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### WORK EXPERIENCES

#### Scientist

Altos Labs Advisor: Dr. Juan Carlos Izpisua Belmonte, Institute director/ Founding scientist

Team lead on an Altos goal project 2024 | Target safety, regulatory feasibility and competition evaluation | Mouse models of aging and fibrosis -inflammatory diseases (skin, lung, brain, muscle, etc.) | Primary human cells and iPSC models, viral and non-viral delivery, molecular biomarker reporters and protein engineering | Spatial transcriptomics, chromatin measurements | Computational biology and data mining | Cross functional team management and strategy

### **Graduate Researcher**

**Cornell University** 2017 - 2023

2023 - Present

Advisor: Prof. Natasza Kurpios, Professor, Department of Molecular medicine, Cornell University Thesis: Mesenchymal progenitors drive intestinal rotation, differentiation, and homeostasis | Mouse, chicken and quail models, embryonic and postnatal development | Gastrointestinal and liver form and physiology evaluation, fat absorption | Single-cell transcriptomics and trajectory reconstruction | lineage tracing, high-resolution/ 3D imaging | measurement and manipulation of gene expression, cell signaling and tissue mechanics | Histo-pathology

2017 **Research Project Fellow Center for Stem Cell Research** 

Advisor: Dr. Mohankumar K Murugesan

Project: Ex-vivo gene therapy for β-hemoglobinopathies | CRISPR platforms | Patient-derived cell models

Khorana Research Scholar	Uni. of Wisconsin-Madison	2016
Research Intern	inStem, NCBS, India.	2015
Undergraduate Researcher	<b>RV College of Engineering.</b>	2014 - 2016

### **EDUCATION**

PhD	Cornell University, Molecular and Cell Biology	2017 - 2023
BEng	RV College of Engineering, Biotechnology / Engineering	2013 - 2017

### HONORS, AWARDS AND ACHIEVEMENTS

## Academic

- 1. Rising star in Bioengineering Princeton university 2023
- 2. Birnstiel award (Honorable mention) IMP Austria 2023
- 3. LPS best paper award 2023
- 4. Cornell College of Veterinary Medicine graduate research fellowship 2022
- 5. Telluride Scholarship Telluride Association 2020 onwards
- 6. Three-Minute Thesis (3MT) competition
  - North American National 3MT (Council of graduate schools) Winner 2022
  - Ivy+3MT-Runner up 2021
  - North-east regional 3MT Runner up 2021
  - Cornell University 3MT Winner 2021
  - Cornell College of Veterinary Medicine 3MT Runner up 2021
- 7. Center for Vertebrate Genomics seed grant Cornell University 2021 (Award team)
- 8. Center for Vertebrate Genomics Scholarship Cornell University 2020
- 9. Graduate School Travel Award Cornell University 2019, 2022
- 10. Stem Cell Technologies Travel Award 2018
- 11. Presidential Life Science Fellowship Cornell University 2017
- 12. Gold Medal for Best Academic Performance RV College of Engineering 2017
- 13. CTS Best Outgoing Student Award Class of 2017 RV College of Engineering 2017
- 14. Center for Stem Cell Research, CMC, Vellore Project Research Fellowship 2017
- 15. Khorana Research Scholarship Dept. of BT, Govt. of India and IUSSTF, USA 2016

# Leadership / Outreach

- 1. Co-chair, Gordon research Seminar 2025 Vascular cell biology, Ventura, CA
- 2. Co-organizer, Indian society for developmental biology Seminar series 2024

- 3. Preferment committee Telluride House preferment strategies for equitable scholarship 2021
- 4. Member of the Global Cornell Anti-racism Engagement Team Spring 2021
- 5. Participant in "Letters to a Pre-scientist" and "Skype a scientist" programs 2019, 2020
- 6. Researcher collaborator eTrash theatre research on human-nature interaction Cornell Center for Performing and Media Arts 2019
- 7. Outreach Chair Graduate Women in Sciences, Cornell arranged women scientists to speak at 4 of the nearby high schools on a regular basis 2018-19
- **8**. Co-founded the Baked Potato Productions to do theater to spread awareness on mental and nervous health, marginalization, etc. 3 critically acclaimed productions covered by major news outlets 2016
- **9**. Head of Circle of Acting at RV (CARV) The theater club of RVCE Headed the 200 member group Participated and won at national and international level theatre festivals 2016-17
- 10. JENESYS Scholarship Selected to be a cultural ambassador to Japan and discuss measures to improve relationships between Asian countries Govt. of Japan 2011

# **Teaching / Mentoring**

- 1. Teaching Assistant BioMG1350 Intro: Cell and Developmental Biology Weekly teaching for 3 sections of students Spring 2022
- 2. Ithaca College, NY "Signaling pathways regulate gene expression in development" Invited lecture for upper-level biochemistry / molecular biology class Spring Fall 2019, Fall 2020, Spring 2021
- 3. Life Science Leaders of Tomorrow seminar series Lecturer for single cell technology Fall 2021
- 4. "Teaching and learning in diverse classrooms" class from Center for Teaching Innovation at Cornell University Summer 2021
- 5. Mentor for the HHMI CHAMPS program for underrepresented students 2018, 2019
- 6. Research mentorship for 5 undergraduate research assistants, 4 graduate research assistants, and 10 PhD rotation students in the lab of Dr. Natasza Kurpios, Cornell University.

## PUBLICATIONS

## Peer reviewed publications / preprints

- 1. Sanketi BD, Mantri M, et al. "Villus myofibroblasts are developmental and adult progenitors of mammalian gut lymphatic musculature." Dev. Cell. (2024) DOI: 10.1016/j.devcel.2024.03.005.
- 2. Sanketi BD\*, Sivakumar A, Kurpios NA\*. Visualizing and manipulating the production and accumulation of hyaluronan for functional assessment in chicken embryos. STAR Protoc. 2023 DOI: 10.1016/j.xpro.2023.102200. (\*co-corresponding authors)
- 3. Sanketi BD, et al, "Pitx2 patterns an accelerator-brake mechanical feedback through latent TGFβ to rotate the gut." Science. (2022) DOI: 10.1126/science.abl3921 Spotlight: Menon and Burdine, "A twist in Pitx2 regulation of gut looping." Dev Cell. (2022) Covered by ScienceDaily, Cornell chronicle, EurekaAlerts, News-medical.net
- 4. Shiroor D, Wang KT, et al. "Inhibition of the ATM kinase rescues planarian regeneration after lethal radiation." EMBO. Rep. (2023) DOI: 10.15252/embr.202256112
- 5. Sanketi BD, Kurpios NA "In ovo gain- and loss- of function approaches to study gut morphogenesis" Methods in Molecular Biology: Cell Polarity Signaling (2022) DOI: 10.1007/978-1-0716-2035-9\_11
- 6. Sanketi BD, Kurpios NA "Avian embryos as a model to study vascular development" Methods in Molecular Biology: Cell Polarity Signaling (2022) DOI: 10.1007/978-1-0716-2035-9\_12
- 7. Chen F, et al. "The long noncoding RNA PLAYRR regulates Pitx2 dosage and protects against cardiac arrythmias." Biorxiv (2022) DOI: 10.1101/2022.09.20.508562
- 8. Hu S, et al. "The asymmetric Pitx2 regulates intestinal muscular-lacteal development and protects against fatty liver disease" Cell. Rep. (2021) DOI: 10.1016/j.celrep.2021.110030
- **9**. Funk EC, et al. "Changes in Nkx2. 1, Sox2, Bmp4, and Bmp16 expression underlying the lung-to-gas bladder evolutionary transition in ray- finned fishes." Evolution & Development (2020) DOI: 10.1111/ede.12354
- 10. Reddy CM, Sanketi BD, et al. "Corrosion inhibition of mild steel by Capsicum annuum fruit paste." Perspectives in Science (2016)
- **11**. Sanketi BD, et al. "Enhancement of Spirulina platensis growth using Coconut water supplemented media" Journal of Environmental Research and Development (2016)
- 12. Shenoy A, et al. "Immobilization of Carbonic Anhydrase: A Review" Research & Reviews: A Journal of Biotechnology (2016)

# In preparation

- **13.** Lu Y, Tu W, Li R, Sanketi BD, et al. "Mitigating mesenchymal drift in aging and diseases via partial reprogramming" (in review)
- **14**. Sanketi BD, et al. "Uncoupling chromatin rejuvenation from dedifferentiation during partial reprogramming" (in preparation for IP and publication)
- **15**. Chen X, Sanketi BD et al. "Umbilical origin of the ventral body wall" (in preparation)
- 16. Sanketi BD, et al. "Spatiotemporal reconstruction of intestinal lymphatic heterogeneity" (in preparation)

# Selected Talks / Posters / Awards

- 1. Gordon Proteoglycans (GRS, GRC), Andover, NH. 2018 / "Dissection of a transcriptional network behind conserved midgut tilting controlled by Pitx2 and HC-HA/Tsg6 pathways" / Poster presentation Best Poster winner
- 2. EMBO Mechanical Forces in Development, Heidelberg, Germany. 2019 / "Synchronizing midgut formation with the initiation of its leftward tilt" / Oral + poster presentation
- 3. iBio2 symposium, Iowa State university Best talk, Developmental Biology 2021
- 4. Binghamton University symposium Selected oral presentation, 2020
- 5. Cornell University BBS symposium Best Poster award 2019, 2020
- 6. International Developmental Mechanics seminar series Oral presentation, 2022
- 7. Intestinal Stem Cell Niche Fusion conference, Cancun, Mexico. 2022 / "Developmental assembly of the intestinal fat-absorption apparatus at single-cell resolution" / Poster presentation
- 8. Invited seminar Harvard Medical School, USA, Nov 2022 / "Go with your gut: How the gut gets its coiled structure and fat absorption function."
- **9**. Invited VERGE special seminar Cornell University, USA, Dec 2022/ "Go with your gut: How the gut gets its coiled structure and fat absorption function."
- 10. Gordon Research conference Vascular Cell Biology, Ventura, USA Jan 2023 / "Reconstruction of the origin and assembly of villus smooth muscles drivers of intestinal fat absorption"/Oral + Poster presentation
- **11**. Invited seminar Rising star in bioengineering award, Princeton university 2023/ "Navigating the landscape of development, homeostasis and aging."
- 12. Invited seminar Longevity initiative, Indian Institute of Science 2024/ "Balancing the somatic state for development, homeostasis and rejuvenation."
- **13**. Invited seminar National Center for Biological sciences 2024/ "Balancing the somatic state for development, homeostasis and rejuvenation."