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CUNY Summer Stem Institute: Experimental Research in Engineering for High School Students

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**INTRODUCTION TO EXPERIMENTAL RESEARCH IN ENGINEERING (ERE)
CUNY SUMMER STEM INSTITUTE 2016
Monday-Thursday 1-4PM (Steinman Hall)**

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| <u>Wednesday June 29th:</u> | Introduction to Experimental Research in Engineering (ERE) Required Materials (Lab Notebook, Computer) and Dress Code Available Summer Projects (4 Undergraduate Presentations) Guidelines for Summer Research Poster Project | ST-402 |
| <u>Thursday June 30th:</u> | Lab Safety Training (Wet and Dry labs) Sterility and Cell Culture Protocols <i>HW 1: Q&A on Cell Culture Protocols for individual lab cell lines</i> | ST-405 ST-405 |
| <u>Week 1:</u> | | |
| Monday, July 4 th | Independence Day Holiday (No Class) | |
| Tuesday, July 5 th | Begin Cell Culture Protocols (Sample Line + Lab Specific) | Labs |
| Wednesday, July 6 th | Cell Imaging (light scope) Lab Data Collection | Labs |
| Thursday, July 7 th | Split and Passage Cells Lab Data Collection <i>HW 2: Save 5 images of cells in culture dishes over time Save 5 image of cell culture setup and equipment</i> | Labs |
| <u>Week 2:</u> | | |
| Monday: July 11 th | <u>Group Lecture:</u> Image J Analysis (bring laptops) Lab Data | ST-402 |
| Tuesday: July 12 th | In-Lab Exercise with gathered cell images | Labs |
| Wednesday: July 13 th | <u>Group Lecture:</u> Microfabrication Lecture and Lab Tour (ST-481) | ST-402 |
| Thursday July 14 th | Microfabrication Lab I (Molding) and II (Bonding) <i>HW 3: Save 3 images of microdevice via microscope</i> | ST-481 |
| <u>Week 3:</u> | | |
| Monday: July 18 th | Loading microdevices with cells Lab Data Collection | Labs |
| Tuesday: July 19 th | Growing and imaging cells in microdevices versus dishes | Labs |
| Wednesday: July 20 th | ASRC Nanofabrication Lab Tour | ASRC |
| Thursday July 21 th | <u>Guest Lecture:</u> Ethics & Health Disparities Lab Data Collection <i>HW 4: Save 5 images of cells in culture dishes over time Save 5 images of cells within microdevice over time</i> | ST-402 |
| <u>Week 4:</u> | | |
| Monday: July 25 th | <u>Group Lecture:</u> Preparing for Poster Presentation Lab Data | ST-402 |
| Tuesday: July 26 th | Data Collection with Selected Research Lab | Labs |
| Wednesday: July 27 th | Data Collection with Selected Research Lab | Labs |
| Thursday July 28 th | Data Collection with Selected Research Lab <i>HW 5: Prepare Poster Draft 1 for review</i> | Labs |
| <u>Week 5:</u> | | |
| Monday: August 1 st | Review Poster Draft with Mentors | Labs |
| Tuesday: August 2 nd | Continue working on Poster presentations | Labs |
| Wednesday: August 3 rd | Finish Posters and Print | Labs |
| Thursday: August 4 th | <i>Poster Project Presentations from Teams 1-4</i> | ST-402 |
| Friday: August 5 th | Summer Stem Institute Presentation and Awards Luncheon | ST-LEC |