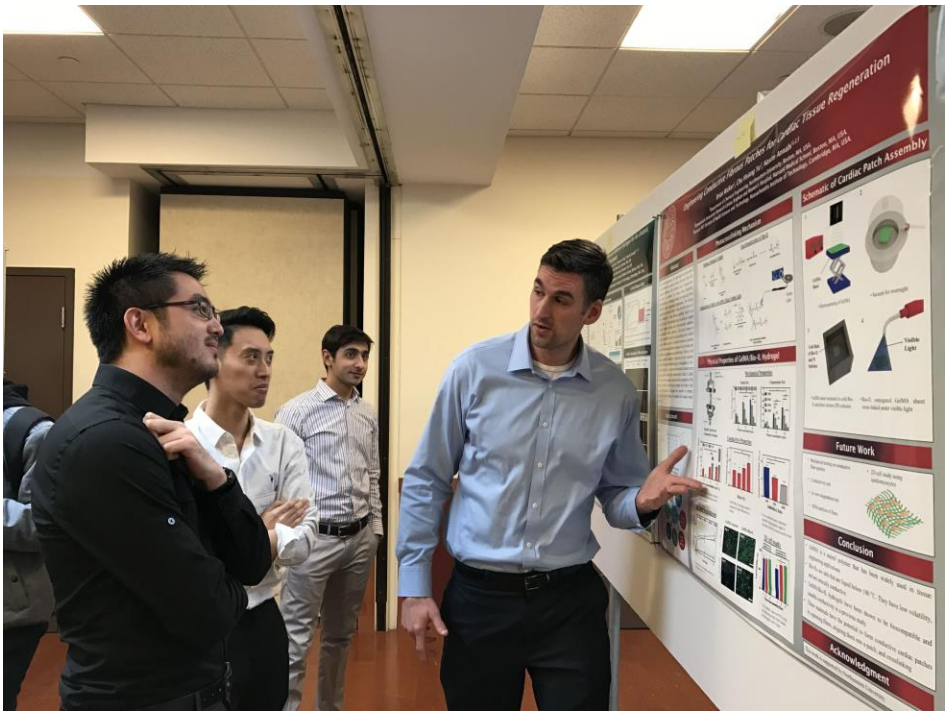
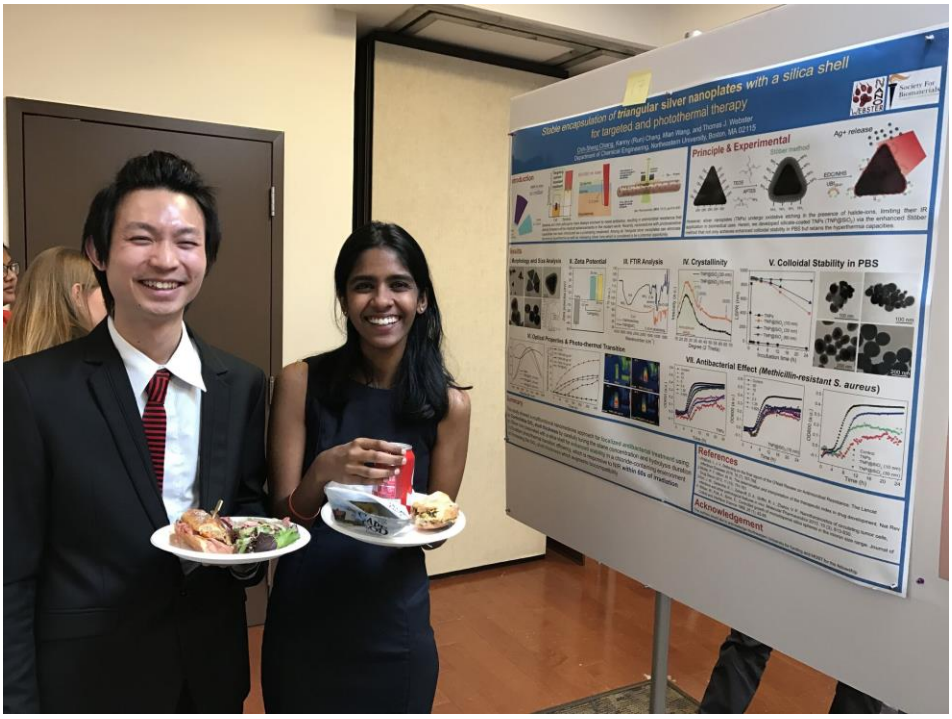
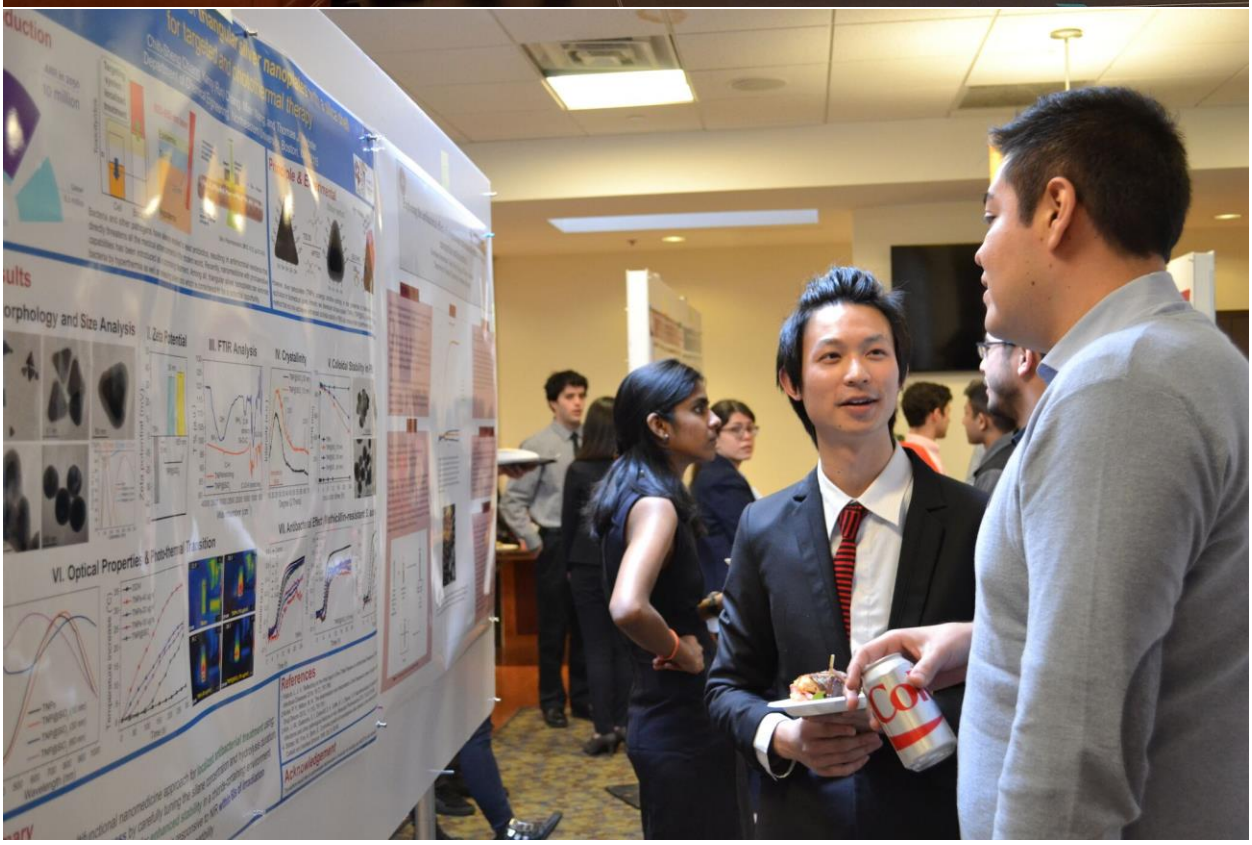

Schematic of Cardiac Patch Assembly
Future Work
Conclusion
Acknowledgment

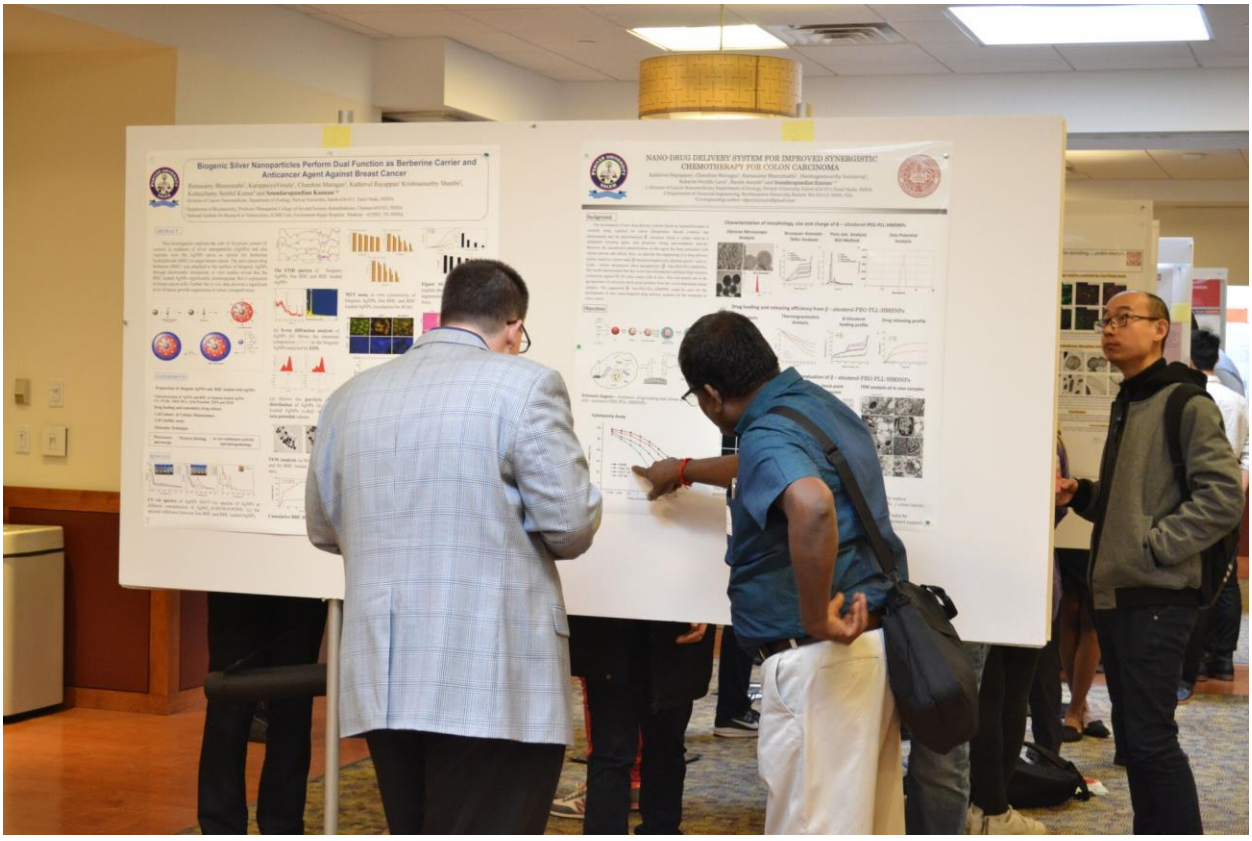

Stable encapsulation of triangular silver nanoplates with a silica shell
for targeted and photothermal therapy
Principle & Experimental
V. Colloidal Stability in PBS
VII. Antibacterial Effect (Methicillin-resistant S. aureus)
References
Acknowledgment


OF FORMULATION VARIABLES ON THE PREPARA
OXACEPROL LOADED NANOPARTICLES


Building Immunity with Biomaterials


VI. Optical Properties
References
Acknowledgement


Biogenic Silver Nanoparticles Perform Dual Function as Berberine Carrier and Anticancer Agent Against Breast Cancer
NANO-DRUG DELIVERY SYSTEM FOR IMPROVED SYNERGISTIC CHEMOTHERAPY FOR COLON CARCINOMA


Biogenic Silver Nanoparticles Perform Dual Function as Berberine Carrier and Anticancer Agent Against Breast Cancer
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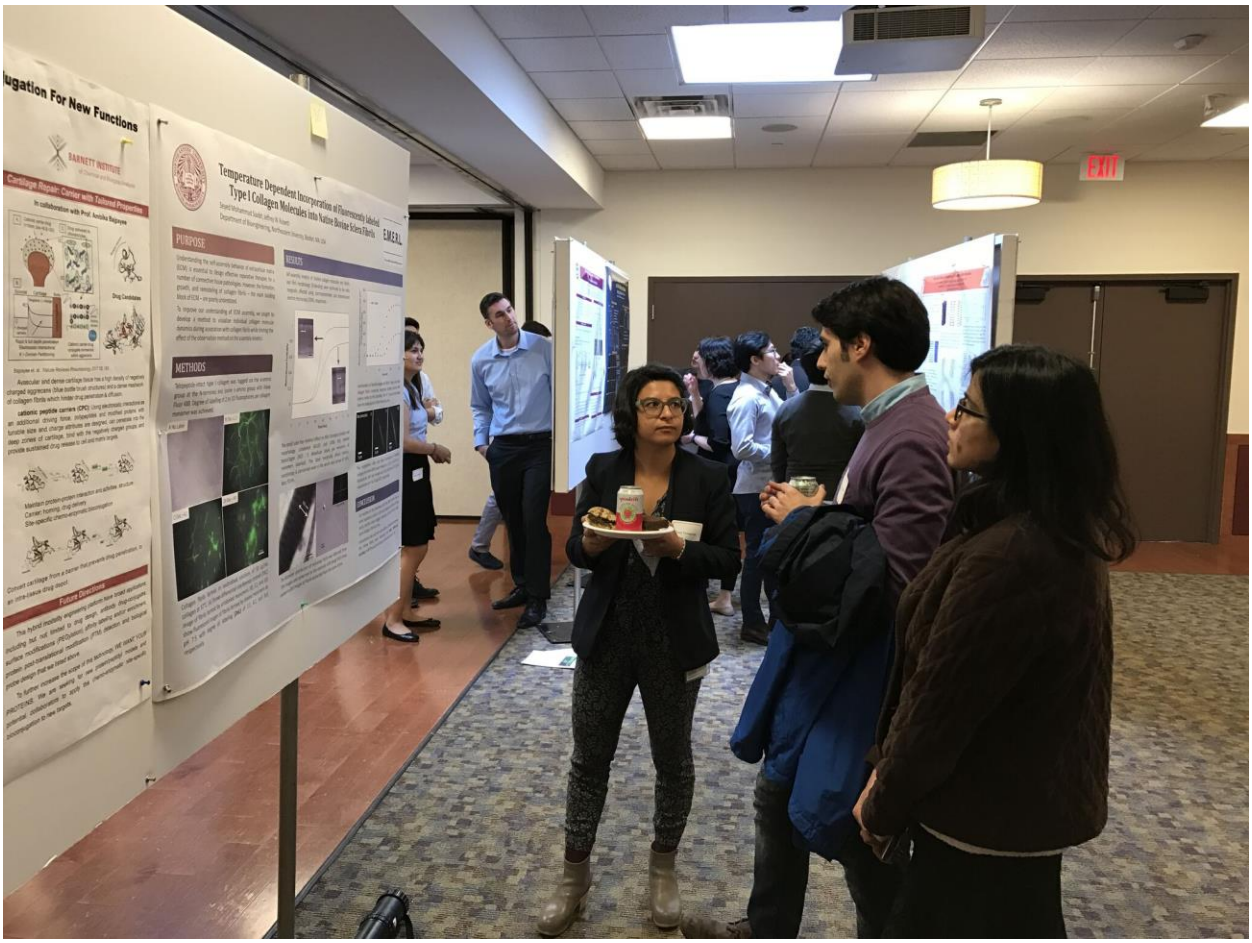
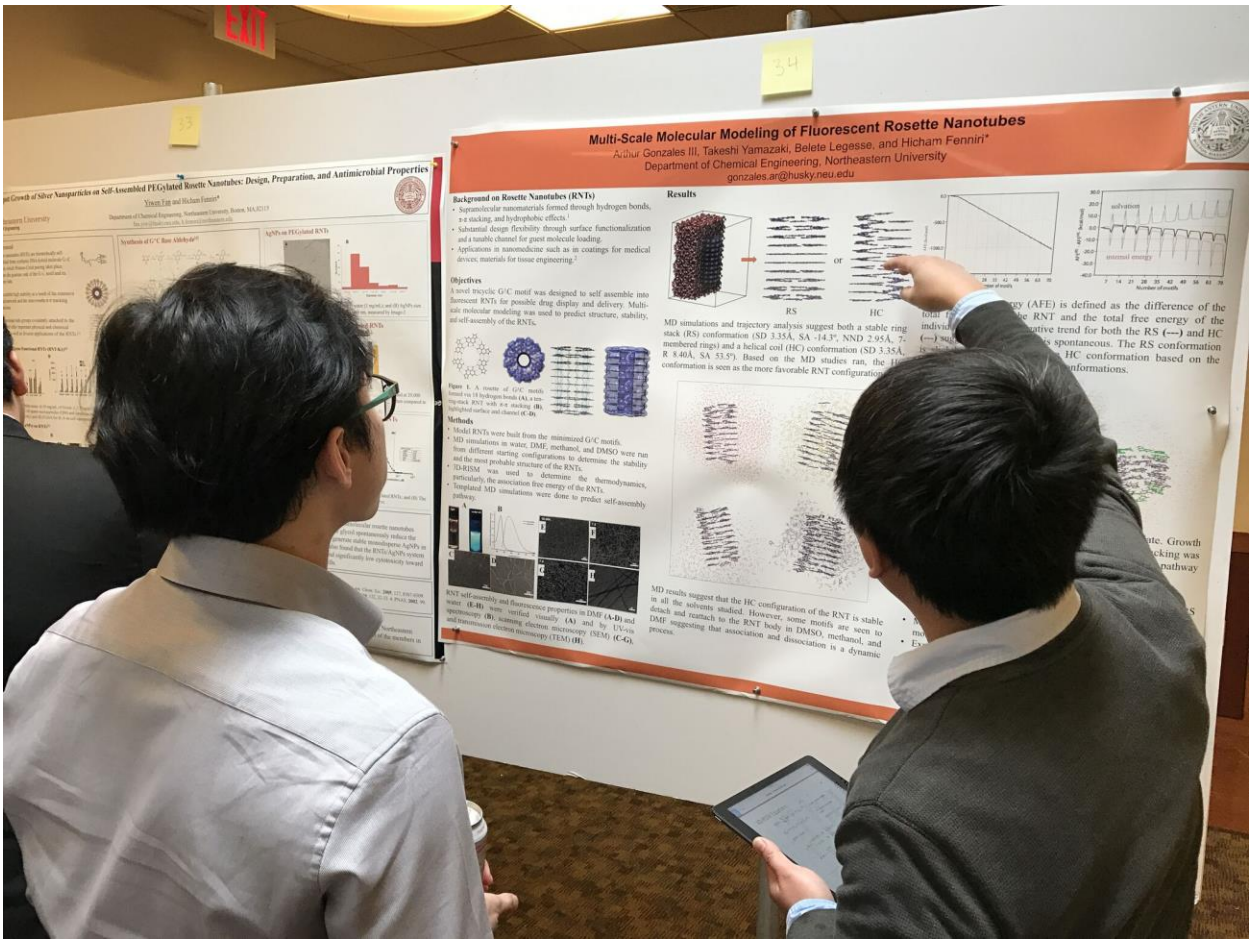
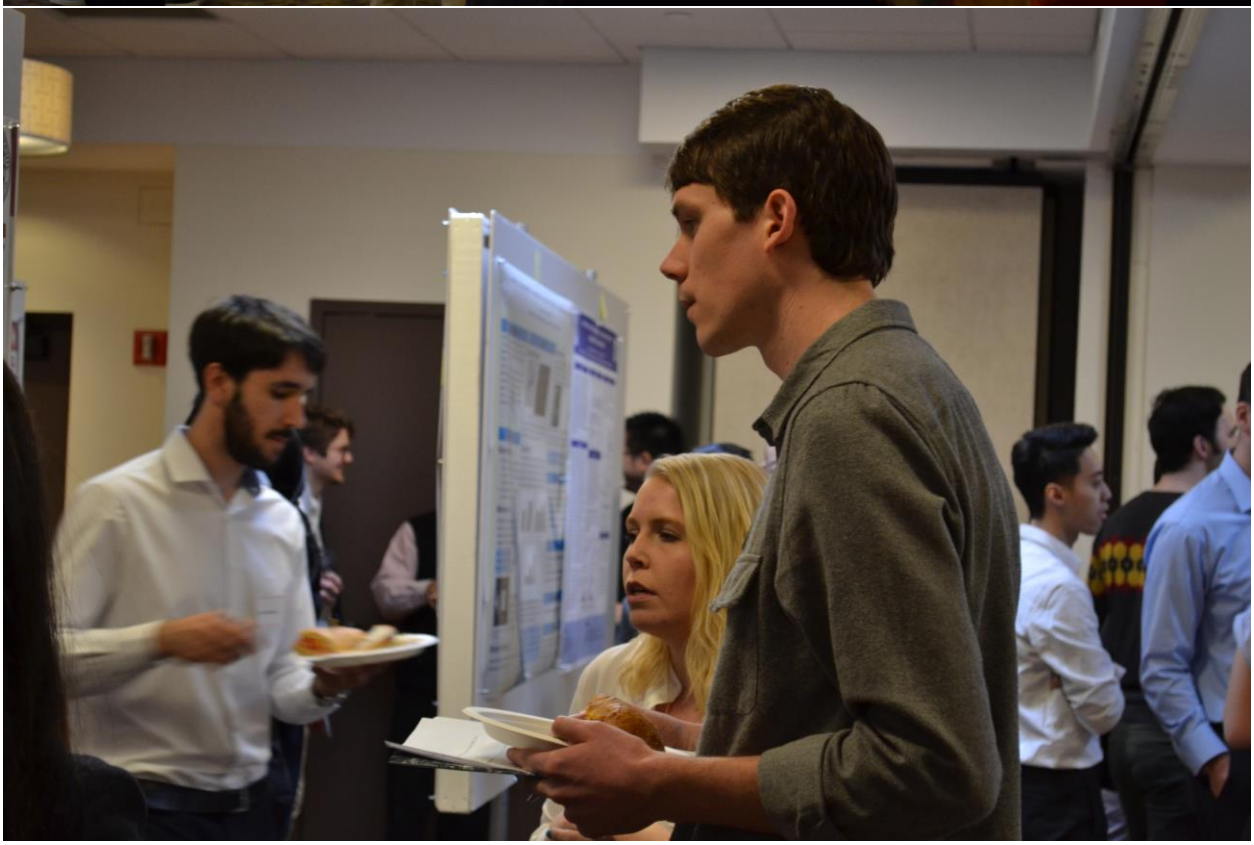
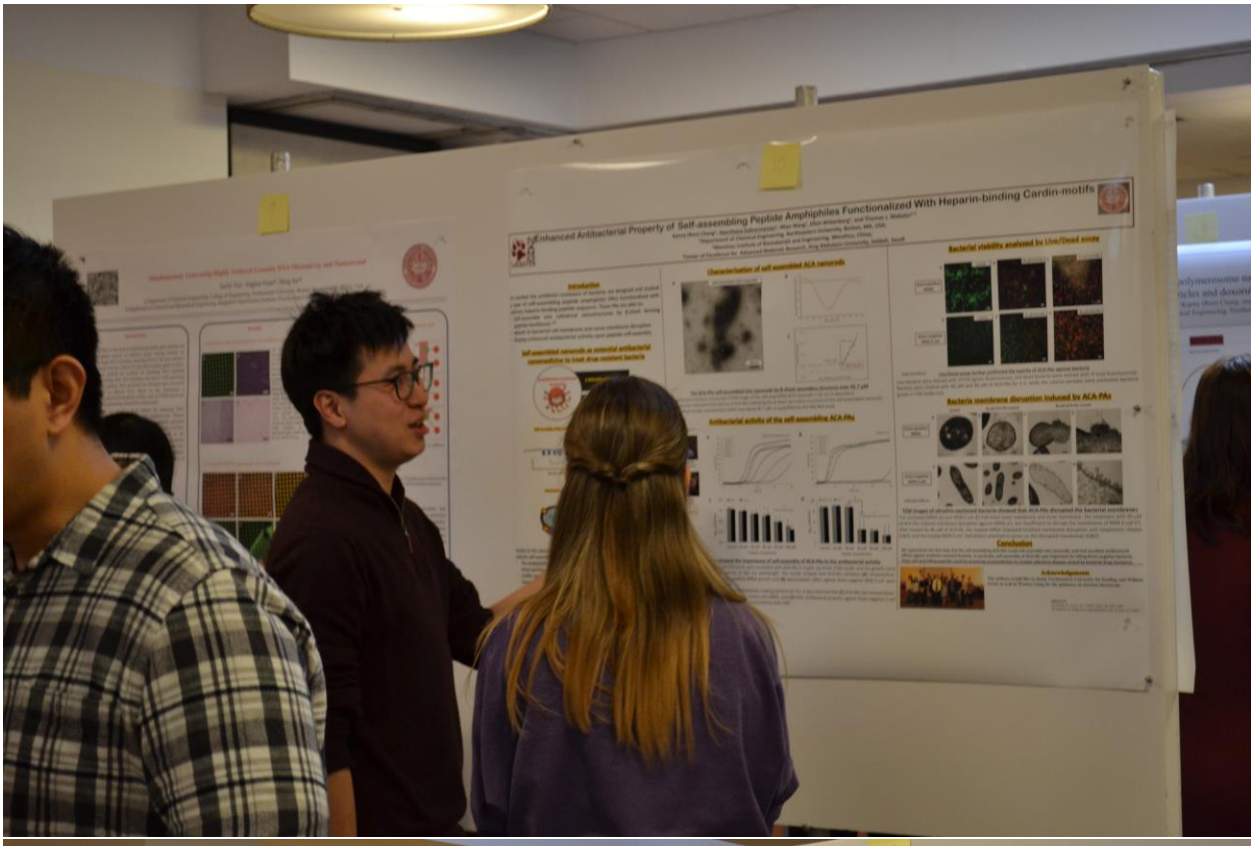
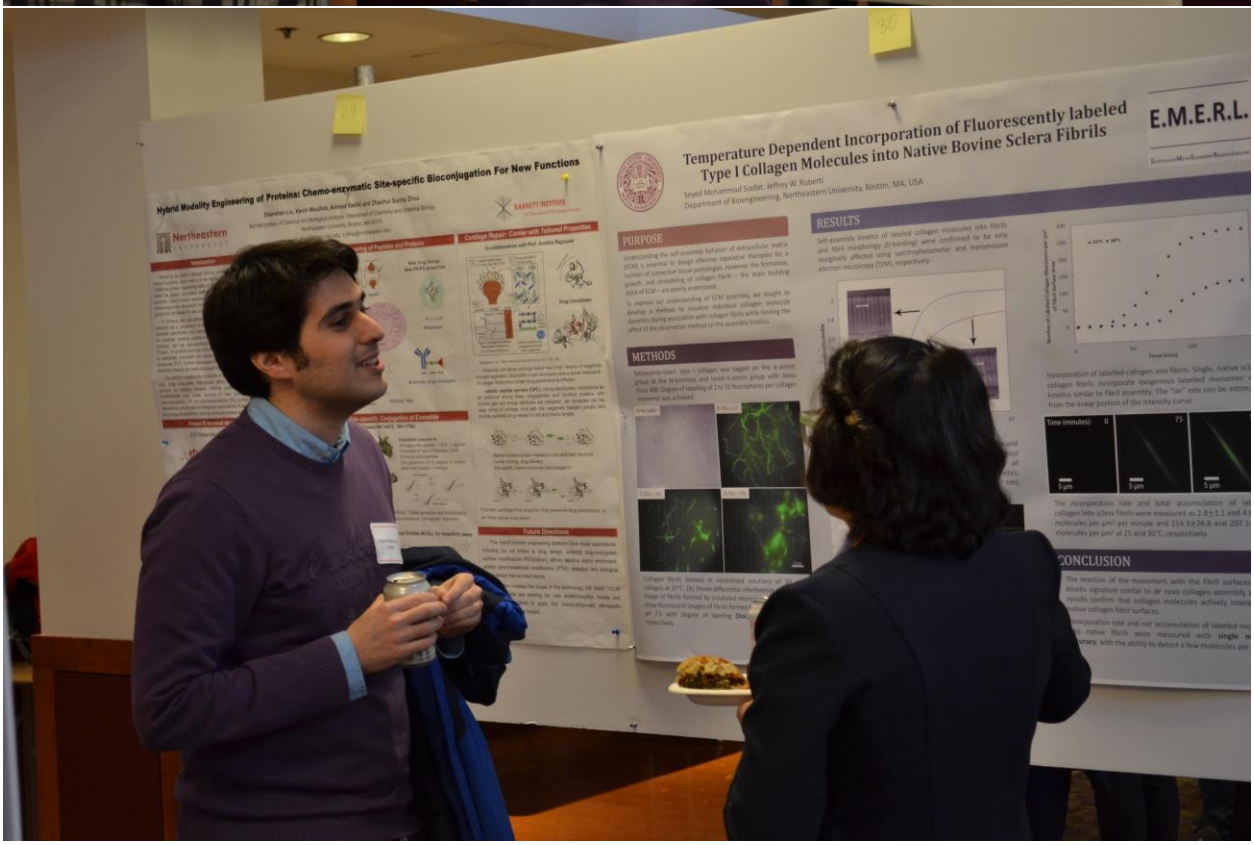

ugation For New Functions
Temperature Dependent Incorporation of Fluorescently Labeled Type I Collagen Molecules into Native Bovine Sclera Fibrils
PURPOSE
METHODS
RESULTS
EXIT


EXIT
33
34
Multi-Scale Molecular Modeling of Fluorescent Rosette Nanotubes
Arthur Gonzales III, Takeshi Yamazaki, Belete Legesse, and Hicham Fenniri*
Department of Chemical Engineering, Northeastern University
gonzales.ar@husky.neu.edu
Background on Rosette Nanotubes (RNTs)
Objectives
Methods
Results
RS
HC
solvation
torsional energy

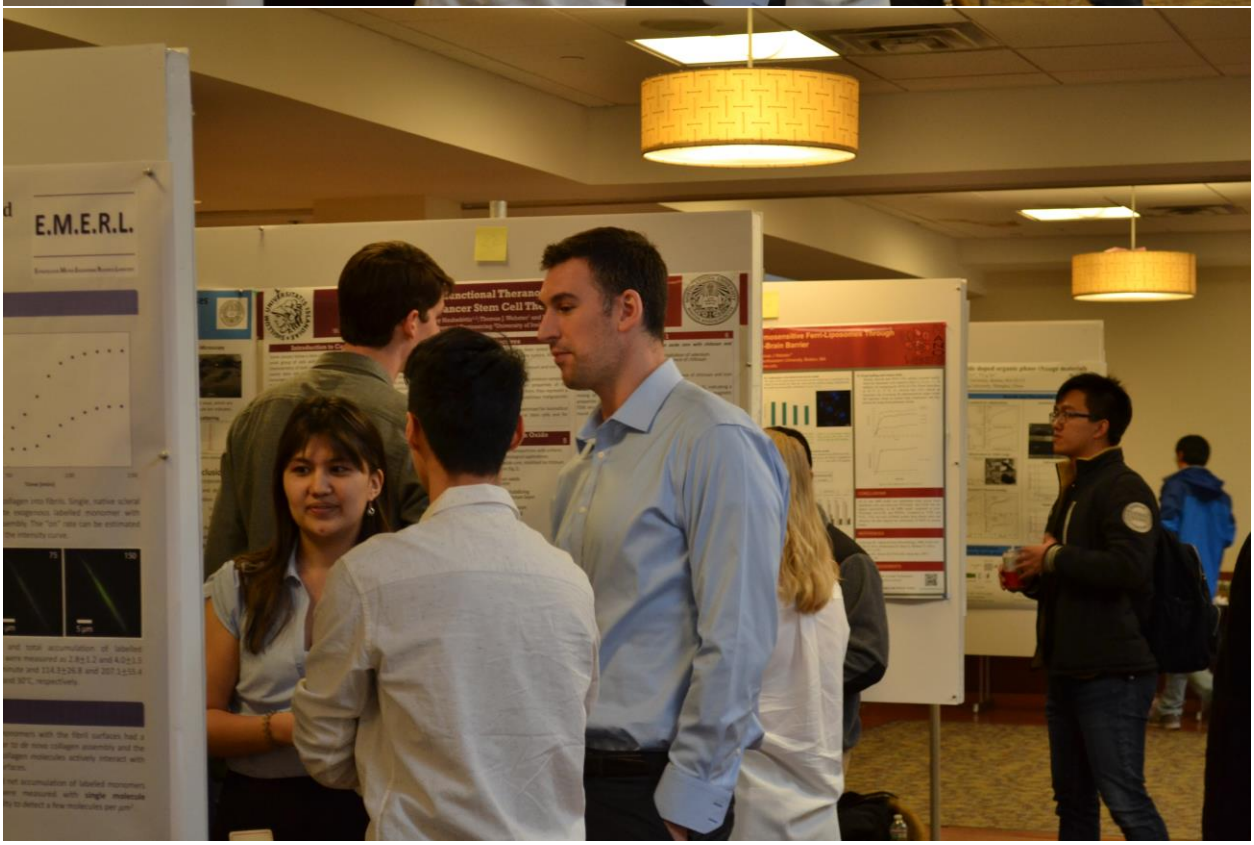

EXIT

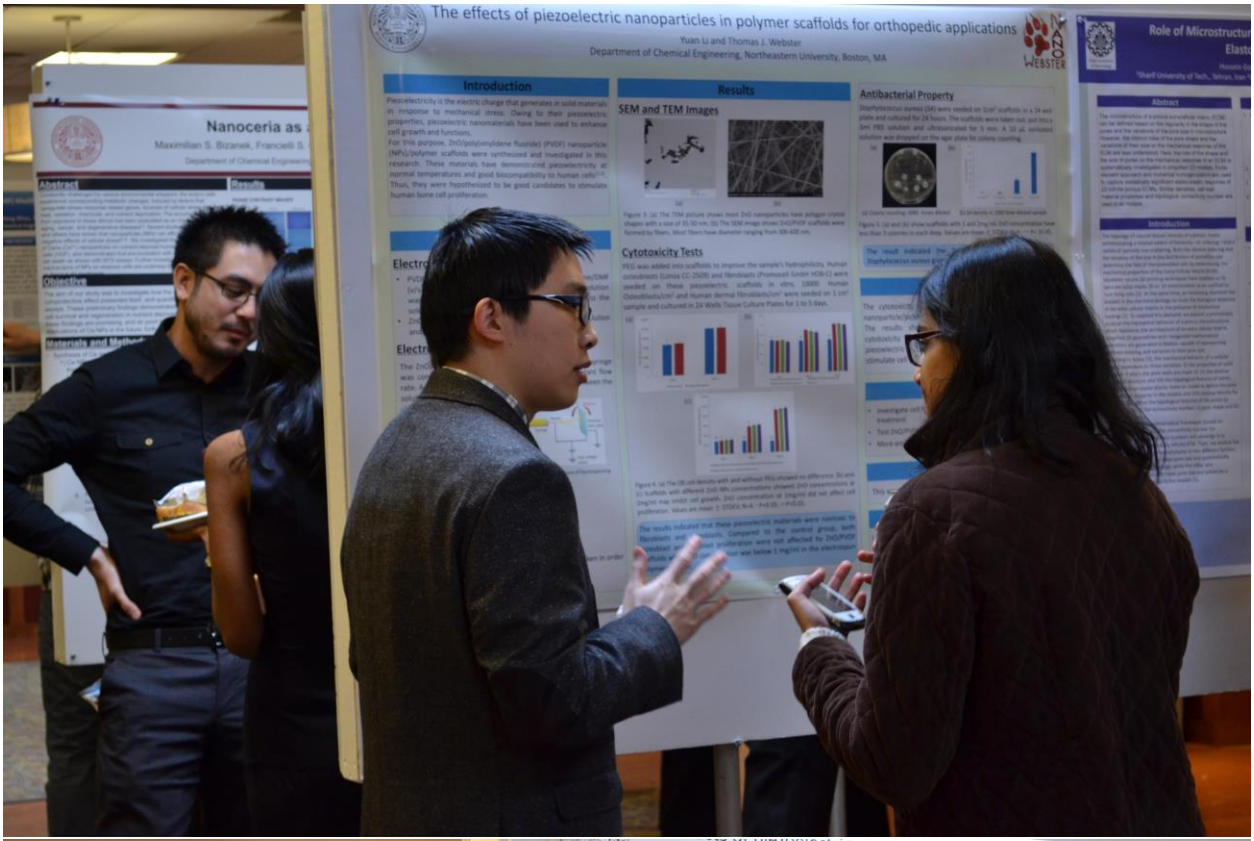


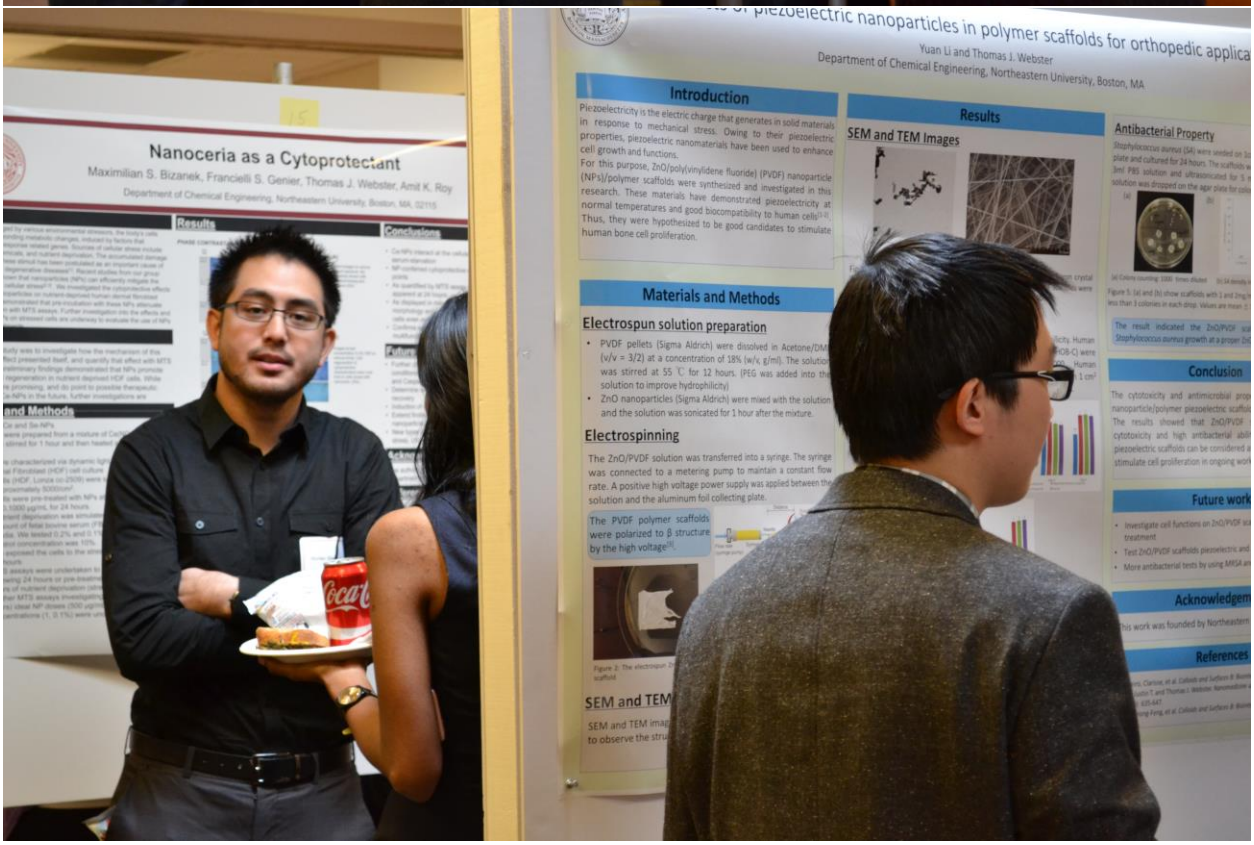

Enhanced Antibacterial Property of Self-assembling Peptide Amphiphiles Functionalized With Heparin-binding Cardin-motifs

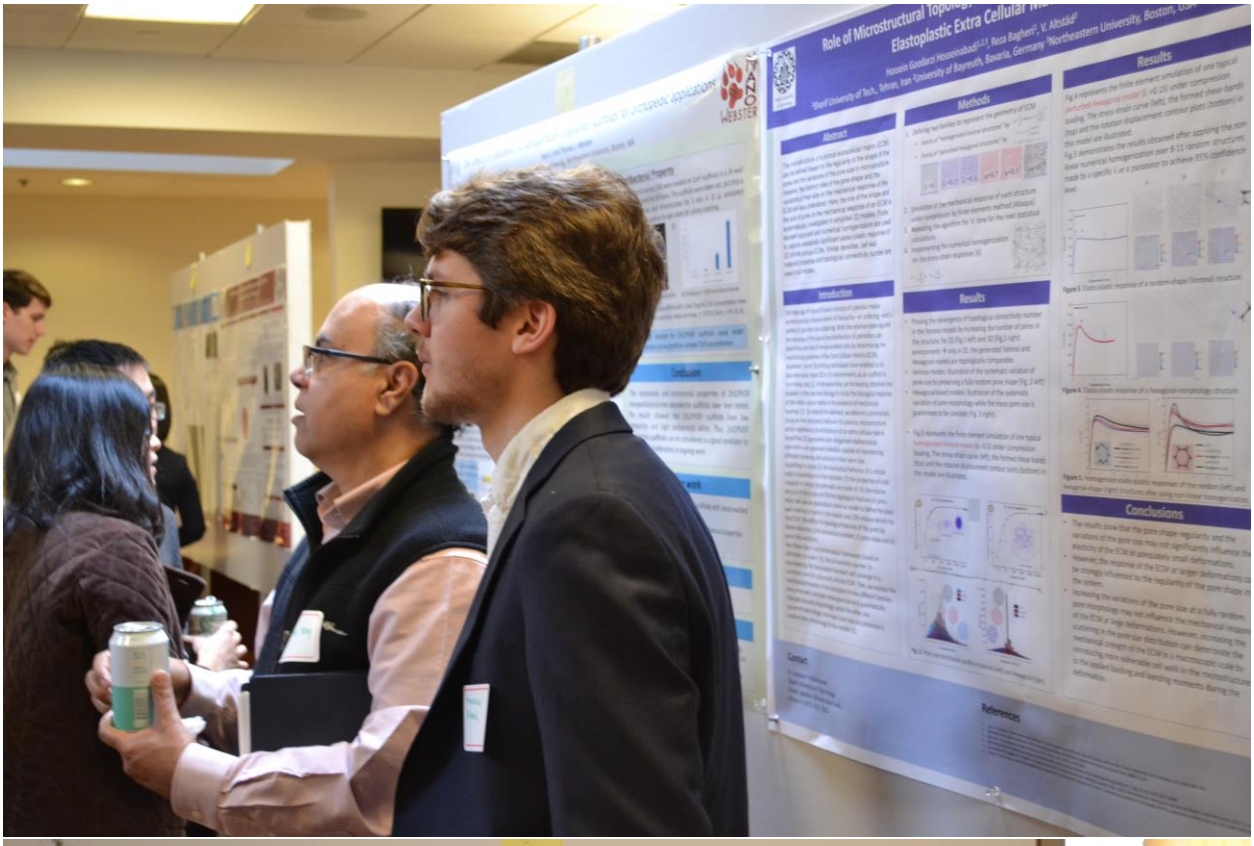

Hybrid Modality Engineering of Proteins: Chemo-enzymatic Site-specific Bioconjugation For New Functions
Temperature Dependent Incorporation of Fluorescently labeled Type I Collagen Molecules into Native Bovine Sclera Fibrils
E.M.E.R.L.
PURPOSE
METHODS
RESULTS
CONCLUSION

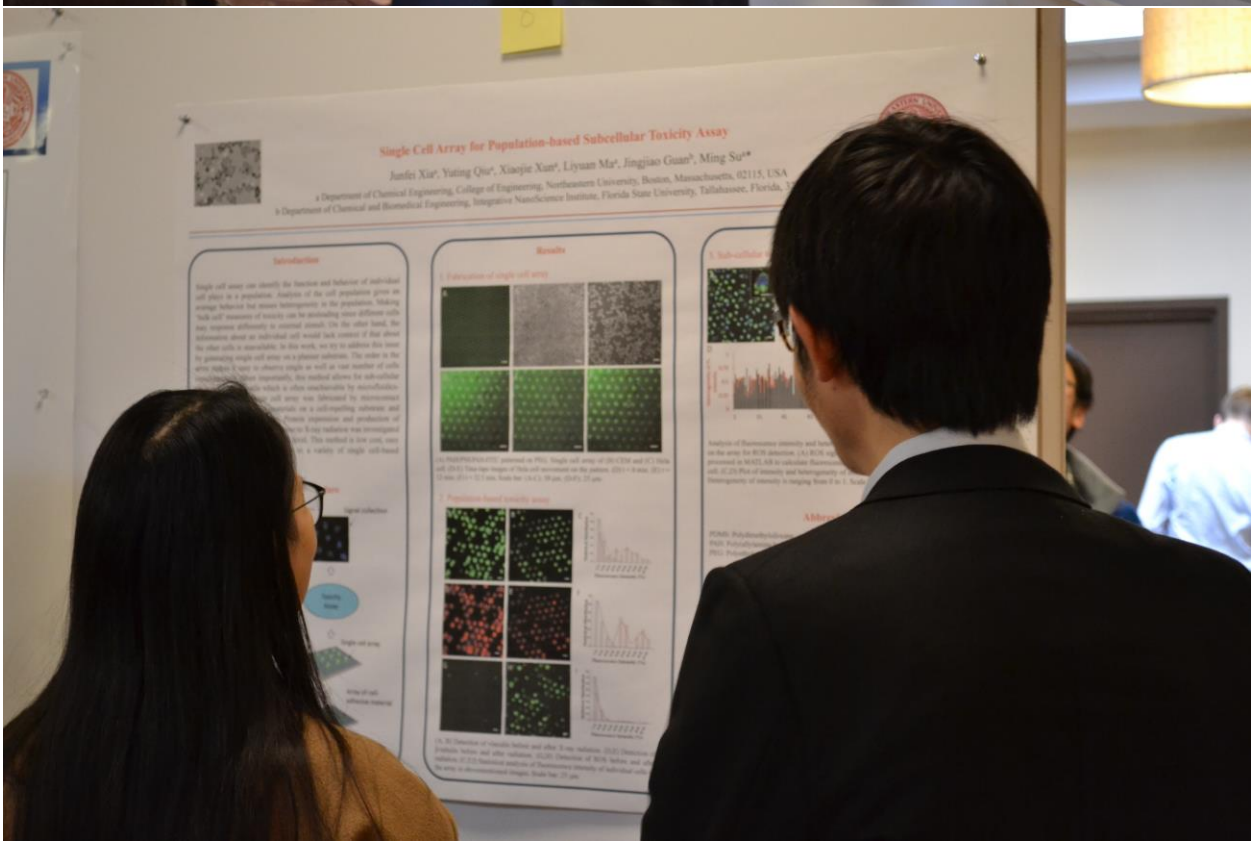

E.M.E.R.L.

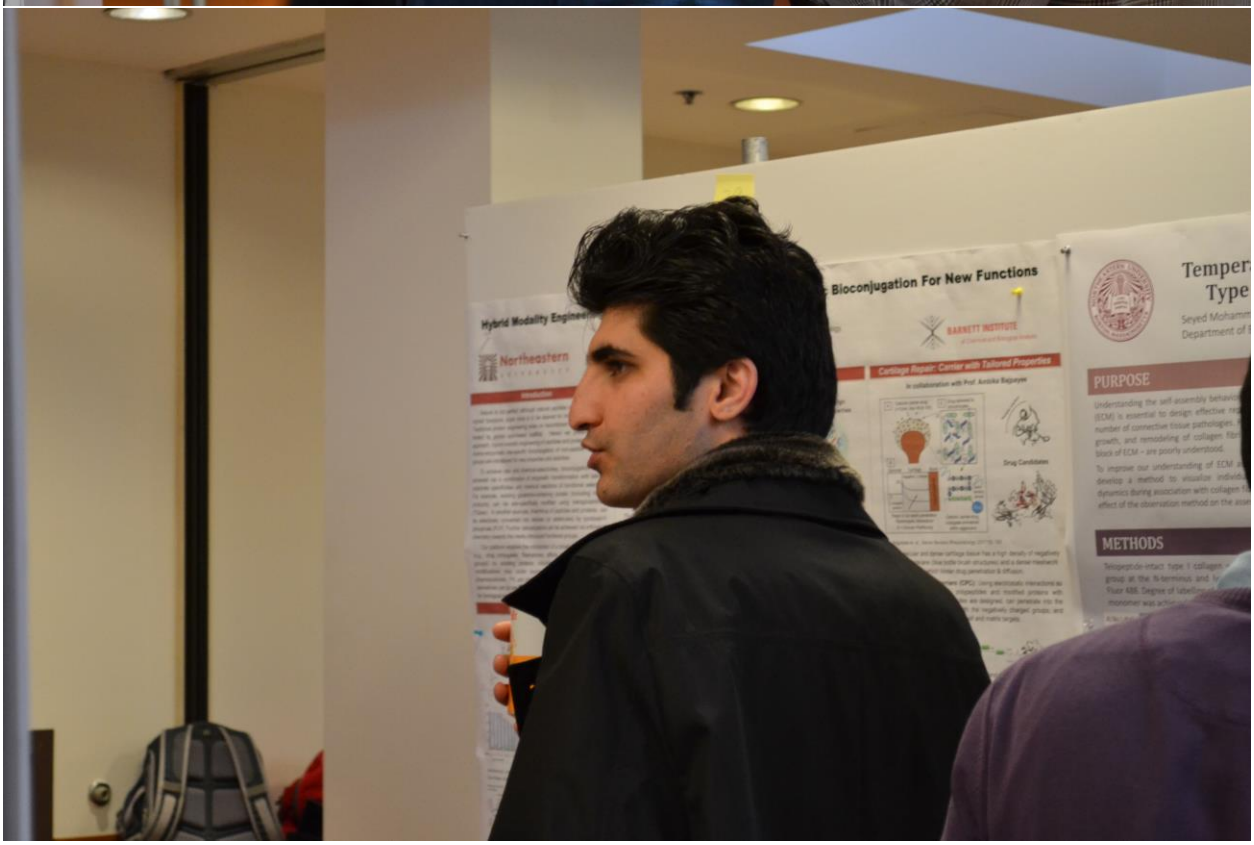

E.M.E.R.L.

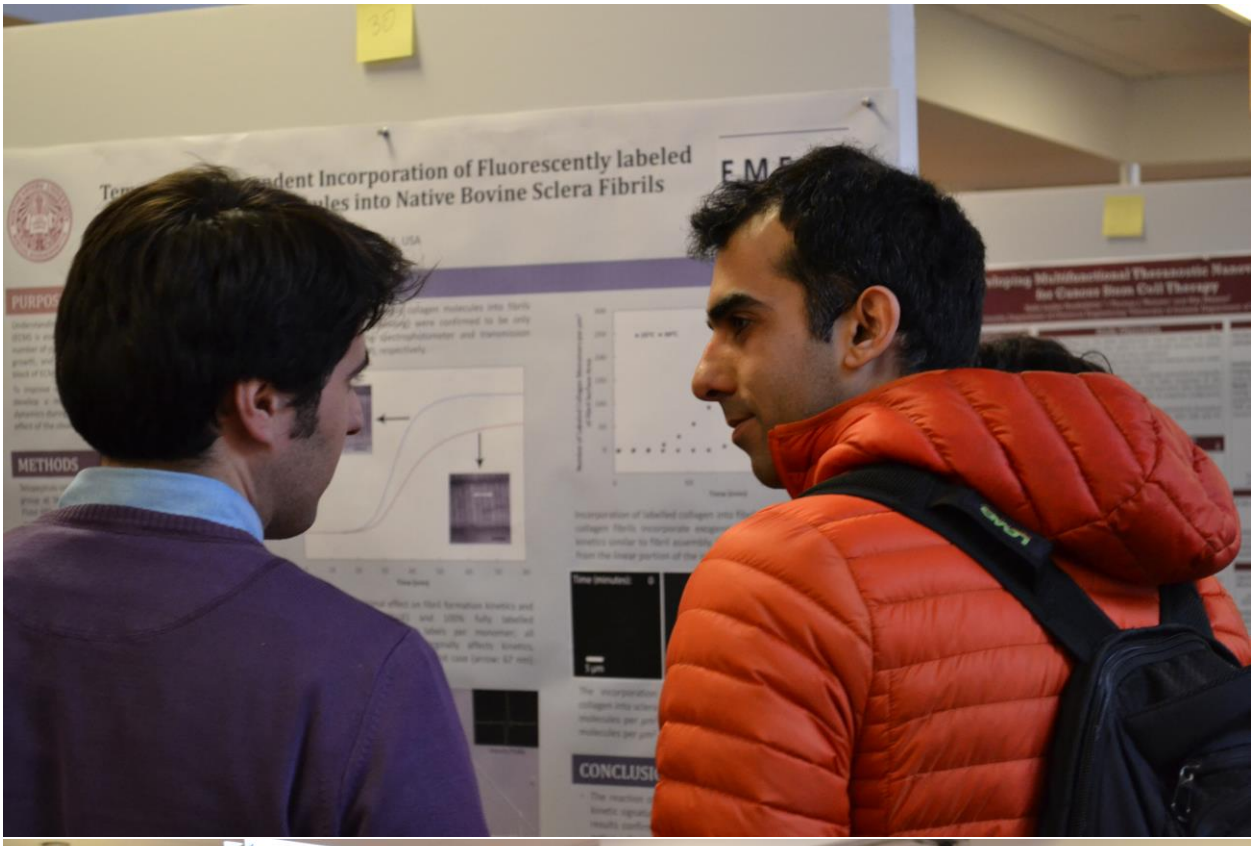

The effects of piezoelectric nanoparticles in polymer scaffolds for orthopedic applications
Yuan Li and Thomas J. Webster
Department of Chemical Engineering, Northeastern University, Boston, MA
Introduction
Results
SEM and TEM Images
Antibacterial Property
Cytotoxicity Tests
Nanoceria as
Maximilian S. Bizanek, Francielli S.
Department of Chemical Engineering
Abstract
Objective
Materials and Methods
Role of Microstructur
Elast

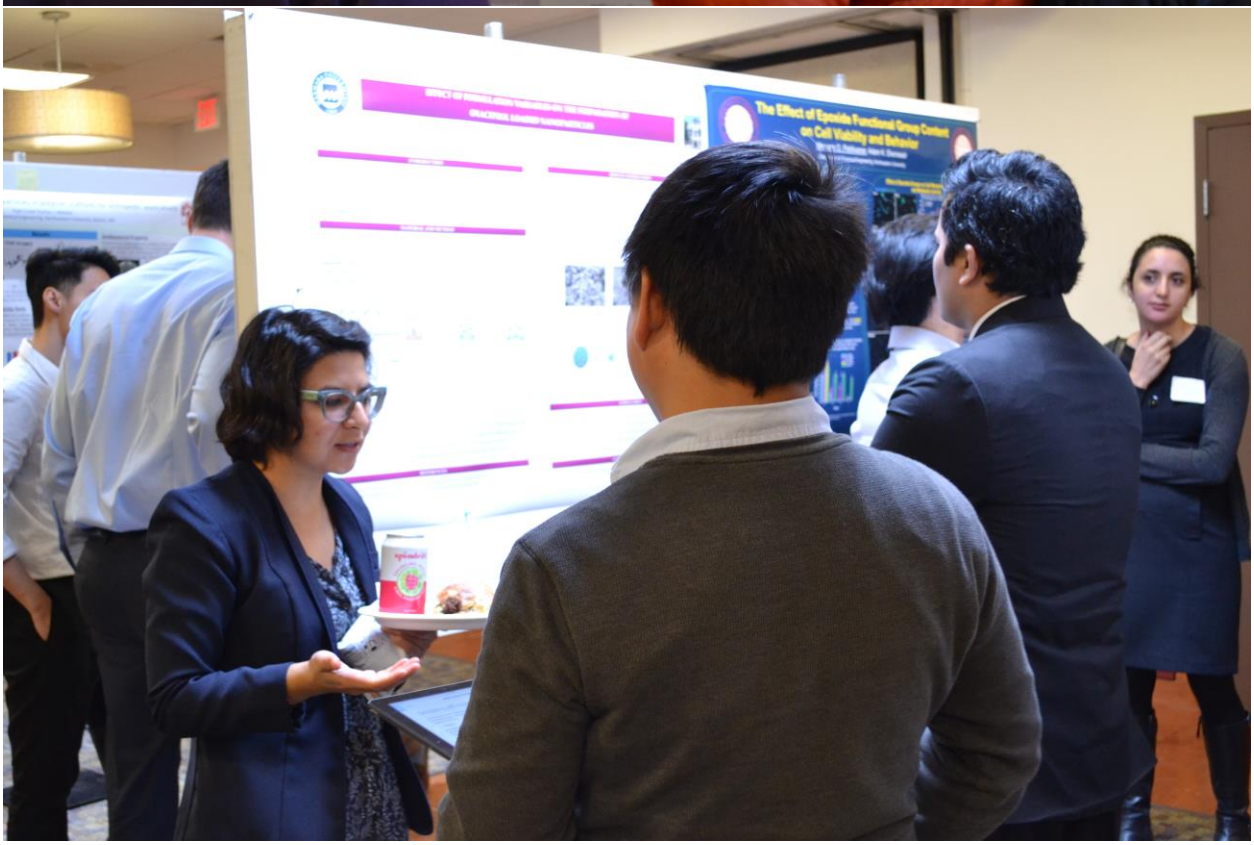

Nanoceria as a Cytoprotectant
Maximilian S. Bizanek, Francielli S. Genier, Thomas J. Webster, Amit K. Roy
Department of Chemical Engineering, Northeastern University, Boston, MA, 02115
Results
Conclusions
piezoelectric nanoparticles in polymer scaffolds for orthopedic applica
Yuan Li and Thomas J. Webster
Department of Chemical Engineering, Northeastern University, Boston, MA
Introduction
Piezoelectricity is the electric charge that generates in solid materials in response to mechanical stress. Owing to their piezoelectric properties, piezoelectric nanomaterials have been used to enhance cell growth and functions.
For this purpose, ZnO/poly(vinylidene fluoride) (PVDF) nanoparticle (NPs)/polymer scaffolds were synthesized and investigated in this research. These materials have demonstrated piezoelectricity at normal temperatures and good biocompatibility to human cells[1-3]. Thus, they were hypothesized to be good candidates to stimulate human bone cell proliferation.
Results
SEM and TEM Images
Antibacterial Property
Materials and Methods
Electrospun solution preparation
PVDF pellets (Sigma Aldrich) were dissolved in Acetone/DM
(v/v = 3/2) at a concentration of 18% (w/v, g/ml). The solution
was stirred at 55 ℃ for 12 hours. (PEG was added into the
solution to improve hydrophilicity)
ZnO nanoparticles (Sigma Aldrich) were mixed with the solution
and the solution was sonicated for 1 hour after the mixture.
Electrospinning
The ZnO/PVDF solution was transferred into a syringe. The syringe
was connected to a metering pump to maintain a constant flow
rate. A positive high voltage power supply was applied between th
solution and the aluminum foil collecting plate.
The PVDF polymer scaffolds
were polarized to β structure
by the high voltage[3].
Conclusion
Future work
Acknowledgem
References

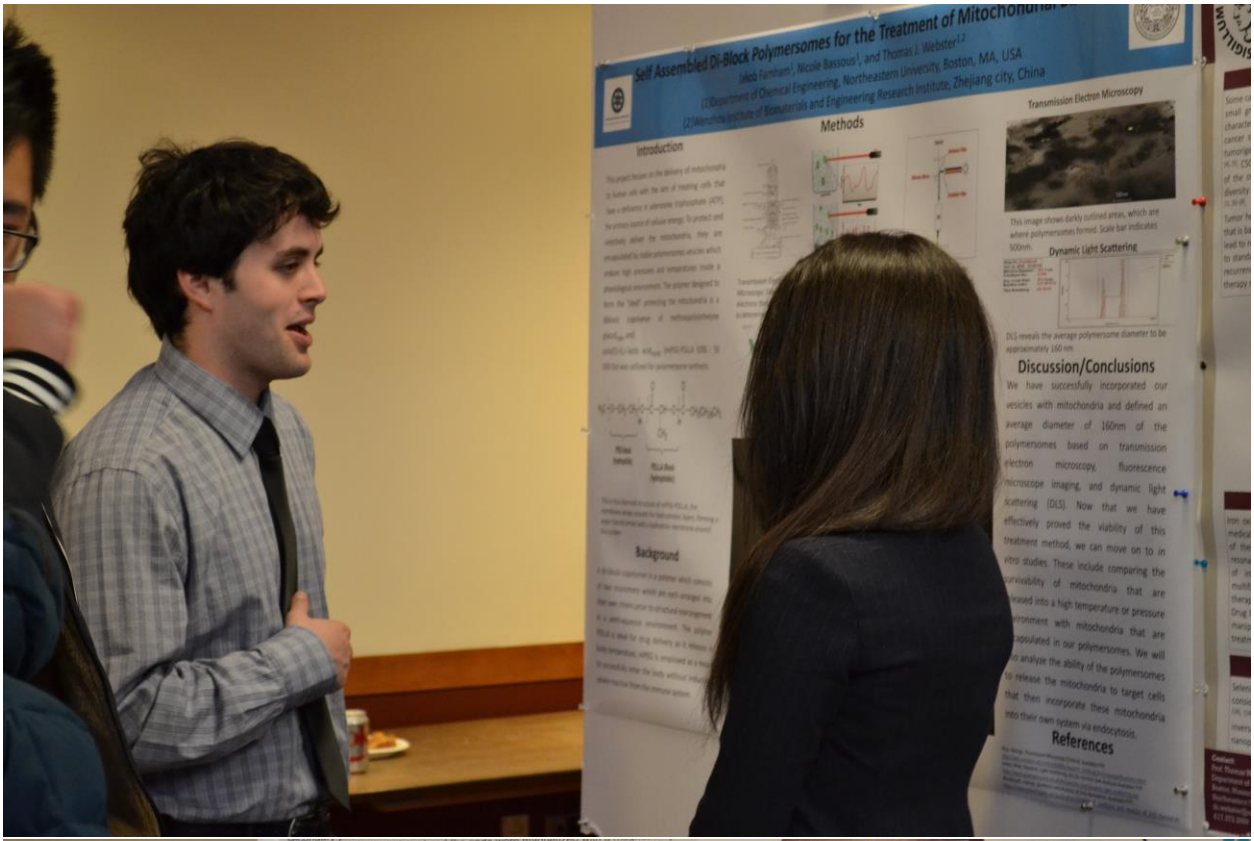

Role of Microstructural Topology
Elastoplastic Extra Cellular
Abstract
Introduction
Methods
Results
Conclusions
References

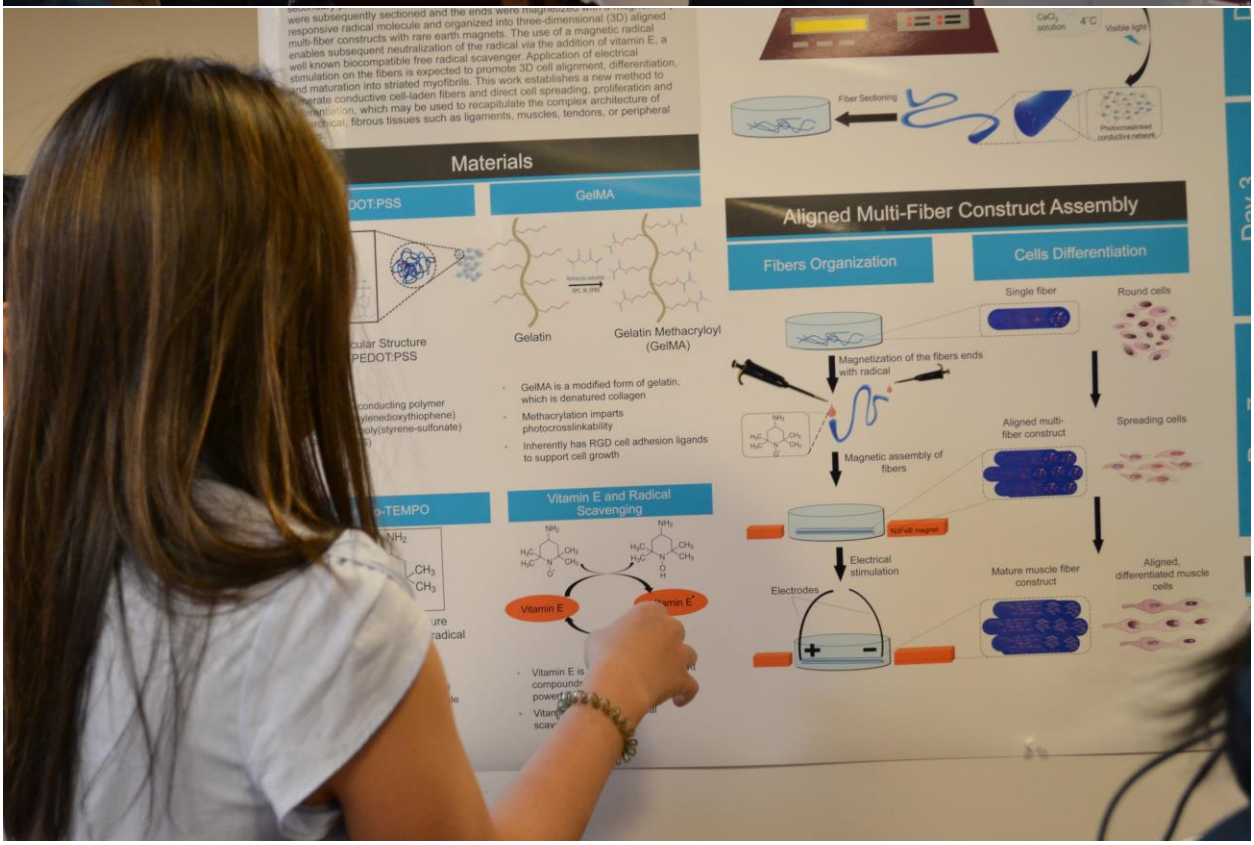

Single Cell Array for Population-based Subcellular Toxicity Assay
Introduction
Results


Bioconjugation For New Functions
Northeastern
BARNETT INSTITUTE
Cartilage Repair: Carrier with Tailored Properties
PURPOSE
METHODS


Incorporation of Fluorescently labeled
into Native Bovine Sclera Fibrils
METHODS

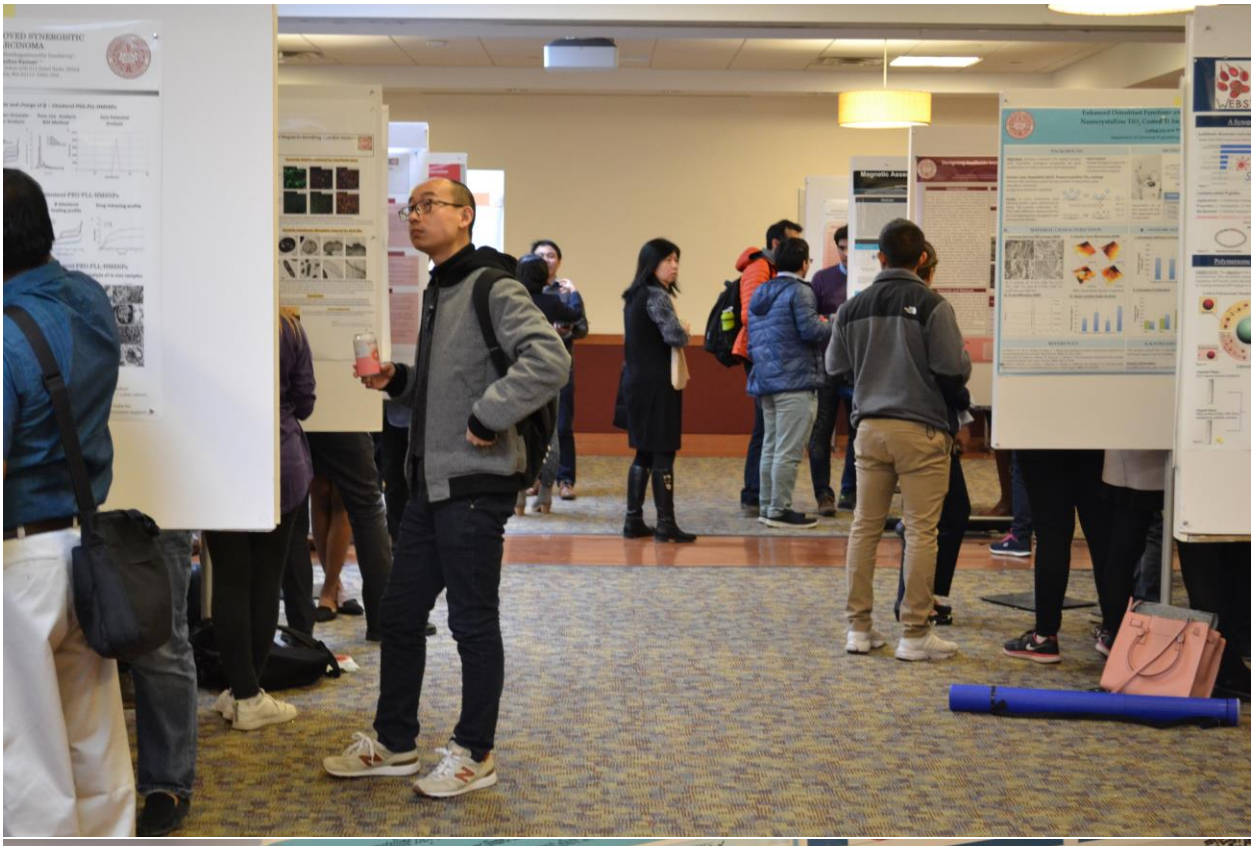

The Effect of Epoxide Functional Group Content
on Cell Viability and Behavior

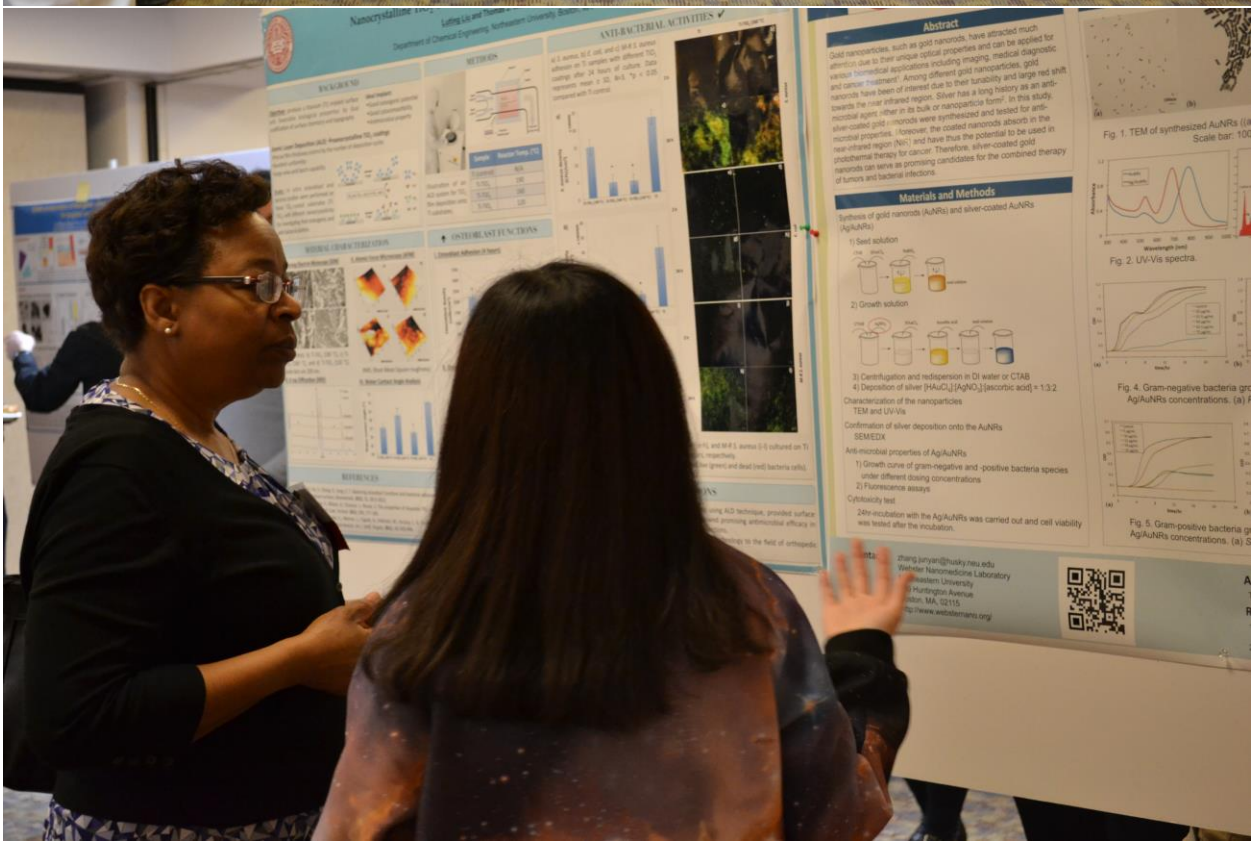

Self Assembled Di-Block Polymersomes for the Treatment of Mitochondrial
Introduction
Methods
Transmission Electron Microscopy
Dynamic Light Scattering
Discussion/Conclusions
We have successfully incorporated our vesicles with mitochondria and defined an average diameter of 160nm of the polymersomes based on transmission electron microscopy, fluorescence microscope imaging, and dynamic light scattering (DLS). Now that we have effectively proved the viability of this treatment method, we can move on to in vitro studies. These include comparing the survivability of mitochondria that are released into a high temperature or pressure environment with mitochondria that are encapsulated in our polymersomes. We will also analyze the ability of the polymersomes to release the mitochondria to target cells that then incorporate these mitochondria into their own system via endocytosis.
References
Background


Materials
GelMA
Gelatin
Gelatin Methacryloyl (GelMA)
GelMA is a modified form of gelatin, which is denatured collagen
Methacrylation imparts photocrosslinkability
Inherently has RGD cell adhesion ligands to support cell growth
Vitamin E and Radical Scavenging
Vitamin E
Fiber Sectioning
Aligned Multi-Fiber Construct Assembly
Fibers Organization
Cells Differentiation
Single fiber
Round cells
Magnetization of the fibers ends with radical
Aligned multi-fiber construct
Spreading cells
Magnetic assembly of fibers
Electrical stimulation
Electrodes
Mature muscle fiber construct
Aligned, differentiated muscle cells

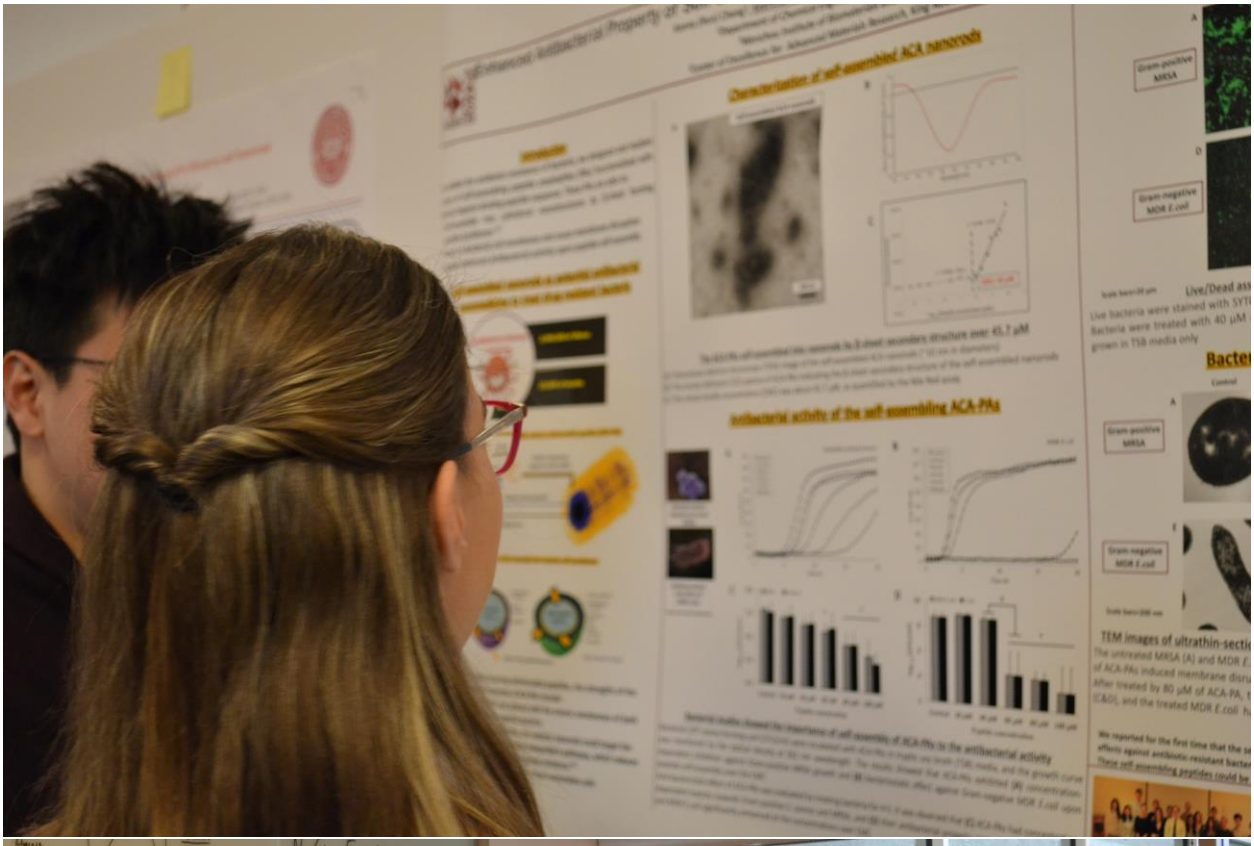

Biogenic Silver Nanoparticles Perform Dual Function as Berberine Carrier and Anticancer Agent Against Breast Cancer
NANO-DRUG DELIVERY SYSTEM FOR IMPROVED SYNERGISTIC CHEMOTHERAPY FOR COLON CARCINOMA


NANO-DRUG DELIVERY SYSTEM FOR IMPROVED SYNERGISTIC CHEMOTHERAPY FOR COLON CARCINOMA




ANTI-BACTERIAL ACTIVITIES
Abstract
Materials and Methods
Fig. 1. TEM of synthesized AuNRs
Fig. 2. UV-Vis spectra.


Enhanced Antibacterial Property of Self-assembling Peptide Amphiphiles Functionalized
Bacterial viability analyzed by Live/Dead assay
Characterization of self-assembled ACA nanorods
Antibacterial activity of the self-assembling ACA-PAs
Bacteria membrane disruption induced by ACA-PAs
Conclusion
Acknowledgments


Characterization of self-assembled ACA nanorods
Antibacterial activity of the self-assembling ACA-PAs
Gram positive MRSA
Gram-negative MDR E.coli


Nafi Frasman
Cape Ann Brewing Co.
Gloucester, MA