Sushant Bangru

Curriculum Vitae

Regenerative Biology Theme, Morgridge Institute for Research
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Education

2024- **Postdoctoral Fellow** in Regenerative Biology, Morgridge Institute for Research
Advisor: Kenneth Poss, Ph.D. & Stefano Di Talia, Ph.D.

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 Ullyot 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 ——

23) 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. (2025). LncRNA-Splicing Factor Condensates Regulate Hypoxia-Responsive Pre-mRNA Processing near Nuclear Speckles. **Molecular Cell**, *In Press*.

22) **Bangru, S.**, Diegmiller, R., Di Talia, S., & Poss, K.D. (2025). Signal control mechanisms underlying tissue regeneration in adult animals. **Nature Reviews Molecular Cell Biology**, *Online now*.

21) 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. (2025). Dysregulation of RNA splicing induces liver regeneration failure in alcohol-associated liver disease. **Nature Communications**, 16(1):8049.

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. (2025). ESRP2-microRNA-122 axis directs the postnatal onset of liver polyploidization and maturation. **Genes & Development**, 39(5-6):325-347.

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., Porras-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 HpyAII 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., Rashan, 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 review (also available as preprints) ——

2) Ando, K.*, **Bangru, S.***, Welsby, J., Thompson, J.D., & Poss, K.D. (2025). Buffering of genetic defects in animal development by regeneration programs. *In Revision*.

1) Zhou, W., Chembazhi, U.V., Huang, J., **Bangru, S.**, Dean, A.E., Asokakumar, A., Kalsotra, A., Rudnick, D.A., & Anakk, S. (2025). Loss of Constitutive Androstane Receptor (Car) elevated bile acids, and c-Myc transcript in mice, revealing its metabolic role during liver regeneration. *In Revision*.

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

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

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

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

Poster Presentations

Sep 2025 Midwest Society for Developmental Biology meeting, Cincinnati, Ohio
Jul 2025 International Zebrafish Conference, Madison, Wisconsin
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

References

Dr Kenneth Poss
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