

**April 24, 2019**  
**Presenters from Chemical,  
Biochemical, and  
Environmental Engineering**  
University Center



UNDERGRADUATE  
**RESEARCH**  
CREATIVE DAY  
ACHIEVEMENT



## **Welcome**

**9:00 AM – 9:50 AM**

**UC 312**

**Remarks by Dr. Katharine Cole, Vice Provost & Dean of Undergraduate Academic Affairs  
and  
Wisdom Institute Breakfast with Student Speakers  
David Fialkow, Mia Rickenbach and Scott Sainz  
and  
recognition of UMBC Review Faculty and Student Editors**

## **General Session**

**12:00 PM - 1:00 PM**

**UC 312**

**Alumni Keynote Speaker Eric Grollman, '07, Sociology and Psychology  
and  
Introduction of the 2018-2019  
Undergraduate Research Award Scholars**

- **Bridget Anger** | Chemical, Biochemical, and Environmental Engineering  
*Phototransformation Of Macrolide Antibiotics In UV-254 Systems And Characterization Of Residual Antimicrobial Activity*  
Mentor(s): Lee Blaney  
UC Ballroom | 10 – 10:45 a.m.
- **Peter Bailer** | Chemical, Biochemical, and Environmental Engineering  
*Design and Analysis Of Hydrogels To Protect Biosensors From Enzyme-Catalysed Degradation*  
Mentor(s): Jennie Leach  
UC Ballroom | 1 – 2:30 p.m.
- **Peter Bailer** | Chemical, Biochemical, and Environmental Engineering  
*Prevention Of RNA Aptamer Degradation To Create Biosensors For Therapeutic Drug*  
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- **Nicholas Balasus** | Chemical, Biochemical, and Environmental Engineering  
*Investigations Of The Acidity And Liquid Water Content Of Chesapeake Bay Aerosols During The OWLETS-2 Campaign*  
Mentor(s): Christopher Hennigan  
UC 204 | 2:15 – 2:30 p.m.
- **Bradley Beckman** | Chemical, Biochemical, and Environmental Engineering  
*Exploring Genomic Locations Leading To High Levels Of Recombinant Protein Expression And Secretion In A. Nidulans*  
Mentor(s): Mark Marten  
UC Ballroom | 1 – 2:30 p.m.
- **Aiswarya Bobby** | Chemical, Biochemical, and Environmental Engineering  
*Recovery Of Nutrients From Human Urine Using Donnan Dialysis*  
Mentor(s): Lee Blaney  
UC Ballroom | 10 – 11:30 a.m.
- **Kwadwo Bonsu** | Chemical, Biochemical, and Environmental Engineering  
*Analysis Of Glycolytic Multienzyme Complex Formation In Human Immune Cells*  
Mentor(s): Gregory Szeto  
UC Ballroom | 10 – 11:30 a.m.
- **Nicole Couturier** | Chemical, Biochemical, and Environmental Engineering  
*Characterizing The Immunogenicity Of Gold Nanoparticles (AuNP) As Drug Delivery Vehicles*  
Mentor(s): Gregory Szeto  
UC Ballroom | 1 – 2:30 p.m.
- **Eliana Crentsil** | Chemical, Biochemical, and Environmental Engineering  
*Effects Of Cell Tension On YAP/TAZ-Mediated Volume Regulation*  
Mentor(s): Sean Sun  
Fine Arts Recital Hall | 11:30 – 11:45 a.m.
- **James Dizon** | Chemical, Biochemical, and Environmental Engineering  
*Production And Bioactivity Of Fc-IL-2 Protein*  
Mentor(s): Gregory Szeto  
Fine Arts Recital Hall | 11:15 – 11:30 a.m.
- **Anna Feerick** | Chemical, Biochemical, and Environmental Engineering  
*Spatiotemporal Analysis Of Contaminants Of Emerging Concern In The Choptank River*  
Mentor(s): Lee Blaney  
UC 204 | 2:45 – 3 p.m.
- **Ward Gracey** | Chemical, Biochemical, and Environmental Engineering  
*Exploring Genomic Locations Leading To High Levels Of Recombinant Protein Expression And Secretion In A. Nidulans*  
Mentor(s): Mark Marten  
UC Ballroom | 1 – 2:30 p.m.
- **Temitope Ibitoye** | Chemical, Biochemical, and Environmental Engineering  
*Phototransformation Of Macrolide Antibiotics In UV-254 Systems And Characterization Of Residual Antimicrobial Activity*  
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- **Rahul Kamdar** | Chemical, Biochemical, and Environmental Engineering  
*Determining The Conditions Optimal for T-cell Activation Using A Plate Bound Substrate*  
Mentor(s): Gregory Szeto  
UC Ballroom | 1 – 2:30 p.m.
- **Blair Landon** | Chemical, Biochemical, and Environmental Engineering  
*Establishing A Three-Dimensional Collagen Based Cell Culture Of Human Monocytes*  
Mentor(s): Gregory Szeto  
UC 312 | 3:15 – 3:30 p.m.
- **April Laranang** | Chemical, Biochemical, and Environmental Engineering  
*Total And Methylmercury Exposure To Individuals In Artisanal And Small-Scale Gold Mining In Madre De Dios, Peru*  
Mentor(s): Helen Hsu-Kim  
UC Ballroom | 10 – 11:30 a.m.
- **Kelsi Lawson** | Chemical, Biochemical, and Environmental Engineering  
*Exploring Genomic Locations Leading To High Levels Of Recombinant Protein Expression And Secretion In A. Nidulans*  
Mentor(s): Mark Marten  
UC Ballroom | 1 – 2:30 p.m.
- **Joshua Leckron** | Chemical, Biochemical, and Environmental Engineering  
*3D Screen Bioprinting: A Novel And Versatile Method Of Tissue Engineering*  
Mentor(s): Erin Lavik  
UC Ballroom | 10 – 11:30 a.m.
- **Samantha Maygers** | Chemical, Biochemical, and Environmental Engineering  
*Phenotypic Characterization Of The snf1 Gene Product In Aspergillus Nidulans*  
Mentor(s): Mark Marten  
UC Ballroom | 1 – 2:30 p.m.
- **Chelsea Mikal** | Chemical, Biochemical, and Environmental Engineering  
*Sorption Of Organometallic Compounds To Dissolved Organicmatter*  
Mentor(s): Lee Blaney  
UC Ballroom | 1 – 2:30 p.m.
- **Kathryn Moormann** | Chemical, Biochemical, and Environmental Engineering  
*Using An Aspergillus Nidulans, Temperature-Sensitive, podB Mutant To Express High Levels Of Secreted Protein*  
Mentor(s): Mark Marten  
UC Ballroom | 10 – 11:30 a.m.
- **Bilal Mughal** | Chemical, Biochemical, and Environmental Engineering  
*Design and Analysis Of Hydrogels To Protect Biosensors From Enzyme-Catalysed Degradation*  
Mentor(s): Jennie Leach  
UC Ballroom | 1 – 2:30 p.m.
- **Bilal Mughal** | Chemical, Biochemical, and Environmental Engineering  
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- **Francesca Nicole Nacion** | Chemical, Biochemical, and Environmental Engineering  
*Optimizing Transfection Of Hexokinase Reporter Proteins Into Jurkat Immune Cells*  
Mentor(s): Gregory Szeto  
UC Ballroom | 1 – 2:30 p.m.
- **Ouriel Ndalamba** | Chemical, Biochemical, and Environmental Engineering  
*The effects Of Ferric Chloride, Chitosan, And Aluminum Sulfate Coagulants On StruvUC 204 Particle Size*  
Mentor(s): Lee Blaney  
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- **Howard Nicholson** | Chemical, Biochemical, and Environmental Engineering  
*Prevention Of RNA Aptamer Degradation To Create Biosensors For Therapeutic Drug*  
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- **Howard Nicholson** | Chemical, Biochemical, and Environmental Engineering  
*Design and Analysis Of Hydrogels To Protect Biosensors From Enzyme-Catalysed Degradation*  
Mentor(s): Jennie Leach  
UC Ballroom | 1 – 2:30 p.m.
- **Feyisanmi Ojo** | Chemical, Biochemical, and Environmental Engineering  
*A Novel Approach To Using Fast Microdialysis With A Glucose Binding Protein Biosensor For Continuous Glucose Monitoring*  
Mentor(s): Leah Tolosa-Croucher  
UC Ballroom | 10 – 11:30 a.m.
- **Olumide Ojo** | Chemical, Biochemical, and Environmental Engineering  
*A Novel Approach To Using Fast Microdialysis With A Glucose Binding Protein Biosensor For Continuous Glucose Monitoring*  
Mentor(s): Leah Tolosa-Croucher  
UC Ballroom | 10 – 11:30 a.m.
- **Raj Purohit** | Chemical, Biochemical, and Environmental Engineering  
*Using An Aspergillus Nidulans, Temperature-Sensitive, podB Mutant To Express High Levels Of Secreted Protein*  
Mentor(s): Mark Marten  
UC Ballroom | 10 – 11:30 a.m.
- **Heather Rosario** | Chemical, Biochemical, and Environmental Engineering  
*Effect Of Aspirin On Staphylococcus Aureus Biofilm Formation*  
Mentor(s): Jennie Leach  
UC Ballroom | 1 – 2:30 p.m.
- **Hediyah Sadeq** | Chemical, Biochemical, and Environmental Engineering  
*A Novel Approach To Using Fast Microdialysis With A Glucose Binding Protein Biosensor For Continuous Glucose Monitoring*  
Mentor(s): Leah Tolosa-Croucher  
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- **Areej Shahid** | Chemical, Biochemical, and Environmental Engineering  
*Characterization Of Electronic And Photonic Nanomaterials*  
Mentor(s): Joshua Zide  
UC Ballroom | 1 – 2:30 p.m.
- **Taylor Stephen** | Chemical, Biochemical, and Environmental Engineering  
*Thermodynamic Modeling Of Pollutant Uptake By Freshwater Mussels (*Elliptio Complanata*)*  
Mentor(s): Upal Ghosh  
UC 312 | 3:30 – 3:45 p.m.
- **Halle Welch** | Chemical, Biochemical, and Environmental Engineering  
*Examining Characteristics Of *erecta*1-6 Mutant Phenotype In *Physcomitrella Patens**  
Mentor(s): Adrienne Roeder  
UC Ballroom | 1 – 2:30 p.m.