancer cells. **Oncotarget** 6:21085-99. [PMID:26035354]
 21. Shen R, Wang, X, **Guda C**. (2015) Discovering Distinct Functional Modules of Specific Cancer Types Using Protein-Protein Interaction Networks. **BioMed Research International**, 2015:146365.
 22. Li Y, Wang X, Vural S, Cowan KH, **Guda C**. (2015) Exome analysis reveals differentially mutated gene signatures of stage, grade and subtype in breast cancers. **PLoS ONE**, 10(3):e0119383.
 23. Mohammed A, **Guda C**. (2015) Application of a hierarchical enzyme classification method reveals the role of gut microbiome in human metabolism. **BMC Genomics**, Suppl 7:S16.
 24. Cornish A, **Guda C**. (2015) A comparison of variant calling pipelines using Genome-in-a-Bottle as a reference. **BioMed Research International**, 2015:456479.
 25. Negi S, Pandey S, Srinivasan SM, Mohammed A, **Guda C**. (2015) LocSigDB: A database of experimental and predicted protein localization signals. **Database**, 2015:bav003.
 26. Chaturvedi NK, Mir RA, Band V, Joshi SS, Guda C. (2014) Experimental validation of predicted subcellular localization of human proteins. **BMC Research Notes**, 7:912.

27. Goonesekhere N, Wang X, Ludwig L, **Guda C**. (2014) A meta-analysis of pancreatic microarray datasets yields new targets as cancer genes and biomarkers. *PLoS ONE*, 9:e93046.
28. Wang X, **Guda C**. (2014) Computational analysis of transcriptional circuitries in human embryonic stem cells reveals multiple and independent networks. *BioMed Research International*, 2014:725780
29. Srinivasan SM, **Guda C**. (2013) MetaID: A novel method for identification and quantification of metagenomic samples. *BMC Genomics*, 14:S4.
30. Betsy Read, Jessica Kegel, Mary Klute, Alan Kuo, Stephan Lefebvre, John Miller, Andy Allen, Virginia Armburst, Kay Bidle, Mark Borodovsky, Chris Bowler, Colin Brownlee, Jean-Michel Claverie, Mark Cock, Colomban de Vargas, Marek Elias, Stephan Frickenhaus, Richard Geider, Vadim N. Gladyshev, Karina Gonzalez, Chittibabu Guda, Ahmad Hadaegh, Emily Herman, Deborah Iglesias-Rodriguez, Tracey Lawson, Florian Leese, Yao-Cheng Lin, Erica Lindquist, Alexei Lobanov, Susan Lucas, Mary E. Marsh, Florian Maumus, Christoph Mayer, Thomas Mock, Adam Monier, Herve Moreau, Bernard Mueller-Roeber, Johnathan Napier, Hiroyuki Ogata, Micaela Parker, Konrad H. Paszkiewicz, Ian Probert, Hadi Quesneville, Christine Raines, Stefan Rensing, Diego Riano, Thomas Richards, Sophie Richier, Asaf Salamov, Analissa Sarno, Jeremy Schmutz, Declan Schroeder, Yoshihiro Shiraiwa, Darren M. Soanes, Michael Steinke, Klaus Valentin, Mark Van der Geizen, Yves Van der Peer, Assaf Vardi, Frederic Verret, Peter Von Dossow, Glen Wheeler, Bryony Williams, Willie Wilson, Gordon Wolfe, Alexandra Worden, #Louie L. Wurch, Jeremy Young, Joel B. Dacks, Charles F. Delwiche, Sonya T. Dyhrman, Gernot Glockner, Uwe John, Tom Richards, Alexandra, Worden, Xiaoyu Zhang and Igor V. Grigoriev. Pan genome of the phytoplankton *Emiliana* drives its global distribution (2013) *Nature* 499:209-213. *Nature*, 499:209-213.
31. Ozturk F, Li Y, **Guda C**, Nawshad A. (2013) RNA-Seq reveals critical developmental changes in transcription profiles of TGF- β 3 transgenic mice. *BMC Genomics*, 14:113.
32. Srinivasan SM, Vural S, King BR, **Guda C**. (2013) Mining for class-specific motifs in protein sequence classification. *BMC Bioinformatics*, 14:96. (*Highly accessed*)
33. King BR, Vural S, Pandey S, Barteau A, **Guda C**. (2012) ngLOC: software and web server for predicting protein subcellular localization in prokaryotes and eukaryotes. *BMC Research Notes*, 5:351.
34. Mohibi S, Gurumurthy CB, Nag A, Wang J, Mirza S, Mian Y, Quinn M, Katafiasz B, Eudy J, Pandey S, **Guda C**, Naramura M, Band H, Band V. (2012) Mammalian alteration/deficiency in activation 3 (*Ada3*) is essential for embryonic development and cell cycle progression. *J Biol Chem.*, 287:29442-56.
35. Shen R, Goonesekere NCW, **Guda C**. (2012) Mining functional subgraphs from cancer protein-protein interaction networks. *BMC Systems Biology* 6:S2
36. Gu, SQ, Bakthavachalu B, Han J, Patil D, Otsuka Y, **Guda C**, Schoenberg DR. (2012) Identification of the human PMR1 mRNA endonuclease as an alternatively processed product of the gene for peroxidase-like protein. *RNA* 18:1186-1196.
37. Zhu X, Ozturk F, Pandey S, **Guda C**, Nawshad A. (2012) Implications of TGF- β on transcriptome and cellular biofunctions of palatal mesenchyme. *Frontiers in Physiology*, 3:1-22.
38. Gunda V, Boosani CS, Verma RK, **Guda C**, Sudhakar, YA. (2012) L-Arginine Mediated Renaturation Enhances Yield of Human, α 6 Type IV Collagen Non-Collagenous Domain from Bacterial Inclusion Bodies. *Protein and Peptide Letters* 19:1112-1121.
39. Mukherjee A, Reisdorph N, **Guda C**, Pandey S, Roy SK. (2012) Changes in ovarian protein expression during primordial follicle formation in the hamster. *Molecular and Cellular Endocrinology*, 348:87-94.
40. **Guda C**, King BR, Pal LR, Guda P. (2009) A top-down approach to infer and compare domain-domain interactions across eight model organisms. *PLoS ONE* 4:e5096.
41. Guda P, Chittur VS, **Guda C**. (2009) Comparative analysis of protein-protein interactions in cancer-associated genes. *Genomics, Proteomics and Bioinformatics* 7:25-36.
42. King BR, Latham L **Guda C**. (2009) Estimation of subcellular proteomes in bacterial species. *The Open and Applied Informatics Journal*, 3:1-11.
43. King BR, **Guda C** (2008) Semi-supervised learning for classification of protein sequence data. *Scientific Programming*, 16:5-29.
44. Meller N, Westbrook JM, Shannon JD, **Guda C**, Schwartz MA. (2008) Function of the N-terminus of zizimin1: autoinhibition and membrane targeting. *Biochemical Journal*, 409:525-533.
45. Guda P, **Guda C**, Subramaniam S. (2007) Reconstruction of pathways associated with amino acid metabolism in human mitochondria. *Genomics Proteomics and Bioinformatics*, 5:166-76
46. Saski C, Lee SB, Fjellheim S, **Guda C**, Jansen RK, Tomkins J, Rognli OA, Daniell H, Clarke JL. (2007) Complete chloroplast genome sequences of *Hordeum vulgare*, *Sorghum bicolor* and *Agrostis stolonifera*, and comparative analyses with other grass genomes. *Theoretical and Applied Genetics* 115:571-590.

47. King B, **Guda C**. (2007) ngLOC: An *n*-gram based Bayesian method for estimating the subcellular proteomes of eukaryotes. **Genome Biology**, 8:R68.
48. Guda P, Bourne PE, **Guda C** (2007) Conserved motifs in voltage-sensing and pore-forming modules of voltage-gated ion channel proteins. **Biochem. Biophys. Res. Commun**, 352:292-98.
49. **Guda C**. (2006) pTARGET: A web server for predicting protein subcellular localization. **Nucleic Acids Research**, 34:W210-213.
50. **Guda C**, Pal LR, Shindyalov IN. (2006) DMAPS: A Database of Multiple Alignments for Protein Structures. **Nucleic Acids Research**, 34:D273-276.
51. Pal LR, **Guda C**. (2006) Tracing the evolutionary origin of functional domains in human proteins. **BMC Evolutionary Biology** 6:91.
52. Acquaaah-Mensah GK, Leach SM, **Guda C** (2006) Predicting the subcellular localization of human proteins using machine learning and exploratory data analysis. **Genomics Proteomics and Bioinformatics**, 4:120-33.
53. Daniell H, Lee SB, Grevich J, Saski C, **Guda C**, Tomkins J, Jansen RK. (2006) Complete chloroplast genome sequence of *Solanum tuberosum*, *Lycopersicon esculentum* and comparative analyses with other Solanaceous genomes. **Theoretical and Applied Genetics**, 112:1503-1518.
54. Cotter D, Maer A, **Guda C**, Saunders B, Subramaniam S. (2006) LIPID MAPS Lipid Proteome Database. **Nucleic Acids Research**, 34:D507-510.
55. **Guda C**, Subramaniam S. (2005) pTARGET: A new method for predicting protein sub-cellular localization in eukaryotes. **Bioinformatics**, 21:3963-3969.
56. **Guda C**, Fahy E, Subramaniam S. (2004) MITOPRED: A genome-scale method for prediction of nuclear-encoded mitochondrial proteins. **Bioinformatics**, 20:1785-1794.
57. **Guda C**, Lu S, Scheeff ED, Bourne PE, Shindyalov IN. (2004) CE-MC: A Multiple Protein Structure Alignment Server. **Nucleic Acids Research**, 32:W100-W103.
58. **Guda C**, Guda P, Fahy E, Subramaniam S. (2004) MITOPRED: A web server for genome-scale prediction of mitochondrial proteins. **Nucleic Acids Research**, 32:W372-W374.
59. Chukkapalli G, **Guda C**, Subramaniam S. (2004) SledgeHMMER: A web server for batch searching of Pfam database. **Nucleic Acids Research**, 32:W542-W544.
60. Heine A, Canaves JM, von Delft F, Brinen LS, Dai X, Deacon AM, Elsliger M. A, Eshaghi S, Floyd R, Godzik A, Grittini C, Grzechnik SK, **Guda C**, Jaroszewski L, Karlak C, Klock HE, Koesema E, Kovarik JS, Kreuzsch A, Kuhn P, Lesley SA, McMullan D, McPhillips TM, Miller MA, Miller MD, Morse A, Moy K, Ouyang J, Page R, Robb A, Rodrigues K, Schwarzenbacher R, Selby TL, Spraggon G, Stevens RC, van den Bedem H, Velasquez J, Vincent J, Wang X, West B, Wolf G, Hodgson KO, Wooley J, Wilson IA. (2004) Crystal structure of O-acetylserine sulfhydrylase (TM0665) from *Thermotoga maritima* at 1.8 Å resolution. **Proteins**, 56:387-91
61. Schwarzenbacher R, Canaves JM, Brinen LS, Dai X, Deacon AM, Elsliger MA, Eshaghi S, Floyd R, Godzik A, Grittini C, Grzechnik SK, **Guda C**, Jaroszewski L, Karlak C, Klock HE, Koesema E, Kovarik JS, Kreuzsch A, Kuhn P, Lesley SA, McMullan D, McPhillips TM, Miller MA, Miller MD, Morse A, Moy K, Ouyang J, Page R, Robb A, Rodrigues K, Selby TL, Spraggon G, Stevens RC, van den Bedem H, Velasquez J, Vincent J, Wang X, West B, Wolf G, Hodgson KO, Wooley J, Wilson IA. (2004) Crystal structure of an iron-containing 1,3-propanediol dehydrogenase (TM0920) from *Thermotoga maritima* at 1.3 Å resolution. **Proteins**, 54: 174-177
62. Schwarzenbacher R, Canaves JM, Brinen LS, Dai X, Deacon AM, Elsliger MA, Eshaghi S, Floyd R, Godzik A, Grittini C, Grzechnik SK, **Guda C**, Jaroszewski L, Karlak C, Klock HE, Koesema E, Kovarik JS, Kreuzsch A, Kuhn P, Lesley SA, McMullan D, McPhillips TM, Miller MA, Miller MD, Morse A, Moy K, Ouyang J, Page R, Robb A, Rodrigues K, Selby T L, Spraggon G, Stevens RC, van den Bedem H, Velasquez J, Vincent J, Wang X, West B, Wolf G, Hodgson KO, Wooley J, Wilson IA. (2003) Crystal structure of uronate isomerase (TM0064) from *Thermotoga maritima* at 2.85 Å resolution. **Proteins**, 52: 142-145
63. Brinen LS, Canaves JM, Dai X, Deacon AM, Elsliger MA, Eshaghi S, Floyd R, Godzik A, Grittini C, Grzechnik SK, **Guda C**, Jaroszewski L, Karlak C, Klock HE, Koesema E, Kovarik JS, Kreuzsch A, Kuhn P, Lesley SA, McMullan D, McPhillips TM, Miller MA, Miller MD, Morse A, Moy K, Ouyang J, Robb A, Rodrigues K, Selby TL, Spraggon G, Stevens RC, Taylor SS, van den Bedem H, Velasquez J, Vincent J, Wang X, West B, Wolf G, Hodgson KO, Wooley J, Wilson IA. (2003) Crystal structure of a zinc-containing glycerol dehydrogenase from *Thermotoga maritima* at 1.5 Å resolution. **Proteins**, 50: 371-374.
64. Kuhn P, Lesley SA, Mathews II, Canaves JM, Brinen LS, Dai X, Deacon AM, Elsliger MA, Eshaghi S, Floyd R, Godzik A, Grittini C, Grzechnik SK, **Guda C**, Hodgson KO, Jaroszewski L, Karlak C, Klock HE, Koesema E, Kovarik JS, Kreuzsch A, McMullan D, McPhillips TM, Miller MA, Miller MD, Morse A, Moy K, Ouyang J, Robb A, Rodrigues K, Selby TL, Spraggon G, Stevens RC, Taylor SS, Van Den Bedem H, Velasquez J,

- Vincent J, Wang X, West B, Wolf G, Wooley J, Wilson IA. (2002) Crystal structure of thy1, a thymidylate synthase complementing protein from *T. maritima* at 2.25 Å resolution. **Proteins**, 49: 142-145.
65. Lesley SA, Kuhn P, Godzik A, Deacon AM, Mathews I, Kreuzsch A, Spraggon G, Klock HE, McMullan D, Shin T, Vincent J, Robb A, Brinen LS, Miller MD, McPhillips TM, Miller MA, Scheibe D, Canaves JM, **Guda C**, Jaroszewski L, Selby TL, Elslinger MA, Wooley J, Taylor SS, Hodgson KO, Wilson IA, Schultz PG, Stevens RC. (2002) Structural genomics of the *Thermotoga maritima* proteome implemented in a high-throughput structure determination pipeline. **Proceedings of the National Academy of Sciences, USA** 99: 11664-69.
66. **Guda C**, Scheeff ED, Bourne PE, Shindyalov IN. (2001) A new algorithm for the alignment of multiple protein structures using Monte Carlo optimization. **Proc. of the Pacific Symposium on Biocomputing**, pp.275-286
67. **Guda C**, Lee SB, Daniell H. (2000) Stable transformation of chloroplasts using a universal integration vector. **Plant Cell Reports**, 19:257-262.
68. Brixey J, **Guda C**, Daniell H. (1997) The chloroplast psbA promoter is more efficient in *E. coli* than the T7 promoter for hyperexpression of a foreign protein. **Biotechnology Letters**, 19:395-399.
69. **Guda C**, Zhang X, McPherson DT, Xu J, Cherry JH, Urry DW, Daniell H. (1995) Hyper-expression of an environmentally friendly synthetic polymer gene. **Biotechnology Letters**, 17:745-750.
70. Zhang X, **Guda C**, Datta R, Dute R, Urry DW, Daniell H. (1995) Nuclear expression of an environmentally friendly synthetic protein-based polymer gene in tobacco cells. **Biotechnology Letters**, 17:1279-1284.
71. Daniell H, Zhang X, **Guda C**, Urry D. (1995) Plastics from Plants. **Highlights of Agricultural Research**, 42:18-19.

Review articles

72. Shen R, **Guda C**. (2014) Applied graph-mining algorithms to study biomolecular interaction networks. **Biomed Research International**, 2014:439476.
73. Mohammed A, **Guda C**. (2011) Computational approaches for automated classification of enzyme sequences. **Journal of Proteomics and Bioinformatics**, 4:147-152.
74. Meller N, Merlot S, **Guda C**. (2005) CZH proteins-New family of Rho GEFs. **Journal of Cell Science**, 118:4937-46.
75. Daniell H, **Guda C**. (1997) Biopolymer production in microorganisms and plants. **Chemistry and Industry**, 14:555-558.

Book Chapters/ Editorials

76. Zhao Z, Jin V, Huang Y, **Guda C**, Ruan J (2015) Frontiers in integrative genomics and translational bioinformatics. **BioMed Research International**, 2015:725491.
77. **Guda C**. (2013) Bioinformatic methods and resources for neuroscience research. In: **Current Laboratory Methods in Neuroscience Research** (Xiong H and Gendelman HE Eds). Pp. 453-463, Springer publishing.
78. **Guda C**. (2010) Towards cataloguing the subcellular proteomes of eukaryotic organisms. In: **Sequence and Genome Analysis** (Zhao, Z. ed), pp. 259-269, iConcepts press.
79. Guda P, Subramaniam S, **Guda C**. (2007) MitoProteome: Human heart mitochondrial protein sequence database *In Cardiovascular Proteomics, Methods and Protocols. Methods in Molecular Biology*, 357:375-384 (Invited book chapter).
80. **Guda C**, Scheeff ED, Bourne PE, Shindyalov IN. (2002) Comparative Analysis of Protein Structure: New Concepts and Approaches for Multiple Structure Alignment. In: **Protein Structure Prediction: Bioinformatics Approach**, pp.451-459.
81. **Guda C**. (1997) Stable expression of foreign genes in chloroplasts. Dissertation submitted to **Auburn University at Auburn**.
82. Daniell H, **Guda C**, McPherson DT, Zhang X, Urry DW. (1997) Hyperexpression of a synthetic protein-based polymer gene. **Methods in Molecular Biology**, 63: 359-371. (Cover page article).
83. Urry DW, McPherson DT, Xu J, Daniell H, **Guda C**, Gowda DC, Jing N, Parker TM. (1997) Protein-Based Polymeric Materials: Syntheses and Properties. **The Polymeric Materials Encyclopedia: Synthesis, Properties and Applications**, pp. 2645-2699, CRC Press.
84. Daniell H, **Guda C**, Singh NK, Weete JD, Cherry JH. (1995) Photosynthesis, epicuticular wax and lipid changes in cowpea cultivars grown under hyperthermic conditions. In: Biochemical and Cellular Mechanisms of Stress Tolerance in Plants (J.H. Cherry ed.) **NATO ASI Series**, Vol. H 86: 213-227, Springer-Verlag, Heidelberg.

PhD Student Dissertations (from Guda lab)

85. Tanwir Ahmad, MS. (2018) Development of Preclinical Magnetic Resonance Imaging database and an interactive analytical tool for diffusion tensor imaging. Thesis submitted to UNMC
86. Adam Cornish, PhD. (2018) Red Panda: A novel method for detecting variation in single-cell RNA sequencing. Dissertation submitted to the University of Nebraska Medical Center (UNMC)
87. Kristin Wipfler, PhD. (2017) Comparative molecular characterization of typical and exceptional responders in glioblastoma. Dissertation submitted to the University of Nebraska Medical Center (UNMC)
88. Simarjeet Negi, PhD. (2016) Expression map of healthy human brain and its application in neurological disorders. Dissertation submitted to the University of Nebraska Medical Center (UNMC)
89. You Li, PhD. (2016) ChimeRScope: a novel alignment-free algorithm for fusion gene prediction using paired-end short reads. Dissertation submitted to the University of Nebraska Medical Center (UNMC)
90. Suleyman Vural, PhD. (2015) Classification of breast cancer patients using somatic mutation profiles and machine learning approaches. Dissertation submitted to the University of Nebraska Medical Center (UNMC)
91. Akram Mohammed, PhD. (2014) Application of hierarchical enzyme classification method reveals the role of gut microbiome in human metabolism. Dissertation submitted to the University of Nebraska Medical Center (UNMC)
92. Shen Ru, PhD. (2014). Graph mining and module detection in protein-protein interaction networks. Dissertation submitted to the University at Albany, State University of New York (SUNY).
93. Brian R. King, PhD. (2008). Protein sequence classification with Bayesian supervised and semi-supervised learned classifiers. Dissertation submitted to the University at Albany, State University of New York (SUNY)

Conference Presentations

1. Tanwir A, Munde S, Gendelman HE, Pandey S, Guda C, Sajja BR (2019). R-based interactive tool for preclinical DTI data analytics. Submitted to *International Society of Magnetic Resonance in Medicine (ISMRM) conference*, Montreal, Canada, May 11-16, 2019
2. Bahado-Singh R, Vishweswaraiah S, Sayed N, Aydas B, Veerappa AM, Mishra NK, Guda C, Radhakrishna U. (2019) Deep Learning/Artificial Intelligence and The Epigenomic Prediction of Coarctation of the Aorta. Submitted to *39th Annual Pregnancy Meeting, Society for Maternal-Fetal Medicine*, Las Vegas, February 11-16, 2019.
3. Kim SK, Vishweswaraiah S, Macknis J, Lalwani A, Mishra NK, Guda C, Ogunyemi D, Radhakrishna U, Bahado-Singh R. (2019) New-onset postpartum preeclampsia: Mechanisms and Prediction. Submitted to *39th Annual Pregnancy Meeting, Society for Maternal-Fetal Medicine*, Las Vegas, February 11-16, 2019
4. Cornish A, Guda C. (2018) A Novel Method for Detecting Variation in Single-Cell Sequencing. Poster presentation at the *Intelligent Systems for Molecular Biology (ISMB) Annual Meeting*, Chicago, IL, July 6-10, 2018
5. Sun G, Konda AR, Zhang D, Avuthu N, Foltz A, Guda C, Cahoon EB, Schnable JS. (2018) Analyses of responses of maize and related grasses to nutrient deprivation to enable systems and synthetic biology research. Poster presented at the Nebraska EPSCoR CRRRI External Review Panel meeting. August 23rd, 2018
6. Southekal S, Guda C. (2018) Identification of kinase targets and Small Molecule Kinase inhibitors (SMKIs) with pan-cancer applications. Poster presentation at the *Intelligent Systems for Molecular Biology (ISMB) Annual Meeting*, Chicago, IL, July 6-10, 2018
7. Avuthu N, Guda C. (2018) The role of microbiome and its products in gastrointestinal cancers. Poster presentation at the *Intelligent Systems for Molecular Biology (ISMB) Annual Meeting*, Chicago, IL, July 6-10, 2018
8. Mishra NK, Niu M, Guda C. (2018) Differential DNA Methylation Analysis of TCGA Cholangiocarcinoma Data. Subsection: Application of Bioinformatics to Cancer Biology 2. Poster presentation at the *Annual Meeting of the American Association of Cancer Research (AACR)*, Chicago, IL, April 14-18, 2018
9. Neetha NV, Banwait J, Albahrani A, Li Y, Guda C. (2018) Pan Cancer Analysis of Fusion Genes in TCGA Using ChimeRScope, an Alignment Free Algorithm. Subsection: Sequence Analysis and Unique Database Resources. Poster presentation at the Annual Meeting of the *American Association of Cancer Research (AACR)*, Chicago, IL, April 14-18, 2018.

10. Mohapatra BC, Luan H, Bielecki TA, Mushtaq I, Mirza S, Bailey, TA, Clubb R, An W, Ahmed D, Ansari RE, Storck MD Guda, C, Sheinin Y, Meza JL, Raja S, Rakha E, Band V Band H. (2018) Subsection: Mechanisms Underlying Metastasis 1. CHIP/STUB1 ubiquitin ligase targets MZF1 and loss of its expression in breast cancer unleashes a MZF1-cathepsin pro-oncogenic program. Poster presentation at the *Annual Meeting of the American Association of Cancer Research (AACR)*, Chicago, IL, April 14-18, 2018
11. Guda C. (2017) Clinical Research Resources in the IDeA-CTR Consortium”, *Great Plains IDeA-CTR Annual Scientific Meeting*, Omaha, NE, October 23-24, 2017
12. Bahado-Singh RO, Zafra R, Albayrak S, Alesh B, Avinash M, Saiyed NM, Mishra NK, Guda C, Rouba A, Radhakrishna U. (2017) Placental Epigenetic Biomarkers accurately detect isolated non-syndromic Ventricular Septal Defect: A new Frontier in CHD Detection? *16th World Congress in Fetal Medicine 2017*. Ljubljana, Slovenia. 25-29th June 2017
13. Du Q, Liu K, Konda A, Freitas D, Martin-Olenski M, Szlewski TM, Eudy J, Guda C, Schnable JC, Cahoon EB, and Zhang C. (2017) Synthetic Biology Tool Development: Identification of Root- and Root Conditional-Specific Promoters from Maize and Related Species and Development of a Root Promoter Database (Abstract submitted)
14. Chandel DS, Pandey S, Guda C, Panigrahi P, Kharbanda KK. (2017) Role of Betaine in Preventing Alcohol-Induced Gut Dysbiosis Conference: *The 2017 Gordon Research Conference (GRC) on Alcohol-Induced End Organ Diseases* "Metabolic Reprogramming and Molecular Mechanisms of Tissue Injury by Alcohol". March 26-31, 2017
15. Chandel DS; Pandey S; Panigrahi P; Guda C; Singh S; Agyabeng A; Matis M; Osna N; Tuma D; Kharbanda KK (2017) Effect of betaine on alcohol-induced gut dysbiosis, ISCHS – *International Symposium on Cells of the Hepatic Sinusoid*, National University of Ireland, Galway, June, 14-17, 2017 (poster)
16. Simarjeet Negi and Guda C (2016) Functional characterization of the healthy adult human brain and its application to study neurological disorders, *RECOMB/ISCB*, Phoenix, AZ, November 6-9 2016 (Poster presentation)
17. Guda C. (2016) The INBRE Bioinformatics Core, Poster presentation at the *NISBRE Conference*, Washington DC, June, 2016.
18. Buddhdev K, Peng X, Guda C, Goldner W (2016) Whole Exome Sequencing Analysis of T1a Papillary Thyroid Carcinoma" oral presentation at *the 86th Annual Meeting of the American Thyroid Association* in Denver, Colorado from September 21-24, 2016
19. Vural S and Guda C. (2015) Classification of breast cancer tumors based on somatic mutation profiles. *Great Lakes Bioinformatics Conference (GLBIO-2015)*, West Lafayette, IN (Poster presentation).
20. Wipfler, K and Guda C (2015) Integrative Molecular Characterization of Glioblastoma. *Great Lakes Bioinformatics Conference (GLBIO-2015)*, West Lafayette, IN (Poster presentation).
21. Li Y and Guda C. (2015) A novel alignment-free searching algorithm for fusion gene detection from RNA-Seq short reads. *Great Lakes Bioinformatics Conference (GLBIO-2015)*, West Lafayette, IN (Poster presentation).
22. Negi S and Guda C, (2015) Application of healthy human brain gene expression model to study neurological disorders. *Great Lakes Bioinformatics Conference (GLBIO-2015)*, West Lafayette, IN (Poster presentation)
23. Cornish A, Guda C. (2014) A comparison of variant calling pipelines using Genome-in-a-bottle as a reference, presented at the *International Conference on Intelligent Biology and Medicine (ICIBM 2014)*, San Antonio, TX (Oral and Poster presentation)
24. Mohammed A, Guda C. (2014) Hierarchical enzyme classification method reveals the role of gut microbiome in human metabolism, presented at the *International Conference on Intelligent Biology and Medicine (ICIBM 2014)*, San Antonio, TX (Oral and Poster presentation)
25. Shen R, Wang X, Guda C. (2014) Discovering distinct functional modules of specific cancer types using protein-protein interaction networks, presented at the *International Conference on Intelligent Biology and Medicine (ICIBM 2014)*, San Antonio, TX (Poster presentation)
26. Mishra N, Guda C. (2014) “Analysis of somatic and germline mutations in pancreatic ductal adenocarcinoma” in *Beyond the Genome: Cancer Genomics*, Boston (8-10 October 2014).
27. Zhang W, Klinkebiel D, Pandey S, Guda C, Miller A, Akers S, Odunsi K, and Karpf AR. (2014) The molecular pathology of DNA hypomethylation in epithelial ovarian cancer (EOC). *Keystone Symposia: Cancer Epigenetics*. February 4-9, Santa Fe, NM.

28. Shukla BS, Chaturvedi NK, Joshi SS, Bierman P, Cornish A, Pandey S, Guda C (2013) The role of PRDM1 and its interacting proteins in the pathogenesis of chronic lymphocytic leukemia. *Blood*, Poster presentation.
29. Wang X, Guda C. (2013) Computational analysis of transcriptional circuitries in human embryonic stem cells reveals multiple and independent networks, presented at the *International Conference on Intelligent Biology and Medicine* (ICIBM 2013), Nashville, TN (Oral presentation)
30. Srinivasan SM, Guda C. (2013) MetaID: A novel method for identification and quantification of metagenomic samples, presented at the *International Conference on Intelligent Biology and Medicine* (ICIBM 2013), Nashville, TN (Oral presentation)
31. Zhang W, Klinkebiel D, Pandey S, Wang D, Liu S, Guda C, Odunsi K, and Karpf AR. (2013) Genomic and epigenomic characterization of DNA hypomethylation in human epithelial ovarian cancer, submitted to the AACR conference on Advances in Ovarian Cancer Research: From Concept to Clinic, September 18-21, 2013, Maimi, FL.
32. Wehrkamp CJ, Smith MA, Natarajan SK, Pandey S, Guda C, Mott JL. (2013) Genome-wide analysis of miR-106b targets in cholangiocarcinoma cells identifies tumor suppressors Kruppel-like factor-2 and -6, characterization of an antiapoptotic microRNA to be presented at a Conference on American Association for the Study of Liver Diseases (AASLD).
33. Vural S, Li Y, Guda C (2012) Computational prediction of cancer types and subtypes using machine learning approaches, presented at The Cancer Genome Atlas (TCGA) 2nd Annual Scientific Symposium, Crystal City, Virginia (Poster presentation).
34. Heather Talbott, Xiaoying Hou, Babu Guda, John S. Davis. (2012) *Pathway Analysis of temporal gene expression in the bovine corpus luteum following in vivo injection with prostaglandin F2 α* . Midwest Student Biomedical Research Forum, Creighton University, Omaha, NE. Feb. 18, 2012
35. Vural S, Srinivasan SM, Guda C (2011) Determining the minimal functional elements in protein families, presented at the *Rocky Mountain Bioinformatics Conference (Rocky '11)*, Aspen, Colorado (Poster presentation).
36. Srinivasan SM, Vural S, Guda C (2011) Mining for class-specific motifs in protein sequence classification, presented at the *Rocky Mountain Bioinformatics Conference (Rocky '11)*, Aspen, Colorado (Poster presentation).
37. Pandey S, Peng H, Ding S, Guda C (2011) CysNO-DB: A database of S-nitrosylation sites, presented at the *Rocky Mountain Bioinformatics Conference (Rocky '11)*, Aspen, Colorado (Poster presentation).
38. Mohammed A, Guda C (2011) Hierarchical prediction of enzyme classes using ensemble machine learning approaches, presented at the *Rocky Mountain Bioinformatics Conference (Rocky '11)*, Aspen, Colorado (Poster presentation).
39. Guda C. (2011) Bioinformatic approaches to study the functional evolution of organellar proteomes. *International Conference and Exhibition on Proteomics & Bioinformatics*, Hyderabad, India. (Oral presentation and Session Chair).
40. Shen R, Guda C. (2010) Inferring isomorphic sub-graphs from multiple cancer protein interaction networks. *Grace Hopper Conference of Women in Computing*, Atlanta, Georgia (Oral presentation).
41. Guda C, King BR, Guda P, Begley TJ (2009) Inferring domain-domain interactions from protein-protein interactions: Applications to cancer interactome. *The 3rd US-EU Workshop on Systems level understanding of DNA damage responses*, Egmond aan Zee, The Netherlands (Oral presentation).
42. The ENCODE consortium (2009) Integrative analysis of ENCODE consortium data. *The Biology of Genomes Meeting at Cold Spring Harbor Laboratory* (CSHL) (Oral presentation).
43. Guda P, Chittur SV, Guda C (2008) Global analysis of protein-protein interactions in cancer-associated genes, presented at the *CRCR Cancer Genomics Conference*, Troy, NY (Poster presentation).
44. Guda P, Chittur SV, Guda C (2008) Global analysis of protein-protein interactions in cancer-associated genes, presented at the *Intelligent Systems in Molecular Biology (ISMB '08)* conference, Toronto, Canada (Poster presentation).
45. King BR and Guda C. (2007) Semi-supervised learning for protein sequence classification, presented at the *Rocky Mountain Bioinformatics Conference (Rocky '07)*, Aspen, Colorado (Oral and poster presentations).

46. Guda C. (2007) Bioinformatics approaches to the mitochondrial proteome, *NIH (NHLBI) Workshop on Mitochondrial Proteomics*, Bethesda, MD (Oral presentation).
47. Guda C, Scheeff ED, Bourne P, and Shindyalov IN (2001) A new algorithm for the alignment of multiple protein structures using Monte Carlo optimization, presented at the *Pacific Symposium on Biocomputing (PSB '01)*, The Big Island, Hawaii (Oral presentation)
48. Guda C, Bourne PE, and Shindyalov IN (2000) Multiple protein structure alignment using Monte Carlo optimization, presented at the *Intelligent Systems in Molecular Biology (ISMB 2000)* conference, San Diego, CA (Poster presentation).
49. Guda C, Daniell H (1995) Expression of a synthetic polymer gene in tobacco chloroplasts, presented at the *International Symposium on Engineering Plants for Commercial Products and Applications*, Lexington, KY (Poster presentation)
50. Guda C, Daniell H (1994) Hyperexpression of an environmentally friendly synthetic polymer gene presented at the *International Symposium on Plant Molecular Biology and Biotechnology*, New Delhi, India (Poster presentation).

Research Support

ACTIVE

Nebraska Research Initiative (NRI) Core **PI: Guda** 07/01/12- Current
“Bioinformatics and Systems Biology Core (BSBC)”

Funds are provided by NRI to subsidize core services. BSBC provides bioinformatic data management and analysis services to over 150 independent PIs that hail from institutions in Nebraska and neighboring states.

Human Genetics Laboratory (HGL) Contract **PI: Guda** 07/01/15- Current
“MOU for providing bioinformatics support to HGL’s clinical diagnostic services”

HGL is a CLIA-certified laboratory that offers genetic diagnostic testing services for patients using a variety of gene panels. We support the bioinformatic analysis of next-gen sequencing data and the interpretation of genetic variants in patient samples.

1U24MH100925-06 (NIH/NIMH) (PI: Fox) **Guda (Co-I)** 05/01/13 – 02/28/23
“National NeuroAIDS Tissue Consortium Data Coordinating Center (NNTC-DCC)”

NNTC, a consortium of four brain banks has served the NeuroAIDS research community since 1998. Guda is a Co-I, who oversees the management of data (clinical/experimental) from NNTC and CHARTER projects, building databases, making the data accessible to researchers and supervising the DCC personnel.

1P01CA217798-01A1 (NIH/NCI) (PI: Batra) **Guda (Co-I)** 06/08/18 – 05/31/23
“Pancreatic Cancer Metastasis”

Guda is a Co-I on this project, who supports the Omics-data analysis needs of the research projects of this PPG.

1P30GM127200-01 (NIH/NIGMS) (PI: Bronich) **Guda (Co-I)** 06/01/18 – 05/31/23
“Nebraska Center for Nanomedicine (COBRE-Phase III)”

To supervise the ultrasound component of the imaging core in the Nanomedicine Cobre and help junior investigators develop plans for leveraging pilot studies into larger grants

2P01AG029531-06A1 (NIH/NIA) (PI: Bousfield) **Guda (Subaward PI)** 09/01/17–05/31/22

" The Aging Pituitary/Gonadal Axis"

This is a Program Project Grant (PPG) to study the role of FSH in bone loss. The Bioinformatics and Genomics Core provides support for 'Omics-data' generation and data analysis.

1R01MH110636-01A1 (NIH/NIMH) (PI: Mirnics) Guda (Co-I) 06/01/17–05/31/22

"Vulnerability of DHCR7^{+/-} mutation carriers to aripiprazole and trazodone treatment"

The goal of this project is to test the vulnerability of the *DHCR7^{+/-}* gene mutation carriers to **aripiprazole** (an atypical antipsychotic) and **trazodone** (an antidepressant) exposure.

3P30MH062261-15S1 (NIH/NIMH) (PI: Buch/Fox) Guda (Co-I) 04/01/16 – 03/31/22

"Chronic HIV Infection and Aging in NeuroAIDS (CHAIN) Center"

This is a Center grant to support investigators working on NeuroAIDS research. Guda (Co-I) provides bioinformatics support to analyze various 'omics' data generated by this project.

1R01CA222907-01A1 (NIH/NCI) (PI: Carlson) Guda (Co-I) 04/01/18–03/31/21

" Development and Application of a Porcine Model of Pancreatic Cancer"

This project aims at developing a porcine model and genomic characterization of such models for use in pancreatic cancers. We support the genomic data analysis component of this project.

5P30CA036727-29 (NIH/NCI) (PI: Cowan) Guda (Core-Lead) 09/01/15 - 07/31/21

"UNMC Eppley Cancer Center Support Grant"

The mission is to coordinate basic research and clinical cancer research, patient care and educational programs, to facilitate application of new knowledge about the etiology, diagnosis, treatment and prevention of cancer and to improve health and quality of life.

NSF Nebraska EPSCoR (PI: Choobineh) Guda (Co-I) 06/06/16 – 05/31/21

"Center for Root and Rhizobiome Innovation (CRRI)"

This project will generate large volumes of omics datasets from analyses and measurements of root gene expression and metabolites, soil microbiota, and plant phenotypes. Computational algorithms will be used for predictive model construction for more efficient data mining.

1 U54GM115458-01 (NIH/NIGMS) (PI: Rizzo) Guda (Co-Director) 09/01/16 – 06/30/21

"Great Plains IDeA-CTR"

The goal of this project is to provide infrastructure, mentoring, resources and evaluation for building clinical and translational research programs for the IDeA-CTR network member institutions through the Biomedical Informatics (BMI) Key Component Activity (KCA).

2P20GM103427-14 (NIH/NIGMS) (PI: Sorgen) Guda (Core-Lead) 05/01/14 – 06/30/20

"INBRE-Nebraska Research Network in Functional Genomics"

This is an Institutional Development Award (IDeA) to enhance the research capabilities of underfunded institutions through infrastructure development and partnerships.

NU/NSRI UARC Task Order FA4600-12-D-9000 (PI: Bayles) Guda (Co-I) 10/1/17 – pending

"Medical Countermeasure Drug Discovery and Development" To build a "drug development pipeline" for Acute Radiation Syndrome (ARS) by best combining the resources and expertise from UN, DoD, AFRRRI at USUHS and pharmaceutical industry.

COMPLETED

FP Buffett Cancer Center Contract (PI: Guda) 02/01/15 – 06/30/17
“Whole Genome Analysis of breast cancer patients”

Integrative analysis of next-gen sequencing data (mostly ExomeSeq data, but also include RNAseq, array CGH, miRNA microarrays and MethylSeq data) from 1000 in-house collected breast cancer tumor/normal paired samples to identify somatic mutations and correlate their effects on the initiation and progression of breast cancer.

University of South Dakota (USD) (PI: Burrell) **Guda (Co-PI)** 06/01/16 – 05/31/17
*“Developing a full-sequence genome of the medicinal leech (*Hirudo medicinalis*)”*

USD Center for Brain & Behavior Research collaborates with UNMC to develop a full-genome sequence map for medicinal leech. Guda’s group will carry out *de novo* genome assembly to develop the reference draft and annotate the coding regions.

Nebraska Research Initiative (NRI) (PI: Kharbanda) **Guda (Co-I)** 07/01/15 – 06/30/17
“Role of betaine in preventing alcohol-induced gut dysbiosis”

To investigate if betaine prevents alcohol-induced gut dysbiosis and also if betaine could reverse the alcohol-induced changes in gut microbiota. Guda (Co-PI) is responsible for providing bioinformatics support for metagenomics data analysis in this project.

T32CA009476 (NIH/NCI) (PI: Black) **Guda (Mentor)** 07/01/15 - 06/30/17

Eppley Institute Cancer Biology Training Grant to Kristin Wipfler

“Integrative molecular characterization of glioblastoma”

This is a prestigious award from the National Cancer Institute (NCI) and competition for these fellowships is rigorous.

UNMC Graduate Fellowship to Adam Cornish **Guda (Mentor)** 07/01/15 - 06/30/17
“Determining the clonal heterogeneity in tumors using exome sequencing data”

This is a competitive fellowship awarded by UNMC graduate school to support up to 2 years of stipend for a full-time graduate student at UNMC

FP Buffett Cancer Center Pilot Award **PI: Guda** 11/01/13 – 11/30/16
“Genomic profiling of breast cancer tumors using bioinformatics approaches”

Develop bioinformatic pipelines to analyze various types of NGS data including ExomeSeq, RNA Seq, and microarrays for over 1000 breast cancer patient samples treated at UNMC.

UNMC’s BMI Graduate Fellowship to You Li **Guda (Mentor)** 07/01/15 - 06/30/16
“A gene fingerprint-based algorithm for fusion genes detection from RNA-Seq short reads”

This is a competitive fellowship awarded by the UNMC graduate school to support stipend for a full-time student in the Biomedical Informatics (BMI) graduate program

1R01GM086533-01A1 (NIH/NIGMS) **PI: Guda** 09/01/09 - 08/31/15
“Cataloging the Subcellular and Suborganellar Proteomes of Sequenced Genomes”

Development of a novel method for predicting protein subcellular location, followed by experimental validation and development of an open-source software package and a web application.

MBEP Pilot Grant (FPB Cancer Center) **PI: Guda** 6/01/14 – 5/31/15
“Proteogenomic (Proteomics-Genomics) Integration of Breast Cancer Expression Data”

TCGA database provides different types of genomic and proteomic data from over 1000 breast cancer patients. The raw and/or processed data are not readily accessible in an understandable format by the biologists. This pilot project facilitates the development of a backend database and a web-based user-interface to query the TCGA data on breast cancer that can be eventually applied to other cancer data.

Nebraska Research Initiative (NRI) (PI: Eudy) **Guda (Co-I)** 08/01/14 – 07/31/15
“Establishment of Single Cell Genomics Technology for Nebraska Researchers”

This equipment grant supports the acquisition of the first single cell genomics instrumentation in the State of Nebraska. This includes the C1-Single-cell AutoPrep system, BioMark HD qPCR system and Access Array system for library preparation. Guda (Co-I) provides bioinformatic data analysis support for single-cell genomics data generated from this technology.

UNMC’s BMI Graduate Fellowship (Vural) **Guda (Mentor)** 07/01/13 - 06/30/15
“Molecular subtyping of breast cancers using NGS data and machine-learning methods”

This is a competitive fellowship awarded by the UNMC graduate school to support up to 2 years of stipend for a full-time student in the Biomedical Informatics graduate program.

Pancreas SPORE’s Pilot Grant (UNMC) **PI: Guda** 08/01/13 – 07/31/14
“Identification and characterization of pancreatic cancer subtypes using exome-sequencing data”

UNMC is the home of the Rapid Autopsy Program (RAP), which provides unique collection of specimens to be used to further research in pancreatic cancer. This project analyzes the Exome sequencing data from matched samples of pre-metastatic (Whipple), primary and metastatic tumors to determine the genomic variants that may be associated with the progression of pancreatic cancer.

Bukey Graduate Fellowship (Mohammed) **Guda (Mentor)** 07/01/12 - 08/15/14
“Development and application of a hierarchical machine learning method for enzyme classification”

This is a competitive fellowship awarded by UNMC graduate school to support up to 3 years of stipend for a full-time graduate student at UNMC.

1R15GM080681-01A1 (NIH/NIGMS) **PI: Guda** 03/01/08 - 03/31/11
“An integrated approach to infer and validate domain-domain interactions in proteins”

This is an AREA (Academic Research Enhancement Award) to develop a novel computational method for inferring functionally significant domain-domain interactions (DDIs) from protein-protein interactions, followed by their experimental validation using yeast-two-hybrid studies.

1UO1HG004571-01 (NIH/NHGRI) (PI: Tenenbaum) **Guda (Co-I)** 09/01/07 - 08/31/10
“Comprehensive Identification of ENCODE RNA based on cis-regulatory elements”

The objective of this project is to comprehensively catalog *cis*-regulatory elements/RBP-binding sites (CREBS) present in expressed ENCODE mRNA. Guda (Co-I) provided bioinformatics support for this project.

5T34-GM008807 (NIH/NIGMS) (PI: Rocha) **Guda (Consultant)** 08/01/04 - 05/31/10
*“California State University of San Marcos MARC U*STAR Program”*

Guda (Bioinformatics Consultant) was involved with the incorporation of preparatory courses in the undergraduate curriculum to enable students pursue graduate training and careers in bioinformatics.

NPACI/NSF **PI: Guda** 04/01/03 – 12/31/03
“Developing a Standalone Tool for Multiple Protein Structure Alignment Algorithm”

This award supported an REU (Research Experience for Undergraduates) summer student in the Guda lab to develop a standalone software package called CE-MC (Combinatorial Extension-Monte Carlo) that performs the alignment of multiple protein structures in the Protein Data Bank (PDB).

Updated on 1/11/2019