

## **Chittibabu (Babu) Guda, PhD**

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### **Executive Summary**

*I have been a life-long learner, and this trait has shaped my career in a unique way. I started off with my bachelor's degree in Biological Sciences and kept exploring new domains of knowledge as I collected more degrees – MS in Genetics, Ph.D. in Molecular Biology, post-doctoral training in Computer Science and Computational Biology – and finally carving out an independent research career in Bioinformatics and Genomic Data Sciences. My current research interests are in the realms of computational biology, systems biology, cancer genomics, and machine learning. My research employs machine learning (ML) and artificial intelligence (AI) approaches to develop computational solutions to a variety of biomedical research and big data integration and interpretation problems.*

*I have around 30 years of experience as an academician with a strong record in biomedical research and mentoring, graduate teaching, and developing graduate programs, research centers, research resources, and Core services. Since 2010, I have been serving in various administrative roles at UNMC reporting to the Vice Chancellor for Research and the Dean, College of Medicine. Over the past 20 years, I've trained about 70 mentees in my laboratory which include 15 Ph.D. students, 13 postdocs, and 12 junior faculty. I have published about 140 peer-reviewed articles (with about half of them as the first or corresponding author) and developed over a dozen novel computational methods and bioinformatics software tools that are widely used by the research community. My research program has been steadily funded since 2004 and I have served as the PI/PD, co-PI, or co-I on 25 distinct grants that use various Research (R series), Program/Center (P series), Cooperative agreements (U series), and Training (T series) mechanisms from NIH, NSF, and DoD sponsors. Since 2016, I have been consistently generating over one million dollars per year in direct costs to support my laboratory research. I also served on numerous NIH/NSF/DoD grant review panels, editorial boards, and external advisory boards of NIH program projects. Given my diverse interdisciplinary expertise, I also served on several executive search committees at UNMC and other University of Nebraska (NU) campuses. I currently co-lead the joint Center for Biomedical Informatics Research and Innovation (CBIRI) that was recently approved by the NU Board of Regents.*

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## Education

- 1999-2001 **University of California at San Diego**  
San Diego Supercomputer Center  
Post-doctoral Research Associate, *Computational Biology*
- 1997-1999 **Iowa State University**  
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, *Computer Science*
- 1992-1997 **Auburn University**  
Department of Biological Sciences  
Ph.D., *Molecular Biology*
- 1990-1992 **Andhra Pradesh Agricultural University, India**  
Department of Genetics and Plant Breeding  
M.Sc.(ag), *Genetics, Seed Science and Technology*
- 1986-1990 **Andhra Pradesh Agricultural University, India.**  
B.Sc.(ag), *Agricultural Sciences*

## Academic Appointments

- 2019-present **Assistant Dean for Research Development**  
College of Medicine, University of Nebraska Medical Center (UNMC)
- 2019-present **Vice-Chair for Bioinformatics Research & Training**  
Dept. of Genetics, Cell Biology & Anatomy, UNMC
- 2018-present **Research Scientist**  
Dept. of Genetics, Cell Biology & Anatomy, UNMC
- 2016-present **Professor (tenured)**  
Dept. of Genetics, Cell Biology & Anatomy, 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 Biol. & Anatomy, UNMC
- 2004-2010 **Assistant Professor (tenure-track)**, Cancer Research Center and Dept. of  
Epidemiology & Biostatistics, State Univ. of New York at Albany (SUNY-Albany)
- 2001-2004 **Project Scientist**, San Diego Supercomputer Center  
University of California at San Diego (UCSD)
- 2000-2004 **Curriculum Developer & Instructor, 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, 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 Appointments

- 2016-present **Courtesy Professor**, Department of Biochemistry & Molecular Biology, UNMC

2010-present **Adjunct Faculty**, Fred & Pamela Buffett Cancer Center, UNMC  
2010-2016 **Assoc. 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 Institutional Service

2022 **Member**, Search Committee for Director, Holland Computing Center, UNL  
2021-present **External Advisory Board Member & External Mentor**, Center for Diagnostic and Therapeutic Strategies in Pancreatic Cancer (COBRE award to NDSU)  
2019-present **External Advisory Committee member**, Center of Biomedical Research Excellence, Epigenomics of Development and Disease (COBRE award to UND)  
2020-21 **Member**, Committee for Promoting Wellness in Graduate Studies, Graduate Council, UNMC  
2019-2021 **Member**, Graduate Council, Graduate Studies, UNMC  
2019-2021 **Director**, Bioinformatics and Systems Biology (BISB) subplan of IGPBS (Interdisciplinary Graduate Program in Biomedical Sciences) at UNMC  
2019-2021 **Member**, Internal Advisory Committee, Holland Computing Center, UNL  
2019-present **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  
2016-2019 **Senator**, Faculty Senate, University of Nebraska Medical Center  
2016-2017 **Member**, Search Committee for Asst. Vice-Chancellor for IT, Chancellor's Office, UNMC  
2014-2019 **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

## Grants and Contracts

### ACTIVE

*"The Aging Pituitary/Gonadal Axis"*

NIH/NIA, **2P01AG029531**

09/01/17–05/31/23

\$78,598/year

PI: Guda (Subaward)

*"Bioinformatics and Systems Biology Core (BSBC)"*

Nebraska Research Initiative (NRI)

07/01/12- Current

\$40,000/year

PI: Guda

*"UNMC Eppley Cancer Center Support Grant"*

NIH/NCI, **5P30CA036727-32**

08/01/16 - 07/31/26

\$1,378,761/year

Guda (Core-Lead), (PI: Cowan)

*"Great Plains IDeA-CTR"*

NIH/NIGMS, **5U54GM115458-03**

09/01/16 – 06/30/26

\$2,829,635/year

Guda (BIBCE Core Director), (PI: Rizzo)

*"INBRE-Nebraska Research Network in Functional Genomics"*

NIH/NIGMS, **5P20GM103427**

01/01/14 – 04/30/25

\$2,901,513/year

Guda (Core-Lead), (PI: Sorgen)

*"Uncovering HIV/opioid effects in the brain at the single cell level: transcription, chromatin accessibility, and reservoir analysis in the SIV/cART/morphine/rhesus monkey model"*

NIH/NIDA, **1U01DA053624**

08/15/21 – 06/30/26

\$1,417,351/year

Guda (Co-I), (PI: Fox)

*"Medical Countermeasure (MCM) Drug Discovery and Development, Increment-2"*

NU/NSRI UARC Task Order FA4600-18-D-9001 (**U2-18-FU910-UNMC-Balyes-02**)

01/06/2020 – 10/31/2023

\$1,000,000/year

The goal is to gather preclinical data for probable radio-protectors in acute radiation syndrome.

Guda (Co-I), (PIs: Berkowitz/Bayles)

*"The cardiac afferents and renal function in heart failure"*

NIH/NHLBI, **2 R01 HL126796-05**

01/10/2020-12/31/2023

\$373,544/year

These data will be important in developing therapies for reducing cardiovascular and renal morbidity and ultimately mortality

Guda (Co-I), (PI: Wang/Zucker)

Strategies to mitigate intergenerational prescription opioid abuse

NU Collaboration Initiative

7/1/21-6/30/23

\$75,000/year

Guda (Co-I), (PI: Pendyala)

Developing a new drug screening platform to identify radioprotective compounds

NU Collaboration Initiative

7/1/21-6/30/23

\$75,000/year

Guda (Co-I), (PI: Deegan)

*"Nebraska Center for Nanomedicine (COBRE-Phase III)"*

NIH/NIGMS, **1P30GM127200-01**

06/01/18 – 05/31/23

\$750,000/year

Guda (Co-I), (PI: Oupicky)

*"Pancreatic Cancer Metastasis"*

NIH/NCI, **1P01CA217798-01A1**

06/08/18 – 05/31/23

\$1,078,411/year

Guda (Co-I), (PI: Batra)

*"National NeuroAIDS Tissue Consortium Data Coordinating Center (NNTC-DCC)"*

NIH/NIMH, **5U24MH100925-07**

03/12/2018 – 02/28/2023

\$757,005/year

Guda (Co-I), (PI: Fox)

*"Bio surveillance Research Development Agreement"*

DEFENSEWERX-ICWERX, **2021-21072100002**

12/01/2021 - 10/31/2022

\$500,000/year

Guda (Co-I), (PI: Bayles)

*"Further Development of 5-AED (Androstenediol, Neumune) for the Protection from Acute Radiation Syndrome (ARS)"*

Department of Defense (DoD) **W81XWH22C0126**

09/19/2022 - 12/18/2025

Total Cost: \$4,500,000

Guda (Co-PI), (PI: Deegan)

## **COMPLETED**

*"Vulnerability of DHCR7+/- mutation carriers to aripiprazole and trazodone treatment"*

NIH/NIMH, **5R01MH110636-02**

06/01/17–05/31/22

\$344,084/year

Guda (Co-I), (PI: Mirnics)

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

NIH/NIMH, **5P30MH062261-18**

04/01/16 – 03/31/22

\$973,613/year

Guda (Co-I), (PI: Buch/Fox)

*"COVID-19 Antigen Team for Immunotherapy and Monitoring Patient Immune Response"*

DHHS/NIH/NCI, **2P30CA036727-COVID Supplement**

07/01/20 – 06/30/21

Dr. Guda's team provides bioinformatics support for analysis of SARS-CoV-2 genome and antigen design.

Guda (Co-I) (PI: Borgstahl/Bayles)

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

NIH/NCI, **5R01CA222907-02**

04/01/18–03/31/21

\$372,846/year

Guda (Co-I), (PI: Carlson)

*"Center for Root and Rhizobiome Innovation (CRR)"*

NSF Nebraska EPSCoR, **95-3101-0050-005**

06/06/16 – 05/31/21

\$67,383/year

Guda (Co-I), (PI: Choobineh)

*"Neuromodulation of long-term sequelae of ischemic acute kidney injury"*

NIH/NDDK, **1R01DK120846-01A1**

01/09/2020-12/31/2023 (PI moved to Mt. Sinai)

\$305,820/year

Guda (Co-I), (PI: Padanilam)

*"MOU for providing bioinformatics support to HGL's clinical diagnostic services"*

Human Genetics Laboratory (HGL)

07/01/15- 03/31/2020

\$360,702 (total)

PI: Guda

*"Whole Genome Analysis of breast cancer patients"*

FP Buffett Cancer Center Contract

02/01/15 – 06/30/17

\$220,000 (total)

(PI: Guda)

*"Developing a full-sequence genome of the medicinal leech (Hirudo medicinalis)"*

University of South Dakota (USD)

06/01/16 – 05/31/17

\$20,000 (total)

Guda (Co-PI), (PI: Burrell)

*"Role of betaine in preventing alcohol-induced gut dysbiosis"*

Nebraska Research Initiative (NRI)

07/01/15 – 06/30/17

\$100,000 (total)

Guda (Co-I), (PI: Kharbanda)

*"Integrative molecular characterization of glioblastoma"*

NIH/NCI

07/01/15 - 06/30/17

\$763,723/year

Guda (Mentor), (PI: Black)

Eppley Institute Cancer Biology Training Grant to Kristin Wipfler  
This is a prestigious award from the National Cancer Institute (NCI) and competition for these fellowships is rigorous.

*"Determining the clonal heterogeneity in tumors using exome sequencing data"*

UNMC Graduate Fellowship to Adam Cornish

07/01/15 - 06/30/17

\$46,200 (total)

Guda (Mentor)

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

*"Genomic profiling of breast cancer tumors using bioinformatics approaches"*

FP Buffett Cancer Center Pilot Award

11/01/13 – 11/30/16

\$167,602 (total)

PI: Guda

*"A gene fingerprint-based algorithm for fusion genes detection from RNA-Seq short reads"*

UNMC's BMI Graduate Fellowship to You Li

07/01/15 - 06/30/16

\$23,100 (total)

Guda (Mentor)

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

*"Cataloging the Subcellular and Suborganellar Proteomes of Sequenced Genomes"*

NIH/NIGMS

09/01/09 - 08/31/14

\$130,000/year

PI: Guda

*"Proteogenomic (Proteomics-Genomics) Integration of Breast Cancer Expression Data"*

MBEP Pilot Grant (FPB Cancer Center)

6/01/14 – 5/31/15

\$10,009 (total)

PI: Guda

*"Establishment of Single Cell Genomics Technology for Nebraska Researchers"*

Nebraska Research Initiative (NRI)

08/01/14 – 07/31/15

\$500,000 (total)

Guda (Co-I), (PI: Eudy)

*"Molecular subtyping of breast cancers using NGS data and machine-learning methods"*

UNMC's BMI Graduate Fellowship to Suleyman Vural

07/01/13 - 06/30/15

\$46,000 (total)

Guda (Mentor)

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.

*"Identification and characterization of pancreatic cancer subtypes using exome-sequencing data"*

Pancreas SPORE's Pilot Grant (UNMC)

08/01/13 – 07/31/14

\$50,000 (total)

PI: Guda

*"Development and application of a hierarchical machine learning method for enzyme classification"*

Bukey Graduate Fellowship to Akram Mohammad

07/01/12 - 08/15/14

\$46,000 (total)

Guda (Mentor)

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.

*"An integrated approach to infer and validate domain-domain interactions in proteins"*

1R15GM080681-01A1 (NIH/NIGMS)

03/01/08 - 03/31/10

\$75,000/year

PI: Guda

*"Comprehensive Identification of ENCODE RNA based on cis-regulatory elements"*

1U01HG004571-01 (NIH/NHGRI)

09/01/07 - 08/31/10

\$745,419/year

Guda (Co-I), (PI: Tenenbaum)

*"California State University of San Marcos MARC U\*STAR Program"*

5T34GM008807-04 (NIH/NIGMS)

08/01/04 - 05/31/09

\$236,600/year

Guda (Consultant), (PI: Rocha)

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.

*"Developing a Standalone Tool for Multiple Protein Structure Alignment Algorithm"*

NSF/NPACI

04/01/03 – 12/31/03

\$5,000 (total)

PI: Guda

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).

## Study Section Service

NIH/CSR **Panelist**, Data Science for Health Discovery and Innovation in Africa (DS-I Africa) (ZRG1 BST-J) 07/08/21

NIH/CSR **Panelist**, Shared Instrumentation: Bioengineering Sciences & Technologies (ZRG1 BST-J (31 I) 11/13/20 – 11/13/2020



NIH/CSR **Panelist**, ZRG1 BST-M (30) – S10, Shared Instrumentation: Topics in computational Biosciences, National Institutes of Health (NIH), 10/30/18 – 10/31/2018

NIH/NCI **Panelist**, Informatics Technology for Cancer Research (ITCR) Study Section National Institutes of Health (NIH), 11/07/17 – 11/08/2017

NIH/NCI **Panelist**, ZCA1 RTRB-E (A1), PDX Development and Trial Centers Review Special Emphasis Panel, National Institutes of Health (NIH), 07/11/17 – 07/12/2017

NIH/NCI **Panelist**, Informatics Technology for Cancer Research (ITCR) Study Section National Institutes of Health (NIH), 03/09/17 – 03/10/2017

NIH/CSR **Panelist**, BDMA (BioData Management and Analysis) Study Section National Institutes of Health (NIH), 09/29/16 – 09/30/2016

DOD **Ad hoc Reviewer**, Pathobiology-5 Panel CDMRP Study Section, Department of Defense (DOD), 02/04/2016

NIH/CSR **Panelist**, GCAT (Genomics, Computational Biology & Technology) Study Section National Institutes of Health (NIH), 06/05/14 – 06/06/2014

NIH/NCI **Panelist**, ZCA1 SRLB –4(M2), Early Stage Development of Information Technology Special Emphasis Panel, National Institutes of Health (NIH), 04/23/2014

NIH/NCI **Panelist**, ZCA1 SRLB –4(M1), Early Stage Development of Information Technology Special Emphasis Panel, National Institutes of Health (NIH), 04/22/2014

NIH/NCI **Panelist**, ZCA1 SRLB –V(J1), Information Technology for Cancer Research Special Emphasis Panel, National Institutes of Health (NIH), 10/22/2013

MRC **Ad hoc Reviewer**, MRC Fellowships Program Medical Research Council (MRC) Fellowships, United Kingdom, 09/09/2013

NIH/NCI **Panelist**, ZCA1 SRLB –V(O1), Early Stage & Adv. Devt. of Information Technology Special Emphasis Panel, National Institutes of Health (NIH), 07/11/13 – 07/12/2013

NIH/CSR **Panelist**, GCAT (Genomics, Computational Biology & Technology) Study Section National Institutes of Health (NIH), 02/20/13 – 02/21/2013

NIH/NCI **Panelist**, ZCA1 SRLB-V (J1) Cancer Target Discovery & Devt. (CTDD) Network National Institutes of Health (NIH), 11/14/11 - 11/15/2011

NSF/ABI **Panelist**, Advances in Biological Informatics (ABI) program review panel National Science Foundation (NSF), 11/18/09 - 11/20/2009

WOTRO **Ad hoc Reviewer**, Innovational Research Incentives Scheme Vidi 2009 WOTRO Science for Global Development, The Netherlands, 06/02/2009

NSF/ABI **Panelist**, Advances in Biological Informatics (ABI) program review panel National Science Foundation (NSF), 11/19/08 -11/21/2008

NSF/IOS **Ad hoc Reviewer**, Integrative Organismal Systems (IOS) program review panel National Science Foundation (NSF), 10/23/2008

## 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.

## Editorial Positions

2020-2022 **Editorial Board Member**, Cancers, MDPI

2019 **Program committee member**, IEEE-BIBM 2019. The International Workshop on Expository Representation Learning of Biomedical Data, San Diego

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

## Consulting Positions

- 2020-present Faculty Mentor, Pancreatic Cancer COBRE, North Dakota State University
- 2019-present External Advisory Board, Epigenetics COBRE, University of North Dakota,
- 2004-05 *Bioinformatics Consultant*, NIH MARC USTAR Grant, CalState at San Marcos, CA
- 2003 *Bioinformatics Training Consultant*, Pfizer Global R&D, La Jolla, CA

## Ad hoc Reviewer for Journals

2003-present: Reviewed manuscripts 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.

## Honors and Awards

- 2021 **Keynote speaker**, Complex Adaptive Systems Conference on Big Data, IoT (Internet of things), and AI (artificial intelligence) for a smarter future, June 16-18<sup>th</sup>, 2021, organized by Penn State at Great Valley
- 2020 **Innovator Award**, UNeMed, University of Nebraska Medical Center
- 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 **Employee Performance Award**, San Diego Supercomputer Center, UCSD  
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

## Society Memberships

- ISCB – International Society for Computational Biology
- AACR – American Association for Cancer Research
- AMIA – American Medical Informatics Association

## Selected Invited Presentations

2021 University of Nebraska Center for Biomedical Informatics Research and Innovation, presented on 9/23/21. Invited by UNO STEM TRAIL program.  
2021 Computational Solutions for Data-Driven Research in Biomedical Sciences, presented at University of North Dakota COBRE Epigenetics Symposium on 3/30/21  
2021 Personalized Medicine for High Schoolers, presented to Future Problem-Solving Students at Aurora Public Schools, Aurora, NE, presented on 3/4/21  
2020 Tech Talk - New services and software tools available from Bioinformatics and Systems Biology Core, VCR Office, UNMC, presented on 5/14/20  
2019 Exploring the landscape of fusion transcripts in 33 different cancer, Regenerative Medicine, UNMC  
2018 Tech Talk - Advanced Software for Bioinformatics and Systems Biology Research, VCR Office, UNMC  
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.  
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

## Bioinformatics Methods 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
2019-22	mintRULS	Prediction of miRNA-mRNA Target Site Interactions Using Regularized Least Square Method
2018-22	NBBt-test	A versatile method for differential analysis of multiple types of RNA-seq data
2016-21	StrainIQ	Taxonomic identification of quantification of microbiome sequencing data
2014-20	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	MetalID	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	Cancer PPIs	Cancer protein interaction networks analysis using data mining
2007-09	DDI prediction	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

## Mentoring Record

In my career, I have mentored over 70 personnel at various stages of the academic ladder. These include 12 junior faculty, 13 postdocs, 15 PhD, and 5 MS students. In addition, I also served on the advisory committees of 16 PhD or MS students at various institutions.

Mentees: Faculty and Visiting Scholars			
Name	Period	Title	Current Position
Rick Jansen, PhD	2020-current	Associate Professor	NDSU COBRE project
Peng Xiao, PhD	2014-current	Assistant Professor	
Meng, Niu, PhD	2015-2022	Res. Assistant Professor	
Subu Jagadesan, PhD	2022-current	Bioinformatics Scientist	
Avinash Veerappa, PhD	2022-current	Instructor	
Ramanuja Simha	2022-current	Instructor	
Nalin Goonesekere, PhD	2022	Visiting Professor	Professor, U. Northern Iowa

Neetha Vellichirammal, PhD	2016-2022	Assistant Professor	Senior Scientist, CytomX Therapeutics San Francisco
Nitish Mishra, PhD	2017-2021	Instructor	Res. Scientist, St. Jude's, TN
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 Univ., Nanjing
Smita Pawar, PhD	2012	BOYSCAST Fellow	Assoc. Professor, Osmania University, India
Nalin Goonesekere, PhD	2011	Visiting Professor	Professor, U. Northern Iowa
Ashok Jangam, M.Sc.(ag)	2011	ICAR/NAIP Fellow	Senior Scientist, ICAR, India
<b>Mentees: Postdoctoral Researchers</b>			
Nagasundaram Nagarajan	2022-current	Postdoc	
Nagavardhini Avuthu, PhD	2022-current	Postdoc	
Jai Chand Patel	2021-current	Postdoc	
Sushil Shakyawar, PhD	2020-current	Postdoc	
Avinash Veerappa, PhD	2021-2022	Postdoc	Instructor at UNMC
Subu Jagadesan, PhD	2018-2022	Postdoc	Bioinformatics Scientist at UNMC
Yuande Tan, PhD	2018-2020	Postdoc	Postdoc at UT Houston
Nitish Mishra, PhD	2013-2016	Postdoc	Research Scientist, St. Jude's, TN
Jasjit Banwait, PhD	2016-2017	Postdoc	Biostatistician, Cardiovascular Clinical Research at the Heart Hospital, Plano TX
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	Genome Analyst, Rare Genomics Inst.
<b>Staff Programmers</b>			
<b>Name</b>	<b>Period</b>	<b>Title</b>	<b>Current Position</b>
Meng, Niu, PhD	2015-2022	Bioinformatics Programmer/Scientist	Res. Assistant Professor at UNMC
Sanjit Pandey, MS	2010-2021	Bioinformatics Programmer/Analyst	Sr. Bioinformatics Support Scientist, Illumina, NC
Duc Le, BS	2016-2019	Bioinformatics Programmer/Analyst	iExcel Programmer, UNMC
Jasjit Banwait, PhD	2017-2018	Bioinformatics Programmer/Analyst	Biostatistician, Cardiovascular Clinical Research at the Heart Hospital, TX
Navodita Upadhyay, MS	2016-2018	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
Frank Doyle, MS	2005-06	Programmer	PhD student, SUNY-Albany
<b>Mentees: Graduate Students</b>			
<b>Name</b>	<b>Period</b>	<b>Degree/Program</b>	<b>Current Position</b>
Rajashree Chakraborty	2022-current	PhD/Biochem Mol Biol	PhD Student
Sahil Sethi	2020-current	PhD/Biomed. Informatics	PhD Student
Abrar Albahrani	2018-2020	PhD/Biomed. Informatics	PhD Student, Discontinued
Siddesh Southeikal, MS	2017-2021	PhD/Biomed. Informatics	Postdoc at Eli Lilly, Indianapolis
Nagavardhini Avuthu, MS	2016-2022	PhD/Biomed. Informatics	Postdoc, UNMC
Sanjit Pandey, MS	2014-2021	PhD/Biomed. Informatics	Illumina, NC

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.	Biobank Director at FORWARD, Omaha. Rheumatic Disease Databank
You Li, MS	2012-2016	PhD/Biomed. Informatics	Sr. Bioinformatics Scientist, HitGen Ltd., Chengdu, China
Simarjeet Negi, MS	2012-2016	PhD/Biomed. Informatics	Medical Science Liaison, Teva Pharmaceuticals, Wash. DC
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:

2021	Vishaal Potineni	Millard North High, NE	Summer volunteer
2021	Akhil Ganti	Millard North High, NE	Summer volunteer
2021	Mahika Kanchanam	Millard North High, NE	Summer volunteer
2021	Meena Sanikommu	Elkhorn South High, NE	Summer volunteer
2021	Anjali Jayan	Millard North High, NE	Summer volunteer
2020	Sachi Lele	Millard North High, NE	Summer volunteer
2019	Amoolya Chengalsetti	Millard North High, NE	Student intern
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, 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	Univ. Nebraska Med. Center	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:

2022-current	Flobator Gawargi	PhD	Integrative Physiology & Molecular Medicine
2021-current	Austin Gowen	PhD	Integrative Physiology & Molecular Medicine

2020-current	Cleos Sarmiento	PhD	Microbiology and Pathology
2020-2022	Jordon Hernandez	PhD	Anesthesiology
2018-2022	Tylor Cambis	PhD	Cellular and Integrative Physiology
2017-2020	Cassie Liu	MD/PhD	Surgery/Surgical Oncology
2014-2015	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 received the 'Instructor of the year' award in 2002 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 also 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 a Co-Director of the Bioinformatics and Systems Biology (BISB) track in the IGPBS (Integrated Graduate Program in Biomedical Sciences) program at UNMC.

GRADUATE-LEVEL DIDACTIC COURSES			
Course	Role	Terms	Institution
<b>BISB 815:</b> Tools and Algorithms in Bioinformatics	Course Co-Director	2020-present, Every Fall	UNMC
<b>GCBA 815:</b> Tools and Algorithms in Bioinformatics	Course Director	2014-2019, Every Fall	UNMC
<b>GCBA 915:</b> Advanced Workshop on Bioinformatics	Course Director	2012-2013, Spring	UNMC
<b>GCBA 815:</b> Introduction to Bioinformatics	Course Director	2011-2013, Fall/Spring	UNMC
<b>CRGP 910:</b> Intensive Training in Translation Cancer Research	Guest lecturer	2017-current, Fall	UNMC
<b>PHAR 820:</b> Current Methods in Neuroscience	Guest lecturer	2012-2014, Spring	UNMC
<b>GCBA 806:</b> Presentation and Scientific Writing Skills	Guest lecturer	2013, Fall	UNMC
<b>STA 573:</b> Introductory Workshop on Bioinformatics	Course Director	2005-2010, Fall or Spring	SUNY-Albany
<b>STA 650/CSI 660:</b> Advanced Topics in Bioinformatics	Co-Director	2006-2010, Spring	SUNY-Albany

BIO 540/STA 569/CSI 660: Principles of Bioinformatics	Co-Director	2005-2009, Fall	SUNY-Albany
Tools and Algorithms in Bioinformatics	Course Director	2001-2004, Fall/Spring	UCSD Extension
Adv. Tools & Algorithms in Bioinformatics	Course Director	2002-2004, Spring	UCSD Extension
Protein Data Analysis & Modeling	Co-Director	2000-2002	UCSD Extension
SHORT WORKSHOPS OR TUTORIALS			
<b>Event/Conference</b>		<b>Year</b>	<b>Place</b>
UNMC High School Alliance Program – Introduction to Bioinformatics and a Field Trip to the Data Center		2015	UNMC
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
Tutorial at Int. Conference on Computers and its Applications		2003	San Diego, CA
Workshop on Computer-Aided Drug Design, UCSD Ext.		2001	La Jolla, CA

## Publications

### a) Peer-reviewed Original Research Articles (\*trainees from Guda lab)

1. Yadav SK, Ahmad R, Moshfegh CM, Elkhatib SK, Talmon GA, **Guda C**, \*Jagadesan S, Case A, Dhawan P, Singh AB. PTSD Induces Inflammatory Gut Milieu by Compromising the Mucosal Barrier Integrity and Altering the Gut Microbiota Colonization. (**Submitted to Brain Behavior and Immunity**)
2. Fox HS, \*Niu M, Morsey B, Lamberty BG, Emanuel K, Periyasamy P, Callen S, Acharya A, Kubik G, Eudy J, **Guda C**, Shetty RD, Fletcher CV, Byrareddy SN, Buch S. Morphine Alters Systemic Responses to SIV Infection of Rhesus Monkeys and Changes Brain Macrophage and Microglia Gene Expression Favoring the Establishment of Viral Reservoirs (**Submitted to Journal of Clinical Investigation**)
3. \*Vellichirammal NN, \*Yuande T, \*Peng X, Eudy JD, Shats O, Kelly D, Desler M, Cowan K, **Guda C**. The mutational landscape of a US Midwestern breast cancer cohort reveals subtype-specific cancer drivers and prognostic markers (**Submitted to Mol Therapy Nucleic Acids**)
4. \*Vellichirammal NN, Singh J, Wise SY, Carpenter A, Fatanmi OO, **Guda C**, Singh VK. Transcriptome profile changes in the jejunum of rhesus macaque (*Macaca mulatta*) exposed to supralethal dose of total or partial-body radiation (**Submitted to MTNA**)
5. \*Shakyawar S, \*Mishra NK, \*Vellichirammal NN, Cary L, Helikar T, Powers R, Oberley-Deegan RE, Berkowitz D, Bayles K, Singh VK, **Guda C**. A review of radiation-induced alterations of multi-omic profiles, radiation injury biomarkers, and countermeasures. **Radiation Research (In minor revision)**
6. \*Vellichirammal N, \*Albahrani A, **Guda C**. Fusion gene recurrence in non-small cell lung cancers and its association with cigarette smoke exposure **Translational Lung Cancer Research (In press)**
7. Obuya S, Elkholly A, \*Avuthu N, Behring M, Bajpai P, Agarwal S, Kim HG, El-Nikhely N, Akinyi P, Orwa J, Afaq F, Abdalla M, Michael A, Farouk K, Bateman LB, Fouad M, Saleh M, **Guda C**, Manne U, Arafat W. (2022) A signature of *Prevotella copri* and *Faecalibacterium prausnitzii* depletion, and a link with bacterial glutamate degradation in the Kenyan colorectal cancer patients. **J Gastrointestinal Oncology (In press)**
8. \*Shakyawar S, \*Siddesh S, **Guda C**. mintRULS: Prediction of miRNA-Targets interactions using regularized least square method. **Genes** 13:1528. PMID: 36140696. PMCID: PMC9498445.



9. \*Vellichirammal NN, \*Sethi S, \*Pandey S, Singh J, Wise SY, Carpenter A, Fatanmi OO, **Guda C**, Singh VK. Lung transcriptome of rhesus macaque (*Macaca mulatta*) exposed to total-body and partial-body irradiation ***Mol Therapy Nucleic Acids***, 29:584-598, PMID: 36090752. PMCID: PMC9418744.
10. Bahado-Singh RO, Friedman P, Talbot C, Aydas B, \*Southekal S, \*Mishra NK, **Guda C**, Yilmaz A, Radhakrishna U, Vishweswaraiah S. (2022) cfDNA in maternal blood and Artificial Intelligence: Accurate Prenatal Detection of Fetal Congenital Heart Defects. ***The American Journal of Obstetrics & Gynecology***, 2022:S0002-9378(22)00618-4. PMID: 35948071.
11. \*Tan YD, **Guda C**. (2022) NBBt-test: a versatile method for differential analysis of multiple types of RNA-seq data. ***Scientific Reports***. 12:12833. doi: 10.1038/s41598-022-15762-x. PMID: 35896555, PMCID: PMC9329447
12. Xia Z, \*Vellichirammal NN, Han L, Gao L, Boesen EI, Hong J, Schiller AM, Pellegrino P, Lisco SJ, **Guda C**, Zucker IH, Wang HJ. (2022) Cardiac Sympathetic Afferent Denervation Attenuates Renal Dysfunction in Rats with Cardio-Renal Syndrome Type 2. ***JACC Basic Translational Science***, 7:582-596. PMID: 35818505; PMCID: PMC9270585
13. \*Avuthu N, **Guda C**. (2022) Meta-analysis of Altered Gut Microbiota Reveals Microbial and Metabolic Biomarkers for Colorectal Cancer ***Microbiology Spectrum*** 2022:e0001322. PMID: 35766483; PMCID: PMC9431300.
14. Bulock L, Ahn J, Shinde D, \*Pandey S, Sarmiento C, Thomas V, **Guda C**, Bayles K, Sadykov M. (2022) Interplay of CodY and CcpA in regulating central metabolism and biofilm formation in *Staphylococcus aureus*. ***Journal of Bacteriology***, 2022:e0061721. doi: 10.1128/jb.00617-21. Epub 2022 Jun 23. PMID: 35735992; PMCID: PMC9295537.
15. Trease AJ, \*Niu M, Morsey B, **Guda C**, Byrareddy SN, Buch S, Fox HS. (2022) Antiretroviral therapy restores the homeostatic state of microglia in SIV-infected rhesus macaques. ***J Leukocyte Biology***, doi: 10.1002/JLB.3HI0422-635R. PMID: 35686500.
16. Odegaard KE, Gallegos G, Koul S, Schaal VL, \*Vellichirammal NN, **Guda C**, Dutoit A, Lisco SJ, Yelamanchili SV, Pendyala G. (2022) Distinct synaptic vesicle signatures associated with pre- and post-natal oxycodone-exposure. ***Cells***, 11:1170. PMID: 35681434; PMCID: PMC9179517.
17. Mohapatra BC, Mirza S, Bele A, Gurumurthy CB, Raza M, Saleem I, Storck MD, Sarkar A, Kolala SS, Shukla S, \*Southekal S, Wagner K, Qiu F, Lele S, Alsaleem MA, Rakha EA, **Guda C**, Singh PK, Cardiff RD, Band H, Band V. (2022) ECD overexpression drives mammary tumorigenesis through upregulation of c-MYC and glucose metabolism. ***Molecular Cancer Research***, doi: 10.1158/1541-7786. PMID: 35675041; PMCID: PMC9437571.
18. Nguyen NM, Vellichirammal NN, **Guda C**, Pendyala GN. (2022) Decoding the synaptosome proteome with long-term exposure to midazolam during early development. ***Int J of Molecular Sciences***, 23:4137. PMID: 35456952. PMCID: PMC9027542.
19. Liu B, Kong Y, Shi W, Kuss M, Liao K, Hu G, \*Xiao P, \*Jagadesan S, **Guda C**, Wang X, Lei Y, Duan B. (2022) Exosomes derived from differentiated human ADMSC with the Schwann cell phenotype modulate peripheral nerve-related cellular functions. ***Bioactive Materials*** 14:61-75 PMID: 35310346 PMCID: PMC8892082.
20. \*Veerappa A, Pendyala G, **Guda C**. (2021) A systems omics-based approach to decode substance use disorders and neuroadaptations, ***Neuroscience and Biobehavioral Reviews***, 130:61-80. PMID: 34411560. PMCID: PMC8511293.
21. Kim SK, Vishweswaraiah S, Macknis J, Yilmaz A, Lalwani A, \*Mishra NK, **Guda C**, Ogunyemi D, Radhakrishnan U, Bahado-Singh RO. New-onset postpartum preeclampsia: Epigenetic mechanism and prediction. (2021) ***Journal of Maternal-Fetal & Neonatal Medicine*** doi: 10.1080/14767058.2021.1946504 PMID: 34374309
22. Radhakrishna U, Nath SK, Vishweswaraiah S, Uppala LV, Forray A, Muvvala SB, \*Mishra NK, \*Siddesh S, **Guda C**, Govindamangalam H, Vargas D, Gardella WG, Crist RC, Berrettini WH, Metpally RP, Bahado-Singh RO. (2021) Maternal opioid use disorder: Placental transcriptome analysis for neonatal opioid withdrawal syndrome ***Genomics***, doi: 10.1016/j.ygeno.2021.08.001. PMID: 34352367.
23. Schissel M, Best R, Liesemeyer S, \*Tan Y, \*Avuthu N, Carlson DJ, Shaffer JJ, **Guda C**, Carlson KA. (2021) Effect of Nora virus infection on native gut bacterial communities and lifespan of *Drosophila melanogaster*. ***AIMS Microbiology***, 7:216-237, PMID: 34250376; PMCID: PMC8255909.
24. Hua G, George JW, Clark KL, \*Southekal S, **Guda C**, Hou X, Blum HR, Eudy J, Butnev VY, Brown AR, Katta S, May JV, Bousfield GR, Davis JS. (2021) Hypo-glycosylated hFSH drives ovarian follicular

- development more efficiently than fully glycosylated hFSH: enhanced transcription and PI3K and MAPK signaling. **Human Reproduction**, 36:1891-1906. PMID: 34059912; PMCID: PMC8213452.
25. Rao C, Frodyma DE, \*Southehal S, Svoboda RA, **Guda C**, Johnson KR, Fisher KW, Lewis RE. (2021) KSR1- and ERK-dependent Translational Regulation of the Epithelial-to-Mesenchymal Transition. **eLife**, 10:e66608. PMID: 33970103; PMCID: PMC8195604.
  26. Saleem I, Mirza S, Sarkar A, Raza M, Mohapatra B, Mushtaq I, Kim JH, \*Mishra NK, Alsaleem M, Rakha EA, Qiu F, **Guda C**, Band H, Band V. (2021) The mammalian ecdysoneless protein interacts with RNA helicase DDX39A to regulate nuclear mRNA export. **Molecular Cell Biology**, MCB.00103-21. PMID: 33941617; PMCID: PMC8224239.
  27. \*Shakyawar SK, \*Pandey S, Harvey DJ, Bousfield G, **Guda C**. FGDB: Database of follicle stimulating hormone glycans (2021) **Comput Struct Biotechnol J**. 19:1635-1640. PMID: 33897975; PMCID: PMC8050109.
  28. \*Southehal S, \*Mishra NK, **Guda C**. (2021) Pan-cancer analysis of human kinome gene expression and promoter DNA methylation identifies prognostic biomarkers in multiple cancers. **Cancers** 13:1189. PMID: 33801837; PMCID: PMC8001681.
  29. Uppala R, Vishweswaraiah S, Uppala LV, Crist RC, \*Mishra NK, Macknis J, Szymanska M, Kumar S, Aydas B, Forray A, **Guda C**, Carey DJ, Metpally RP, Berrettini WH, Bahado-Singh. (2021) Placental DNA methylation in opioid-exposed pregnancies and associations with the neonatal opioid withdrawal syndrome. **Genomics**, 113:1127-35. PMID: 33711455
  30. Moore R, Puniya BL, Powers R, **Guda C**, Bayles K, Berkowitz D, Helikar T. (2021) Integrative network analyses of transcriptomics data reveal potential drug targets for acute radiation syndrome, **Scientific Reports**, 11:5585. PMID: 33692493; PMCID: PMC7946886.
  31. \*Vellichiramal NN, **Guda C**. (2021) A compiled dataset of pathways associated with fusion genes identified in pediatric cancers. **Data in Brief**, 35:106780. PMID: 33553527; PMCID: PMC7848762.
  32. Sagar S, Rathinavel AK, Lutz WE, Struble LR, Khurana S, Schnaubelt AT, \*Mishra NK, **Guda C**, Broadhurst MK, Reid SPM, Bayles KW, Borgstahl GEO and Radhakrishnan P. (2021) Bromelain inhibits SARS-CoV-2 infection via targeting ACE-2 and spike protein. **Clinical and Translational Medicine** 11:e281. PMID: 33635001; PMCID: PMC7811777.
  33. Gaurav R, Mikuls TR, Thiele GM, Nelson AJ, \*Niu M, **Guda C**, Eudy JD, Barry A, Romberger AJ, Duryee MJ, England BR, Poole JA. (2021) High-throughput analysis of lung immune cells in a murine model of rheumatoid arthritis-associated lung disease. **PLOS ONE**, 16:e0240707. PMID: 33577605; PMCID: PMC7880471.
  34. Odegaard KE, Schaal VL, Clark AR, Koul S, \*Jagadesan S, Xia Z, Mellon M, Uberti M, Liu Y, Stothert A, Van Hook M, Wang H, **Guda C**, Lisco SJ, Pendyala G, Yelamanchili S. (2021) A holistic systems approach to characterize the impact of pre- and post-natal oxycodone exposure on neurodevelopment and behavior. **Frontiers in Cell and Developmental Biology**, 8:619199. PMID: 33490084; PMCID: PMC7817773.
  35. Wu S, Kumar V, \*Xiao P, Kuss M, Lim JY, **Guda C**, Butcher J, Duan B. (2020) Age related extracellular matrix and interstitial cell phenotype in pulmonary valves, **Scientific Reports**, 10:21338. PMID: 33288823; PMCID: PMC7721746.
  36. \*Jagadesan S, Ahmad R, \*Avuthu N, Singh AP, **Guda C**. (2020) Gut Microbiota and Metabolic Specificity in Ulcerative Colitis and Crohn's Disease. **Frontiers in Medicine, Gastroenterology**, 7:606298, PMID: 33193605; PMCID: PMC7606733.
  37. Odegaard KE, Schaal VL, Clark AR, Koul S, Gowen A, \*Sankarasubramanian J, \*Xiao P, **Guda C**, Lisco SJ, Yelamanchili S, Pendyala G. (2020) Characterization of the intergenerational impact of in utero and postnatal oxycodone exposure. **Translational Psychiatry**, 10:329. PMID: 32968044; PMCID: PMC7511347.
  38. \*Mishra NK, \*Meng N, **Guda C**. (2020) Identification of prognostic markers in cholangiocarcinoma using altered DNA methylation and gene expression profiles. **Frontiers in Genetics**, 11:522125. PMID: 33193605; PMCID: PMC7606733.
  39. \*Cornish A, Roychoudhury S, Sarma K, Pramanik S, Bhakat K, Dudley A, **Guda C**. (2020) Red Panda: a novel method for detecting variants in single-cell RNA sequencing, **BMC Genomics** 21(S11):830. PMID: 33372593; PMCID: PMC7771073.
  40. Chand S, Jo A, Vellichiramal NN, Gowen A, **Guda C**, Schaal V, Odegaard K, Lee H, Pendyala G, Yelamanchili S. (2020) Comprehensive characterization of organ-specific extracellular vesicle protein

- markers: Implications for preclinical and clinical applications. *ACS Applied Nano Materials*, 3:8906-8909. PMID: 33385108; PMCID: PMC7771629.
41. Koul S, Schaal VL, Chand S, Pittenger ST, \*Vellichirammal NN, **Guda C**, Bevins RA, Yelamanchili SV, Pendyala G. (2020) Role of brain derived extracellular vesicles in decoding sex differences associated with nicotine self-administration, *Cells*, 9(8):E1883. PMID: 32796722; PMCID: PMC7464419.
  42. Gao L, Kumar V, \*Vellichirammal NN, Park SY, Rudebush TL, Yu L, Son WM, Pekas EJ, Wafi AM, Hong J, Xiao P, **Guda C**, Wang HJ, Schultz HD, Zucker IH. (2020) Functional, Proteomic, and Bioinformatic Analyses of Nrf2- and Keap1- Null Skeletal Muscle. *Journal of Physiology* doi: 10.1113/JP280176, PMID: 32893883; PMCID: PMC7749628.
  43. Tan Y, Xiao P, **Guda C**. (2020) In-depth Mendelian randomization analysis of causal factors for coronary artery disease. *Scientific Reports*, 10:9208, PMID: 32514076; PMCID: PMC7280530.
  44. Kumar SRP, Wang X, \*Avuthu N, Bertolini TB, Terhorst C, **Guda C**, Daniell H, Herzog RW. (2020) Role of small intestine and gut microbiome in plant-based oral tolerance for hemophilia. *Frontiers in Immunology*, 11:844, PMID: 32508814; PMCID: PMC7251037.
  45. Zhang W, Klinkebiel D, Barger CJ, \*Pandey S, **Guda C**, Miller A, Akers S, Odunsi K, Karpf AR (2020) Global DNA hypomethylation in epithelial ovarian cancer: passive demethylation and association with genomic instability *Cancers*, 12:764. PMID: 32213861; PMCID: PMC7140107.
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126. 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.
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## b) Reviews and Editorials

128. \*Vellichiramal NN, Chaturvedi N, Joshi SS, Coulter DW, **Guda C** (2020) Fusion genes as biomarkers in pediatric cancers: A review of the current state and applicability in diagnostics and personalized therapy, **Cancer Letters**, S0304-3835(20)30607-8. PMID: 33248210; PMCID: PMC9275405
129. \*Mishra NK, \*Southeikal S, **Guda C** (2020) Prognostic value of biomarkers in the tumor microenvironment of pancreatic ductal adenocarcinoma. **Annals of Translational Medicine**, 8(10):615, PMID: 32566552; PMCID: PMC7290607.
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131. \*Shen R, **Guda C**. (2014) Applied graph-mining algorithms to study biomolecular interaction networks. **BioMed Research International**, 2014:439476. PMID: 24800226; PMCID: PMC3996886.
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### c) Book Chapters

135. \*Shakyawar S, \*Sethi S, \*Southehal S, \*Mishra NK, **Guda C.** (2021) Big data analytics for modelling COVID-19 and comorbidities: An unmet need. *In Computational Intelligence Techniques for Combating COVID-19, Springer Book Chapter*, (Eds. Kautish S, Peng S, Obaid A.) pp.185-201.
136. Vellichirammal NN, Albahrani A, Li Y, **Guda C.** (2020) Identification of fusion transcripts from unaligned RNA-seq reads using ChimerScope. In: *Chimeric RNA: Methods and Protocols, Methods in Molecular Biology* (Eds. Li and Elfman), 2079:13-25. PMID 31728959.
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139. \*Guda P, Subramaniam S, **Guda C.** (2007) MitoProteome: Human heart mitochondrial protein sequence database *In Cardiovascular Proteomics, Methods and Protocols. Methods in Molecular Biology, (Invited book chapter)*. 2007;357:375-83. doi: 10.1385/1-59745-214-9:375. PMID: 17172703.
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141. **Guda C.** (1997) Stable expression of foreign genes in chloroplasts. Dissertation submitted to **Auburn University at Auburn**.
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144. 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.

### d) Non-Peer Reviewed Publications

1. Sagar S, Rathinavel AK, Lutz WE, Struble LR, Khurana S, Schnaubelt AT, \*Mishra NK, **Guda C**, Broadhurst MK, Reid SPM, Bayles KW, Borgstahl GEO and Radhakrishnan P. Bromelain Inhibits SARS-CoV-2 Infection in VeroE6 Cells. bioRxiv doi: <https://doi.org/10.1101/2020.09.16.297366>, PMID: 32995771
2. Zhang W, Klinkebiel D, Barger CJ, \*Pandey S, **Guda C**, Miller A, Akers S, Odunsi K, Karpf AR (2020) Global DNA hypomethylation in epithelial ovarian cancer: passive demethylation and association with genomic instability. MedRxiv doi: <https://doi.org/10.1101/2020.01.22.20018374>
3. \*Cornish A, Roychoudhury S, Sarma K, Pramanik S, Bhakat K, Dudley A, **Guda C.** (2020) Red Panda: a novel method for detecting variants in single-cell RNA sequencing. *BioRxiv* 2020.01.08.898874; doi: <https://doi.org/10.1101/2020.01.08.898874>
4. Bahado-Singh R, Albayrak S, Zafra R, Baraa a, Veerappa AM, Mahishi D, Sayed N, Mishra NK, **Guda C**, Ali-Fehmi R, Radhakrishna U (2019) Placental epigenetics for evaluation of fetal congenital heart defects: Ventricular septal defect (VSD) bioRxiv 355768; doi: <https://doi.org/10.1101/355768>

### e) Graduate Student Theses and Dissertations (11 PhDs and one MS student)

1. Nagavardhini Avuthu, PhD. (2022) Metagenome-wide associations and metabolic modeling to predict the biomarkers for colorectal cancer. Dissertation submitted to the University of Nebraska Medical Center (UNMC)
2. Siddesh Southehal, PhD. (2021) Integrative analysis of multi-omics kinome data and virtual screening of identified targets with pan-cancer application. Dissertation submitted to the University of Nebraska Medical Center (UNMC)
3. Sanjit Pandey, PhD. (2021) StrainIQ: an n-gram-based method to identify and quantify microbial communities in metagenomic samples. Dissertation submitted to the University of Nebraska Medical Center (UNMC)
4. Tanwir Ahmad, MS. (2018) Development of Preclinical Magnetic Resonance Imaging database and an interactive analytical tool for diffusion tensor imaging. Thesis submitted to UNMC
5. 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)
6. Kristin Wipfler, PhD. (2017) Comparative molecular characterization of typical and exceptional responders in glioblastoma. Dissertation submitted to the University of Nebraska Medical Center (UNMC)
7. 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)
8. 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)
9. 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)
10. 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)
11. 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).
12. 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. Mathews MA, Jagadesan S, Guda C, Davis JS, George J, (2022) Identifying distinct functions of Hippo pathway effectors YAP and TAZ in a human granulosa cell line. Abstract presented in the American Society for Reproductive Medicine (ASRM) Scientific Congress and Expo, Anaheim, CA. October 22-26, 2022.
2. Veerappa A, Guda C. (2022) Parsing Transcriptomic and Variant Signatures in Tetrapartite Brain Regions Uncover a Collection of Novel Genes in the Neuropeptide-Neurotransmitter Axis Conferring Addiction Risk. **2022 American Society of Human Genetics (ASHG 2022)** Meeting held at Los Angeles Convention Center, Los Angeles. October 24-29, 2022.
3. Shakyawar S, Southehal S, Guda C. (2022) mintRULS: Prediction of miRNA-mRNA target site interactions using regularized least square method. Original paper presentation at **the International Conference on Intelligent Biology and Medicine (ICIBM 2022)**, Philadelphia, PA, August 7-9, 2022
4. Sethi S, Shakyawar S, Patel JC, Guda C. (2022) Gene co-expression-based comparison of SARS-CoV-2 infected tissues in humans. Poster presentation at **the Mechanisms of Disease Research and Recruitment Conference**, Kansas City, KS, August 4-6, 2022
5. Veerappa A, Guda C. (2022) A multipronged approach unravels the spectrum of variants and transcriptomic signatures in distinct stages of substance use and addiction. **2022 Genetics and Epigenetics Cross-Cutting Research Team (GECRT)** Meeting to be held at Howard University, Washington D.C. May 11<sup>th</sup>, 2022
6. Nguyen **NM**, Hernandez **J**, Flores **A**, Yi **J**, Bhakat **R**, Vellichirammal **NN**, Guda C, Yelamanchili **S**, Pendyala **GN**. (2022) Crisis in the NICU and the Medley with Midazolam. **Genetics and Epigenetics**

**Cross-Cutting Research Team (GECRT)** Meeting to be held at Howard University, Washington D.C. April 27<sup>th</sup>, 2022

7. Sethi S, Shakyawar S, Guda C. (2022) Gene co-expression based comparison of SARS-CoV-2 infected tissues in human. Poster presentation at **the 53rd Annual Midwest Student Biomedical Research Forum (MSBRF)**, Omaha, NE, March 5, 2022
8. Obuya S, Elkholy A, Avuthu N, Behring M, Bajpai P, Agarwal S, Kim HG, El-Nikhely N, Akinyi P, Orwa J, Abdalla M, Michael A, Mostafa M, Bateman L, Fouad M, Saleh M, Guda C, Manne U, Arafat W. (2021) Gut Microbiome in Kenyan Colorectal Cancer: Probiotic *S. boulardii* and Response to FOLFOX Chemotherapy. Poster presentation at the **Annual Meeting of the American Association of Cancer Research (AACR)**, 2021.
9. Southekal S, Mishra NK, Guda C (2021), Multiomics Analysis of Kinome Methylation and Expression Data Across Cancers Identifies Prognostic Markers, **Midwest Student Biomedical Research Forum (MSBRF)**, Creighton University, Omaha, February 2021.
10. Avuthu N, Guda C (2020). Identification of microbial biomarkers for colorectal cancer, **Campus Research Retreat**, *University of Nebraska Medical Center*, Omaha, November 11-12, 2020.
11. Vellichirammal NN, Albahrani A, Guda C (2020). Fusion Landscape of Lung Cancers: An Exploratory Study. Virtual Poster Presentation, **Campus Research Retreat**, *University of Nebraska Medical Center*, Omaha, NE. November 10-11, 2020.
12. Pandey SP, Guda C (2020). N-gram based method to identify and quantify microbial communities in metagenomic samples. **Campus Research Retreat**, Omaha, NE, November 10-11, 2020
13. Jagadesan S, Ahmad R, Singh AP, Guda C. (2020) Gut Microbiota Heterogeneity in Inflammatory Bowel Disease and Specific Microbial Association with Crohn's Disease versus Ulcerative Colitis. **Campus Research retreat**. *University of Nebraska Medical Center*, Omaha, NE. Nov 10-11, 2020
14. Southekal S, Mishra NK, Guda C (2020), Pan-cancer Kinome Expression and Methylation Landscape, **Campus Research Retreat (COM)**, Omaha, NE, November 10-11, 2020
15. Rao C, Frodyma D.E, Southekal S, Svaboda R.A, Guda C, Fisher K.W, Lewis.R.E (2020), Translational Control of EMT in Ras-driven colon cancers. Selected Short Talk, **FASEB Cell Signaling in Cancer: from Mechanisms to Therapy**, Virtual Conference, September 2020
16. Doxtater K, Zacheaus C, Sekhri R, Mishra UK, Zachary Stiles Z, **Mishra NK, Guda C**, Zafar N, Amin M, Shukla PK, Yallapu MM, Jaggi M, Chauhan SC, Tripathi MK (2020) Stress regulated role of lncRNA Malat1 in colorectal cancer progression and metastasis. Poster presentation at the **Annual Meeting of the American Association of Cancer Research (AACR)**, 2020
17. Gaurav R, Mikuls TR, Thiele GM, Nelson AJ, \*Niu M, Guda C, Eudy JD, Barry A, Romberger AJ, Duryee MJ, England BR, Poole JA. (2020) High-Throughput Single-Cell Analysis Reveals Unique Cellular Subsets in a Murine Model of Rheumatoid Arthritis-Inflammatory Lung Disease. Oral presentation at American College of Rheumatology (ACR) Conference at Washington, DC. November 5-9, 2020
18. Fox HS, Niu M, **Guda C**, Emanuel K, Lamberty B, Fangmeier A, Dyball K, Rivera RL, Berman JW, Morsey B. (2020) Single cell sequencing studies of microglia in health and disease. Oral presentation at the **Conference on CNS infections, Drug Abuse and Treatment** at Potomac, MD. April, 2020
19. Vellichirammal NN, Albahrani A, Avuthu N, Li Y, Guda C (2020). Fusion gene identification from primary lung cancer and comparison to cell lines. Poster presentation at the **Annual Meeting of the American Association of Cancer Research (AACR)**, San Diego, CA, April 24-29, 2020
20. Mishra NK, Southekal S, Guda C (2020). Integrative analysis and molecular subtyping of TARGET osteosarcoma. Poster presentation at the **Annual Meeting of the American Association of Cancer Research (AACR)**, San Diego, CA, April 24-29, 2020
21. Southekal S, Mishra NK, Guda C (2020). Multiomics analysis of kinome methylation and expression profiles across cancers. Poster presentation at the **Annual Meeting of the American Association of Cancer Research (AACR)**, San Diego, CA, April 24-29, 2020
22. Rao C, Frodyma DE, Southekal S, Zhou W, Svoboda RA, Guda C, Luo X, Fisher KW, Lewis RE (2020) Translational control of EMT in Ras-driven colorectal cancer. Poster presentation at the **Annual Meeting of the American Association of Cancer Research (AACR)**, San Diego, CA, April 24-29, 2020
23. Vieira H, Rao C, Black AR, Southekal S, Mizutani T, Guda B, Clevers H, Black JD, Lewis RE (2020) KSR1-Dependent Modulation of the Translational Landscape in Ras-driven Colorectal Cancer. Poster presentation at the **Annual Meeting of the American Association of Cancer Research (AACR)**, San Diego, CA, April 24-29, 2020

24. Gajecka M, Vishweswaraiah S, Karolak JA, Mrugacz M, Ratnamala U, Mishra NK, Guda C, Chettiar SS, Johar KR, Uppala R, Swierkowska J. (2019) DNA hypomethylation in high myopia: Differentially methylated genes in overrepresented molecular pathways could contribute to high myopia in Polish children. . in the ASHG 2019 Annual Meeting, October 15-19, Houston, TX, 2019
25. Vishweswaraiah S, Bahado-Singh R, Mishra NK, Guda C, Radhakrishna U. (2019) DNA methylation changes in newborn leucocyte: The mechanisms and the prediction of hypoplastic left heart syndrome in the ASHG 2019 Annual Meeting, October 15-19, Houston, TX, 2019
26. Bahado-Singh R, Talbot C, Aydas B, Southehal S, Mishra NK, Friedman P, Yilmaz A, Guda C, Radhakrishna U, Vishweswaraiah S. (2019) Cell-free fetal DNA, Artificial Intelligence and epigenomic analysis for Congenital Heart Defect (CHD) detection. Society of Maternal-Fetal Medicine annual conference, March 9-12, San Antonio, TX, 2019
27. Gao L, Kumar V, Vellichirammal NN, Xiao P, Hackfort B, Rudebush TL, Yu L, Guda C, Schultz HD, Zucker IH. (2019) Proteomic and Functional Analyses of Nrf2/Keap1 in Skeletal Muscle. (EB -Experimental Biology 2019), April 6-9, Orlando, FL, 2019
28. Vellichirammal NN, Albahrani A, Banwait JK, Li Y, Guda C (2019) Fusion gene identification from common cancer cell lines (CCLE) and comparison to primary tumors (TCGA). **Annual Meeting of the American Association of Cancer Research (AACR)**, Atlanta, Georgia, 2019
29. Mishra NK, Southehal S, Guda C (2019) Integrative analysis of TCGA pancreatic ductal adenocarcinoma data. **Annual Meeting of the American Association of Cancer Research (AACR)**, Atlanta, Georgia, 2019
30. Rao C, Frodyma D, Southehal S, Fisher K, Askew J, Guda C, Lewis RE. (2019) Profiling oncogenic translation in colon cancer. **Midwest Student Biomedical Research Forum (MSBRF)**, Creighton University, Omaha, NE, 2019
31. 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
32. 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 **39<sup>th</sup> Annual Pregnancy Meeting, Society for Maternal-Fetal Medicine**, Las Vegas, February 11-16, 2019.
33. 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 **39<sup>th</sup> Annual Pregnancy Meeting, Society for Maternal-Fetal Medicine**, Las Vegas, February 11-16, 2019
34. 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
35. 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 23<sup>rd</sup>, 2018
36. Southehal 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
37. 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
38. 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
39. 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.
40. 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

41. Guda C. (2017) Clinical Research Resources in the IDeA-CTR Consortium”, **Great Plains IDeA-CTR Annual Scientific Meeting**, Omaha, NE, October 23-24, 2017
42. Bahado-Singh RO, Zafra R, Albayrak S, Alish 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. 25-29<sup>th</sup> June 2017
43. 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)
44. 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
45. 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)
46. 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)
47. Guda C. (2016) The INBRE Bioinformatics Core, Poster presentation at the **NISBRE Conference**, Washington DC, June, 2016.
48. 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
49. 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).
50. Wipfler, K and Guda C (2015) Integrative Molecular Characterization of Glioblastoma. **Great Lakes Bioinformatics Conference** (GLBIO-2015), West Lafayette, IN (Poster presentation).
51. 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).
52. 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)
53. 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)
54. 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)
55. 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)
56. 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).
57. 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.

58. 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.
59. 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)
60. 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)
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*I solemnly declare that all the information furnished in this document is true and correct to the best of my knowledge and belief and I take full responsibility for the correctness of this information.*

***Babu Guda, PhD.***