Nevada iGEM 2014 Safety Form

All of the members on the Nevada iGEM team have taken a safety training course. Provided is a link to a full course description: http://www.unr.edu/ehs/program-areas/lab-safety/biosafety

Ben Owens is responsible for biological safety training at the University of Nevada, Reno. He abides by the requirements found in the above link. In our country, the regulations that govern biosafety are the responsibility of the Center of Disease Control. Provided is a link to their standards: http://www.cdc.gov/biosafety/.

Organisms and parts we used:

Species name (including strain)	Risk Group	Risk Group Source	Disease risk to humans?	Part number/ name	Natural function of part	How did you acquire it?	How will you use it?	
E. coli NEB 10Beta	1	WHO	no	n/a		New England Biolabs	Cloning Chassis	
Saccharomyces cerevisiae W303	1	WHO	no	n/a		Lim Lab - UCSF	Chassis	
Arabidopsis thaliana	1	WHO	no	COI1	plant E3 ligase	TAIR: https://www.arabidopsis.org/	Expressed in yeast to target proteins for degradation	
Arabidopsis thaliana	1	WHO	no	Jaz6 degron	plant protein targeted for degradation by COI1 in the presence of jasmonic acid	TAIR: https://www.arabidopsis.org/	Expressed in yeast to target proteins for degradation	
Arabidopsis thaliana	1	WHO	no	Jaz1 degron	plant protein targeted for degradation by COI1 in the presence of jasmonic acid	TAIR: https://www.arabidopsis.org/	Expressed in yeast to target proteins for degradation	

Possible risks to the safety and health of team members or others include: Use of ethidium bromide and TAE in agarose gels. Use of bacterial organisms. Exposure to UV light when extracting DNA from agarose gels.

Possible risks to the safety and health of the general public: Bacterial contamination - only if waste was not properly disposed.

Possible risks to the environment: Bacterial contamination - only if waste is not properly disposed. All bacteria have antibiotic resistance and cannot survive in the wild. All yeast strains are derived from commonly used lab strain W303.

Possible risks to security through malicious mis-use by individuals: There is almost no risk to security. The organisms and proteins being used are not harmful.

Measures we are taking to inhibit aforementioned risks: Training and education prior to use of risky organisms and practices; personal protective equipment at all times; safe lab practice; proper waste disposal.

Risks from our project in the future, provided that we had grown into a commercial/industrial/medical product: If our project worked, then it could be used to silence necessary proteins in humans that are needed to live. However, this would take a large advance in introducing proteins into humans that would function. Otherwise, there are no new risks

to the environment or obvious malicious mis-use. If the method were widely available other researchers could use the information to target and degrade any protein, which has the possibility of being detrimental to the affected organism.

Current design features that reduce this risk: The risk of a possibly faulty product is greatly minimized by specific tags used for targeted degradation. Bacterial organisms have antibiotic selection and yeast have auxotrophic marker selections.