2022 Fall Semester Schedule

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

Course Director: Dr. Daiqing Liao (dliao@ufl.edu)

Tuesdays and Thursdays 1:15PM - 2:45PM

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| **Date/Room** | **Lecturer and lecture title** | **Student Presenter** | **Paper for presentation/group discussion** |
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| Tuesday Sept 27 CGRC 451 | Dr. Daiqing Liao (Translational control and Cancer) |  | Challa S. et al. Ribosome ADP-ribosylation inhibits translation and maintains proteostasis in cancers Cell. 2021 Jul 19;S0092-8674(21)00831-X. PMID: 34314702  DOI: [10.1016/j.cell.2021.07.005](https://doi.org/10.1016/j.cell.2021.07.005) |
| Thursday Sept. 29  CGRC 451 | Dr. Nadja Makki (Regulation of Cell Growth and Proliferation in Development and Disease) |  | “Regulation of Body Length and Bone Mass by Gpr126/Adgrg6”. Sci Adv. 2020 Mar 20;6(12). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7083604/pdf/aaz0368.pdf> |
| Tuesday Oct 4  CGRC 491 | Dr. Rene Opavsky (DNA methylation in cancer) |  | |  | | --- | | [Dnmt3a regulates T-cell development and suppresses T-ALL transformation.](http://www.ncbi.nlm.nih.gov/pubmed/28321121) | | Kramer AC, et al. | | Leukemia. 2017 Apr 11. doi: 10.1038/leu.2017.89. [Epub ahead of print] | |
| Thursday Oct. 6  CGRC 451 | Dr. Ryan Kolb (Wnt/-Catenin signaling pathway in cancer) |  | Kaur AI et al. sFRP2 in the aged microenvironment drives melanoma metastasis and therapy resistance. Nature. 2016 Apr 14;532(7598):250-4. doi: 10.1038/nature17392. Epub 2016 Apr 4. <https://www.nature.com/articles/nature17392> |
| Tuesday Oct 11  CGRC 451 | Dr. Alexander Ishov (Histone variants pathway in cancer) |  | Gomes et al. Dynamic Incorporation of Histone H3 Variants into Chromatin Is Essential for Acquisition of Aggressive Traits and Metastatic Colonization  Cancer Cell. 2019 Oct 14;36(4):402-417.e13. <https://pubmed.ncbi.nlm.nih.gov/31564638/> |
| Thursday Oct. 13  CGRC 491 | Dr. Yehia Daaka (Nuclear Receptor Signaling) |  | Nyquist et al. TALEN-engineered AR gene rearrangements reveal endocrine uncoupling of androgen receptor in prostate cancer. Proc Natl Acad Sci U S A. 2013 Oct 22;110(43):17492-7. PMID: 24101480. <https://pubmed.ncbi.nlm.nih.gov/24101480/> |
| Tuesday Oct 18  CGRC 491 | Dr. Zhijian Qian (Cell cycle control in hematopoietic stem cells) |  | Hou Y, et al. The transcription factor Foxm1 is essential for the quiescence and maintenance of hematopoietic stem cells. Nat Immunol. 2015 Aug;16(8):810-8. doi: 10.1038/ni.3204. Epub 2015 Jun 29. <https://www.nature.com/articles/ni.3204> |
| Thursday Oct. 20  CGRC 451 | Dr. Shuang Huang (role of miRNA in cell proliferation and survival) |  | |  | | --- | | [Normal and cancerous mammary stem cells evade interferon-induced constraint through the miR-199a-LCOR axis.](http://www.ncbi.nlm.nih.gov/pubmed/28530657) | | Celià-Terrassa T, et al. | | Nat Cell Biol. 2017 Jun;19(6):711-723. doi: 10.1038/ncb3533. Epub 2017 May 22. | |
| Tuesday Oct 25  CGRC 451 | Dr. Jianrong Lu (Epigenetic regulation of EMT) |  | |  | | --- | | Guerrero-Martínez et al. TGFβ promotes widespread enhancer chromatin opening and operates on genomic regulatory domains. Nat Commun. 2020;11:6196.  <https://www.nature.com/articles/s41467-020-19877-5.pdf> | |
| Thursday Oct. 27  CGRC 451 | Dr. Satya Narayan  (Tumor suppressor p53 in the control of cell proliferation) |  | |  | | --- | | [Essential role for centromeric factors following p53 loss and oncogenic transformation.](http://www.ncbi.nlm.nih.gov/pubmed/28356341) | | Filipescu D et al. Genes Dev. 2017 Mar 1;31(5):463-480. doi: 10.1101/gad.290924.116. Epub 2017 Mar 29. | |  | |

**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. Each lecture consists of a lecture (30 to 45 min) by an instructor, followed by a presentation and/or group discussion of a specific publication assigned by the instructor (45 to 60 min).

**Grading scale**: letter grade

Grades will be based on attendance and paper discussion --A selected publication will be discussed in each class meeting. Paper discussion will cover background and rationale for the study, the data that support the author's point of view and the major conclusions of the paper. Discussions may also include weaknesses and points for improvement for the publication. Each student will be assigned a specific paper for class presentation. For group discussion (when no specific presenter is assigned), each student may be asked to discuss a specific part of the publication. 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.