NC STATE UNIVERSITY

Comparative Medicine Institute

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Title:

Research emphasis:

Dr. Somarelli's research focuses on metastasis, the process by which cancer cells disseminate and colonize throughout the body. He is specifically interested in understanding 1. How alternative splicing and transcriptional regulation contribute to cancer progression and metastasis; and 2. How phenotypic plasticity drives metastatic dissemination and colonization.

Application:

- Pre-mRNA splicing
- Control of gene regulation
- Phenotypic plasticity
- Animal models of cancer

Collaboration potential:

- RNA in cancer
- Studies of phenotypic transitions during development, wound healing, fibrosis, and cancer progression

Selected publications:

Somarelli, J. A., Schaeffer, D., Bosma, R., Bonano, V. I., Wook Sohn, J., Kemeny, G., Ettyreddy, A., and Garcia-Blanco, M. A. 2013. Fluorescence-based alternative splicing reporters for the study of epithelial plasticity *in vivo*. *RNA*. 19:116-127.

Somarelli, J. A.†, Schaeffer, D., Marengo, M. S., Bepler, T., Rouse, D., Ware, K. E., Hish, A. J., Zhao, Y., Buckley, A. F., Epstein, J. I., Armstrong, A. J., Virshup, D. M. and Garcia-Blanco, M. A.† 2016. Distinct routes to metastasis: plasticity-dependent and plasticity-independent pathways. *Oncogene*. doi: 10.1038/onc.2015.497. [Epub ahead of print].

Ware, K. E., **Somarelli, J. A.**, Schaeffer, D., Li, J., Zhang, T., Park, S., Patierno, S., Freedman, J., Garcia-Blanco, M. A., Armstrong, A. J. 2016. Snail regulates androgen receptor biology and enzalutamide resistance in prostate cancer. *Oncotarget*. In press.

Somarelli, J. A. †, Shetler, S., Jolly, M. K., Wang, S., Bartholf Dewitt, S., Hish, A. J., Gilja, S., Eward, W., Ware, K. E., Levine, H., Armstrong, A. J., and Garcia-Blanco, M. A. 2016. Mesenchymal-epithelial transition in sarcomas is controlled by combinatorial expression of miR200s and GRHL2. *Molecular and Cellular Biology*. In press.