

Summer 7-5-2016

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

Maribel Vazquez  
CUNY City College

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

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