BIOL-UA 926.001 Build-A-Genome

Instructor:
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Course Description:
This is an intensive course designed to provide hands-on experience in a laboratory setting. Students will perform independent laboratory research by making important contributions to an ongoing project and may even have the opportunity to publish their work. Students should expect to complete their individual assignments by the end of the semester, which will require commitment to the following: attending group laboratory sessions and group meetings, diligent note taking in an online laboratory notebook, reading relevant scientific literature, and performing independent laboratory work. All laboratory sessions must be logged in the student’s notebook. Laboratory safety is extremely important, and all EHS safety requirements must be met before students begin class.

Pre-requisite:
N/A

Textbook and Required Materials:
Weekly readings as assigned

Grading:
Presentation/discussions  40%
Lab notebook  20%
Written assignments  20%
Attendance  10%
Practical bench knowledge  10%

Topics:
Yeast transformation with pRS plasmids
Yeast transformation with genomic integration
Yeast transformation/PCR confirmation for independent products
Gel electrophoresis
Yeast mating
tetrad dissection
PCR tag analysis of endoduplicated strains
Transformation with plasmids containing opposite mating type
Using SnapGene to design CRISPR gRNAs
CRISPR experiment to delete ADE2 using student-designed gRNAs
genotyping of tetrads for independent project