2017 Fall Semester Schedule

GMS6647 **Transcriptional and Translational Control of Cell Growth and Proliferation**

Course Directors: Drs. Yi Qiu (qiuy@ufl.edu) and Daiqing Liao (dliao@ufl.edu)

Room: DG-41, Tuesday and Thursday 2PM-3:30PM

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| **Date** | **Lecturer and lecture title** | **Student Presenter** | **Paper for presentation/further reading** |
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| Tuesday Sept 26 | Dr. Jorg Bungert (Introduction to transcription and translation) |  | No paper discussion |
| Thursday Sep. 28 | Dr. Rene Opavsky (DNA methylation in cancer) |  | Thienpont B et al., Tumour hypoxia causes DNA hypermethylation by reducing TET activity. Nature, 2016, 537:63-68 |
| Tuesday Oct 3 | Dr. Yi Qiu (Histone modifications in gene expression and cancer) |  | Chiacchiera F, Rossi A, Jammula S, Piunti A, Scelfo A, Ordóñez-Morán P,  Huelsken J, Koseki H, Pasini D. Polycomb Complex PRC1 Preserves Intestinal Stem Cell Identity by Sustaining Wnt/β-Catenin Transcriptional Activity. Cell Stem Cell. 2016 Jan 7;18(1):91-103. |
| Thursday Oct. 5 | Dr. Satya Narayan  (Tumor suppressor p53 in the control of cell proliferation) |  | No paper discussion |
| Tuesday Oct 10 | Dr. Jianrong Lu (Epigenetic regulation of EMT) |  | Sciacovelli M, Gonçalves E, Johnson TI, Zecchini VR, da Costa AS, Gaude E, Drubbel AV, Theobald SJ, Abbo SR, Tran MG, Rajeeve V, Cardaci S, Foster S, Yun H, Cutillas P, Warren A, Gnanapragasam V, Gottlieb E, Franze K, Huntly B, Maher ER, Maxwell PH, Saez-Rodriguez J, Frezza C. Fumarate is an epigenetic modifier that elicits epithelial-to-mesenchymal transition.  Nature. 2016 Aug 31. doi: 10.1038/nature19353. [Epub ahead of print] |
| Thursday Oct. 12 | Dr. Eric Vitriol (Actin cytoskeleton in cell growth) |  | Le HQ, Ghatak S, Yeung CY, Tellkamp F, Günschmann C, Dieterich C, Yeroslaviz A, Habermann B, Pombo A, Niessen CM, Wickström SA.  Mechanical regulation of transcription controls Polycomb-mediated gene silencing during lineage commitment. Nat Cell Biol. 2016 Aug;18(8):864-75. doi: 10.1038/ncb3387. Epub 2016 Jul 11. |
| Tuesday Oct 17 | Dr. Daiqing Liao (Translational control and Cancer) |  | No paper discussion |
| Thursday Oct. 19 | Dr. Shuang Huang (role of miRNA in cell proliferation and survival) |  | Han C, Liu Y, Wan G, Choi HJ, Zhao L, Ivan C, He X, Sood AK, Zhang X, Lu X. The RNA-binding protein DDX1 promotes primary microRNA maturation and inhibits ovarian tumor progression. Cell Rep. 2014 Sep 11;8(5):1447-60. |
| Tuesday Oct 24 | Dr. Suming Huang (Long Noncoding RNA in development and cancer) |  | Deng C, Li Y, Zhou L, Cho J, Patel B, Terada N, Li Y, Bungert J, Qiu Y, Huang S. HoxBlinc RNA Recruits Set1/MLL Complexes to Activate Hox Gene Expression Patterns and Mesoderm Lineage Development.  Cell Rep. 2016 Jan 5;14(1):103-14. |
| Thursday Oct. 26 | Dr. William Dunn (Transcriptional Control of Autophagy-Mediated Cell Survival/Death) |  | No paper discussion |
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**Summary**: The course covers latest development in our understanding of the mechanisms that regulate gene expression at the transcriptional and translational levels. Phenotypic impact of gene regulation at the molecular and epigenetic levels on cell growth especially in relation to cancer and other diseases is emphasized. Topics related to cellular and viral systems are covered.

**Grading scale**: letter grade

Grades will be based on oral presentation, group discussion and attendance--A selected published paper will be presented and discussed in the class. The presenter will introduce background and rationale for the study, show the data that support the author's point of view and summarize the major conclusions of the paper. The presenter is also encouraged to critique the paper, point out weakness and offer points for improvement. Students are expected to attend all lectures and participate in paper discussion.

**Textbook**: No specific textbook is assigned. Journal articles or handouts will be distributed.

**Select past student comments**: This course was very useful to me. Most of the papers were appropriate and the course was set up in a way where we could easily discuss things as a group.