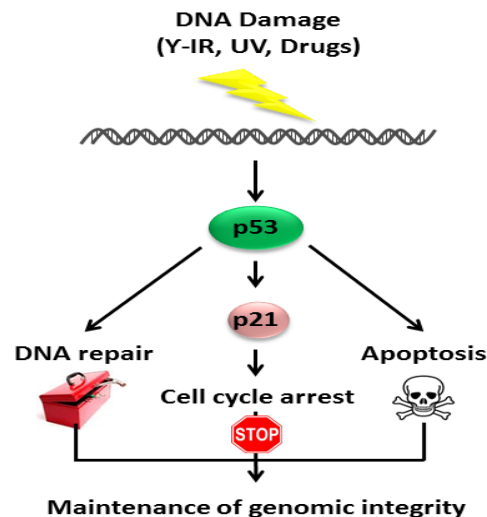


**Overview:**

- Participants will be introduced to a variety of methods for studying cellular signaling processes including theory, applications and limitations.
- Students will use select techniques in the laboratory to examine the effects of a chemotherapeutic agent on cancer cell signaling and survival.



**Lectures:**

1. Introduction to cell signaling
2. Drug receptor interactions, dose-response relationships
3. Protein gel electrophoresis (1D and 2D)
4. Fluorescence microscopy (confocal, TIRF, PALM)
5. Flow cytometry
6. Immunoprecipitation

**Labs:**

- |   |         |
|---|---------|
| 1. Dose-Response and EC <sub>50</sub> Determination | 2 weeks |
| 2. Nuclear and Cytoplasmic Fractionation            | 1 week  |
| 3. Western Blot                                     | 1 week  |
| 4. Fluorescence Microscopy                          | 1 week  |
| 5. Flow Cytometry and Analysis                      | 3 weeks |