Mohit Kumar Jolly

Assistant Professor,
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EMPLOYMENT

Assistant Professor Oct 2018 – present
Centre for BioSystems Science and Engineering, Indian Institute of Science (IISc), Bangalore

Postdoctoral Fellow
Center for Theoretical Biological Physics, Rice University, USA Oct 2016 – Sep 2018

Computational Cancer Biology Fellow
Gulf Coast Consortia, Houston, USA Apr 2017 – Sep 2018

EDUCATION

Rice University, Houston, TX, USA
Ph.D., Bioengineering Aug 2012 – Sep 2016
Thesis title: The hybrid epithelial/mesenchymal phenotype and its implications in cancer metastasis
Graduate Certificate in Teaching and Learning Jan 2015 – May 2016

Indian Institute of Technology (IIT) Kanpur, Kanpur, India
M.Tech. (Master of Technology), Biological Sciences & Bioengineering (BSBE) Aug 2010 – May 2012
Thesis title: Mathematical modeling of Planar Cell Polarity in Drosophila wing epithelium
B.Tech. (Bachelor of Technology), Biological Sciences & Bioengineering (BSBE) Aug 2006 – May 2010

AWARDS AND HONORS

Young Investigator Award, 'Cells Tissues Organs' journal (former title: *Acta Anatomica*; Karger publishers) 2020
Outstanding Reviewer, Experimental Biology and Medicine (published by Society of Experimental Biology and Medicine (SEBM)) 2020
Outstanding Reviewer, Physical Biology (published by Institute of Physics, UK) 2018
Editorial Board Member, Translational Oncology (IF = 3.56) August 2020 – present
Editorial Board Member, Computational and Systems Oncology (Wiley) May 2020 – present
Editorial Board Member, Journal of Clinical Medicine (IF = 3.30) April 2018 – present
Editorial Board Member, Biomolecules (IF = 4.08) June 2018 – present
Review Editor, Bioinformatics and Computational Biology section, Frontiers in Bioengineering and Biotechnology (IF = 5.12), Frontiers in Plant Biology (IF = 4.11), Frontiers in Genetics (IF= 3.52) August 2019 – present
Member, Indian National Young Academy of Science (INYAS) January 2020 – present

Fellowships/Awards

Ramanujan Fellowship, Department of Science and Technology, India 2018
Computational Cancer Biology Fellowship, Gulf Coast Consortia, Houston, USA 2017
Winner, IBiology Young Scientist Series (YSS) 2016
Overall 2nd place and People's Choice Award, SCREECH, Rice University 2013
Summer Innovation Award, Biological Sciences & Bioengineering (BSBE), IIT Kanpur 2009
SURGE (Summer Undergraduate Research Grant for Excellence) fellow, IIT Kanpur 2008

Travel/Poster Awards

Tata Trust Travel Award, Indian Institute of Science Bangalore	2019
Company of Biologists Travel Award, TEMTIA (EMT International Association) meeting	2019
2nd Best Poster Award, Gordon Research Conference on 'Physical Science of Cancer'	2017
Landahl Travel Award, Society of Mathematical Biology Annual Meeting	2017, 2015
IBB Travel Award, Institute of Biosciences and Bioengineering (IBB), Rice University	2016, 2015
Travel Award, Rice University Graduate Student Association	2015
Q-bio conference fellowship, Los Alamos National Laboratory	2014
Best Poster Award, 10th Annual Computational and Theoretical Biology Symposium, Rice University	2013

FUNDING (as Principal Investigator)

- Ramanujan Fellowship, Department of Science and Technology, India (Oct 2018 – Sep 2023)
- Dynamical Systems Biology of Epithelial-Mesenchymal Plasticity: An Integrated Computational-Experimental Approach; SPARC, MHRD, India (March 2019 – February 2021)

PEER-REVIEWED PUBLICATIONS

*Equal contribution, #Corresponding author; Members from the group are underlined

Pre-prints:

1. Kumar S, Hari K, **Jolly MK**, Rangarajan A (2019). Feedback loops involving AMPK, ERK and TFEB in matrix detached leads to non-genetic heterogeneity. *bioRxiv*: 736546
2. Nam A, Mohanty A, Bhattacharya S, Kotnala S, Achuthan S, Hari K, Nathan A, Rangarajan G, Massarelli E, Levine H, **Jolly MK**, Kulkarni P, Salgia R (2020). Suppressing chemoresistance in lung cancer via dynamic phenotypic switching and intermittent therapy. *bioRxiv*: 028472
3. Pramanik D, **Jolly MK#**, Bhat R# (2020). Interactive dynamics of reaction-diffusion and adhesion predict diverse invasion strategies of cancer cells in matrix-like microenvironments. *bioRxiv*: 041632
4. Sahoo S, Hari K, Jhunjhunwala S, **Jolly MK** (2020). Mechanistic modeling of the SARS-CoV-2 and immune system interplay unravels design principles for diverse clinicopathological outcomes. *bioRxiv*: 097238
5. Johnson KS, Hussein S, Song S, Chakraborty P, **Jolly MK**, Toneff M, Lin YC, Taube JH (2020). Phased gene expression and chromatin accessibility during progressive EMT and MET linked to dynamic CTCF engagement. *bioRxiv*: 089110
6. Lahiry M, Kumar S, Hari K, Chedere A, Jolly MK, Rangarajan A (2020). AMPK-Fyn signaling promotes Notch1 stability to potentiate hypoxia-induced breast cancer stemness and drug resistance. *bioRxiv*: 458489
7. Pathak S, **Jolly MK**, Nandi D (2020). Protective roles of flu infections and BCG vaccination in lowering COVID-19 mortality. *ResearchSquare:* rs-3.rs-33242.
8. **Jolly MK#**, Murphy RM, Bhatia S, Whitfield H, Davis MJ#, Thompson EW#. Quantifying the epithelial /mesenchymal hybrid state in Cancer: Clinical Implications. *Preprints:* 2020080023
9. Chakraborty P, George JT, Woodward W, Levin H, **Jolly MK#** (2020). Gene expression profiling of inflammatory breast cancer reveal high heterogeneity across the epithelial-hybrid-mesenchymal spectrum. *bioRxiv:* 267609
10. Subbalakshmi A R, Sahoo S, Biswas K, **Jolly MK#** (2020). A computational systems biology approach identifies SLUG as a mediator of partial Epithelial-Mesenchymal Transition. *bioRxiv*: 278085

Published articles:

11. Sahoo S, Jhunjhunwala S, **Jolly MK**[#](2020). The Good, The Bad and The Ugly: A mathematical model investigates the differing outcomes among CoVID-19 patients. *Journal of the Indian Institute of Science*, in press
12. Duddu AS, Sahoo S, Hati S, Jhunjhunwala S, **Jolly MK**[#] (2020). Multistability in cellular differentiation enabled by a network of three mutually repressing master regulators. *Journal of the Royal Society Interface*, 17 (170): 20200631
13. Archana PT*, Murali M*, Karthikeyan N, Varghese BA, Teo WS, McFarland A, Roden DL, Holliday H, Konrad CV, Cazet A, Dodson E, Yang J, Baker LA, George JT, Levine H, **Jolly MK**, Swarbick A, Nair R (2020). Targeting the Id1-Kif11 axis in triple negative breast cancer using combination therapy. *Biomolecules*, 10 (9): 1295
14. Saxena K, Srikrishnan S, Celia-Terrassa T, **Jolly MK**[#] (2020). OVOL1/2: Drivers of epithelial differentiation in development, disease and reprogramming. *Cells Tissues Organs*, in press (Preprints: *2020070713*)
15. Subbalakshmi A R, Kundnani D, Biswas K, Hanash SM, Ghosh A, Tripathi SC[#], **Jolly MK**[#] (2020). NFATc acts as a non-canonical phenotypic stability factor for a hybrid epithelial/mesenchymal phenotype. *Frontiers in Oncology*, 10: 553342
16. Kaur T, Sarkar S, Chowdhury S, Sinha SK, **Jolly MK**, Dutta PS (2020). Anticipating the novel coronavirus disease (COVID-19) pandemic. *Frontiers in Public Health*, 89: 569669
17. Saxena K, **Jolly MK**[#,] Balamurugan K[#] (2020). Hypoxia, partial EMT and collective migration: emerging culprits in metastasis. *Translational Oncology*, 13 (11): 100845
18. Ashray N, Bhide A, Chakraborty P, Mishra A, Chhabria K, **Jolly MK**, Modi D (2020). Single cell RNAseq identifies subsets of cells in the feto-maternal interface that highly express factors that drive pathogenesis of SARS-CoV-2. *Frontiers in Cell and Developmental Biology*, 8: 783
19. Mohanty A, Nam A, Pozhiktov A, Bhattacharyya S, Yang L, Nathan A, Xiewei W, Srivastava S, Mambetsariev I, Nelson M, Subbalakshmi A R, Guo L, Nasser MW, Batra SK, Orban J, **Jolly MK**, Maserralli E, Kulkarni P, Salgia R (2020). A non-genetic mechanism for chemoresistance in lung cancer: the role of integrin β4/paxillin axis. *iScience*, 23 (9): 101496
20. Bocci F, Onuchic JN[#], **Jolly MK**[#] (2020). Understanding the principles of pattern formation driven by Notch signaling through integrating experiments and theoretical models. *Frontiers in Physiology*, 11: 929
21. Jia D, Tripathi S, Chakraborty P, Chedere A, Rangarajan A, Levine H[#], **Jolly MK**[#] (2020). Epigenetic feedback and stochastic cell division can drive resistance to EMT. *Oncotarget*, 11 (27): 2611-2624
22. Gearhart-Serna LM, Davis JB, **Jolly MK**, Jayasundara N, Saeur SJ, Giulio RD, Devi GR (2020). A complex polycyclic aromatic hydrocarbon environmental chemical mixture promotes aggressive phenotype and survival signaling with hormone receptor selectivity in breast cancer cells. *Carcinogenesis*, *in press*
23. Ranganathan S, Kumar S, Mohanty SS, **Jolly MK**, Rangarajan A (2020). Cellular plasticity in matrix-attached and -detached cells: implications in metastasis. *Journal of the Indian Institute of Science*, 100 (3): 525-536
24. Khot M, Sreekumar D, Jahagirdar S, Kulkarni A, Hari K, Faseela EE, Radhakrishnan S, **Jolly MK**, Sengupta K. Twist1 induces chromosomal instability (CIN) in colorectal cancer cells. *Human Molecular Genetics*, 29 (10): 1673-88

25. Iyer A, Gupta K, Sharma S, Hari K, Lee YF, Ramalingam N, Yap YS, West J Bhagat AA, Subramani BV, Sabuwala B, Tan TZ, Thiery JP, **Jolly MK**, Ramalingam N, Sengupta D (2020). Integrative analysis and machine learning based characterization of single circulating tumor cells. *Journal of Clinical Medicine*, 9 (4): 1206

26. Hari K, Sabuwala B, Subramani BV, La Porta C, Zapperi S, Font-Clos F, **Jolly MK**[#] (2020). Identifying inhibitors of epithelial-mesenchymal plasticity using a network topology based approach. *NPJ Systems Biology & Applications*, 6: 15

27. Archana PT*, Saxena K*, Murali R, **Jolly MK**[#], Nair R[#] (2020). Cancer Stem Cell plasticity – a deadly deal. *Frontiers in Molecular Biosciences*, 7:79

28. Sahoo S*, Singh D*, Chakraborty P, **Jolly MK**[#] (2020). Emergent properties of the HNF4α-PPARγ network may drive consequent phenotypic plasticity in NAFLD. *Journal of Clinical Medicine*, 9 (3): 870

29. Dhadve AC, Hari K, Rekhi B, **Jolly MK**, De A, Ray P (2020). Decoding molecular interplay underlies the pulsatile IGF1R expression during acquisition of chemoresistance. *BBA – Molecular Basis of Disease*, 1866 (1): 165754

30. Chakraborty P, George JT, Tripathi S, Levine H, **Jolly MK**[#] (2020). Comparative study of transcriptomics-based scoring metrics for the epithelial-hybrid-mesenchymal spectrum. *Frontiers in Bioengineering and Biotechnology*, 8: 220

31. Drapela S, Bouchal J, **Jolly MK**, Culig Z, Soucek K (2020). ZEB1: a critical regulator of cell plasticity, DNA damage response and therapy resistance. *Frontiers in Molecular BioSciences*, 10:3389

32. Tripathi S, Chakraborty P, Levine H[#], **Jolly MK**[#] (2020). A mechanism for epithelial-mesenchymal heterogeneity in a population of cancer cells. *PLoS Computational Biology*, 16 (2): e1007619

33. Tripathi S, Levine H[#], **Jolly MK**[#] (2020). The Physics of Cellular Decision-Making during Epithelial-Mesenchymal Transition. *Annual Reviews of Biophysics*, 49: 1-18

34. Lourenco AR, Ban Y, Crowley MJP, Lee S, Ramchandani D, Du W, Elemento O, George JT, **Jolly MK**, Levine H, Sheng J, Wong ST, Altorki NK, Gao D (2020). Differential contributions of pre- and post-EMT tumor cells in the breast to lung metastasis. *Cancer Research*, 80 (2): 163-169 ***(Featured in Cancer Research Highlights)***

35. Kilinc AN, Kalathur RK, Sugiyama N, Antonaidis H, Birogul H, Ishay-Ronen D, George JT, Levine H, **Jolly MK**, Christofori G (2020). Histone deactylases, Mbd3/NuRD and Tet2 hydroxylase are crucial regulators of epithelial-mesenchymal plasticity and tumor metastasis. *Oncogene*, 39: 1498-1513

36. Sarkar S, Sinha SK[#], Levine H[#], **Jolly MK**[#], Dutta PS[#] (2019). Anticipating critical transitions in epithelial-hybrid-mesenchymal cell fate determination. *Proceedings of the National Academy of Sciences USA (PNAS)*, 116 (52): 26343-26352

37. Thangavel H, Angelis CD, Vasaikar S, Bhat R, **Jolly MK**, Nagi C, Creighton CJ, Chen F, Dobrolecki LE, George JT, Kumar T, Abdulkareem NM, Mao S, Nardone A, Rimawi M, Obsorne K, Lewis MT, Levine H, Zhang B, Schiff R, Giuliano M, Trivedi MV (2019). A CTC-cluster-specific signature derived from OMICS analysis of patient-derived xenograft tumors predicts outcomes in basal-like breast cancers. *Journal of Clinical Medicine*, 8 (11): 1772

38. Kang T, Bocci F, **Jolly MK**, Levine H, Onuchic JN, Levchenko A (2019). Pericytes enable effective angiogenesis in the presence of pro-inflammatory signals. *Proceedings of the National Academy of Sciences USA (PNAS)*, 116 (47): 23551-23561

39. Kalvala A, Wallet P, Yang L, Wang C, Li H, Nam A, Nathan A, Mambetsariev I, Poroyko V, Gao H, Chu P, Sattler M, Bild A, Manuel ER, Lee PP, **Jolly MK**, Kulkarni P, Salgia R. Phenotypic Switching of Naïve T cells to Immune-suppressive Treg-like Cells by Mutant KRAS (2019). *Journal of Clinical Medicine,* 8 (10): 1726

40. Celia-Terrassa T[#], **Jolly MK[#]** (2019). Cancer Stem Cells and Epithelial-to-Mesenchymal Transition in Cancer Metastasis. *Cold Spring Harb Perspect Med*, in press

41. **Jolly MK[#]**, Celia-Terrassa T[#] (2019). Dynamics of phenotypic heterogeneity associated with EMT and stemness during cancer progression. *Journal of Clinical Medicine,* 8 (10): 1542

42. Bocci F, **Jolly MK[#]**, Onuchic JN[#] (2019). A biophysical model uncovers the size distribution of circulating tumor cell clusters across cancer types. *Cancer Research*, 79 (21): 5527-5535

43. Nath B, Bidkar AP, Kumar V, Dalal A, **Jolly MK**, Ghosh SS, Biswas G (2019). Deciphering hydrodynamic and drug-resistant behaviors of metastatic EMT breast cancer cells moving in a constricted microcapillary. *Journal of Clinical Medicine*, 8 (8): E1194

44. Saxena K, Subbalakshmi A R, **Jolly MK[#]** (2019). Phenotypic heterogeneity in circulating tumor cells and its prognostic value in metastasis and overall survival. *EBiomedicine,* 46: 4-5

45. Jia W, Deshmukh A, Mani SA, **Jolly MK[#]**, Levine H[#]. (2019). A possible role for epigenetic feedback regulation in the dynamics of the Epithelial-Mesenchymal Transition (EMT). *Physical Biology*, 16 (6): 066004

46. Saxena K, **Jolly MK[#]** (2019). Acute vs. chronic vs. cyclic hypoxia: their differential dynamics, molecular mechanisms, and effects on tumor progression. *Biomolecules,* 9 (8): 339

47. Mambetsariav I, Mirzapoiazova T, Lennon F, **Jolly MK**, Li H, Nasser MW, Vora L, Kulkarni P, Batra SK, Salgia R (2019). Small cell lung cancer therapeutic responses through fractal measurements: from radiology to mitochondrial biology. *Journal of Clinical Medicine,* 8 (7): E1038

48. Bocci F*,Tripathi SC*, Vilchez S*, George JT, Casabar JC, Wong PK, Hanash SM, Levine H[#], Onuchic JN[#], **Jolly MK[#]** (2019). NRF2 inhibits a complete epithelial-mesenchymal transition and is maximally expressed in a hybrid epithelial/mesenchymal phenotype. *Integrative Biology,* 11 (6): 251-263

49. Varankar S, More M, Ancy A, Pansare K, Kumar B, Narayanan NJ, **Jolly MK**, Mali AM, Bapat SA (2019). Functional balance between Tcf21-Slug defines cellular plasticity and migratory modalities in high grade serous ovarian cancer cell lines. *Carcinogenesis*, in press

50. Jia D, Li X, Bocci F, Tripathi S, Deng Y, **Jolly MK[#]**, Onuchic JN[#], Levine H[#] (2019). Quantifying cancer epithelial-mesenchymal plasticity and its association with stemness and immune response. *Journal of Clinical Medicine,* 8 (5): 725

51. Lin X, Kulkarni P[#], Bocci F, Schafer N, Roy S, Tsai M-Y, He Y, Chen Y, Rajagopalan K, Mooney SM, Zeng Y, Weninger K, Grishaev A, Onuchic JN[#], Levine H, Wolynes PG, Salgia R, Rangarajan G, Uversky V, Orban J[#], **Jolly MK[#]** (2019). Structural and Dynamical Order of a Disordered Protein: Molecular Insights into Conformational Switching of PAGE4 at the Systems Level. *Biomolecules*, 9(2): E77

52. Xu S, Ware KE, Ding Y, Kim SY, Sheth M, Chan W, Townsend J, Armstrong AJ, Eward WC, **Jolly MK[#]**, Somarelli JA[#]. An integrative systems biology and experimental approach identifies convergence of gene expression circuitry on alterations in epithelial plasticity, metabolism, and autophagy to promote chemoresistance (2019). *Journal of Clinical Medicine,* 8 (2): 205 ***(Cover article)***

53. **Jolly MK***, Ware KA*, Xu S, Gilja S, Shetler S, Yang Y, Wang X, Austin RG, Runyambo D, Hish AJ, Dewitt SB, George JT, Kruelen RT, Boss M-K, Lazarides AL, Kerr DL, Gerber DG, Sivaraj D, Armstrong AJ, Dewhirst MW,

Eward WC, Levine H, Somarelli JA (2019). E-cadherin represses anchorage-independent growth in sarcomas through both signaling and mechanical mechanisms. *Molecular Cancer Research*, 17 (6): 1391-1402

54. Shinde A, Hardy SD, Kim D, Akhand SS, **Jolly MK**, Wang WH, Anderson JC, Khodadadi RB, Brown WS, George JT, Liu S, Wan J, Levine H, Willey CD, Krusemark CJ, Geahlen RL, Wendt MK (2019). Spleen tyrosine kinase-mediated autophagy is required for epithelial-mesenchymal plasticity and metastasis in breast cancer. *Cancer Research*, 79 (8): 1832-1843 ***(Cover article)***
55. Hewelt B, Li H, **Jolly MK**, Kulkarni P, Mambetsariev I, Salgia R (2019). The DNA walk and its demonstration of deterministic chaos – relevance to genomic alterations in lung cancer. *Bioinformatics*, 35 (16): 2738-2748
56. Bocci F, Levine H, Onuchic JN, **Jolly MK**[#] (2019). Deciphering the dynamics of epithelial-hybrid-mesenchymal transition and cancer stem cells in tumor progression. *Current Stem Cell Reports*, 5 (1): 11-21
57. Li X*, **Jolly MK***, George JT, Pienta KJ, Levine H (2019). Computational modeling of the crosstalk between differently polarized macrophages and tumor cell plasticity in a tumor microenvironment. *Frontiers in Oncology*, 9: 10
58. Jia D*, George JT*, Tripathi SC, Kundnani DL, Lu M, Hanash SM, Onuchic JN, **Jolly MK**[#], Levine H[#] (2019). Testing the gene expression classification of the EMT spectrum. *Physical Biology*, 16 (2): 025002
59. Bocci F*, Gearhart-Serna L*, Boareto M, Riberio M, Ben-Jacob E, Devi GR[#], Levine H[#], Onuchic JN[#], **Jolly MK**[#] (2019). Towards understanding cancer stem cell heterogeneity in the tumor microenvironment *Proceedings of National Academy of Sciences USA (PNAS)*, 116 (1): 148-157
60. Biswas K, **Jolly MK**[#], Ghosh A[#] (2019). Stability and mean residence times for hybrid epithelial/mesenchymal phenotype. *Physical Biology*, 16(2): 025003
61. **Jolly MK**[#], Somarelli JA, Sheth M, Biddle A, Tripathi SC, Hanash SM, Armstrong AJ, Bapat SA, Rangarajan A, Levine H[#] (2019). Hybrid epithelial/mesenchymal phenotype promote metastasis and therapy resistance across carcinomas. *Pharmacology & Therapeutics*, 194: 161-184
62. Eapen MS, Hansbro PM, Callerfelt A-K L, **Jolly MK**, Myers S, Sharma P, Markos J, Chia C, Larby J, Haug G, Hardikar A, Weber HC, Mabeza G, Cavalheri V, Khor YH, McDonald CF, Sohal SS (2018). Chronic obstructive pulmonary disease (COPD) and lung cancer: underlying pathophysiology and new therapeutic modalities. *Drugs*, 78 (16): 1717-1740
63. **Jolly MK***, Preca BT*, Tripathi SC*, Jia D, George JT, Hanash SM, Brabletz T, Stemmler MP, Maurer J, Levine H (2018). Regulation of epithelial-mesenchymal plasticity through interconnected feedback loops between ZEB1, ESRP1, HAS2, and CD44. *APL Bioengineering*, 2 (3): 031908 *(Among the 'Top cited articles in 2019')*
64. **Jolly MK**, Mani SA, Levine H (2018). Hybrid epithelial/mesenchymal phenotype(s): the 'fittest' phenotype(s) for metastasis? *BBA Reviews on Cancer*, 1870 (2): 151-157
65. Bocci F, **Jolly MK**, George JT, Levine H, Onuchic JN (2018). A mechanism-based computational model to capture the interconnections among epithelial-mesenchymal transition, cancer stem cells, and Notch-Jagged signaling. *Oncotarget*, 9 (52): 29906-29920 *(Highlighted in News & Views)*
66. Tripathi S, **Jolly MK**, Woodward WA, Levine H, Deem MW (2018). Analysis of hierarchical organization in gene expression networks reveal underlying principles of collective tumor cell dissemination and metastatic aggressiveness of inflammatory breast cancer (2018). *Frontiers in Oncology*, 8: 244
67. Salgia R, **Jolly MK**, Dorff T, Lau C, Weninger K, Orban J, Kulkarni P (2018). Prostate-associated Gene 4 (PAGE4): leveraging the conformational dynamics of a dancing protein cloud as a therapeutic target. *Journal of Clinical Medicine*, 7 (6): 156

68. Lin X, Roy S, **Jolly MK**, Bocci F, Schafer N, Tsai MY, Kulkarni P, Orban J, Grishaev A, Weninger K, Rangarajan G, Levine H, Onuchic JN (2018). PAGE4 and conformational switching: insights from molecular dynamics simulations and implications for prostate cancer. *Journal of Molecular Biology*, 430 (16): 2422-2438
69. **Jolly MK**, Kulkarni P, Weninger K, Orban J, Levine H (2018). Phenotypic plasticity, bet-hedging, and androgen independence in prostate cancer: role of non-genetic heterogeneity. *Frontiers in Oncology*, 8: 50
70. Evans MK, Brown M, Geradts J, Bao X, Robinson TJ, **Jolly MK**, Vermeulen PB, Palmer G, Gromeier M, Levine H, Morse MA, van Laere SJ, Devi GR (2018). Crosstalk between MNK and XIAP mediates NFkB activity to promote a hyperproliferative breast cancer phenotype. *Cancer Research***,** 78 (7): 1726-1738
71. George JT*, **Jolly MK***, Xu S, Somarelli JA, Levine H (2017). Survival outcome in cancer patients predicted by a partial EMT gene expression scoring metric. *Cancer Research*, 77 (22): 6415-6428
72. Bocci F*, **Jolly MK***, Tripathi SC*, Aguilar M, Hanash SM, Levine H, Onuchic JN (2017). Numb inhibits a complete epithelial-mesenchymal transition by modulating Notch signaling. *Journal of the Royal Society Interface***,** 14 (136): 20170512
73. **Jolly MK**[#], Boareto M, Debeb B, Aceto N, Farach-Carson MC, Woodward WA, Levine H[#] (2017). Inflammatory Breast Cancer: a model for investigating cluster-based dissemination. *NPJ Breast Cancer*, 3: 21
74. Kulkarni P, **Jolly MK**, Jia D, Mooney SM, Bhargava A, Kagohara LT, Chen Y, Hao P, He Y, Veltri RW, Grishaev A, Weninger K, Levine H, Orban J (2017). Phosphorylation-induced conformational dynamics in an intrinsically disordered protein and its potential role in phenotypic heterogeneity. *Proceedings of the National Academy of Sciences USA (PNAS)*, 114 (13): E2644-E2653
75. Jia D, **Jolly MK**, Harrison W, Boareto M, Ben-Jacob E, Levine H (2017). Operating principles of tristable circuits regulating cellular differentiation. *Physical Biology*, 14: 035007
76. Jia D, **Jolly MK**, Tripathi SC, Hollander DP, Huang B, Lu M, Celiktas M, Ramirez-Pena E, Ben-Jacob E, Onuchic JN, Hanash SM, Mani SA, Levine H (2017). Distinguishing mechanisms underlying EMT Tristability. *Cancer Convergence*, 1: 2
77. **Jolly MK**, Tripathi SC, Somarelli JA, Hanash SM, Levine H (2017). Epithelial-mesenchymal plasticity: how have quantitative mathematical models helped improve our understanding? *Molecular Oncology*, 11 (7): 739-754
78. **Jolly MK**, Ware K, Gilja S, Somarelli JA, Levine H (2017). EMT and MET: necessary or permissive for metastasis? *Molecular Oncology*, 11 (7): 755-769
79. **Jolly MK**, Ward C, Eapen MS, Myers S, Hallgren O, Levine H, Sohal S (2017). Epithelial mesenchymal transition (EMT), a spectrum of states: role in both lung development and disease. *Developmental Dynamics*, 247 (3): 346-358
80. **Jolly MK**, Levine H (2017) Computational systems biology of epithelial-hybrid-mesenchymal transitions. *Current Opinion in Systems Biology*, 3: 1-6
81. Jia D, **Jolly MK**, Kulkarni P, Levine H (2017). Phenotypic plasticity and cell-fate decisions in cancer: insights from dynamical systems theory. *Cancers*, 9 (7): 70
82. Mooney SM*, Talebian V*, **Jolly MK***, Jia D*, Gromala M, Levine H, McConkey BJ (2017). GRHL2/ZEB feedback loop – a key axis in the regulation of EMT in breast cancer. *Journal of Cellular Biochemistry*, 118 (9): 2559-2570
83. Tripathi SC, Fahrmann JF, Celiktas M, Aguilar M, Marini KM, **Jolly MK**, Katayama H, Wang H, Murage EN, Dennison JB, Watkins N, Levine H, Ostrin EJ, Taguchi A, Hanash SM (2017). MCAM mediates chemoresistance in small cell lung cancer via PI3K/AKT/SOX2 Signaling Pathway. *Cancer Research*, 77 (16): 4414-4425

84. Ware KE, Gilja S, Xu S, Shetler S, **Jolly MK**, Wang X, Bartholf-Dewitt S, Hish AJ, Jordan S, Eward W, Levine H, Armstrong AJ, Somarelli JA (2017). Induction of mesenchymal-epithelial transitions in sarcoma cells. *Journal of Visualized Experiments,* 112
85. Somarelli JA, Shelter S, **Jolly MK**, Wang S, Bartholf-Dewitt S, Hish A, Gilja S, Eward W, Ware K, Levine H, Armstrong AJ, Garcia-Blanco MA (2016). Mesenchymal-epithelial transition in sarcomas is controlled by the combinatorial expression of GRHL2 and miR-200s. *Molecular and Cellular Biology*, 36 (19): 2503-2513 ***(Cover article)***
86. Boareto M, **Jolly MK**, Goldman A, Pietila M, Mani SA, Sengupta S, Ben-Jacob E, Levine H, Onuchic JN (2016). Notch -Jagged signaling can give rise to clusters of cells exhibiting a hybrid epithelial/mesenchymal phenotype. *Journal of the Royal Society Interface*, 13 (118): 20151106
87. **Jolly MK,** Tripathi SC, Jia D, Mooney SM, Celiktas M, Mani SA, Hanash S, Pienta KJ, Ben-Jacob E, Levine H (2016). Stability of the hybrid epithelial /mesenchymal phenotype. *Oncotarget*, 7 (19): 27067-27084
88. Tripathi SC, Peters HL, Taguchi A, Katayama H, Wang H, Momin A, **Jolly MK**, Celiktas M, Rodriguez-Canales J, Liu H, Behrens C, Wistuba II, Ben-Jacob E, Levine H, Molldrem JJ, Hanash SM, Ostrin EJ (2016). Immuno-proteasome deficiency is a feature of non-small cell lung cancer with a mesenchymal phenotype and is associated with a poor outcome. *Proceedings of the National Academy of Sciences USA (PNAS)*, 113 (11): E1555-1564
89. Mooney SM, **Jolly MK**, Levine H, Kulkarni P (2016). Phenotypic plasticity in prostate cancer: the role of intrinsically disordered proteins. *Asian Journal of Andrology*, 18 (5): 704-710
90. Grigore AD*, **Jolly MK***, Jia D, Farach-Carson MC, Levine H (2016). Tumor budding: the name is EMT. Partial EMT. *Journal of Clinical Medicine*, 5(5): E51
91. Huang B, **Jolly MK**, Lu M, Tsarfaty I, Ben-Jacob E, Onuchic JN (2015). Modeling the transitions between collective and solitary migration phenotypes in cancer metastasis. *Scientific Reports*, 5: 17379 *(Recommended by F1000 faculty)*
92. Boareto M, **Jolly MK**, Ben-Jacob E, Onuchic JN (2015). Jagged mediates differences in normal and tumor angio-genesis by affecting tip-stalk fate decision. *Proceedings of the National Academy of Sciences USA (PNAS)***,** 112 (29): E3836-E3844
93. **Jolly MK***, Jia D*, Boareto M, Mani SA, Pienta KJ, Ben-Jacob E, Levine H (2015). Coupling the modules of EMT and stemness: A tunable 'stemness window' model. *Oncotarget***,** 6(28): 25161-25174
94. **Jolly MK***, Boareto M*, Lu M, Clementi C, Onuchic JN, Ben-Jacob E (2015). Operating principles of Notch-Delta-Jagged module of cell-cell communication. *New Journal of Physics*, 17: 055021
95. Jia D*, **Jolly MK***, Boareto M, Parsana P, Mooney SM, Pienta KJ, Levine H, Ben-Jacob E (2015). OVOL guides the epithelial-hybrid-mesenchymal transition. *Oncotarget*, 6 (17): 15436-15448
96. **Jolly MK**, Boareto M, Huang B, Jia D, Lu M, Onuchic JN, Ben-Jacob E, Levine H (2015). Implications of the hybrid epithelial/mesenchymal phenotype in metastasis. *Frontiers in Oncology*,5: 155
97. Boareto M, **Jolly MK**, Lu M, Onuchic JN, Clementi C, Ben-Jacob E (2015). Jagged-Delta Asymmetry in Notch Signaling can give rise to a Sender/Receiver hybrid phenotype, *Proceedings of the National Academy of Sciences USA (PNAS)*, 112 (5): E402-E409
98. **Jolly MK**, Huang B, Lu M, Mani SA, Levine H, Ben-Jacob E (2014). Towards elucidating the connection between epithelial-mesenchymal transitions and stemness, *Journal of the Royal Society Interface*, 11 (101): 20140962 *(Highlighted in National Science Foundation (NSF) News)*
99. Huang B, Lu M, **Jolly MK**, Tsarfaty I, Onuchic JN, Ben-Jacob E (2014). The three-way switch operation of Rac1/ RhoA GTPase-based circuit controlling amoeboid-hybrid-mesenchymal transition, *Scientific Reports* 4: 6449

100. Lu M*****, **Jolly MK***, Onuchic JN, Ben-Jacob E (2014). Toward Decoding the Principles of Cancer Metastasis Circuits. *Cancer Research,* 74 (17): 4574-4587

101. **Jolly MK*,#**, Rizvi MS*, Kumar A, Sinha P (2014). Mathematical modeling of sub-cellular asymmetry of Fat-Dachsous Heterodimer for generation of Planar Cell Polarity, *PLoS ONE* 9(5): e97641

102. Lu M*****, **Jolly MK***, Levine H, Onuchic JN, Ben-Jacob E (2013). MicroRNA-based regulation of epithelial-hybrid-mesenchymal cell fate determination. *Proceedings of the National Academy of Sciences USA (PNAS),* 110 (45): 18144-18149

103. Lu M, **Jolly MK**, Gomoto R, Huang B, Onuchic JN, Ben-Jacob E (2013). Tristability in Cancer Associated miRNA-TF Chimera Toggle Switch. *Journal of Physical Chemistry B,* 117 (42): 13164-13174

Book chapters:

1. Somarelli JA, Armstrong AJ, Sheth M, Ware KE, **Jolly MK** (2020). Phenotypic plasticity and lineage switching in prostate cancer. *Phenotypic switching: implications in biology and medicine.* Elsevier (Editors: Levine H, Kulkarni PK, Jolly MK, Nanjundiah V)
2. Jia D, **Jolly MK**, Levine H, Onuchic J (2020). Epithelial-Mesenchymal Transition in Cancer. *Phenotypic switching: implications in biology and medicine.* Elsevier (Editors: Levine H, Kulkarni PK, Jolly MK, Nanjundiah V)
3. Sahoo S, Subbalakshmi AR, **Jolly MK** (2020). The fundamentals of phenotypic plasticity. *Phenotypic switching: implications in biology and medicine.* Elsevier (Editors: Levine H, Kulkarni PK, Jolly MK, Nanjundiah V)
4. Tripathi S, Xing J, Levine H, **Jolly MK** (2020). Mathematical modeling of plasticity and heterogeneity in EMT. *Epithelial-to-Mesenchymal Transitions*. 'Methods in Molecular Biology' series, Springer Nature (Editors: Campbell K, Theveneau E).
5. Denisov EV, **Jolly MK**, Shubin VP, Tsukanov AS, Cherdyntseva NV (2019). Critical steps in Epithelial-Mesenchymal transition as target for cancer treatment. *Network-Based Pharmacology and Systems Approach in Bio-Medicine Polypharmacology and Complex Diseases* Series on 'Human Perspectives in Bio-Medicine and Technology', Springer Nature. (Editor: Bizzarri M, ISBN: 978-3-030-32856-6)
6. Yang Y, **Jolly MK**, Levine H (2019). Computational modeling of collective cell migration: mechanical and biochemical aspects. *Cell migrations: causes and functions, 'Advances in Experimental Medicine and Biology' series*, Springer Nature (Editors: La Porta C, Zapperi S, ISBN: 978-3-030-17592-4)
7. **Jolly MK**, Li X, Levine H (2018). Collective effects in cancer progression. *Landscapes of Collectivity in the Life Sciences*, MIT press (Editors: Gissis SB, lamm E, Shavit A; The Vienna Series in Theoretical Biology; ISBN: 9780262036856)
8. **Jolly MK**, Jia D, Levine H (2018). Modeling cell-fate decisions in biological systems: bacteriophages, hematopoietic stem cells, epithelial-to-mesenchymal transition, and beyond. *Quantitative Biology: Theory, Computational Models and examples of models***.** MIT press (Editors: Munsky B, Hlavacek W, Tsimring LS; ISBN: 9780262038089)
9. Jia D, **Jolly MK**, Levine H (2018). Uses of bifurcation analysis in understanding cellular decision-making. *Quantitative Biology: Theory, Computational Models and examples of models***.** MIT press (Editors: Munsky B, Hlavacek W, Tsimring LS; ISBN: 9780262038089)
10. Bocci F, **Jolly MK**, Levine H, Onuchic JN (2018). Quantitative characteristics of ncRNA regulation in gene regulatory networks. *Computational Biology of non-coding RNA in Biomedicine*, 'Methods in Molecular Biology' series, 1912: 341-366. Springer Nature (Editors: Lai X, Gupta SK, Vera J, ISBN: 978-1-4939-8981-2).

CONFERENCES, SEMINARS, WORKSHOPS

Invited Talks:

1. *How do cancer cells make decisions during metastasis? (Causes and consequences of multistability in cancer metastasis),* Center for Complexity and BioSystems, University of Milan, November 2020 (scheduled)
2. *Dynamical approaches to decode EMT and stemness and their implications in phenotypic heterogeneity.* XXVII Porto Cancer Meeting, University of Porto, Portugal, October 2020 (scheduled)
3. *Shapeshifters in cancer: how do tumor cells switch among different phenotypes to drive aggressive behavior?,* Computational Biology Seminar, Institute of Mathematical Sciences, October 2020
4. *Physics of cellular transitions during cancer metastasis.* Center for Models of Life, Niels Bohr Institute, September 2020
5. *Multi-scale modeling of the dynamics of cancer metastasis: a computational systems biology approach.* Mathematical and Computational Biology Seminar Series, University of Massachusetts Amherst, September 2020
6. *The Good, The Bad and The Ugly: A mathematical model investigates the differing outcomes among CoVID-19 patients.* Pravega Lecture Series, IISc Bangalore, September 2020
7. *Integrating mechanism-based and data-based approaches to identify hybrid epithelial/mesenchymal phenotypes.* Society for Mathematical Biology Annual Meeting, August 2020
8. *Mathematical modeling of cellular transitions during cancer metastasis.* School of Engineering and Technology, Christ University, August 2020
9. *Integrating mechanism-based and data-based approaches to decoding the mechanisms of non-genetic heterogeneity in cancer.* Centre for Computational Biology, IIIT Delhi, June 2020
10. *A dynamical systems approach elucidate the design principles of cancer metastasis.* Department of Chemistry, IIT Delhi, February 2020
11. *Identifying inhibitors of epithelial-mesenchymal plasticity through a systems biology approach.* Annual Meeting of Indian Association for Cancer Research (IACR), Trivandrum, February 2020
12. *Integrating mathematical models with experiments to elucidate the mechanisms of cellular plasticity during cancer metastasis.* School of Biology, IISER Thiruvananthapuram, February 2020
13. *Communication and cooperation in clusters of circulating tumor cells: the key drivers of metastasis.* Discussion Meeting on Conflict & Cooperation in Cellular Populations, inStem, Bangalore, February 2020
14. *Origins and implications of non-genetic heterogeneity in cancer metastasis.* Department of Biological Sciences and Bioengineering (BSBE), IIT Kanpur, January 2020
15. *A systems biology approach to decoding epithelial-mesenchymal plasticity and heterogeneity in cancer metastasis.* Conference on 'Phenotypic Heterogeneity as a driver of cancer progression', IISc Bangalore, January 2020
16. *Decoding phenotypic plasticity during cancer metastasis: can mathematical models help understand cancer biology?* Molecular Biology and Genetics Unit, JNCASR, December 2019
17. *Elucidating the nonlinear dynamics of cancer metastasis: an integrated computational-experimental approach.* Conference on Nonlinear Dynamics and Systems, IIT Kanpur, December 2019
18. *Decoding the (nonlinear) dynamics of cellular plasticity during cancer metastasis.* Indian Academy of Sciences Discussion Meeting on 'Unraveling cellular processes – models and experiments', Coorg, December 2019
19. *Computational systems biology of cancer metastasis: decoding the nonlinear dynamics of cancer cell plasticity.* The Systems Biology Institute, Tokyo, November 2019
20. *Cancer as a complex adaptive dynamic system.* IISc-RGUHS Molecular Biology Training Program, IISc Bangalore, November 2019
21. *Dynamical systems biology of cellular plasticity and heterogeneity during cancer metastasis.* Department of Chemical Engineering, IIT Bombay, October 2019
22. *Using design principles of epithelial-mesenchymal plasticity to identify novel targets for cancer metastasis.* Annual Conference of Biological Engineering Society (BESCON), IIT Madras, October 2019
23. *United cancer cells stand, divided they fall: decoding mechanisms of collective cell migration during cancer metastasis.* Symposium on Collective Behavior, Centre for Ecological Sciences, IISc Bangalore, September 2019

24. *Mathematical modeling of cellular plasticity and heterogeneity during cancer metastasis.* Department of Chemical Engineering, IISc Bangalore, August 2019
25. *Computational systems biology of cancer metastasis: decoding the nonlinear dynamics of cancer cell plasticity.* School of Mechanical Sciences, IIT Goa, August 2019
26. *Dynamical Systems Biology of Cancer Metastasis*. Discussion Meeting on Mathematical and Statistical Explorations in Disease Modeling and Public Health, ICTS Bangalore, July 2019
27. *An iterative theoretical-experimental approach to decode the dynamics of cellular plasticity.* Institute of Bioinformatics, Bangalore, July 2019
28. *Understanding the dynamics of simple biological networks.* 7th Annual Monsoon School on 'Physics of Life', NCBS Bangalore, June 2019
29. *Dynamical Systems Biology of Cancer Metastasis*. Molecular Biophysics Unit, IISc Bangalore, June 2019
30. *Computational Systems Biology of Cancer Metastasis: Can mathematical modeling help understand cancer progression?* Department of Chemical Engineering, IIT Kanpur, June 2019
31. *Dynamical Systems Biology of Cancer Metastasis*. Department of Chemical Engineering, IIT Madras, May 2019
32. *Computational Systems Biology of cellular plasticity during cancer metastasis.* Institute of Bioinformatics and Applied Biotechnology (IBAB), Bangalore, April 2019
33. *Linear Algebra and Nonlinear Dynamics in Biological Systems.* Workshop on Linear Algebra for Engineering Applications and Hands-on Training with MATLAB, Bangalore Institute of Technology, Bangalore, April 2019
34. *Dynamical systems biology of cellular plasticity during cancer metastasis.* National Conference on Emerging Trends in Disease Model Systems, National Center for Cell Science (NCCS) Pune, March 2019
35. *A theoretical biophysicist looks at cancer metastasis.* Annual Meeting of Indian Biophysical Society (IBS), IISER Kolkata, March 2019
36. *Hybrid epithelial/mesenchymal phenotype: 'fittest' for metastasis?* Annual Meeting of Indian Association for Cancer Research (IACR), PGIMER Chandigarh, March 2019
37. *Computational Systems Biology of Cancer Metastasis: Can mathematical modeling help understand cancer progression?* Department of Biological Sciences, IISER Mohali, February 2019
38. *A dynamical systems approach to decode cancer metastasis.* Department of Chemistry, IIT Ropar, February 2019
39. *Can mathematical modeling help understand cancer progression?* IISc (Indian Institute of Science) - CMC (Christian Medical College) Conclave, IISc, Bangalore, January 2019
40. *Introduction to mathematical modeling in cancer biology.* Workshop on 'Phenotypic Heterogeneity in Cancer Progression', Indian Institute of Science (IISc), Bangalore, January 2019
41. *A systems biology approach to understand tumor heterogeneity: EMT and CSCs.* UGC-UKIERI workshop on 'Tumor Microenvironment in Cancer Research', University of Hyderabad, November 2018
42. *Fifty (or more) shades of EMT: a systems biology perspective*. Indo-Australia Symposium on Epithelial-Mesenchymal Transition, National Center for Cell Science (NCCS) Pune, October 2018
43. *Hybrid epithelial/mesenchymal phenotype and cluster-based dissemination in inflammatory breast cancer*. Morgan Welch Inflammatory Breast Cancer Research Program, UT MD Anderson Cancer Center, September 2018
44. *Quantitative Systems Biology: examples from embryonic development to cancer metastasis*. Annual Meeting on Physics of Living Systems (iPoLS), Houston, June 2018
45. *A theoretical (bio) physicist looks at cancer metastasis.* Indian Institute of Science Education and Research (IISER) Pune, May 2018
46. *Computational systems biology of cellular transitions during cancer metastasis.* NCCS Pune, May 2018
47. *Computational modeling of epithelial-mesenchymal plasticity: can theory help understand cancer biology?* American Association for Cancer Research (AACR) Annual Meeting, Chicago, April 2018
48. *Hybrid epithelial/mesenchymal phenotype – the 'metastatic sweet spot'. 8th Annual Physics of Cancer Symposium,* Leipzig, Germany, October 2017

49. *Mathematical modeling in cancer biology: can theory help understand cancer?* Hematology/Oncology Grand Rounds, Duke University, Durham, April 2017
50. *Implications of hybrid epithelial/mesenchymal phenotype in metastasis: how can theory help understand cancer biology better?* Philippines Genome Center (Webinar), June 2016
51. *Clusters of circulating tumor cells: primary 'bad agents' of metastasis*. 9th Annual q-bio Summer School, Fort Collins, July 2015
52. *Modeling the phenotypic plasticity of metastatic cancer stem cells*. Annual Meeting of Society of Mathematical Biology, Atlanta, July 2015
53. *Looking at epithelial plasticity from a physicist's perspective*. University of Texas Health Science Center, Houston, October 2014

Contributed Talks:

1. *Mechanistic modeling of the SARS-CoV-2 and immune system interplay unravels design principles for diverse clinicopathological outcomes*. Canadian Applied and Industrial Mathematical Society (CAIMS) Coronavirus Modelling e-Conference, June 2020
2. *Origins of conformational switching of PAGE4, and its implications in generating non-genetic heterogeneity in prostate cancer cells.* EMBO workshop on 'Intrinsically Disordered Proteins: From molecules to systems', IISc Bangalore, December 2019
3. *Identifying inhibitors of epithelial-mesenchymal plasticity through a network-based mathematical modeling approach.* 9th Biennial Meeting of the EMT International Association (TEMTIA), Kumamoto, November 2019
4. *An integrated multi-scale modeling approach reveals the mechanisms of cancer metastasis.* Conference on Multiscale Simulation & Mathematical Modelling of Complex Biological Systems, JNU New Delhi, January 2019
5. *Quantifying epithelial-mesenchymal plasticity during cancer metastasis and its association with patient survival*. 14th Indo-Australian Biotechnology Conference, ACTREC Mumbai, October 2018
6. *Quantifying epithelial-mesenchymal plasticity during cancer metastasis and its association with patient survival*. Annual Meeting of Systems Biology of Human Diseases, Los Angeles, June 2018
7. *Identifying intercellular phenotypic stability factors for a hybrid epithelial/mesenchymal phenotype.* American Association for Cancer Research (AACR) Annual Meeting, Chicago, April 2018
8. *Quantifying epithelial-mesenchymal plasticity during cancer metastasis and its association with patient survival.* Annual winter q-bio meeting, Hawaii, February 2018
9. *Computational systems biology of cellular transitions during cancer metastasis.* International Symposium on Systems, Synthetic, and Chemical Biology, Kolkata, December 2017
10. *Quantifying epithelial-mesenchymal plasticity in cancer and its association with poor survival.* 18th International Conference on Systems Biology, Blacksburg, August 2017
11. *Quantifying epithelial-mesenchymal plasticity during cancer progression*. Annual Meeting of Society of Mathematical Biology, Salt Lake City, July 2017
12. *Stability and stemness of a hybrid epithelial/mesenchymal phenotype*. American Association for Cancer Research (AACR) Annual Meeting, Washington DC, April 2017
13. *Inflammatory Breast Cancer: a model for investigating cluster-based dissemination*. 10th Annual Morgan Welch Inflammatory Breast Cancer Meeting, UT MD Anderson Cancer Center, February 2017
14. *Network motifs that stabilize the hybrid epithelial/mesenchymal phenotype*. American Physical Society (APS) March Meeting, Baltimore, March 2016

Workshops/Summer Schools Attended:

1. Physicists working on cancer, Weizmann Institute of Science, Rehovot, July 2018
2. 8th Annual q-bio Summer School (Theme: Stochastic Gene Regulation), Albuquerque, July 2014
3. SERC School on Introduction to Systems and Synthetic Biology, IIT Bombay, April-May 2012

Poster Presentations:

1. *Quantifying epithelial-mesenchymal plasticity and its association with patient survival.* 17th Biennial Meeting of Metastasis Research Society, Princeton University, July 2018
2. *Quantifying epithelial-mesenchymal plasticity and its association with patient survival*. 11th Annual q-bio Meeting, Rutgers University, July 2017
3. *Implications of stable hybrid epithelial/mesenchymal phenotype in cancer metastasis*. Keystone Meeting on Cell Plasticity within the Tumor Microenvironment, Big Sky, January 2017
4. *Coupling the Decision-making of EMT and Stemness: A Flexible 'Stemness Window' Model*. CPRIT Conference on Innovations in Cancer Prevention and Research, Austin, November 2015
5. *Stemness and stability in the hybrid epithelial/mesenchymal phenotype.* 2nd Annual Hallmarks of Cancer Symposium, Rice University, Houston, October 2015
6. *Stemness in the hybrid epithelial/mesenchymal phenotype*. Gordon Research Conference (GRC) on Stem Cells and Cancer, Ventura, February 2015
7. *Coupled decision-making of EMT and stemness: a bottom-up regulatory model*. American Association for Cancer Research (AACR) meeting on Computational & Systems Biology, San Francisco, February 2015
8. *Stemness in epithelial, hybrid epithelial/mesenchymal and mesenchymal phenotypes*. 11th Annual Computational and Theoretical Biology Symposium, Rice University, December 2014
9. *Modeling the association between epithelial-mesenchymal transition (EMT) and stemness*. 8th Annual q-bio Meeting, Santa Fe, August 2014
10. *Characterizing the hybrid epithelial/mesenchymal phenotype: collective migration of carcinoma cells*. 1st Annual Bioengineering Graduate Student Symposium, Rice University, May 2014
11. *Hybrid Epithelial/Mesenchymal Phenotype and Epithelial Plasticity: Role of (miR-200/ZEB)*. 105th Annual Meeting of American Association for Cancer Research (AACR), San Diego, April 2014
12. *Tristable 'three-way' miR-TF toggle switch: The hybrid epithelial/mesenchymal phenotype*. *Meeting on Translating Cancer Data and Models to Clinical Practice, Institute for Pure & Applied Mathematics, UCLA, Los Angeles, February 2014*
13. *Tristability in miR-TF toggle switch: The hybrid epithelial/mesenchymal phenotype*. 10th Annual Computational and Theoretical Biology Symposium (CTBS), Rice University, Houston, December 2013
14. *Mathematical modeling of global regulation of PCP in Drosophila*. International Conference on Mathematical and Theoretical Biology, Pune, January 2012
15. *Modeling the global regulation of Planar Cell Polarity in wing epithelium*. 12th International Conference on Systems Biology (ICSB), Heidelberg/Mannheim, August 2011
16. *Keeping the hair aligned: Mathematical modeling of global module of Planar Cell Polarity*. International Conference on Mathematical Biology, Indian Institute of Science, Bangalore, July 2011

PROFESSIONAL MEMBERSHIP AND SERVICE

Reviewed manuscripts for following **50+ journals**: Proceedings of National Academy of Sciences, Bioinformatics, eLife, Scientific Reports, Journal of Laboratory Automation, Tumor Biology, Journal of Cancer, Biosystems, Cancer Convergence, Artificial Intelligence in Medicine, Cancer Informatics, Systems and Synthetic Biology, Experimental and Molecular Pathology, Biomedicine and Pharmacotherapy, International Journal of Cancer, Communications Biology, Physical Biology, Phytomedicine, Oncotarget, PLoS Computational Biology, Journal of Cancer Metastasis and Treatment, BMC Cancer, Cancer Medicine, NPJ Systems Biology & Applications, Oncogenesis, International Journal of Molecular Sciences, Aging, Bioengineered, OncoImmunology, FEBS Letters, BBA Molecular Cell Research, Cancer Microenvironment, Cancer Drug Resistance, Current Opinion in Systems Biology, Journal of Theoretical Biology, European Journal of Pharmacology, iScience, British Journal of Cancer, Cells, Neoplasia, Frontiers in Cell and

Developmental Biology, Cancer Cell International, Biophysical Journal, BMC Molecular and Cell Biology, Chemico-Biological Interactions, Journal of Oncology, Aging, Frontiers in Bioengineering and Biotechnology, OncoTargets and Therapy, BMC Complementary Medicine and Therapies, Gastroenterology Research and Practice, BBA Molecular Cell Research, Journal of Cellular Physiology, Journal of Nutritional Biochemistry

Organizer, mini-symposium on 'Integrative approaches to quantify non-genetic heterogeneity in cancer' at the Annual Meeting of European Conference on Mathematical and Theoretical Biology (ECMTB), Heidelberg Aug 2020
Organizing Committee Member, Phenotypic Heterogeneity as a Driver of Cancer Progression, Bangalore Jan 2020
Organizer, mini-symposium on 'Mathematical modeling of epithelial-mesenchymal plasticity and related cellular traits' at the Annual Meeting of Society of Mathematical Biology (SMB), Montreal July 2019
Organizing Committee Member, Phenotypic Heterogeneity as a Driver of Cancer Progression, Bangalore Jan 2019
Organizer, mini-symposium on 'Quantifying genetic and non-genetic heterogeneity during cancer evolution' at European Conference on Mathematical and Theoretical Biology (ECMTB), Lisbon July 2018
Organizer, mini-symposium on 'Quantifying phenotypic plasticity in cancer cells' at the Annual Meeting of Society of Mathematical Biology (SMB), Salt Lake City July 2017

Guest Editor, Special Issue on 'Mesenchymal-Epithelial Transition in cellular reprogramming and cancer', Cancers (ongoing)
Guest Editor, Special Issue on 'Latest Advances in Mathematical Biology and Cancer Systems Biology', Journal of Clinical Medicine (ongoing)
Guest Editor, Frontiers Research Topic on 'Characterizing the multi-faceted role of tumor cell plasticity' (ongoing)
Guest Editor, Special Issue on 'Epithelial-Mesenchymal Plasticity in Cancer Metastasis: Molecular reprogramming, cellular adaptation, and clinical implications', Journal of Clinical Medicine (25 articles; June 2020)
Co-editor, Book on 'Phenotypic plasticity: Implications in biology and medicine', Elsevier Publishing (28 chapters)
Guest Editor, Vol 100 No 3 (Theme: Phenotypic Plasticity), Journal of Indian Institute of Science (10 articles)

Member of following national/international societies:
American Association for Cancer Research
Society of Mathematical Biology
The International EMT (Epithelial Mesenchymal Transition) Association
American Physical Society
Society of Biological Chemists (India)
European Society of Mathematical and Theoretical Biology

TEACHING

At IISc, Bangalore:
Guest Lecturer, RD 204 (Principles of Signal Transduction in Biological Systems) Aug-Dec 2019
Instructor, BE 213 (Fundamentals of Bioengineering I) Aug-Dec 2019
Guest Lecturer, MC 210/RD 206 (Molecular Oncology) Jan-Apr 2019
Instructor for Systems Biology module in BE 208 (Fundamentals of Bioengineering: 7 lectures) Jan-Apr 2019

At Rice University:
Guest Lecturer, BIOE/C 4/560 (Cancer Biology), Rice University 2016 – 2018
Teaching Assistant, BIOE 372 (Biomechanics), Rice University 2014
Teaching Assistant, BIOE 322 (Fundamentals of Systems Physiology), Rice University 2013
Teaching Assistant, BIOE 444 (Mechanical Lab Testing Module), Rice University 2013