

# Sushant Bangru

## Curriculum Vitae

Dept of Cell Biology, Duke University  
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### Education

- 2021- **Postdoctoral Fellow** in Cell Biology, Duke University  
Advisor: Kenneth Poss, Ph.D. & Stefano Di Talia, Ph.D.
- 2015-21 **Ph.D.** in Biochemistry, University of Illinois, Urbana-Champaign  
Advisor: Auinash Kalsotra, Ph.D.
- 2011-15 **B.Sc.(Research)** in Biological Sciences (major), Indian Institute of Science, Bangalore  
Advisor: Desirazu N. Rao, Ph.D.

### Fellowships & Grants

- 2021-23 CAGT Genome Technology Postdoctoral Fellowship  
Center for Advanced Genomic Technology, Duke University
- 2020-21 Graduate College Dissertation Completion Fellowship  
Department of Biochemistry, University of Illinois, Urbana-Champaign
- 2018-20 NIH TiMe T32 Tissue Microenvironment Fellowship (T32EB019944)  
Beckman Institute, University of Illinois, Urbana-Champaign
- 2015-16 Ulliyot Fellowship  
School of Molecular and Cellular Biology, University of Illinois, Urbana-Champaign
- 2010-15 Kishore Vaigyanik Protsahan Yojana (KVPY) Fellowship  
National Science Fellowship, Department of Science and Technology, Government of India

### Publications \*Equal contribution

#### Peer-reviewed articles

- 20) **Bangru, S.**, Chen, J., Baker, N., Chembazhi, U.V., Das, D., Derham, J.M., Chorghade, S., Arif, W., Alencastro, F., Duncan, A.W., Carstens, R.P., & Kalsotra, A. (2024). ESRP2-microRNA-122 axis directs the postnatal onset of liver polyploidization and maturation. **Genes & Development**, In press.
- 19) Goo, Y.H., Ayyappan, J.P., Cheeran, F.D., **Bangru, S.**, Saha, P.K., Baar, P., Schulz, S., Lydic, T.A., Spengler, B., Wagner, A.H., Kalsotra, A., Yechoor, V.K., & Paul, A. (2024). Lipid droplet-associated hydrolase mobilizes stores of liver X receptor sterol ligands and protects against atherosclerosis. **Nature Communications**, 15(1):6540.
- 18) Iyer, R.R., Applegate, C.C., Arogundade, O.H., **Bangru, S.**, Berg, I.C., Emon, B., Porrás-Gomez, M., Hsieh, P., Jeong, Y., Kim, Y., Knox, H.J., Moghaddam, A.O., Renteria, C.A., Richard, C., Santaliz-Casiano, A., Sengupta, S., Wang, J., Zambuto, S.G., Zeballos, M.A., Pool, M., Bhargava, R., & Gaskins, H.R. (2024). Inspiring a convergent engineering approach to measure and model the tissue microenvironment. **Heliyon**, e32456.

- 17) Ando, K., Ou, J., Thompson, J., Welsby, J., **Bangru, S.**, Shen, J., Wei, X., Diao, Y., & Poss, K.D. (2024). A screen for regeneration-associated silencer regulatory elements in zebrafish. **Developmental Cell**, 59(5), 676-691.
- 16) Piersma, S.\*, **Bangru, S.\***, Yoon, J., Liu, T.W., Yang, L., Hsieh, C.S., Plougastel-Douglas, B., Kalsotra, A. & Yokoyama, W. (2023). NK cell expansion requires HuR and mediates innate immune control of solid tumors and long-term virus infection. **Journal of Experimental Medicine**, 220(11):e20231154.
- 15) Srivastava, I., Lew, B., Wang, Y., Blair, S., George, M.B., Hajek, B.S., **Bangru, S.**, Pandit, S., Wang, Z., Ludwig, J., Flatt, K., Gruebele, M., Nie, S., & Gruev, V. (2023). Cell-membrane coated nanoparticles for tumor delineation and qualitative estimation of cancer biomarkers at single wavelength excitation in murine and phantom models. **ACS Nano**,17(9):8465-8482.
- 14) Chembazhi, U.V., Tung, W.S., Hwang, H., Wang, Y., Lalwani, A., Nguyen, K.L., **Bangru, S.**, Yee, D., Chin, K., Yang, J., Kalsotra, A., & Mei, W. (2023). PTBP1/HNRNP I controls intestinal epithelial cell regeneration by maintaining stem cell survival and stemness. **Nucleic Acids Research**, gkad042.
- 13) Arif, W., Mathur, B., Saki M.F., Chembazhi, U.V., Toohill, K., Song, Y.J., Hao, Q., Karimi, S., Blue, S.M., Yee, B.A., Van Nostrand, E.L., **Bangru, S.**, Guzman, G., Yeo, G.W., Prasanth, K.V., Anakk, S., Cummins, C., & Kalsotra, A. (2022). Splicing factor SRSF1 deficiency in the liver triggers NASH-like pathology via R-loop induced DNA damage and cell death. **Nature Communications**, 14(1):551
- 12) Sonam, S.\*, **Bangru, S.\***, Perry, K.J., Chembazhi, U.V., Kalsotra, A., & Henry, J.J. (2022). Cellular and molecular profiles of larval and adult *Xenopus* corneal epithelia resolved at the single-cell level. **Developmental Biology**, 491, 13-20.
- 11) Peng, J., Serrano, G., Traniello, I.M., Calleja-Cervantes, M.E., Chembazhi, U.V., **Bangru, S.**, Ezponda, T., Rodriguez-Madoz, J.R., Kalsotra, A., Prosper, F., Ochoa, I., & Hernaez, M. (2022). A single-cell gene regulatory network inference method for identifying complex regulatory dynamics across cell phenotypes. **Communications Biology**, 5(1):351.
- 10) Chembazhi, U.V.\*, **Bangru, S.\***, Hernaez, M., & Kalsotra, A. (2020). Cellular plasticity balances metabolic and proliferation dynamics of a regenerating liver. **Genome Research**, 31(4), 576-591.
- 9) Kumar, S., **Bangru, S.**, Kumar, R., & Rao, D. (2020). Promiscuous DNA cleavage by HpyAll endonuclease is modulated by the HNH motif catalytic residues. **Bioscience Reports**, bsr20201633.
- 8) Sun, Q., Hao, Q., Lin, YC., Song, YJ., **Bangru, S.**, Arif, W., Tripathi, V., Zhang, Y., Cho, J.H., Freier, S.M., Jenkins, L.M., Ma, J., Yoon, J.H., Kalsotra, A., Lal, A., Prasanth, S.G., & Prasanth, K.V. (2020). Antagonism between Splicing and Microprocessor complex Dictates the Serum-induced Processing of Lnc-MIRHG for Efficient Cell Cycle Re-entry. **RNA**, rna.075309.120.
- 7) Srivastava, I., Misra, S.K., **Bangru, S.**, Boateng, K.A., Soares, J.A.N.T., Schwartz-Duval, A.S., Kalsotra, A., & Pan, D. (2020). Complementary Oligonucleotide Conjugated Multicolor Carbon Dots for Intracellular Recognition of Biological Events. **ACS Applied material & Interfaces**, 12(14), 16137-16149.
- 6) **Bangru, S.**, & Kalsotra, A. (2020). Cellular and molecular basis of liver regeneration. **Seminars in Cell & Developmental Biology**, 100, 74-87.
- 5) Hyun, J., Sun, Z., Ahmadi, A.R., **Bangru, S.**, Chembazhi, U.V., Du, K., Chen, T., Tsukamoto, H., Rusyn, I., Kalsotra, A., & Diehl, A.M. (2020). ESRP2-mediated alternative splicing reprograms hepatocytes in severe alcoholic hepatitis. **Journal of Clinical Investigation**, 130(4), 2129-2145.

- 4) Misra, C., **Bangru, S.**, Lin, F., Lam, K., Koenig, S., Lubbers, E., Hedhli, J., Murphy, N., Parker, D.J., Dobrucki, W.L., Cooper, T.A., Tajkhorshid, E., Mohler, P., & Kalsotra, A. (2020). Aberrant Expression of a Non-muscle RBFOX2 Isoform Triggers Cardiac Conduction Defects in Myotonic Dystrophy. **Developmental Cell**, 52(6), 748-763.
- 3) Seimetz, J., Arif, W., **Bangru, S.**, Hernaez, M., & Kalsotra, A. (2019). High resolution and cell-type specific polysome profiling from tissues. **Methods**, 155, 131-139.
- 2) **Bangru, S.\***, Arif, W.\*, Seimetz, J., Bhate, A., Chen, J., Rashaan, E.H., Carstens, R.P., Anakk S., & Kalsotra, A. (2018). Alternative Splicing rewires Hippo Signaling pathway in hepatocytes to promote liver regeneration. **Nature Structural & Molecular Biology**, 25(10), 928-939.
- 1) **Bangru, S.**, & Kalsotra, A. (2016). Advances in analyzing RNA diversity in eukaryotic transcriptomes: peering through the Omics lens. **F1000Research**, 5:2668.

— **Works in preparation/ In review** —

- 5) **Bangru, S.**, Diegmiller, R., Di Talia, S., & Poss, K.D. (2024). Signal control mechanisms underlying tissue regeneration in adult animals.
- 4) Chembazhi, U.V.\*, **Bangru, S.\***, Dutta, R., Peiffer, B., Das, D., Natua, S., Toohill, K., Leona, A., Purwar, I., Bhowmik, A., Goyal, Y., Sun, Z., Diehl, A.M., & Kalsotra, A. (2024). Dysregulation of RNA splicing induces liver regeneration failure in alcohol-associated liver disease.
- 3) Song, Y.J., Shinn, M.K.\*, **Bangru, S.\***, Wang, Y., Sun, Q., Hao, Q., Chaturvedi, P., Freier, S.M., Perez-Pinera, P., Nelson, E.R., Belmont, A.S., Guttman, M., Prasanth, S.G., Kalsotra, A., Pappu, R., & Prasanth, K.V. (2024). Nuclear speckle resident lncRNA-splicing factor condensates regulate hypoxia responsive RNA processing of genes pre-positioned in speckle- hubs.
- 2) Gillotay, P., Mirian, R., Dassy, B., **Bangru, S.**, Haerlingen, B., Shankar, M.P., Fonseca, B.F., Ziros, G.P., Singh, S.P., Sykiotis, P.S., & Costagliola, S. (2023). NRF2/nrf2a promotes maturation and hormone synthesis in mammalian and non-mammalian thyroid.
- 1) Zhou, W., Chembazhi, U.V., Huang, J., **Bangru, S.**, Dean, A.E., Kalsotra, A., Rudnick, D.A., & Anakk, S. (2024). Excess bile acid increase after partial hepatectomy in constitutive androstane receptor knockout mice drives regeneration.

## Awards

- 2022 Conference Travel Award  
Annual RNA society meeting, Boulder, Colorado
- 2020 Conference Travel Award - Cancelled March 2020 (Covid19 pandemic)  
Annual RNA society meeting, Vancouver, BC
- 2019 Colin A. Wraight Award  
Best Research paper in Biochemistry, University of Illinois, Urbana-Champaign
- 2018 Poster presentation Award  
RNA Rustbelt Meeting 2018, Columbus, Ohio
- 2018 RNA Society Conference Travel Award  
International Society for Computational Biology Conference, Chicago, Illinois
- 2017 Graduate College Travel Award  
Department of Biochemistry, University of Illinois, Urbana-Champaign
- 2014 TN Khoshoo Ecology and Environment Award  
Annual WIPRO Earthian Competition

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## Mentoring Experience

- 2016-19 Jackie Chen, Undergraduate, Department of Biochemistry, UIUC, Class of 2018  
Current Position: Graduate student, University of Wisconsin, Madison  
Best Undergraduate Poster Award, RNA rustbelt meeting, Indiana, October 2017.  
Award for Best Undergraduate Thesis in Biochemistry, 2018.
- 2019-21 Jan Uy, Undergraduate, Department of Biochemistry, UIUC, Class of 2022  
MCB Summer Research Fellowship 2020
- 2022-23 Demi Wang, Undergraduate, Department of Cell Biology, Duke University, Class of 2024
- 2022-24 Lucas Garcia, Research Technician II, Poss-Di Talia Lab, Department of Cell Biology, Duke University  
Current Position: Graduate student, Denver University, Denver
- 2024- Rebecca Myatt, Research Technician II, Poss Lab, Department of Cell Biology, Duke University

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## Teaching Experience

- Spring 2022 Instructor, BIOTRAIN754 The Responsible Scientist II, Duke University
- Spring 2018 Teaching Assistant, MCB354 Biochemical & Physical Basis of Life, UIUC
- Fall 2017 Teaching Assistant, MCB354 Biochemical & Physical Basis of Life, UIUC
- Fall 2016 Teaching Assistant, MCB450 Introductory Biochemistry, UIUC
- Spring 2015 Teaching Assistant, UES307 Introduction to Solid Earth, IISc

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## Oral Presentations

- Aug 2021 CSHL Eukaryotic mRNA processing, Online platform
- Feb 2019 Keystone Symposia (RNA-protein interactions X1), Whistler, British Columbia
- Apr 2018 Tissue Micro-environment Symposium, Urbana, Illinois
- Oct 2017 RNA Rustbelt meeting, Indianapolis, Indiana

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## Poster Presentations

- Oct 2022 RNA Rustbelt meeting, Cleveland, Ohio
- Jun 2022 Annual RNA Society meeting, Boulder, Colorado
- Sep 2021 RNA Rustbelt meeting, Online platform
- May 2021 Annual RNA Society Meeting, Online platform
- May 2020 Annual RNA Society Meeting, Online platform
- Oct 2019 RNA Rustbelt meeting, Cleveland, Ohio
- Oct 2018 RNA Rustbelt meeting, Columbus, Ohio
- Jul 2018 GRC post-transcriptional gene regulation, Newry, Maine
- Jul 2018 International Society for Computational Biology Annual Meeting, Chicago, Illinois
- Aug 2017 CSHL Eukaryotic mRNA processing, Cold Spring Harbor, New York
- Oct 2016 RNA Rustbelt meeting, Cleveland, Ohio
- Jul 2016 GRC post-transcriptional gene regulation, Stowe, Vermont

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## References

### **Dr Kenneth Poss**

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**Dr K.V. Prasanth**

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