

## SAIKAT MUKHOPADHYAY

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Assistant Professor, Cell Biology, UT Southwestern Medical Center, Dallas.  
W.W. Caruth, Jr. Scholar in Biomedical Research, CPRIT Scholar in Cancer Research.

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Google Scholar url: <http://scholar.google.com/citations?hl=en&user=PUKbgQ0AAAAJ>

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### EDUCATION

- 2008-2012            **Postdoctoral Fellow**, Genentech, South San Francisco, CA.
- 2002-2008            **PhD**, Biology, Brandeis University, Waltham, MA.
- 1999-2002            **MD**, Biochemistry, Banaras Hindu University, Varanasi, India.
- 1992-1998            **MBBS**, Medical College, Calcutta, India.

### POSITIONS AND EMPLOYMENT

- 2013-                **Assistant Professor**, Department of Cell Biology,  
UT Southwestern Medical Center, Dallas.
- 2013-                Member, Harold C. Simmons Comprehensive Cancer Center, UT  
Southwestern
- 2013-                Member, Development track, Kidney cancer program, UT Southwestern

### PUBLICATIONS

(# **corresponding** or ## **co-corresponding author**)

1. Palicharla, V., Hwang, S., Somatilaka, B., Badgandi, H. B., Legue, E, Shimada, I, Tran, V., Woodruff, J., Liem, K, and **Mukhopadhyay, S<sup>#</sup>**. (2021). Interactions between TULP3 tubby domain cargo site and ARL13B amphipathic helix promote lipidated protein transport to cilia. **bioRxiv**.  
doi: <https://doi.org/10.1101/2021.05.25.445488>
2. Hwang, S., Somatilaka, B., White, K., and **Mukhopadhyay, S<sup>#</sup>**. (2021). Gpr161 ciliary pools prevent hedgehog pathway hyperactivation phenotypes specifically from lack of Gli transcriptional repression. **bioRxiv (in revision, eLife)**.  
doi: <https://doi.org/10.1101/2021.01.07.425654>.

3. Constable, S and **Mukhopadhyay, S<sup>#</sup>** (2020). Ubiquitin tunes hedgehog in matters of the heart. **Developmental Cell**, **55**, 385-386. PMID. 33232673.
4. Somatilaka, B., Hwang, S., Palicharla, V., White, K., Badgandi, H. B., Shelton, J. N., and **Mukhopadhyay, S<sup>#</sup>**. (2020). Ankyr2 represses Smoothed independent hyperactivation of Hedgehog pathway via cilia regulated adenylyl cyclase signaling. **Developmental Cell**, **54**, 1-17. PMID. 32702291.
5. Kopinke D, Norris AM, **Mukhopadhyay, S<sup>#</sup>**. Developmental and Regenerative Paradigms of Cilia Regulated Hedgehog Signaling. **Semin Cell Dev Biol**. 2020 Jun 12. doi: 10.1016/j.semcdb.2020.05.029. [Epub ahead of print] PMID: 32540122.
6. Shimada, I. S., Somatilaka, B. N., Hwang, S. H., Anderson, A. G., Shelton, J. M., Rajaram, V., Konopka, G., **Mukhopadhyay, S<sup>#</sup>**. (2019) Derepression of sonic hedgehog signaling upon Gpr161 deletion unravels forebrain and ventricular abnormalities. **Dev Biol**. Jun 1;450 (1): 47-62. PMID: 30914320.  
\*Cover story.
7. Hwang, S., Somatilaka, B., Badgandi, H. B., Palicharla, V., Walker, R., Shelton, J. N., Qian, F., and **Mukhopadhyay, S<sup>#</sup>**. (2019). Tulp3 regulates renal cystogenesis by trafficking of cystoproteins to cilia. **Current Biology**, Mar 4; 29, 1-13. PMID: 30799239.
8. Anvarian, Z., Mykytyn, K., **Mukhopadhyay, S.**, Pedersen, L. B., Christensen, S. T. (2019) Cellular signaling by primary cilia in development, organ function and disease. **Nat Rev Nephrol**. Apr;15(4):199-219. Review. PMID: 30733609.
9. Kim, S. E., Lei, Y., Hwang, S., Wlodarczyk, B. J., **Mukhopadhyay, S.**, Shaw, G. M., Elaizabeth Ross M., Finnell, R. H. (2018) Dominant negative GPR161 rare variants are risk factors of human spina bifida. **Hum Mol Genet**. Sep 25 doi: 10.1093/hmg/ddy339. PMID: 30256984.
10. Shimada, I., Hwang, S., Somatilaka, B. N., Wang, X., Skowron, P., Kim, J., Kim, M., Shelton, J. M., Rajaram, V., Xuan, Z., Taylor, M. D., and **Mukhopadhyay, S<sup>#</sup>**. (2018). Basal Suppression of Sonic Hedgehog Pathway by the G Protein-Coupled Receptor Gpr161 Restricts Medulloblastoma Pathogenesis. **Cell Reports**\* 2018 Jan 30; 22, 1-16.  
\*Cover story.  
\*Highlighted in UT Southwestern Newsroom:  
<http://www.utsouthwestern.edu/newsroom/articles/year-2018/pediatric-brain-tumor.html>.  
\*Highlighted in Science Daily:  
<https://www.sciencedaily.com/releases/2018/03/180329095432.htm>  
\*Highlighted in The Visible Embryo:  
<http://www.visembryo.com/story4962.html>

11. Hwang, S., White, K.A., Somatilaka, B. N., Shelton, J. M., Richardson, J. A., and **Mukhopadhyay, S<sup>#</sup>**. (2018). The G-protein-coupled receptor Gpr161 regulates forelimb formation, limb patterning and skeletal morphogenesis in a primary cilium-dependent manner. **Development** 2018 Jan 8; 145(1). pii: dev.154054. doi: 10.1242/dev.154054.
12. Shimada, I. S., Badgandi, H. B., Somatilaka, B. N., and **Mukhopadhyay, S<sup>##</sup>**. (2017). Using primary neurospheres to study primary cilia. **Journal of Vis Exp** Apr14; (122). Doi: 10.3791/55315.
13. Badgandi, H. B., Hwang, S., Shimada, I. S., Lorient, E., and **Mukhopadhyay, S<sup>##</sup>**. (2017). Tubby family proteins are adapters for ciliary trafficking of integral membrane proteins. **Journal of Cell Biology**, Mar 6, 216(3):743-760.  
\*Highlighted in Journal of Cell Biology. Tubby proteins prove their adaptability. *Journal of Cell Biology* 2017 Mar 6; 216(3):527.  
\*Selected for Special Collection of recently published outstanding articles about the cell biology of Centrosomes and cilia, *Journal of Cell Biology* August 2018.  
\* Rated “Exceptional” by Olson M and Brauer M in Faculty Opinions, 27 Apr 2020; 10.3410/f.727274260.793573374  
<https://facultyopinions.com/prime/727274260#tab=recommendations>
14. **Mukhopadhyay, S<sup>#</sup>**, Badgandi, H., Hwang, S., Somatilaka, B., Shimada I., and Pal, K. (2017) Trafficking to the primary cilium membrane. **Molecular Biology of the Cell**, Jan 15; 28(2):233-239.
15. Shimada, I. S., **Mukhopadhyay, S<sup>#</sup>** (2016) G-protein-coupled receptor signaling and neural tube closure defects. **Birth Defects Res A Clin Mol Teratol**, Oct 12. doi: 10.1002/bdra.23567. [Epub ahead of print]
16. Pal, K, Hwang, S., Somatilaka, B., Badgandi, H., Jackson, P. K., DeFea ,K., and **Mukhopadhyay, S<sup>#</sup>**(2016) Smoothed determines  $\beta$ -arrestin-mediated removal of the G-protein-coupled receptor Gpr161 from the primary cilium. **Journal of Cell Biology**, Mar 21. pii:jcb.201506132. PMID: 27002170.  
\*Highlighted in Journal of Cell Biology.  
<http://jcb.rupress.org/content/early/2016/03/21/jcb.2127iti3.1.full>
17. Pal, K., Badgandi, H., & **Mukhopadhyay, S<sup>#</sup>** (2015) Studying G-protein-coupled receptors: Immunoblotting, immunoprecipitation, phosphorylation, surface labeling, and cross-linking protocols. **Methods in Cell Biology**, Volume 127, ISSN 0091-679X, <http://dx.doi.org/10.1016/bs.mcb.2014.12.003>.
18. **Mukhopadhyay, S<sup>#</sup>** (2015) TCTEX1D2, a potential link to skeletal ciliopathies. **Cell Cycle**, 14(3), 293-4. doi: 10.1080/15384101.2015.1006548. PMID: 25590661.
19. **Mukhopadhyay S<sup>##</sup>**, Rohatgi R. (2014) G-protein-coupled receptors, hedgehog

- signaling, and primary cilium. **Seminars in Cell and Developmental Biology**. pii: S1084-9521(14) 00129-3. doi: 10.1016/j.semcdb.2014.05.002. [Epub May 17 ahead of print] PMID: 24845016.
20. Pal K, **Mukhopadhyay S<sup>#</sup>**. (2014) Primary cilium and sonic hedgehog signaling during neural tube patterning: Role of GPCRs and second messengers. **Developmental Neurobiology**. doi: 10.1002/dneu.22193. [Epub May 26 ahead of print] PMID: 24863049.
21. Hwang, S, **Mukhopadhyay S<sup>#</sup>**. (2014) G-protein-coupled receptors and localized signaling in the primary cilium during ventral neural tube patterning. **Birth Defects Research** doi: 10.1002/bdra.23267. [Epub Jun 16 ahead of print] PMID: 24917297.
22. **Mukhopadhyay S<sup>##</sup>**, Wen X, Ratti N, Loktev A, Rangell L, Scales S, Jackson P. (2013) The ciliary G-protein-coupled receptor Gpr161 negatively regulates the sonic hedgehog pathway via cAMP signaling. **Cell**. 152: 210-223.  
\*Highlighted in Nature Reviews Molecular Cell Biology.  
<http://www.nature.com/nrm/journal/vaop/ncurrent/full/nrm3527.html>
23. **Mukhopadhyay S<sup>##</sup>**, Jackson P. (2013) Cilia, *tubby* mice, and obesity. **Cilia**. 2:1.
24. Wright K, Baye L, Olivier-Mason A, **Mukhopadhyay S**, Sang L, Kwong M, Wang W, Pretorius P, Sheffield V, Sengupta P, Slusarski D, Jackson P. (2011) An Arl3-Unc119-RP2 GTPase cycle delivers myristoylated NPHP3 to the primary cilium. **Genes Dev**. 25: 2347-2360.
25. **Mukhopadhyay S<sup>##</sup>**, Jackson P. (2011) The tubby family proteins. **Genome Biol**. 12: 225.
26. **Mukhopadhyay S<sup>##</sup>**, Wen X, Chih B, Nelson C, Lane W, Scales S, Jackson P. (2010) TULP3 bridges the IFT-A complex and membrane phosphoinositides to promote trafficking of G protein-coupled receptors into primary cilia. **Genes Dev**. 24: 2180-2193.
27. Nokes E, Van Der Linden A, Winslow C, **Mukhopadhyay S**, Ma K, Sengupta P. (2009) Cis-regulatory mechanisms of gene expression in an olfactory neuron type in *Caenorhabditis elegans*. **Dev. Dyn**. 238: 3080-92.
28. **Mukhopadhyay S**, Lu Y, Shaham S, Sengupta P. (2008) Sensory signaling-dependent remodeling of olfactory cilia architecture in *C. elegans*. **Dev. Cell**. 14: 762-774.  
\*Cited in Faculty of 1000. <http://www.f1000biology.com/article/id/1108497>  
\*Highlighted in Science Signaling.  
<http://stke.sciencemag.org/cgi/content/abstract/sigtrans;1/20/ec187/>

- \*Preview in Dev Cell. Reiter J. F. (2008) A Cilium Is Not a Cilium Is Not a Cilium: Signaling Contributes to Ciliary Morphological Diversity Dev. Cell. 14: 635-636.
29. Omori Y, Zhao C, Saras A, **Mukhopadhyay S**, Kim W, Furukawa T, Sengupta P, Veraksa A, Malicki J. (2008) Elipsa is an early determinant of ciliogenesis that links the IFT particle to membrane-associated Rab8. **Nat. Cell Biol.** 10: 437-44.
30. **Mukhopadhyay S**, Lu Y, Qin H, Lanjuin A, Shaham S, Sengupta P. (2007) Distinct IFT mechanisms contribute to the generation of ciliary structural diversity in *C. elegans*. **EMBO J.** 26: 2966-80.  
\*Cited in Faculty of 1000.  
<http://www.f1000biology.com/article/id/1087940/evaluation>
31. Colosimo M, Brown A, **Mukhopadhyay S**, Gabel C, Lanjuin A, Samuel A, Sengupta P. (2004) Identification of thermosensory and olfactory neuron-specific genes via expression profiling of single neuron types. **Curr. Biol.** 14:2245-51.
32. Chakrabarti P, Karim ZA, Gupta R, Vadhawan V, **Mukhopadhyay S**, Dash D. Biochemical characterization of Glanzmann's Thrombasthenia, a rare genetic disorder affecting platelet function. (2004) **Ind. J Med. Biochem.** 8:56-60.
33. Karim Z, **Mukhopadhyay S**, Ramars A, Dash D. (2004) Sustained stimulation of platelet thrombin receptor is associated with tyrosine dephosphorylation of a novel p67 peptide in a manner regulated by extracellular calcium. **Biochim. Biophys. Acta.** 1693: 147-57.
34. Wadhawan V, Karim ZA, **Mukhopadhyay S**, Gupta R, Dikshit M, Dash D. (2004) Platelet storage under in vitro condition is associated with calcium-dependent apoptosis-like lesions and novel reorganization in platelet cytoskeleton. **Arch. Biochem. Biophys.** 422: 183-90.
35. Srinivasan A, **Mukhopadhyay S**, Karim Z, Gupta R, Gupta A, Wadhawan V, Shukla J, Singh VP, Dash D. (2002) Factor VIII gene polymorphisms in North Indian population: a consensus algorithm for carrier analysis of hemophilia A. **Clin. Chim. Acta.** 325(1-2):177-81.
36. Ramars A, **Mukhopadhyay S**, Dash D. (2002) Regulation of postaggregation events induced by protease-activated receptor 1 ligation in human platelets: evidence of differential signaling pathways. **Arch. Biochem. Biophys.** 398: 253-60.
37. **Mukhopadhyay S**, Ramars A, Ochs H, Dash D. (2001) Bruton's tyrosine kinase is a substrate of calpain in human platelets. **FEBS Lett.** 505: 37-41.
38. **Mukhopadhyay S**, Ramars A, Dash D. (2001) Bruton's tyrosine kinase associates with the actin-based cytoskeleton in activated platelets. **J. Cell. Biochem.** 81: 659-65.

**Complete List of Published Work in MyBibliography:**

<https://www.ncbi.nlm.nih.gov/myncbi/saikat.mukhopadhyay.1/bibliography/public/>

**RESEARCH EXPERIENCE**

- 2008-2012 **Postdoctoral Fellow**, Genentech, South San Francisco, CA.  
*Project:* High-confidence proteomics and functional genomics of ciliopathies. *Advisor:* Dr. Peter K. Jackson.
- 2002-2008 **Graduate student**, Biology, Brandeis University, Waltham, MA.  
*Project:* Mechanisms of olfactory cilia formation in *C. elegans*. *Advisor:* Dr. Piali Sengupta.
- 1999-2002 **Resident, MD Biochemistry**, Institute of Medical sciences, Banaras Hindu University, India.  
*Project:* Role of Bruton's tyrosine kinase in platelet signal transduction. *Advisor:* Dr. Debabrata Dash.
- 2000 **Summer Trainee**, Diagnostics division, Centre for DNA Fingerprinting and Diagnostics, Hyderabad, India.  
*Project:* Role of homocysteinemia in male infertility.
- 1998 **Medical Intern, MBBS**, Holy Family Hospital, Delhi, India.

**RESEARCH SUPPORT**

**ONGOING RESEARCH SUPPORT**

- 01/13- **Endowed Scholarship Program**, UT Southwestern
- 02/17-08/21 **ALEX'S LEMONADE STAND FOUNDATION "A" AWARD GRANT**  
Role: Mukhopadhyay (PI)  
Project Title: Role of primary cilium signaling and dynamics in medulloblastoma initiation and progression.
- 07/19-06/21 **PKD FOUNDATION POSTDOCTORAL FELLOWSHIP (awarded to Vivek Palicharla, postdoc)**  
Role: Palicharla (PI) ; Mukhopadhyay (Mentor)  
Project Title: Role of Tulp3-mediated ciliary protein trafficking in kidney cystogenesis

**COMPLETED RESEARCH SUPPORT**

- 01/15-12/19 **NIGMS, NIH (1R01GM113023)**  
Role: Mukhopadhyay (PI)  
Project Title: Signaling at the primary cilium in development and disease.
- 06/16-05/19 **WELCH FOUNDATION (I-1906)**  
Role: Mukhopadhyay (PI)

Project Title: Biochemical characterization of factors regulating subcellular trafficking of adenylyl and guanylyl cyclases.

06/14-05/15 **UT Southwestern O'Brien Kidney Research Core Center P&F Grant (P30DK079328)**

Role: Mukhopadhyay (PI)

Project Title: Role of Gpr161 in kidney development and disease.

03/13-02/17 **CPRIT Recruitment of First-Time Tenure-Track Faculty R1220**

Role: Mukhopadhyay (PI)

Project Title: Ciliary signaling in the pathogenesis of cancer: Investigating the role of a novel, ciliary GPCR in sonic hedgehog signaling and tumorigenesis.

#### **PENDING RESEARCH SUPPORT**

01/22-12/26 **NIGMS, NIH (1R01GM113023)**

Role: Mukhopadhyay (PI)

Project Title: Signaling at the primary cilium in development and disease.

09/21-08/26 **NIDDK, NIH (1R01DK128089-01A1)**

Role: Mukhopadhyay (PI)

Project Title: Role of primary cilium-generated signaling in polycystic kidney disease

#### **RESEARCH PRESENTATIONS**

June 2022 Invited talk: "Ciliary signaling in development and disease". FASEB SRC: The Biology of cilia and Flagella, Tucson, AZ. Rescheduled 2022

July 2021 Invited talk: "Ciliary signaling in development and disease". UCSF

Mar 2021 Invited speaker at Molecular Biosciences Seminar Series at The University of Texas at Austin.

Oct, 2020 Keynote talk: European cilia network/European Marie Curie Training network for PhD students. Online presentation on "Cilia and Hedgehog signaling".

Sep, 2020 Online Symposia: Adenylyl cyclase signaling, cilia and neural tube development. 11<sup>th</sup> BCSB GenSoc UK Cilia Network e-symposium, UK Cilia Network. <https://www.cilianetwork.org.uk/>

Sep, 2020 Online Talk: GPCR and Adenylyl Cyclase Signaling at the Primary cilia in Development and Disease. Department of Genetics, University of North Texas Health Science Center, Fortworth, Texas.



- June 2020 Invited talk: “Ciliary signaling in development and disease”. Touchstone Diabetes center, UT Southwestern.
- June, 2020 Invited talk: “Ciliary signaling in kidney cystogenesis”, FASEB SRC: The Polycystic Kidney Disease Conference: Hurdles and Advances in Molecular Mechanisms and Therapies, Session on: “PKD cystogenic signaling mechanisms”, Lisbon, Portugal. (Cancelled due to COVID-19)
- May 2020. Invited talk: “Ciliary signaling in kidney cystogenesis”, 13<sup>th</sup> Annual O’Brien Kidney Research Symposium, UT Southwestern. (Cancelled due to COVID-19)
- Nov, 2019 Talk: “Progress and Controversies in PKD” as a speaker on “Cilia and Cystogenesis”, American Society of Nephrology’s Kidney Week, Washington DC.
- Sep, 2019 Talk: “Ciliary signaling and Cystogenesis”, Baltimore PKD Symposium.
- Aug, 2019 Talk: “Role of Tulp3 in ciliary trafficking of lipidated proteins and renal cystogenesis”, FASEB SRC: The Biology of cilia and Flagella (presented by Vivek Palicharla).
- May, 2019 Talk: Keeping an Eye on Ciliary Signaling in development and disease. Visual Sciences Seminar Series, Department of Ophthalmology, UT Southwestern.
- April, 2019 Talk: Ciliary Signaling in childhood diseases. Grand Rounds on “Pediatric Hematology/Oncology”, UT Southwestern.
- Dec, 2018 Talk: Ciliary Signaling in development and disease. Special Interest Subgroup on “Cilia, Stem Cell Signaling and Tissue Regeneration”, ASCB/EMBO Meeting 2018, San Diego.
- Nov, 2018 Talk: Ciliary Signaling in development and disease. Department of Physiology seminar series, UT Southwestern.
- July, 2018 Talk: Primary Ciliary Signaling in Renal Cystogenesis and Cerebellar Tumorigenesis. Hamon Cancer Center Lab Conference series, UT Southwestern.
- June, 2018 Talk: GPCR signaling and primary cilia in lateral ventricular expansion of the brain and hydrocephalus. McDermott Center for Human Growth & Development WIPs, UT Southwestern.
- Sep, 2017 Talk: Primary cilium, signaling and medulloblastomas. ALSF Young Investigator Summit, Hollywood, CA.



- July, 2017 Talk: Trafficking to the ciliary membrane, cilia-generated signaling, and ciliopathy phenotypes. FASEB SRC on Biology of Cilia and Flagella, Scottsdale, Arizona.
- June, 2017 Talk: Tubby family proteins, ciliary trafficking of integral membrane proteins and polycystic kidney disease. FASEB SRC on Polycystic kidney disease, Big Sky, Montana.
- Dec, 2016 Talk: GPCR signaling and primary cilia: embryonic, early development and childhood tumors. Stanley Manne Children's Research Institute, Northwestern University, Chicago.
- Dec, 2016 Talk: Tulp3 and Tubby function as general adapters for trafficking of structurally diverse integral membrane proteins to cilia, (presented by Hemant Badgandi), ASCB annual meeting, San Francisco.
- June, 2016 Talk: Subcellular Trafficking of Adenylyl Cyclases: Primary Cilia and Beyond, (presented by Bandarigoda Somatilaka), Phosphorylation & G-Protein Mediated Signaling Networks, University of New England Biddeford, ME
- Oct, 2015 Talk: GPCR signaling in neural tube development and closure. 9<sup>th</sup> International Neural tube meeting, Austin.
- Sep, 2015 Talk: A "cilio-centric" view of GPCR signaling. 5<sup>th</sup> International caesar Conference "The Omnipresent Cilium - Structure, Signalling, and Motion", Bonn, Germany.
- July, 2015 Talk (Kasturi Pal): Smoothed regulates  $\beta$ -arrestin-mediated removal of Gpr161 from the primary cilium. Biology of Cilia and Flagella, FASEB SRC, Snowmass, CO.
- Feb, 2015 Talk (Kasturi Pal): Tonic and Sonic Hedgehog-Regulated Mechanisms Determine Ciliary Trafficking of G-Protein-Coupled Receptor Gpr161. Molecular Pharmacology, Connecting G Protein-Coupled Receptor Mechanisms to Physiological Functions, Gordon Research Conference (GRC), Ventura, CA.
- Jan, 2015 Talk (Kasturi Pal): Tonic and Sonic Hedgehog-Regulated Mechanisms Determine Ciliary Trafficking of G-Protein-Coupled Receptor Gpr161. Molecular Pharmacology (GRS), Gordon Research Seminar, New Frontiers in GPCR Signaling: From Biased Agonism to Disease Progression, Ventura, CA.
- Aug, 2014 Talk: Gpr161 removal from cilia. Hedgehog Meeting, University of Michigan.

- July, 2014      Talk: GPCRs, Hedgehog Signaling, and Cilia.  
Phosphorylation and G Protein-Mediated Signaling Networks, Gordon  
Research Conference (GRC), Biddeford, Maine.
- Jan, 2014      Talk: GPCRs, Hedgehog Signaling, and Cilia.  
MSTP Program, UT Southwestern Medical Center, Dallas.
- Nov, 2013      Talk: GPCRs, Hedgehog Signaling, and Cilia.  
Department of Biology, Texas A & M University, College Station, Texas
- Oct, 2013      Talk: GPCRs, Hedgehog Signaling, and Cilia.  
Neural tube Defects 2013 Conference, Austin, Texas
- Oct, 2013      Talk: GPCRs, Hedgehog Signaling, and Cilia.  
Department of Biology, University of North Texas, Denton, Texas.
- Sep, 2013      Talk: GPCRs, Hedgehog Signaling, and Cilia.  
Department of Genetics, University of North Texas Health Science  
Center, Fortworth, Texas.
- June, 2013      Talk: GPCRs, Hedgehog Signaling, and Cilia. *Chaired the session on*  
*“Ciliary Signal Transduction”*.  
Biology of Cilia and Flagella, FASEB Summer Research Conference,  
Niagara Falls, New York.
- Mar, 2013      Talk: Primary cilia and cancer: A novel ciliary GPCR in sonic hedgehog  
signaling and tumorigenesis.  
Development and Cancer Scientific Program Retreat, Harold C. Simmons  
Comprehensive Cancer Center, UT Southwestern Medical Center, Dallas.
- Apr, 2012      Talk: A Functional Proteomic Approach to Understanding Hedgehog  
Signaling in Primary Cilia.  
Koch Institute for Integrative Cancer Research, MIT, Cambridge.
- Feb, 2012      Talk: A Functional Proteomic Approach to Understanding Signaling in the  
Primary Cilia.  
Department of Cell Biology, UT Southwestern Medical Center, Dallas.
- Jan, 2012      Talk: A Functional Proteomic Approach to Understanding Signaling in the  
Primary Cilia.  
Department of Biological Chemistry, Johns Hopkins Medical University,  
Baltimore.
- Dec, 2010      Talk: TULP3 Bridges the IFT-A Complex and the Ciliary Membrane to  
Promote Trafficking of G Protein-Coupled Receptors into Primary Cilia.

American Society of Cell Biology Annual Meeting minisymposium on “Intracellular Trafficking”, Philadelphia.

- July, 2010      Talk: TULP3 Binds the IFT-A Complex to Allow Trafficking of G Protein-Coupled Receptors into Primary Cilia.  
FASEB summer research conference on “Biology of Cilia and Flagella”, Saxtons River.
- Feb, 2010      Talk: A Short Story of a Known Complex and an Unknown Cargo.  
Keystone symposia on “Cilia, Signaling, and Human disease”, Monterey.
- Mar, 2007      Talk: Mechanisms of specialized cilia formation in *C. elegans*.  
Boston Area Worm Meeting, MIT Dept. of Biology, Cambridge.
- Dec, 2006      Talk: Molecules required for sensory transduction regulate ciliary structures in *C. elegans*.  
Special Interest Subgroup Meeting on Intraflagellar Transport, American Society of Cell Biology Annual Meeting, San Diego.
- July, 2006      Talk: Neuron specific modulation of IFT in *C. elegans*.  
*C. elegans* Neuroscience Meeting, Wisconsin.
- Nov, 2000      Talk: RGDS induced signaling events in human platelets.  
All Indian Cell Biology Conference, JNU, New Delhi, India.
- Oct, 2000      Talk: RGDS Peptide-induced signaling events in human platelets.  
XVth European Symposium on Blood Platelets, Alsace, France.  
(Presented by Dr. Debabrata Dash, my MD advisor).
- Nov, 1999      Talk: Reversible translocation of Btk to the cytoskeleton of thrombin activated platelets.  
All Indian Cell Biology Conference, CCMB, Hyderabad, India.

## **AWARDS**

- 2016              Alex’s Lemonade Stand Foundation “A” grant awardee
- 2013              W.W. Caruth, Jr. Scholar in Biomedical Research, UT Southwestern Medical Center, Dallas.
- 2013              CPRIT Scholar in Cancer Research.
- 2011              Poster Award, FASEB summer research conference on “Polycystic kidney disease, from bench to bedside”, Saxtons River.
- 2011              Marquis Who's Who in Medicine and Healthcare 2011-2012 (8th Ed).

- 2005 Poster Award, 15<sup>th</sup> International *C. elegans* Meeting, UCLA.
- 2001 CSIR-NET Research Fellowship, Govt. of India.
- 2001 Indian Council of Medical Research Junior Research Fellowship.
- 1996 Girish Chandra Ghose Prize (Silver Casket) in Pathology & Microbiology, Medical College, Calcutta.
- 1994 Maharaja Gwalior Prize for the session 1993-94 Medical College, Calcutta.
- 1993 Goodeve Silver Medal in Anatomy, Medical College, Calcutta.
- 1994 B. Basak Silver Medal in Anatomy, Medical College, Calcutta.
- 1992 Stood 1<sup>st</sup> in West Bengal Joint Entrance Examination, 1992 for admission to Medical/Dental Colleges.
- 1992 Jagadish Bose National Science Talent Scholarship.
- 1991 Polar Science Scholarship.

## **TEACHING**

- 2013 Fall Cilia as a signaling center: Cell Regulation Journal Club with Dr. William Snell.
- 2013 Fall Regulation of Cellular Architecture and Dynamics core course: 2 classes
- 2014 Fall Discussion leader for “Genes” module for first year graduate students
- 2015 Spring Special topics in cell biology, module IV with Dr. William Snell
- 2015-20 Fall Lecture for medical students, and preparing course material on “Cell Signaling IV”.
- 2015-20 Fall Teaching histology to medical students
- 2015-19 Fall Discussion leader for “Genes” module for first year graduate students (Fall)
- 2016 Spring Special topics in cell biology, module IV with Dr. William Snell

2016, 2018	Discussion leader for “Responsible conduct of Research” module for first year graduate students.
2016-20 Fall	Core course “Cells”: GPCR signaling. 1 Lecture (Fall)
2017-19	Special topics in cell biology, module IV with Dr. Khuloud Jaqaman (Spring)
2020	Special topics in cell biology, module IV with Dr. Anju Sreelatha (Spring)
2020	Discussion Head and Coordinator for “Genes” module for first year graduate students (Fall)

## **CURRENT AND PAST TRAINEES**

### **CURRENT TRAINEES**

Sun-hee Hwang	Scientist (2013-2018), Senior Scientist (2018-)
Venkata Vivek Reddy Palicharla	Postdoctoral Fellow (2017-) -Society of Developmental Biology Award 2019 for attending the Biology of Cilia and Flagella FASEB Summer Research Conference; -2 <sup>nd</sup> best talk in FASEB SRC 2019; -PKD Foundation postdoctoral fellowship (2019-2021)
Kevin White	Research Assistant II (2019-2020)
Sandra Constable	Research Associate (2020-) Postdoctoral Fellow (2019-)

### **PAST TRAINEES**

Evan Lorient (STARS program, Summer 2014)	Junior, Jesuit College Preparatory School, Dallas
Karisma Sheth (SURF, Summer 2014-15) Kasturi Pal	Undergraduate, Austin College Postdoctoral Research Fellow (2013- 2016). Presently, Postdoctoral Research Fellow, Fowler lab, Scripps Inst.
Hemant Badgandi	Research Scientist (2013-2017) Presently, Lecturer, Department of Chemistry, Vanderbilt University.
Issei Shimada	Assistant Instructor (2015-2018) Presently, Assistant professor, Department of Cell Biology, Graduate

Pratibha Bhalla  
Teja Sebastian (SURISKD, Summer 2019)  
Bandarigoda Gamage Nipunika Somatilaka

School of Medical Sciences, Nagoya  
City University, Nagoya, Japan.  
Postdoctoral Fellow (2018-2019)  
Presently, Postdoctoral research fellow,  
Van Oers' lab, UT Southwestern.  
Undergraduate, University of Austin  
Graduate Student (2014-2018),  
-GSO Spring Travel Award 2016  
Postdoctoral Fellow (2018-2020 Feb)  
-Travel Award for attending 9<sup>th</sup>  
International neural tube defects  
meeting 2019, Boston  
-Best Postdoc Talk Award, International  
neural tube defects meeting 2019  
Presently, Postdoctoral Research  
Fellow, Lu Le Lab, UT Southwestern.

## **PROFESSIONAL ACTIVITIES**

### **SOCIETY MEMBERSHIPS**

2005-till date American Society for Cell Biology.  
2015- American Association for Cancer Research.

### **SERVICE TO PROFESSIONAL ORGANIZATIONS**

2020 Mentoring: Enrolled as a mentor in ASCB community platform (in Career Development, Science). <https://community.ascb.org/home>

2018 ASCB|EMBO Abstract Programming Task Force, Development and Morphogenesis

2016 Ad-hoc reviewer, Center for Oral Health Research, NIH.

2015 Ad-hoc reviewer, BBSRC, UK.

2014 Ad-hoc reviewer, Medical Research Council, Molecular & Cellular Medicine Board, UK.

2013- Member, Harold C. Simmons Comprehensive Cancer Center, UT Southwestern Medical Center.

2010 Grand Awards Judge for the 2010 Intel International Science and Engineering Fair in San Jose, CA.

2009 Invited Judge for the 2009 IRACDA Conference, San Francisco, CA.

**SERVICE TO PROFESSIONAL PUBLICATIONS**

2013- Ad-hoc reviewer:  
*Biochemical Society Transactions (1 paper)*  
*Bio Essays (1 paper)*  
*Cell (1 paper)*  
*Cell Reports (2 papers)*  
*Current Biology (5 papers)*  
*Comms Bio (1 paper)*  
*Cellular & Molecular Immunology (1 paper)*  
*Cells (1 paper)*  
*Cell Proliferation (1 paper)*  
*Cilia (2 papers)*  
*Development (2 papers)*  
*Developmental Cell (1 paper)*  
*Developmental Neurobiology (1 paper)*  
*Developmental Biology (1 paper)*  
*Developmental Dynamics (1 paper)*  
*ELife (2 papers)*  
*EMBO J (3 papers)*  
*FASEB (2 papers)*  
*FEBS Open (1 paper)*  
*Frontiers of medicine (1 paper)*  
*Frontiers Cell and Developmental Biology (2 papers)*  
*Human Mol Genetics (1 paper)*  
*Journal of Cell Science (5 papers)*  
*Journal of Cell Biol (7 papers)*  
*Journal of Cellular Physiology (1 paper)*  
*Journal of Clinical Endocrinology & Metabolism (1 paper)*  
*Journal of Developmental Biology (1 paper)*  
*Journal of Pathology (1 paper)*  
*Life Sci Alliance (2 papers)*  
*Molecular Biology of the Cell (1 paper)*  
*Nature Communications (3 papers)*  
*Nature Chemical Biology (1 paper)*  
*PLOS (1 paper)*  
*PLOS Genetics (1 paper)*  
*PNAS (3 papers)*  
*Science Advances (1 paper)*  
*Science Signaling (1 paper)*  
*Scientific Reports (3 papers)*  
*Seminars in Cell and Developmental Biology (1 paper)*  
*WIREs Developmental Biology (1 paper)*  
*Review Commons (1 paper)*



2013- Ad-hoc reviewer:  
Medical Research Council, UK (2)  
Agence Nationale de la Recherche, France  
BBSRC, UK  
Center for Oral Health Research, NIH  
National Science Center, Poland  
Wellcome Trust, UK  
FWF Der Wissenschaftsfonds, Austrian Science Fund, Austria  
Deutsche Forschungsgemeinschaft (DFG), Germany  
Leibniz Competition, Germany  
Swiss National Science Foundation  
BioNexus Kansas City Patton Trust  
Czech Science Foundation

#### **SERVICE TO UNIVERSITY COMMITTEES**

**Qualifying Examination Committees:** Chair (Ebony Flowers, 2014; Marco Monroy, 2019); Member (Isabel Lopez Garcia, 2020; Tezin Walji, 2018; Antonio Fernandez-Perez, 2015; Duygu Saatcioglu, 2014; Junyao Ren, 2013)

**Discussion leader for Qualifying examinations** for Hypothesis-driven Grant writing for Genes & Development program (Victor Palacios, Bercin Kutluk Cenik; 2014), (Ningyan Cheng, Andres Ramirez Martinez, Sarah Addams, Samadrita Bhattacharyya; 2015), (Zhaoning Wang, Anushka Wickramaratne, Yu Zhang; 2016), (Anu Thomas, Yu Zhang<sup>2</sup>, Boxun Li; 2017)

**Graduate Students Recruitment Committee:** Consultant for international recruitments (2014, 2015, 2016); Cancer Biology Program Recruitment Member (2015, 2016)

#### **Medical School Admissions Committee:**

Interviewer (2018, 2019);  
Online Interviewer (2020, 20-24 interviews; 2021, 16 interviews)

**PhD Committee:** Magid S. Mohamed (2016-)

**Judge:** Cancer Biology Retreat & Poster Session, Sep 2017.

**Panelist:** SOAR 2015 (Successfully obtaining an R grant program), August 31, 2015.