

Advanced Readings in Molecular Biology

BISC 544 (Spring 2013)

2 units

Course Chair: Matt Dean

Instructors: Molecular and Computational Faculty

Meeting Time: Tuesday 10 am - 11 am, RRI 121

Overview and Course Goals: The goal of the course is to give advanced training to graduate students in reading primary journal articles. The course will emphasize critical analyses of primary scientific data and interpretations presented in the literature.

Course enrollment: Enrollment is restricted to Molecular Biology graduate students. All students need instructor's permission to take this class.

Website: Course materials and announcement will be made using the USC Blackboard website.

Course Grading: You will be evaluated based on your class participation and performance on the final exam. You are expected to read the assigned paper before each class and understand the material presented. During each meeting you are expected to contribute to the discussion or you will not get credit for attendance. When reading the paper, make sure you understand the questions being asked, the data being collected, and the analyses being employed.

Statement for Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

Statement on Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. Scampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: <http://www.usc.edu/dept/publications/SCAMPUS/gov/>. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further

review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.

Class schedule:

15-Jan-12 Matt Dean

Class introduction

22-Jan-12 Matt Dean

Barbosa-Morais et al. 2012. The evolutionary landscape of alternative splicing in vertebrate species. *Science* 338:1587-1593.

29-Jan-12 Ken Neilson

Wolfe-Simon et al. A bacterium that can grow by using arsenic instead of phosphorous. 2010. *Science* DOI: 10.1126/science.1197258

5-Feb-12 Steve Finkel

Hansen, S. K, P. B. Rainey, J. A. J. Haagensen, and S. Molin. 2007. Evolution of species interactions in a biofilm community. *Nature* 445: 533-536.

12-Feb-12 Xiaojiang Chen

Yardimci et al. 2012. Bypass of a protein barrier by a replicative DNA helicase. *Nature* 492: 405-411.

19-Feb-12 Don Arnold

Matsuda et al. 2008. Accumulation of AMPA receptors in autophagosomes in neuronal axons lacking adaptor protein AP-4. *Neuron* 57:730-745.

26-Feb-12 John Tower *CLASS WILL BE AT 9 AM THIS DAY*****

Sharpley M. S. et al.. 2012. Heteroplasmy of mouse mtDNA is genetically unstable and results in altered behavior and cognition. *Cell* 151: 333-343.

5-Mar-12 Irene Chiolo

Nagai, S. et al. 2008. Functional targeting of DNA damage to a nuclear pore-associated SUMO-dependent ubiquitin ligase. *Science* DOI: 10.1126/science.1162790

12-Mar-12 Oscar Aparicio

Karras & Jentsch. The RAD6 DNA damage tolerance pathway operates uncoupled from the replication fork and is functional beyond S phase. *Cell* 141:255-267.

19-Mar-12 Spring Break

26-Mar-12 Joe Hacia

Araki et al. In press. Negligible immunogenicity of terminally differentiated cells derived from induced pluripotent or embryonic stem cells. *Nature*.

2-Apr-12 Susan Forsburg

Stirling et al. 2012. R-loop-mediated genome instability in mRNA cleavage and polyadenylation mutants. *Genes Dev.* 26:163-75.

9-Apr-12 Ian Ehrenreich *CLASS WILL BE AT 9 AM THIS DAY*****

Chang et al. 2012. Parallel selection mapping using artificially selected mice reveals body weight control loci. *Current Biology.* 22: 1-7.

16-Apr-12 Xuelin Wu

Kumar & Wigge. 2010. H2A.Z-containing nucleosomes mediate the thermosensory response in *Arabidopsis*. *Cell* 140: 136-147.

23-Apr-12 Fabien Pinaud

Zhang et al. 2009. The dynamic control of kiss-and-run and vesicular reuse probed with single nanoparticles. *Science* 323: 1448-1453.

30-Apr-12 Lin Chen

Dixon et al. 2012. Topological domains in mammalian genomes identified by analysis of chromatin interactions. *Nature.*