Sabareesan Ambadi Thody, PhD

Assistant Instructor

HHMI/Department of Biophysics,

UT Southwestern Medical Center,

Dallas, Texas, 75235
(214) 645-6357 (Lab)

Sabareesan.ambadithody@utsouthwestern.edu

5940 Forest Park Road,

Dallas, TX 75235

(682) 812-4801 (Mobile)
sabareesanat@gmail.com

EDUCATION

2017	Ph.D., Biological Sciences, NCBS, TIFR, Bengaluru, India
2010	M.Sc., Biotechnology, Amrita School of Biotechnology, Kollam, India
2008	B.Sc., Biotechnology, Amrita School of Biotechnology, Kollam, India

RESEARCH EXPERIENCE

2024- Present	Assistant instructor, HHMI/Department of Biophysics, UT Southwestern Medical Center, Dallas, TX
2017-2023	Postdoctoral Research Fellow, HHMI/Department of Biophysics, UT Southwestern Medical Center, Dallas, TX
2017- 2017	Bridging Postdoctoral Research Fellow, National Centre for Biological Sciences, Tata Institute of Fundamental Research (TIFR), Bengaluru, India
2011-2017	Graduate Research Scholar (PhD candidate), National Centre for Biological Sciences, TIFR, Bengaluru, India
2010- 2011	Junior Research Fellow (CSIR Fellow), National Centre for Biological Sciences, TIFR, Bengaluru, India
2010- 2010	Graduate Research Assistant (M.Sc. dissertation), National Centre for Biological Sciences, TIFR, Bengaluru, India
2009-2009	Indian Academy of Science Summer Research fellow, Department of Zoology, Banaras Hindu University, Banaras, India

TEACHING AND MENTORING EXPERIENCE

2018-Present	UT Southwestern Medical Center, Dallas, TX. Mentored one Graduate Student Rotation Project and one Polish Exchange Program M.Sc. Dissertation Project Student.
2011-2017	National Centre for Biological Sciences, TIFR, Bengaluru, India. Mentored and Trained Graduate Students for Rotations Projects (8), and M.Sc. Dissertation Project Students (2)
2008-2011	Pragati Academic Center, Kerala, India. Teaching Assistant for Biology course, Division of Higher Secondary School Education, with 20-30 students in each batch

PROFESSIONAL MEMBERSHIPS AND AD HOC SCIENTIFIC REVIEWER

2023-Present	Member of International Protein Society
2023-Present	Reviewer: Star Protocol Journal (Cell Press)
2022-Present	Reviewer: Frontiers Journals
2021-Present	Editor: CPQ Medicine
2020-Present	Reviewer: BMC Cancer
2020-Present	Reviewer: Cancer Cell International

MANUSCRIPT UNDER PREPARATION

1. **Ambadi Thody, S**., Mccormack, S., Baniasadi, H., Sigman, M. S., and Rosen, M. K. (2025) Macromolecular Composition Shapes Small-Molecule Partitioning in Biomolecular Condensates.
2. **Ambadi Thody, S**., Mccormack, S., Baniasadi, H., Taylor, J. P, Sigman, M. S., and Rosen, M. K. (2025) Decoding the Mechanism of Small-Molecule Partitioning into Stress Granule-Like Condensates.

PEER-REVIEWED PUBLICATIONS

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1. **Sabareesan Ambadi Thody**, Hanna D. Clements, Hamid Baniasadi, Andrew S. Lyon, Matthew S. Sigman, Michael K. Rosen, (2024) Small Molecule Properties Define Partitioning into Biomolecular Condensates, ***Nature Chemistry*** *16:1794-1802*.

   1. News & views: Properties governing small-molecule partitioning into biomolecular condensates, B.Chandra, S.Tripathi & R.Kriwacki, Nature Chemistry, 16:1743–1745 (2024).

   2.Research Highlight: Predicting small-molecule partitioning. Russel Johnson, Nature Chemical Biology, 20:1388 (2024).

2. **Sabareesan Ambadi Thody**, Hanna D. Clements, Hamid Baniasadi, Andrew S. Lyon, Matthew S. Sigman, Michael K. Rosen, (2022) Small Molecule Properties Define Partitioning into Biomolecular Condensates, ***BioRxiv***, 2022/1/1.

3. **Sabareesan Ambadi Thody**, M.K. Mathew and Jayant B. Udgaonkar, (2018) Mechanism of aggregation and membrane interactions of mammalian prion protein, ***Biochimica et Biophysica Acta (BBA) - Biomembranes***, 1860(9):1927-1935

4. **Sabareesan Ambadi Thody** and Jayant B. Udgaonkar, (2017) The G126V Mutation in the Mouse Prion Protein Hinders Nucleation-Dependent Fibril Formation by Slowing Initial Fibril Growth and by Increasing the Critical Concentration, ***Biochemistry***., 56(44):59315942

5. **Sabareesan Ambadi Thody** and Jayant B. Udgaonkar, (2016) Pathogenic mutations within the palindromic region of the prion protein induce structure therein and accelerate the formation of misfolded oligomers. ***J Mol Biol***., 428:3935-47.

6. Jogender Singh, Harish Kumar, **Sabareesan Ambadi Thody**, and Jayant B. Udgaonkar. (2014) Rational Stabilization of Helix 2 of the Prion Protein Prevents Its Misfolding and Oligomerization. **J. Am. Chem. Soc**., 136 (48):16704–16707

7. **Sabareesan Ambadi Thody** and Jayant B. Udgaonkar, (2014) Amyloid fibril formation by the chain B subunit of monellin occurs by a nucleation-dependent polymerization mechanism. ***Biochemistry***., 53(7):1206-17
8. Singh, J., **Sabareesan, Ambadi Thody.**, Mathew, M.K., and Jayant B. Udgaonkar, (2012) Development of the structural core and of conformational heterogeneity during the conversion of oligomers of the mouse prion protein to worm-like amyloid fibrils. ***J Mol Biol***., 423(2):217-31

ORAL PRESENTATIONS

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1. **"Small Molecule Properties Define Partitioning into Biomolecular Condensates,"** Biophysical Society Virtual Networking Event: Biophysics of Liquid-Liquid Phase Separation (USA), November 8, 2024
2. **"Small Molecule Properties Define Partitioning into Biomolecular Condensates,"** Protein Society Annual Symposium, organized by Protein Society, Boston MA (USA) (July 13-16, 2023)
3. "**Small Molecule Properties Define Partitioning into Biomolecular Condensates**" MB Symposium, organized by UT Southwestern Graduate office, Dallas, TX (USA) (May 5, 2023)
4. "**The pathogenic A116V mutation enhances the ion-channel activity of the prion protein**", Annual meeting of Indian Biophysical Society on Molecules in living cells: Mechanistic basis of function, organized by Indian Institute of Science, Bengaluru (India), (February 8-10, 2016)

POSTER PRESENTATIONS

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1. **Decoding Small Molecule Partitioning into Biomolecular Condensates**, Bringing Chemistry to Medicine Symposium**,** organized by St. Jude Children's Research Hospital, Memphis, TN (USA), October 2-3, 2025
2. **Small Molecule Properties Define Partitioning into Biomolecular Condensates,** Keystone Symposium, Biomolecular Condensates: Mechanisms and Therapeutic Opportunities, Breckenridge, Colorado (USA), September 06-09, 2024,

3. **Small Molecule Properties Define Partitioning into Biomolecular Condensates,** Protein Society Annual Symposium, organized by Protein Society, Boston MA (USA) (July 13-16, 2023)
4. **The Metabolic Composition of Biomolecular Condensates**, Howard Hughes Medical Institute Scientific meeting, Janelia Research Campus, Virginia (USA), February 11-13, 2020
5. **The Metabolic Composition of Biomolecular Condensates**, Keystone symposia: Biomolecular Condensates: Phase-Separated Organizers of Cellular Biochemistry, Snowbird, Utah, (USA), April 10–13, 2019
6. **Protective G126V prion variant slows down the nucleation dependent polymerization of prion protein**, The third international symposium on Protein Folding and Dynamics, National Centre for Biological Sciences (NCBS), Bengaluru (India), November 8-11, 2016
7. **The pathogenic A116V mutation enhances the selective ion-channel activity of the prion protein in artificial and living cell membranes**, The 7th EMBO meeting, European Molecular Biology Organization (EMBO), Mannheim (Germany), September 10-13, 2016
8. **The pathogenic A116V mutation enhances the selective ion-channel activity of the prion protein in artificial and living cell membranes**, Biophysical Society 60th Annual meeting, International Biophysical Society, Los Angeles (USA), February 27-March 2, 2016
9. **Ion channel formation by monomeric prion protein**, The 2014 ASCB/IFCB meeting, American Society for Cell Biology (ASCB), Philadelphia (USA), December 6-10, 2014
10. **Ion channel formation by monomeric prion protein**, The Second International Symposium on Protein Folding and Dynamics, NCBS, Bengaluru (India), November 5-7, 2014
11. **Biophysical Characterization of Lipid Bilayer-Prion Interaction**, Lipid-Protein interactions in Membranes, International Biophysical Society, Hyderabad (India), November 1-5, 2012
12. **Aggregation mechanism of a non- native protein, B chain, from the double chain monellin**, International Symposium on Protein Folding and Dynamics, NCBS, Bengaluru (India), October 15-17, 2012

HONORS AND DISTINCTIONS

2025	Travel Award to Attend Bringing Chemistry to Medicine Symposium**,** organized by St. Jude Children's Research Hospital, Memphis, TN
2024	Dean’s discretionary Award for Postdoctoral excellence in Research from UT Southwestern Medical Center
2023	Best research talk recognition at the Molecular Biophysics Research Symposium
2016	Ratna Phadke award from Indian Biophysical Society
2016	EMBO International travel award for attending the EMBO meeting at Mannheim, Germany
2016	Infosys International Travel award for attending the 7th EMBO meeting from Infosys Foundation, Bengaluru
2016	International travel award for attending the Biophysical Society 60th annual meeting at Los Angeles, USA from Biophysical Society
2016	International travel award for attending the Biophysical Society 60th annual meeting from Centre for International Co-operation in Science (CICS)
2014	International travel award for attending the 2014 ASCB/IFCB Meeting at Los Angeles, USA, from Department of Science and Technology (DST), India
2012	Travel and conference award from International Society for Neurochemistry (ISN) 2010 Qualified all India GATE Biotechnology exam with a percentile of 99.99.
2010	Qualified CSIR-UGC-JRF/NET and DBT-JRF from Government of India
2009	Indian Academy of Science Summer Research Fellow

REFERENCES

1. Professor Michael Rosen- Postdoc Mentor

   Professor and Chair, Howard Hughes Medical Institute investigator

   Department of Biophysics, University of Texas Southwestern Medical Center

   Dallas, Texas, USA

   Email: michael.rosen@utsouthwestern.edu

2. Professor Matthew S. Sigman

   Professor and Chair, Department of Chemistry

University of Utah, Salt Lake, Utah, USA

Email: matt.sigman@utah.edu

3. Prof. Mathew K. Mathew

   Senior Professor, National Centre for Biological Sciences

   Tata Institute of Fundamental Research, Bengaluru, Karnataka, India

   Email: mathew@ncbs.res.in

4. Prof. Jayant B Udgaonkar

   Senior Professor, National Centre for Biological Sciences

   Tata Institute of Fundamental Research, Bengaluru, Karnataka, India Email:

   jayant@ncbs.res.in