

# VINAYA SHETTY

## CONTACT

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 LinkedIn

## SKILLS

- CRISPR-Cas9 Editing
- NGS analysis
- RT-qPCR
- Molecular cloning
- Mutation studies
- RNAi studies
- Chromosome preparation and imaging

## PUBLICATIONS



## EDUCATION

**Ph.D. in Applied Genetics** Aug' 2012 – Sep' 2017  
Bangalore University, India

**M.S. in Biotechnology** Jun' 2007 – Jun' 2009  
Kuvempu University, India

**B.S. (Biotechnology, Chemistry, Botany)** Jun' 2004 – May' 2006  
Mangalore University, India

## WORK EXPERIENCE

**Postdoctoral Research Associate** Mar' 2020 - Present  
Texas A&M University, College Station, USA

- Conducted a study on the role of the circadian clock in mosquito behaviors using techniques such as CRISPR-Cas9 mediated gene editing, molecular cloning, embryo microinjection, SgRNA designing and invitro production, RT-qPCR, next generation sequence analysis and behavioral assays, etc.
- Performed functional characterization of gustatory receptor genes (GR33 and GR19) in mosquitoes using techniques such as RNA interference and CRISPR-Cas9 mediated knockouts, gene expression analysis, Sanger, and Oxford nanopore sequence analysis, RNA seq analysis and behavioral assays, etc.
- Possess foundational knowledge in coding languages including Python, R, and Linux, complemented by hands-on experience in utilizing these proficiencies to perform data analysis and tackle intricate problems.

**Project Scientist/Postdoc Fellow** Apr 2018 – Mar 2020  
University of California, Irvine, USA

- Developed a gene drive-based population modification in *Anopheles stephensi* mosquitoes against malaria parasites, using multiple effector molecules. Techniques used included CRISPR/Cas9 genome editing, embryo microinjection, gene drive engineering, and parasite challenge assays, western blotting, RT-qPCR, etc.
- Conducted a study on programmable Cas9s controlled nuclease activity in response to plasmodium specific protease. Techniques used included biochemical assays, Cas9 protein engineering, molecular cloning, site specific mutagenesis, sanger sequencing, competent cell preparation, electroporation, flow cytometry and gene expression analyses, etc.
- Executed a chromosome mapping procedure utilizing fluorescent in-situ hybridization to pinpoint the transgene insertion on the chromosome. Methodology involved chromosome preparation, in-situ hybridization, and imaging using confocal microscopy.

**Research Scholar** Apr' 2010 – Aug'2017  
Bangalore University, Bengaluru, India

- Conducted genetic, cytogenetic, and biochemical studies to investigate the effect of gamma radiation on mosquitoes. Techniques used included radiation exposure, cytogenetic analysis, and biochemical assays, DNA damage study using comet assay, fluorescent microscopy imaging, SDS PAGE, genetic sequence and LS-MS based proteomic analyses, etc.

## PEER REVIEWER

- Journal of Genes
- PLOS ONE Genetics
- Journal of Medical Entomology
- Journal of Asia Pacific Entomology
- Journal of Parasites and vectors
- Journal of Biology
- Journal of Insects

- Conducted insecticide resistance studies in mosquitoes using techniques such as bioassays, genetic sequencing, and transcriptomic analysis.
- Created a cytogenetic photomap from ovarian polytene chromosomes of mosquitoes through a comparative study. Techniques used included polytene chromosome preparation, staining, and imaging.

## SELECTED PUBLICATIONS

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- Impact of disabled circadian clock on yellow fever mosquito *Aedes aegypti* fitness and behaviors. Scientific Reports, 2022.
- RNA Taste is Conserved in Dipteran Insects. Journal of Nutrition, 2023.
- Evaluation of gamma radiation-induced DNA damage in *Aedes aegypti* using the comet assay. Toxicology and Industrial Health, 2017.