2017-18
Annual Report

Undergraduate Research and Prestigious Scholarships
Division of Undergraduate Academic Affairs
ur.umbc.edu
# Table of Contents

- Mission | 5
- Message from the Director | 6
- Undergraduate Research Programs | 7
- Campus-wide Data on 2018 Undergraduate Degree Recipients who Engaged in Research | 8
- 2018 Exceptional Grads who Participated in Undergraduate Research/Prestigious Scholarships | 9
- By the Numbers | 11
- Faculty Support | 12
- Mentoring | 14
- Benefits of Engaging Students in Research | 15
- Undergraduate Research Awards (URA) | 16
  - 2017-18 URA Scholars
  - URA Spotlights
  - URA Data
- Undergraduate Research and Creative Achievement Day (URCAD) | 25
  - Qualitative Data
  - URCAD Highlights
  - URCAD Data
- UMBC Review | 33
- Travel Awards | 34
- Research Opportunities | 36
- Prestigious Scholarships | 37
- Partnerships | 39
- One-on-one Support | 41
- Publicity and Marketing | 42
- 2018... it was a very good year | 45
- History | 46
- Staff | 47
Mission

Undergraduate Research and Prestigious Scholarships provides academic support and advising, mentoring, and funding, to students involved in research and creative work, or who are preparing to apply for prestigious scholarships. Our mission is to promote engagement and experiential learning that enriches the educational experience of UMBC undergraduates in all disciplines, and promotes a culture of scholarship throughout the university.

Vision

Our students are exposed to opportunities that prepare them to achieve their academic goals and make them competitive candidates for graduate and professional school, employment, and prestigious awards. We contribute to UMBC’s strategic commitment to the twin goals of research and a distinctive undergraduate experience by fostering academic excellence both inside and outside of the classroom.

Shared Values

As a unit of the Division of Undergraduate Academic Affairs, we are committed to UMBC’s core values of diversity, integrity, social responsibility, and lifelong learning. We define excellence in higher education through an inclusive culture that connects innovative teaching and learning, research across disciplines, and civic engagement.
Message from the Director

I’ve been a staff member and part-time faculty at UMBC for about 14 years, but 2018 marks the close of my first full year as the Director of Undergraduate Research and Prestigious Scholarships. This unit has a strong foundation that was built by Founding Dean Diane Lee, Interim Dean Simon Stacey, and former Director Janet McGlynn. The goals for this past year were to maintain continuity of programming and to ensure a smooth transition to new leadership. This year, I have also been assessing our practices and building upon them with the goal of improving student outcomes. In the case of prestigious scholarships, I am working to establish protocols and forming committees, giving structure to the institutional nomination process. This year was also about forming and energizing connections on campus and beyond, building trust with students and faculty, and improving the visibility of the unit and the division, as major contributors to student success at UMBC.

This academic year saw a continued increase in the number of UMBC’s undergraduate students who are engaged in research and creative work. Through our various programs and initiatives, students have obtained funding for their projects, presented their results to faculty and peers both on campus and at national conferences, published their academic writing in peer-reviewed journals, participated in off-campus REUs, and competed for prestigious scholarships. A few of the accomplishments I am most proud of for this year include successfully nominating and advising Naomi Mburu, UMBC’s first Rhodes scholar in school history, through the rigorous application and interview process. Other highlights include taking over as the faculty representative for seven prestigious scholarships and streamlining processes for applicants, developing faculty committees to improve the quality of applications, and creating an archive of UMBC’s past winners. I’ve attended the annual National Association of Fellowships Advisors (NAFA) conference and learned about best practices in the field, met with Goldwater president, John Mateja, and Tara Yglesias, Deputy Executive Secretary of the Harry S. Truman Scholarship Foundation, to identify strategies for putting forward successful candidates for these scholarships. As an alumna of UMBC’s visual arts program, it has been a personal goal to increase participation from the arts and to showcase creative scholarship at URCAD side-by-side with traditional research fields. We’ve improved assessment, and rebranded our programs with an energy that is supportive, professional, and student-focused.

I am pleased to report significant growth in all of the programs I oversee, in term of the numbers of students and faculty who participate, as well as the quality of research and creative work these students are producing. For these successes, the programs are indebted to the support of UAA leadership, especially Dean Katharine Cole, and the funding that comes from a variety of contributors, including the Deans of all five colleges, the Office of Vice President for Research, and Provost Philip Rous. The success of students involved in our programs is an integral part of upholding UMBC’s reputation as a national leader in academic excellence. I hope to build on this year’s student successes next year and beyond!

April L. Householder
April Householder, Ph.D.
Director of Undergraduate Research and Prestigious Scholarships
Undergraduate Research Programs

Getting involved in research as an undergraduate helps students network with faculty both on and off campus, strengthen their resumes for graduate school, professional school, and employment, support their artistic vision, and helps them apply what they’ve learned in the classroom in a research setting. UMBC has several programs that affirm UMBC’s commitment to the twin goals of research and a distinctive undergraduate experience:

**Undergraduate Research and Creative Achievement Day (URCAD)** features research, scholarship, and creative work carried out by UMBC undergraduates. Student work is shared through oral presentations, posters, artistic exhibits, performances, and film.

**Undergraduate Research Awards (URA)** provide up to $1,500 to undergraduate students to support their research or creative work with a UMBC faculty mentor on an original project. UMBC students of all years and disciplines are invited to apply.

**UMBC Review (Journal of Undergraduate Research)** Published annually, this peer-reviewed journal features academic papers written by UMBC undergraduates.

**Travel Awards** Students who are invited to present their work at a conference or festival may apply for funds to support their travel.

**Research Opportunities** Assistance with finding and applying to summer REUs and other research opportunities.

**Prestigious Scholarships** Support for students applying for prestigious scholarships such as Rhodes, Gates-Cambridge, Marshall, Truman Goldwater, and others.
Campus-wide Data on 2018 Undergraduate Degree Recipients Who Engaged in Research

Data was collected on 1,266 undergraduate degree recipients (2018) for the UMBC Career Center’s First Destination Report.
2018 Exceptional Grads
who participated in undergraduate research and prestigious scholarships

Academic all-star and peer mentor Noah Zazanis
pursues research into LGBT health disparities

Doopshika Welikela to begin Johns Hopkins MSPH
after reproductive health research abroad

Adaku Uchendu to extend passion for mathematics
through information sciences Ph.D. at Penn State

Choreographer Maia Schechter’s critically acclaimed
“Now Elsewhere” to be featured at the Kennedy
Center

Jonathan Weiner pursues Ph.D. combining interests
in experimental and computational biology

Valedictorian Eudoreh Vital to pursue neuroscience-
focused M.D./Ph.D. at Emory University

Humanities Scholar and service leader Morgan Zepp
will travel to Lithuania as a Fulbright Scholar

Manisha Vepa pursues interest in East Asian affairs
as Fulbright Scholar in South Korea

Biochemistry researcher and award-winning figure
skater Ariissa Falat to pursue Pharm.D./J.D.

Emmanuel Mone serves as a streetwear brand to
prompt public discussion of gender, sexuality, and
equality
“This September I will be travelling to Romania as a Fulbright scholar, conducting research on Roman coin imagery in the ancient Roman province of Dacia. As I begin the next chapter of my academic career, I cannot help but reflect on the opportunities I have had at UMBC, without which my Fulbright application would have been severely lacking. By allowing me to pursue my research interests and apply to prestigious scholarships, UMBC has prepared me not only for this upcoming project, but for years to come. My URCAD presentation was attended by students and faculty alike. I was able to use feedback from my presentation to further refine my project and submit it as my honors thesis. I also applied to the Marshall Scholarship under the mentorship of Dr. April Householder. Though the application was arduous, requiring five separate essays, I found the experience rewarding. As well as enhancing my writing skills, the application process made me truly reflect on the reasons I had chosen this field of study, why I wanted to pursue archaeology, and how I wanted to proceed. Thanks to this introspective nature of the process I was able to narrow down my plans for after Fulbright, choosing to marry my research with a future in museums curation.”

--Flora Kirk

2018 Graduate, Ancient Studies
URA Scholar, URCAD Participant, Fulbright Scholar
<table>
<thead>
<tr>
<th>Statistic</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total members of the research community</td>
<td>5,664 members reached</td>
</tr>
<tr>
<td>NIST applicants advised</td>
<td>246 applicants advised</td>
</tr>
<tr>
<td>First Rhodes Scholar in school history</td>
<td>1st Rhodes Scholar</td>
</tr>
<tr>
<td>URCAD presenters advised</td>
<td>350 presenters advised</td>
</tr>
<tr>
<td>Rhodes Scholar in school history</td>
<td>1st Rhodes Scholar</td>
</tr>
<tr>
<td>Travel Awards</td>
<td>18 awards</td>
</tr>
<tr>
<td>Student workshops</td>
<td>20 workshops</td>
</tr>
<tr>
<td>Rhodes Scholar in school history</td>
<td>1st Rhodes Scholar</td>
</tr>
<tr>
<td>URA Scholars</td>
<td>67 Scholars</td>
</tr>
<tr>
<td>URCAD attendees</td>
<td>2,448 attendees</td>
</tr>
<tr>
<td>UMBC Review copies distributed</td>
<td>2,000 copies distributed</td>
</tr>
<tr>
<td>Goldwater Winner</td>
<td>1 Goldwater Winner</td>
</tr>
<tr>
<td>Honorable Mention</td>
<td>1 Honorable Mention</td>
</tr>
<tr>
<td>Student workshops</td>
<td>20 workshops</td>
</tr>
<tr>
<td>REU database entries</td>
<td>481 entries</td>
</tr>
<tr>
<td>Undergraduate degree recipients engaged in research</td>
<td>30% of all undergraduate degree recipients engaged in research while at UMBC</td>
</tr>
</tbody>
</table>
Faculty Support

**URCAD Committee**

- **Stephen Miller, Chair**  
  Biological Sciences
- **Diane Alonso**  
  Psychology
- **Song An**  
  Chemistry and Biochemistry
- **Ian Anson**  
  Political Science
- **Bradley Arnold**  
  Chemistry
- **Richard Chang**  
  Computer Science and Electrical Engineering
- **Lindsay DiCuirci**  
  English
- **Amy Everhart**  
  Information Systems
- **April Householder**  
  Undergraduate Research and Prestigious Scholarships
- **Molly Jones-Lewis**  
  Ancient Studies
- **Hye-Won Kang**  
  Mathematics and Statistics
- **Jodi Kelber-Kaye**  
  Honors College
- **Jason Kestner**  
  Physics
- **Jackie King**  
  MARC U*STAR Program
- **Charles Laberge**  
  Computer Science and Electrical Engineering
- **Hua Lu**  
  Biological Sciences
- **Galina Madjaroff**  
  Management of Aging Services
- **Nagaraj Neerchal**  
  Mathematics and Statistics
- **Timothy Nohe**  
  Visual Arts
- **Cheryl North**  
  Education
- **Corrie Parks**  
  Visual Arts
- **Sara Poggio**  
  Modern Languages, Linguistics, and Intercultural Communication
- **Neil Rothman**  
  Mechanical Engineering
- **Felipe Filomeno**  
  Political Science and Global Studies
- **Kathy Sutphin**  
  College of Natural and Mathematical Sciences

**URA Committee**

- **Gregory Szeto**  
  Chemical, Biochemical, and Environmental Engineering
- **Eric Brown**  
  Interdisciplinary Studies
- **Marigiose Castellanos**  
  Chemical Engineering
- **Daniel Ritschel**  
  History
- **Viviana Cordova**  
  Visual Arts
- **Thomas Cronin**  
  Biological Sciences
- **Carolyn Forestiere**  
  Political Science
- **Jeffrey Gardner**  
  Biological Sciences
- **Vin Grabill, Chair**  
  Visual Arts
- **Doug Hamby**  
  Dance
- **April Householder**  
  Undergraduate Research and Prestigious Scholarships
- **Renee Lambert-Bretiere**  
  Modern Languages, Linguistics, and Intercultural Communication
- **Andrea Kleinsmith**  
  Information Systems
- **April Kreizenbeck**  
  Theatre
- **Bernard Lohr**  
  Biology
- **J. Vanderlei Martins**  
  Physics
- **Tim Oates**  
  Computer Science and Electrical Engineering
- **Michele Osherow**  
  English, Judaic Studies
- **Bryce Peake**  
  Media Communication Studies
- **Marcus Zupan**  
  Mechanical Engineering
- **Brad Peercy**  
  Mathematics and Statistics
- **E. Michael Richards**  
  Music
- **David Rosenbloom**  
  Ancient Studies
- **Anne Sarah Rubin**  
  History
- **Dena Smith**  
  Sociology and Anthropology
- **Paul Smith**  
  Chemistry
- **Colin Studds**  
  Geography and Environmental Systems
- **Laura Ting**  
  Social Work
- **Shari Waldstein**  
  Psychology
- **Chuming Yuan**  
  Economics

**Critical Ped . a . go . gy:**
Faculty review committees are an integral part of not only evaluating and selecting URCAD presenters, URA recipients, and prestigious scholarships applicants, but also provide feedback to students to improve their research and writing.
Goldwater Committee

April Householder  
Committee Chair  
Undergraduate Research and Prestigious Scholarships

Lee Blaney  
Chemical, Biochemical and Environmental Engineering

David Eisenmann  
Biological Sciences

Stephen Freeland  
Interdisciplinary Studies

Jason Kestner  
Physics

Brad Peercy  
Mathematics and Statistics

Marcin Ptaszek  
Chemistry and Biochemistry

Cynthia Wagner  
Biological Sciences

Mitsue Wiggs  
Meyerhoff Scholars Program

“\(I've\) enjoyed the 15 years I've served as URA committee chair. It was my goal to work with faculty members on the committee to encourage proposals from as many students as possible across the campus. I also enjoyed working with Dean Diane Lee, Provost Rous, and other administrators in an effort to secure more funds, when possible. I'm glad to say that URA funding and project completion continues on an upward trend, and I look forward to returning to URCAD in the years to come to witness the research produced by our talented and motivated students at UMBC. As I step down from my role, the URA initiative and URCAD are in very good hands with April Householder now directing.”

-- Vin Grabill  
Outgoing URA Committee Chair

Travel Awards Committee

Devon Fick  
Undergraduate Academic Affairs

Timothy Phin  
Ancient Studies

Bedrich Sousedik  
Mathematics and Statistics

Laura Ting  
Social Work
Mentoring

Students reported feeling more connected to the faculty
- advice, encouragement
- Students better understand the culture of the discipline
- Students develop skills such as
  - self-confidence, communication, technical abilities, change management, leadership, team work, ability to work independently
- Students made connections to classroom learning
- Professionalization: networked to faculty/institutions outside the university
- Faculty provided opportunities to present and publish

“When I was an undergraduate student, I lacked context for my studies. I got good grades, but I wasn’t passionate about what I was studying. After getting involved in undergraduate research, I began to see how I could impact and improve the world. My undergraduate research experience allowed me to work on grand challenges related to clean water and public health. That work changed my life. So, for me, it is important to mentor undergraduate researchers to help ignite that flame of curiosity and help our students become leaders on global issues. But, I also get a lot from my undergraduate researchers. It is immensely gratifying to watch a student present their work for the first time, to publish their first paper, or to receive a major award. Their excitement is contagious and helps to push myself, and the rest of our research group, forward.”

-- Dr. Lee Blaney

Department of Chemical, Biochemical and Environmental Engineering
URA and URCAD Mentor
23.2% of grads who engaged in undergraduate research are pursuing advanced degrees vs. 4.6% who did not

Graduate sooner than students with similar admission criteria (75.6% 4-yr and 90% 5-yr)

UR Mentors report being more engaged/satisfied with their work

Increased identification with other members of an intellectual cohort and high levels of satisfaction with their college experience (esp. among minority students)

Benefits of Engaging Students in Research

Enhanced academic performance:
UR students graduate with higher GPAs (3.6 vs. 3.0 campus-wide)

Better positioned for prestigious scholarships
(5/5, or 100% of prestigious scholarships winners were engaged in undergraduate research)

Higher career outcome rate*
(89.9% vs. 81.8%)

Unaffiliated students get engaged with their intellectual community
(about 1/3 of UR participants are unaffiliated with other scholars or honors programs)

Greater acceptance rates to graduate and professional school
(84.2% vs. 16% campus-wide)

* Total % of students who are employed and/or pursuing an advanced degree.
For 2017-18, **98** applications were received (in the requested amount of $126,281) and **66** URA projects were funded (67 students, including group projects), for a total of **$78,496**.

Unaffiliated students (students not participating in an honors/scholars program) continued to rise, indicating that we are reaching students who aren’t being served by other programs.

Over the last year, these URA scholars conducted research, engaged in entrepreneurial projects, and prepared creative art, with the guidance of their mentors, and with the support of URA funding (up to $1500). They presented their findings at URCAD on April 25, 2018. The URA Scholars and their mentors for 2017-18 are:

**Shreya Agarwal**
Developing New Therapeutics for Prostate Cancer: Inhibition of RNA Pol I in Mouse Models of Prostate Cancer  
Dr. Charles Bieberich

**Tsola Akuya**
Hip-Hop Dance: Foundational vs. Commercial styles  
Ms. Carol Hess-Vait

**Yafet Arafayene**
Synthesizing Flexible Purines for Inhibition of the Nucleocapsid Protein NCp7 in HIV-1  
Dr. Katherine Seley-Radtke

**Hannah Aris**
Isolating Phosphorus from Poultry Litter via Membrane Potentials  
Dr. Lee Blaney

**Emma Ayala**
Strata Animation: Layers in Time and Space  
Ms. Corrie Parks

**Haley Bast**
Malaria in Developed Nations  
Dr. J. Lee Jenkins

**Siya Bhagat**
Dendritic Drug Delivery System for Delivery of Cisplatin  
Dr. Marie-Christine Onuta

**Jayati Bhavsar**
Design of Nano-engineered Materials for Laser Host and Bone Applications: Novel Hydroxyapatites  
Drs. Bradley Arnold, N.B. Singh
Jessica Black
Sex Differences in Brain Responses to Pain in Migraineurs
Dr. Raimi Quiton

Peter Braunschweig
Studying the St. Louis Urban Heat Island During the 2017 Total Solar Eclipse
Dr. Jeffrey Halverson

Thomas Burnett
Investigating Adaptation of Melanopsin Activation
Dr. Phyllis Robinson

Anya Byrd
Effect of Environmental Coloring on Reflectance of Neogonodactylus oerstedii
Dr. Thomas Cronin

Jolee Cohen
Summer Shakespearean Study
Ms. Eve Muson

Kelly Dunn
Narrative Constructions of Collective Memory: Representing the Armed Conflict in Colombia
Dr. Tania Lizarazo

Arissa Falat
A Structure-Activity Relationship study of Flex-acyclic 2,4-diaminopyrimidine nucleosides
Dr. Katherine Seley-Radtke

Jair Flores
Role of Phosphatases in intrinsically photosensitive Rential Ganglion Cell
Dr. Phyllis Robinson

Sam Giannakoulis
Development of a Light Adaptation Model for the Melanopsin Phototransduction Cascade
Dr. Kathleen Hoffman

Jasmine Gim
Chinese and Korean Immigrant Mothers’ Social Support Networks and Parenting Styles
Dr. Charissa Cheah

Jennifer Hewitt
Characterizing Hotspots of Extragalactic Jets and the Connection Between Jet Speed and Jet Power
Dr. Eileen Meyer

Lisa Hong
Synthesis of Near Infrared Imaging Dendron for use in Theranostic Systems
Dr. Marie-Christine Onuta

Anthony Huynh
Dissecting Dynamic Spatial Localization of mTOR in Living Cells
Dr. Minjoung Kyoung

Temitope Ibitoye
Photolysis of Macrolide Antibiotics at 253.7 NM
Dr. Lee Blaney

Zakari Jaworski
Meaning in Movement: Understand Dance Through Research
Prof. Carol Hess-Vait
Marcus Jordan
Synthesis of Novel Water-soluble Self-assembling Bacteriochlorophyll c Mimics
Dr. Marcin Ptaszek

Matthew Kane
Nest Predation of the Bahama Oriole: Examining the Effect of Invasive Rodents on a Critically Endangered Songbird
Dr. Kevin Omland

Michael LaScola
Generation and analysis of dp1 mutants in the green alga Volvox carteri
Dr. Stephen Miller

Andrew Le
Genome-scale Metabolic Reconstruction of the Purinsome Multi-enzyme Complex
Dr. Songon An

Richard Linkous
Characterization of the Pathogenic Bacterial Iron Uptake Protein FeoA
Dr. Aaron Smith

Samiksha Manjani
Analyzing the Sociological and Legal Impacts on the State-wide Occurrence and Reporting of Rape
Dr. Jeffrey Davis

Jason Mascelli
Can Local Governments and Nonprofits Affect Immigrant Settlement?
Dr. Felipe Filomeno

Courtney Mattson
Behavior of Darters in Response to Olfactory Cues
Dr. Tamra Mendelson

Lucas McCullum
Investigating the Feasibility of PZT Plates Towards Developing a Transducer for Tumor Detection
Dr. Soobum Lee

Sarah Miller
Women’s Roles in Affordable Housing Communities in Rio de Janeiro
Dr. Sarah Chard

Ijaz Mohamed
Heme Regulation of Arginine Transferases
Dr. Aaron Smith

Emmanuel Mones
Alt-Masc: Defying Toxic Masculinity through Fashion and Photography
Prof. Mark Durant

Rachel Morin
Documentary of Catholic Missions in Peru
Ms. Sarah Sharp

Heather Mortimer
The Effect of Immersive, Interactive, and Participatory Exhibit Experiences on Visitor Interactions in the Library Rotunda
Ms. Sandra Abbott

Jamar Nash
End of Life Care among Ex-prisoners in Nursing Home Facilities
Dr. Bronwyn Hunter
Tziona NessAiver
Communicating Via EEG and Sound
Dr. Charles LaBerge

Angela Ossana
Laser-induced Plasma Infrared Spectroscopy
Dr. Bradley Arnold

Ezra Pailer
Animated Documentary Exploring Poetry as a Tool of Activism
Prof. Corrie Parks

Alexis Ramsey
Functional Characterization of the *Aspergillus nidulans, nrc2* gene
Dr. Mark Marten

Priyanka Ranade
Using Cognitive Computing to Improve Cybersecurity
Dr. Anupam Joshi

Mia Rickenbach
Cobalt Studios Summer Scene Painting
Prof. Nate Sinnott

Nicolette Riggin
Vlog: A Discourse and Ethnographic Analysis of Vlogging and its Effects on Romantic Relationships
Dr. Bryce Peake

Kwame Robertson
Using Cognitive Computing to Improve Cybersecurity
Dr. Anupam Joshi

Joel Ronning
The Success and Failure of Language in the Works of Ben Jonson and Samuel Beckett
Dr. Raphael Falco

Michael Rowley
Investigating Relative Habitat Densities of the Bahama Oriole
Dr. Kevin Omland

Iman Said
The Effect of Socioeconomic Status on the Relationship Between Marginalized Identities and Psychological Distress
Dr. Jasmine Abrams

William Shelton
Analyzing the Effectiveness of Crowd-sourcing Classification Tasks
Dr. Matthew Fagan

Emily Slaby
Boosting Immune Cells using Plasma Membrane-inserting Drugs to Combat Cancer
Dr. Gregory Szeto

Savannah Steinly
Direct and Indirect Photolysis of Organometallic Compounds
Dr. Lee Blaney

Georgina Stephanie
Analyzing the Dynamics of Intracellular Trafficking and Processing of Lipid-tailed Peptides in Immune Cells
Dr. Gregory Szeto
Jacob Street
Paying Dividends: Examining the Political Viability of Universal Basic Income
Dr. Cynthia Hody

Donnel Thomas
Putative Autophagy Proteins Affect Morphology in Aspergillus Nidulans
Dr. Mark Marten

Mekha Thomas
Characterizing Enzymatic Complexes in Metabolically Stressed Immune and Tumor Cells to Guide Cancer Immunotherapy
Dr. Gregory Szeto

Garrett Tignall
Computational Studies of the Rotational State of Comet Nuclei
Dr. Susan Hoban

Mai-Han Trinh
A Creative Approach to Measuring Empathy
Dr. Simon Stacey

Yeervan Tuerdi
An Efficient Parallelizing Compiler for the Many-core Architecture
Dr. Tinoosh Mohsenin

Adaku Uchendu
Numerical Simulation of Vibrations of Mechanical Structures
Dr. Bedrich Sousedik

Austin Vong
Mammal Species Richness and Abundance Across Baltimore Forest Patches
Dr. Colin Studds

Theodore Weinberg
Fast Implementation of Mixed Finite Elements and Applications to Flow in Porous Media using MATLAB
Dr. Bedrich Sousedik

Majuwana Wijesekara
Determining the Impact of the REACH Initiative on High School Students
Dr. Mariano Santo Domingo

Linda Wiratan
Investigation of Effects of Elicitor-induced Defense Activation on the Circadian Clock in Arabidopsis
Dr. Hua Lu

Claudia Xie
The Effects of Mothers’ Emotion Socialization Practices on Children's Emotional Regulation and Prosocial Behaviors in Chinese American Families
Dr. Charissa Cheah

Yuwanyum Zhu
Parenting Control in European American mothers, Chinese and Korean Immigrant Mothers
Dr. Charissa Cheah
Mia is a Linehan Artist Scholar and Theatre Design & Production major, with an Entrepreneurship & Innovation minor. She used her URA award to study mural painting techniques at Cobalt Studio in New York. She applied these skills to create large-scale mural paintings depicting stories from women involved in human trafficking, as told in the book, *Half the Sky* (also the UMBC New Student Book Experience book). She exhibited her paintings at URCA. Mia earned a second, ENTR URA for 2018-19. She will be researching her idea to start a business called, “Create Freedom”, an organization to raise awareness, empower change-makers, and to fund activists in the fight against human trafficking.

“I had an idea of the direction my academic career was taking prior to participating in undergraduate research at UMBC. When I received the URA, those goals and the new direction became much more tangible. The manifold support was not only financial, but also in mentorship, and the community of fellow researchers. The collective of student researchers was one of my favorite parts of the experience; as we gathered to share about our processes, I felt equally awed at others’ work and encouraged in my own. I have felt fueled to continue down a path I would have otherwise been intimidated to pursue on my own, largely thanks to these URAs.”

-- Mia Rickenbach
Two-time URA Scholar and URCA Presenter
**URA Spotlight: Arissa Falat (Chemistry)**

*A Structure-Activity Relationship study of Flex-acyclic 2,4-diaminopyrimidine nucleosides*

Mentor: Dr. Katherine Seley-Radtke

Several deadly pathogens have emerged recently for which there are no cures available. These include the coronaviruses such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS); filoviruses, like the Ebola (EBOV), Sudan (SUDV), and Marburg (MARV) viruses; and flaviviruses, including Dengue virus (DENV) and Zika virus (ZIKV). With high mortality rates, the potential reemergence of SARS, recent outbreaks of MERS, EBOV, DENV, and severe side effects of ZIKV, it is imperative that safe and effective treatments are developed. One potential option involves the use of nucleoside analogues, one known to exhibit potent antiviral activity, to disrupt viral DNA or RNA synthesis. The Seley-Radtke lab has developed several types of flexible nucleoside analogues, termed “fleximers,” which have demonstrated the ability to increase interactions in the binding pocket that were previously unattainable. Preliminary results have revealed potent activity for several acyclic fleximers against all of these viruses in vitro. Unfortunately, bioavailability is an obstacle to nucleoside delivery; however, this may be overcome by using prodrug moieties such as the McGuigan ProTides. A series of nucleotide prodrugs were synthesized in order to more effectively deliver the monophosphate form of the nucleoside into the cell.

**URA Spotlight: Sarah Miller (Interdisciplinary Studies)**

*Dona de Casa: Women’s Roles in Affordable Housing Movements in Rio de Janeiro*

Mentor: Dr. Sarah Chard

For this project, I was researching the roles that women play in affordable housing movements, specifically those in the Brazilian city of Rio de Janeiro. My research focused on the ways in which women’s participation in the public and political sphere appear to subvert traditional Brazilian gender roles while actually crystallizing those roles in many ways. I also explored the use of collaborative photography methods to give more agency to my subject in regards to their representation.

**URA Spotlight: Samikshha Manjani (Political Science)**

*Analyzing the Sociological and Legal Impacts on the State-wide Occurrence and Reporting of Rape*

Mentor: Dr. Jeffrey Davis

This research analyzes and reveals the inequities in sentencing sexual assault convictions. It highlights various cases, but most notably analyzes the sentencing in People of the State of California v. Brock Allen Turner (2016). Brock Allen Turner was convicted of three felony sexual assault charges yet was only sentenced to six months confinement in a county jail. He was then released after serving three months, and subsequently on probation for three years. The public outcry in response raised questions regarding sentencing leniency for some sex offenders; especially when factors of race and social class are considered. The Californian legislature responded in 2016 with the passage of mandatory minimum sentences for sexual assault offenses as an attempt at adequate and uniform retribution. This research analyzes the consequences of mandatory minimum sentences on minority populations, and its constitutionality. Furthermore, it analyzes and suggests alternative sentencing approaches including non-binding sentencing guidelines, restorative justice, and rehabilitation.
URA Data

URA Projects by Discipline (2017-18)

# of URA Projects Funded (1999-2018)
Feedback from the 2018 post-URA Scholar Survey

“The URA gave me an opportunity to explore an interest I would not have been able to otherwise. Through the URA, I felt more prepared to face research in my classes and pursue personal research after graduating. The URA opened up new grad school, Ph.D., and career opportunities for me that I wasn't considering before.”

“The URA helped me formalize my research project such that it had a clear end goal, points of self-assessment and reflection, and a manageable size so that it could be completed in one year. This has greatly streamlined what I was able to accomplish as a result.”

“I'm pretty sure having completed the URA process guaranteed me a full scholarship to the patent law school I'm going to. It also showed me the tediousness and difficulty of research. I have a much, much greater degree of respect for those in basic biological research now.”
Undergraduate Research and Creative Achievement Day (URCAD)

The 22nd Annual URCAD event featured presentations by a record 350 students (up 50 from last year), and an attendance of almost 2,500 (up 300). Students presented oral and poster presentations, dance performances, films, music, theatre performances, and computer engineered video games. Alumnus Isaac Kinde (Biological Sciences, ‘05) provided the keynote address. 90 unaffiliated students participated.

“Conducting the research without a graduate mentor and being able to think out the next steps of what I should be doing in my experiment strengthened my critical thinking skills.”

“I learned to handle questions better and think on the spot.”

“I learned how to compile my research into concise texts and graphics, display it in an organized way, and then how to verbally present my material and guide people through my poster. I now feel prepared and confident that I could present research at a future job than before I presented at URCAD.”

“My URCAD presentation forced me to look at why my thesis research mattered to someone outside of my discipline. It also helped me to gain a better understanding of and confidence in the importance of my area of research.”

“At UMBC everyone is taught to continuously learn, and UR CAD is a great way to learn about the research that other disciplines are doing on campus and to educate yourself on various parts of the world, just through our community here at UMBC.”

“My mentor and I definitely communicated more than we would have if I was just a student in her class.”

“It was exciting and uniting for so many disciplines to be presenting at one event. The environment was encouraging and fun.”

“URCAD served as a warm-up for my INDS capstone presentation.”

Feedback from Post-URCAD Presenter Survey
Maia Schecter’s dance piece, “Now Elsewhere”, was also featured at the Kennedy Center.

Filmmaker Ezra Pailer collaborated with D.C. poet, Jordann Allen to create an animated documentary film.

Musician Ellington Carthan performed, “Black Radio: The Robert Glasper Experiment.”

Guests interacted with student-designed and engineered video games at URCAD.

Alumni Keynote Speaker
Isaac Kinde
‘05 Biological Sciences
M.D./Ph.D., Johns Hopkins University School of Medicine

Dr. Isaac Kinde is a nationally recognized innovator of molecular cancer diagnostics. He holds an M.D./Ph.D. from the Johns Hopkins University School of Medicine. His doctoral research produced novel cancer diagnostics based on improvements in DNA sequencing technology and was awarded the Hans Joaquim Prochaska Research Award. Notable applications of his work include a prototype screening test for ovarian and endometrial cancers from liquid-based Pap tests, a noninvasive method of monitoring bladder cancers from urine, and a revelation in the development of treatment resistance from analyzing the blood of patients with colon cancer.

Descriptions of his inventions and their applications appear in prominent scientific journals — such as Science Translational Medicine, Proceedings of the National Academy of Sciences, and Nature — and are the subject of several patents. His work has attracted considerable attention from industry, spurring partnerships to facilitate its commercialization, including PapGene, Inc., a molecular diagnostic startup where he currently serves as chief scientific officer. He has been recognized as one of Forbes Magazine’s ‘30 under 30’ in Science and Healthcare and a ‘Game Changer’ by Men’s Fitness. Isaac received a B.S. in Biological Sciences from the University of Maryland, Baltimore County in 2005, where he worked with research mentor, Dr. Michael Summers. At UMBC, he was an Undergraduate Research Award (URA) Scholar and URCAD presenter (2004-05), a Meyerhoff Scholar, and received the Faculty Award of Excellence in the Biological Sciences.
URCAD Data

Number of URCAD Presenters Annually, 1997-2018

Note: Students could identify more than one affiliation.
# URCAD Presentations by Year and Discipline

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*Note: Some students are listed in multiple majors*
• “I learned disappointment and trouble shooting. I had to ask why did this go wrong? Why did that contribute to error? How can I fix it?”
• “It gave great practice in trying to explain complex topics to someone who is not in your field of expertise.”
What did you learn about delivering an effective presentation?

- “The oral presentation prep session given by Dr. Phin was very helpful in explaining how to make slides and presentations accessible and easy to understand.”
- “It is important to speak in a broad audience and emphasize what your research means and why it is important when introducing and concluding it.”

How?

- “Participating at URCAD requires you to trace your steps backwards in your research in order to give a good, concise presentation. You end up catching things you might not have paid attention to before, or ask yourself more questions since you’re considering an audience.”
- “The questions people asked me at my poster helped open my mind about things to consider in future research.”
How?

• “This helped my relationship with my mentor as she provided me with good, constructive feedback and encouragement.”
• “I was able to meet other professors because of my presentation, which was nice because I don’t attend Main Campus so I’m limited in what professors I get to meet.”
• “I was able to talk to my mentor more about research (how it's done, why it's done, etc.) which was nice. I also bumped into a lot of people who were presenting at URCD that were also in a lot of my classes so it was nice getting to know them and their research better.”

Did URCD give you skills that you can apply to future academic or professional pursuits (graduate school, career, future research)?

How?

“I learned how to compile my research into concise texts and graphics, display it in an organized way, and then how to verbally present my material and guide people through my poster. I now feel prepared and confident that I could present research at a future job than before I presented at URCD.”
Please indicate what your immediate plans are following graduation from UMBC
67 responses

I will be entering the workforce in a career directly related to my research discipline immediately after graduation
67 responses

I will be continuing to conduct research related to my research discipline immediately after graduation
67 responses
The UMBC Review is a peer-reviewed publication, completely directed by UMBC undergraduates. All of the articles published in The Review go through a rigorous peer editing process, and are reviewed by off-campus faculty to assure the high quality of the publication. A student graphic designer is responsible for the creative design. We are proud to produce the publication in print format. It premiers every April, at URCAD.
Students, departments, and the university benefit when undergraduate researchers present their work at discipline-specific conferences or appropriate artistic venues. To support travel by students who are presenting their scholarly or creative work, and who have exhausted all other options for fully funding the anticipated costs of conference participation, we provide new (up to $500) and matching funds (up to $750). Students must be degree-seeking undergraduates in good standing and the student’s work must have been accepted for presentation at the conference or arts event. Funding is for presentation of results, not for collaboration, training, or professional development, and must be supported by faculty recommendation.

- Funding reduced from $12,500 to $2,500 in FY 17
- FY 18: 5 students funded ($3,000). Additional funds repurposed to support an additional 11 students (16 total), in the amount of $7,630.

“Thanks to the travel award, I attended the American Ornithology Society’s conference at Michigan State University, where I presented my independent research project for the first time. Since there were numerous ornithologists, I was presented with good questions that further developed my ideas on the project and provided me with further knowledge on the subject. Listening to other presentations was also very beneficial, as it inspired potential research projects that I hope to initiate in the future for either my M.S. or PhD. This was a huge opportunity for me to connect with other researchers at various institutions, especially since I was in the process of looking at graduate programs. In addition, I learned about one lab while talking with some of the researchers that I will be joining at Salisbury University this coming Fall semester for a M.S. I’m very grateful for the opportunity to attend this research conference. My job as an Honors College Transfer Team Leader has allowed me to share my experience to other transfer students coming in so that they also may have such an experience. Since presenting my research at AOS, I have also noticed that I am more confident presenting my research at UMBC. Overall, my experience has been very positive, and I look forward to attend more conferences in the future.”

--Derek Cross
2017 Travel Award Recipient
2017-18 Travel Award Recipients

**Summer Akhtar**, $500  
"UMBC Mock Trial"  
Duke University Tobacco Road Invitational  
Durham, NC

**Hannah Aris**, $280  
"Relationship Between Coordination Variability and Tibia Stress"  
Gulf Coast Undergraduate Research Symposium  
Houston, TX

**Catherine Barwulor**, $500  
iConference 2018  
Sheffield, UK

**Jayati Bhavsar**, $500  
"Design and Characteristics of Hydroxyapatites: Effect of Radiation"  
SPIE: Commerical and Scientific Sensing and Imaging  
Orlando, FL

**Derek Cross**, $500  
"Migratory Return Rates and Breeding Fidelity in Eastern Bluebirds"  
2017 American Ornithology Joint Meeting  
East Lansing, MI

**Amanda Fernandez**, $500  
"Pollen Dynamics of Field Bindweed and Competitive Release in Pollen Loads of a Generalist Pollinator in the Mediterranean"  
The Society for Integrative and Comparative Biology Annual Meeting  
San Francisco, CA

**Gregory Furlletti**, $500  
"Gold Supported on Multi-Walled Carbon Nanotubes for Biochemical Energy Harnessing"  
IEEE International Conference on Nano/Micro Engineered and Molecular Systems  
Singapore

**Alex Holtschneider**, $500  
"Fabrication of a Temperature Monitoring System"  
IEEE International Conference on Nano/Micro Engineered and Molecular Systems  
Singapore

**Jaedon Huie**, $500  
Yale University Mock Trial Invitational  
New Haven, CT

**Manpreet Kaur** (canceled trip)

**Alison Larsen**, $350  
"Exposure to Low Doses of Helium Particles Disrupts Neuronal Function and Cognitive Performance"  
Neuroscience 2017  
Washington, DC

**Lucas McCullum**, $500  
"Tracking Air Pollution in the City of Baltimore, Maryland Utilizing Light Detection and Ranging (LiDAR)"  
2017 2nd Asia Conference on Environment and Sustainable Development  
Tokyo, Japan

**David Sachs**, $500  
"Growth of Bio Sensor Materials by Physical Vapor Transport Method"  
SPIE Defense and Commercial Sensing  
Orlando, FL

**Ressa Sarreal**, $500  
"Dual Glucose and Lactate Electrochemical Biosensor"  
IEEE International Conference on Nano/Micro Engineered and Molecular Systems  
Singapore

**Arman Setser**, $500  
"Local Gradient Optimization of Modular Entangling Sequences"  
APS March Meeting  
Los Angeles, CA

**Amulya Shrestha**, $500  
"The Fabrication of a Temperature Monitoring System"  
IEEE International Conference on Nano/Micro Engineered and Molecular Systems  
Singapore

**Emily Slaby**, $500  
"Enhancing Immune Cells Using Plasma Membrane-Inserting Drugs to Combat Cancer"  
2017 Biomedical Engineering Society Annual Meetings  
Phoenix, AZ
Research Opportunities

Students who participate in applied learning activities such as research, have higher academic outcomes, including earning higher GPAs and more credits, graduating with honors, and achieving higher graduation rates.¹

- UR provides help with identifying REUs, completing applications, preparing resumes, and personal statements, asking for letters of recommendation, etc.
- UR maintains a database of summer research opportunities growing to over 500 entries. We’ve partnered with Career Services, Meyerhoff, and others to maintain the entries.
- With help from the Office of Sponsored Programs, student applications are submitted to the summer research program at the National Institute of Standards and Technology (NIST) Summer Undergraduate Research Fellowships (SURF): 2018 SURF students advised: 246; Applicants: 23; Accepted: 4; Attending: 3 (Zachary Clifford, Temiloluwa Okusolubo, Vanda Luu).

Prestigious Scholarships

PS provides support for students to study within the U.S and abroad, by providing funding for graduate school and research opportunities. These scholarships are recognized as some of the most prestigious in the world, and their purpose is to develop outstanding students into leaders whose research and careers will have far-reaching impacts on the world. We focus on the following awards: Rhodes, Gates, Marshall, Truman (public service), Goldwater (STEM), but also advise for other scholarships such as Udall, Schwarzman, Douglass, Fulbright, etc., when students come forward.

In 2017-18, PS developed and sent forward:

- **Naomi Mburu** for *Rhodes, Gates-Cambridge, and Marshall* (won all three)
- **Linda Wiratan** (Winner) **Yasmin Graham** (Honorable Mention), **Eliana Crentsil**, and **Puja Trivedi** for *Goldwater*
- **Flora Kirk** for *Marshall*. Won *Fulbright* (Romania)
- **Manisha Vepa** for *Schwarzman* (interviewed, waitlisted) and *Carnegie Endowment for International Peace Junior Fellowship*. Won *Fulbright* (South Korea)
- **Rebecca Mann** for *Truman*
- **Katie Poteet** for *Rangle*
- **Eyal Handelsman Katz** (*graduate exchange student*) for *Gates-Cambridge* and *Ertegun* (Cambridge)
New Implementations for Prestigious Scholarships

- Established a protocol for recruiting candidates for prestigious scholarships
- Institutional nomination and selection processes established
- Met with Goldwater President and implemented rubrics for internal review of candidates
- Met with Truman Regional Representative to gather information that will strengthen our candidates
- Held first information sessions for students
- Coordinated mock interviews, dining and interview etiquette seminar for nominees, support for students traveling to interviews
- Developed website with archive of UMBC’s past recipients
- Partnered with Honors College to create list of runner up/honorable mention and bios of post-graduate achievements
- Director attended Interweek Program at Universidade do Porto, Portugal and represented UMBC in the continuing development of this international partnership
- Director attended NAFA’s annual conference
- Established a project code and budget ($1500) for prestigious scholarships
- Co-nominated valedictorian (Naomi Mburu, finalist)
- Restructured Goldwater committee and added Cynthia Wagner (Biology), Jason Kestner (Physics), Brad Peercy (Math and Statistics). Developed internal evaluation rubrics and ranking/feedback process.
This year, we’ve forged partnerships with many UAA programs, and beyond.

**UAA**

- Students completing capstones for **INDS** are strongly encouraged to apply for URAs in order to fund their work, and submit their final projects for publication in the UMBC Review. 3/10 articles published in the 2018 edition are written by INDs students. 5/10 of the articles are by URA Scholars. April Householder also serves as a member of the INDs Committee (ISC), where she reviews and approves INDs degree proposals.

- Mia Rickenbach, is a two-time URA recipient and her URCAD presentation, a large-format scenic painting, was based on stories from the women in the OUE new student book experience book, *Half the Sky*, who inspired her to advocate for awareness about human trafficking.

- Support from the **Honors College** continues to help our students and staff to succeed- HC helped facilitate mock interviews and funded nominees for prestigious scholarships to attend regional interviews and professionalization workshops. They also funded the professional development of the UR/PS Director, with membership in NAFA (National Association of Fellowship Advisors) and attendance at their annual conference. HC students are a mainstay in UR and PS. April Householder makes multiple presentations each year for Honors College students.

- The **Sherman STEM Teacher Scholars Program** was integral in bringing high school students to URCAD. Future efforts will assess URCAD attendance by high school students as a recruitment tool.

- The director works closely with staff from the **Meyerhoff Scholars Program** to recruit and advise candidates for the Goldwater scholarship. Meyerhoff students continue to be the largest group to present at URCAD, and make up a large number of Goldwater (20/30), and other prestigious scholarships applicants.

- We are currently developing workshops for the **Women’s Center ‘s** returning women scholars. Jess Meyers continues to be an advocate for overlapping students (helped develop Becca Mann for Truman).

- **LRC** had several students who conducted research for certification for college reading and learning level 3. Supplemental Instruction (SI PASS) leaders and tutors are a growing presence at URCAD (9).
Campus-wide Partnerships

• There is great synergy between the International Education Services Office and UR/PS. April Householder serves on the Fulbright interview selection committee. Manisha Vepa (UMBC Review editor) and Flora Kirk applied for prestigious scholarships but won Fulbrights this year, as did Morgan Zepp (URCAD presenter). David DiMaria and Brian Souders also participated in mock interviews for international prestigious scholarships awards (U.K. and Schwarzman). Householder and Souders teamed up for presentations to the Honors College, and for students interested in international scholarships.

• A new partnership with Career Services was forged this year to enroll the 2018-19 URAs in the Research Internship Practicum (PRAC). Expectations are: increased student and faculty accountability; tracking of workshop attendance; an orientation to conducting research; setting of learning goals; mid-semester check in with mentor; end of semester final reports; and formal evaluations. The PRAC will be marked on students’ transcripts, as a means of formalizing the URA experience.

• We have recently partnered with Vivian Armor, Director, Alex Brown Center for Entrepreneurship, to offer ENTR URAs (funded separately by the Alex Brown Center) which support students in the development of a solution to either a technical or social problem in collaboration with a UMBC faculty mentor. Two students successfully proposed and were awarded ENTR URAs for 2018-19 (Drue Nixon and Mia Rickenbach).

• We have a new partnership with OIA for promotion of our programs to alumni, prospective students, and UMBC-wide advertising. This is very helpful for wider visibility and promoting our brand.

• The MARC U*STAR and McNair Scholars Program both contributed funding to support URCAD.

“URCAD, URA, and the UMBC Review represent three faces of an important connection for INDS to the broader activities of UAA and UMBC. These initiatives offer perfect avenues for bringing our students into deeper contact with other students, other faculty, and the expert help offered by the office of undergraduate research. Together we are not only stronger, but we exemplify that as the point of UAA - to integrate better for the benefit of all.”

--- Dr. Stephen Freeland
INDS Director
After a presentation about research opportunities was given to Elaine MacDougal’s (ENGL/LRC) Technical Writing class, an unaffiliated student wrote the following email. She then came in to the office for help with writing her research abstract, which she submitted, and was accepted at URCAD 2018.

“I really enjoyed all the presentations so far this semester, but the presentation I enjoyed the most was the one given by Dr. April Householder. I felt very engaged during the entire presentation, her use of the PowerPoint behind her and visuals made her speaking very effective. I think visuals are very important and they help your audience understand what you are saying; I know when I present I love using visuals because it gives me something to relate to. Listening to her presentation really got me thinking about URCAD, and that it is something I am thinking about doing. It is a great opportunity, and doing this project will definitely further my academic career. I truly believe that if Dr. Householder’s presentation skills were not effective, that I would not be thinking about URCAD like I am now. Her presentations skills were very effective and got me thinking outside of the classroom. That should be the goal of every speaker, to make their audience think about what was talked about even when its over. I just wanted to thank you for all of your help this past semester with getting me interested in URCAD. Though I am graduating this semester from the Media and Communication (MCS), I will be back through the Applied Sociology M.A. Program.”

- In 2017-18, there were over 120 walk-ins or appointments made for one-one-one advising with students to help them identify and pursue their academic goals.

- UR hosted numerous student workshops on topics such as: Effective Oral and Poster Presentations, How to Get Started in Research, How to Write a Research Proposal, Applying to Prestigious Scholarships, and more.

- 90 students presented at URCAD who were unaffiliated with scholars or honors programs, like the one quoted above.
Publicity and Marketing

**UR website (ur.umbc.edu)**

The UR website serves as a centralized, comprehensive site for students, faculty, and staff to learn about undergraduate research in general, and more specifically, about research opportunities through UMBC programs, and externally. Our website received **62,295 visits** in 2017-18, and **46,078 unique views**. Our REU database contains almost **500 entries** for students to search in a variety of ways to find summer research opportunities. We host a separate website (urcad.umbc.edu) for URCAD-specific information, such as sneak peeks of student presentations, search parameters for finding students by discipline or presentation format, student abstracts, schedules, guest speaker bios, and archiving photos. It was viewed **11,986 times** last year, and **2,030 times on the day of URCAD**.

Our UR website is updated frequently to provide students at all stages of research involvement with news, resources, and information. We utilize many photos, videos, and links to external resources, to be used by current and prospective students. The website also houses the online forms for registering and applying to our programs, along with detailed information on topics such as how to write strong research proposals and abstracts, effective presentations, and how to get started in research. Pages for Prestigious Scholarships were newly added this year. Updates and Improvements to the website are an ongoing effort, and are managed by Michael Mower, IT, Web, and Graphic Design Specialist.
Facebook and Social Media
Social media complement and reinforce email and web communications and provide a preferred method of information dissemination to many students. Social media outreach is an expected feature of any academic office in today’s digitally connected university environment. Social media usage increases UR visibility at UMBC and elsewhere. In addition to Facebook, we have also added Twitter (325 followers) and Instagram accounts this year. Given the focus on social media around the men’s basketball win, we have begun collaborating with OIA to use #UMBC hashtags for posts about our programs. Facebook, Instagram, and Twitter have also provided venues for us to interface with other campus organizations and offices. We announce events, deadlines, highlight student research, and “share” and “retweet” with other offices across campus. The URCAD Selfie Contest generates heavy traffic to our social media pages.

Our Facebook page has 773 followers (up 60 from last year), and in the last year, has generated 792 “likes” on posts. Our peak views happen in the months leading up to URCAD in April (see below).
myUMBC Group
The Undergraduate Research myUMBC group has more than **2,400 members** and **1,000 followers** comprised of faculty, staff, students, and alumni from every discipline. Once part of the myUMBC group, these members receive emails announcing upcoming Undergraduate Research events; posts range from workshops and information about URA and URCAD, to student researcher spotlights and information about research-related internships/programs. Students can follow the group or sign-up to be a member at any of the Undergraduate Research hosted events. Those who are URA students or URCAD participants are automatically added as members so that they can receive the latest updates about upcoming events and deadlines related to URA and URCAD. One distinctive feature is the “**Researcher of the Week**”, which highlights student accomplishments and research in a profile that includes a Q&A with the student. Direct emails to groups and the myUMBC group are the primary methods used to notify students about events and deadlines, as well as to post sign-up information.

Printed Materials
- **Flyers**- We frequently post flyers around campus and send them to departments and programs to post in their areas to advertise workshops and events hosted by our office
- **New Student Orientation and Advising Guide**- we advertise our programs in the booklet given out at freshman and transfer orientations, and in the slide presentation given to parents at orientation
- **Posters and Banners**- we work closely with Commonvision and Pure Impressions to design advertisements for the Commons breezeway, iNet, the Commons, RAC jumbo screen, library, UC, and other high-traffic student areas
- **News**- we advertise in The Retriever student newspaper and are frequently featured in stories in UMBC News and alumni publications
- **Promotional Items**- We print neck wallet name tags for students presenters at URCAD, pens, programs, buttons, and staff tee shirts

**AV**
- **Radio**- we advertise URCAD and other programs on WMBC radio
- **Video**- we create videos for promoting programs, giving advice, and celebrating student successes

**Workshops and Tabling**
- Transfer Student Network (TSN) **workshop** and **breakfast**
- Over 20 **student workshops** throughout the year to general student body, or directed to specific groups (Honors College, Meyerhoff, arts majors, etc.)
- Presence at **new student orientations**
In addition to Naomi Mburu being selected as the first Rhodes Scholar in UMBC’s history, the historic Men’s Basketball upset of #1 seeded UVA in the NCAA tournament has shined a light on UMBC for not only its success on the court, but also academically. They swim! They run! They score! But did you know that UMBC’s Student Athletes also conduct research and create art? Check out these Student Athletes who presented their research and creative work at URCAD or who are URA Scholars:

2018 URCAD Presenters
Hannah Aris, Engineering (Cross Country/Track and Field) URA Scholar
Characterization of CMI-7000 Membrane for Implementation in Resource Recovery Systems
Courtney Culp, Visual Arts (Soccer) Color of Me (Animated film)
Matthew Kane, Biological Sciences (Cross Country/Track and Field) URA Scholar
Scratching the Surface of Bahama Oriole Pine Forest Nesting
Courtney Mattson, Biological Sciences (Cross Country/Track and Field)
The Role of Olfactory Cues in Male Mate Choice in Etheostoma zonale
Jethro Ssengonzi, Engineering (Swimming)
Surface Phenomena Driving Natural Surfaces

2018-19 URA Scholars
Miles Smith, Mechanical Engineering (Cross Country/Track and Field)
Multidisciplinary Piezoelectric Energy Harvesting Research for Wind Turbine Monitoring Systems
Matthew Kane, Biological Sciences (Cross Country/Track and Field)
Cats and Rats vs. the Bahama Oriole: Assessing the Threat of Invasive Species to a Critically Endangered Species

“When I think about who we are as an institution and what happened last night, it represents what we tell our students: If you work hard, there can be these special moments where you’re moving toward greatness,” said the university’s president. More than the win last night, Dr. Hrabowski said he was proud of what else was on display: a diverse group in the stands, in the band, on the dance team. “You saw in the UMBC community what America wants to be.”

-- Dr. Freeman A. Hrabowski, III, UMBC President
on inclusive excellence, quoted in the New York Times
The idea for The Office of Undergraduate Education (OUE) came from the Honors University Task Force Report, “Educating Undergraduates in a Public Honors Research University in the Twenty-First Century”, in May, 2000. The Honors University Task Force was charged to use UMBC’s vision: We aspire to continue our development as an honors university which seeks to combine the traditions of the liberal arts academy, the creative intensity of the research university, and the social responsibility of the public university to guide it in defining elements of an Honors University experience and in recommending the means to transform the aspirations into a program of action. The Task Force was to consider what opportunities and experiences UMBC should offer each of its undergraduate students. OUE was formally established in 2005, but many of its current programs pre-date 2005. During that pre-OUE period,(1996-2005), Dr. Diane Lee and Beth Pennington were working with some activities that became comprehensive OUE programs. Forerunners of OUE programs that pre-date OUE include: Introduction to an Honors University (1994) and First Year Seminars (1996); activities fostering undergraduate research including Undergraduate Research Awards (1996), Undergraduate Research and Creative Achievement Day (1997), The UMBC Review (2000); the Women’s Center (1999); and The New Student Book Experience (2004). Many of these initiatives, such as UMBC’s annual Undergraduate Research and Creative Achievement Day (URCAD) were rare and innovative activities on university campuses when they began in 1997. URCAD is now an integral and successful part of the UMBC culture. 

While many university units, including deans’ offices, academic departments, specialty programs such as McNair and Meyerhoff, and the Office of the Vice President for Research, play essential roles in supporting undergraduate research, UAA’s involvement serves students from all colleges and departments. UR/PS programming takes four forms: providing venues for students to demonstrate their research, scholarship, and creative work; allocating financial support to individual students for their research; facilitating student engagement in research; and supporting students who are applying for prestigious scholarships.

In January, 2017, OUE Dean Diane Lee and Janet McGlynn, Director of Communications for OUE both retired, and Interim Dean Simon Stacey took leadership for one year before Dean Katharine Cole was permanently hired in August of 2017. McGlynn’s position was filled by Dr. April Householder, with the title of Director of Undergraduate Research and Prestigious Scholarships. This is the first time that there has been a dedicated staff member who’s role (10%) is focused on prestigious scholarships activities. In June, 2018, under the leadership of Dean Katharine Cole, OUE dissolved into ten units, under the Division of Undergraduate Academic Affairs (UAA): Academic Engagement and Transition Programs; Academic Standards and Policy Administration; Honors College, Interdisciplinary Studies; Learning Resources Center; Meyerhoff Scholars Program; Office of Academic Opportunity Programs; Sherman STEM Teacher Scholars Program; Undergraduate Research and Prestigious Scholarships; Women’s Center.
The Office of Undergraduate Research and Prestigious Scholarships offers year-round programming to facilitate and promote undergraduate research and nationally competitive scholarships. We are a small office with a large mission that contributes to recruiting and educating highly motivated students in all fields of study. Support for on-going professionalization and training of personnel comes from within the division. The programming budget for FY 2017-18 was $101,000.

Full-time
**April Householder** (90% UR, 10% PS)
Director of Undergraduate Research and Prestigious Scholarships

**Support Staff**
**Devon Fick** (Shared with UAA)
Administrative Assistant II

**Michael Mower** (Shared with UAA)
IT, Web, and Graphic Design Specialist

**Denise Kedzierski** (Shared with UAA)
Administrative Assistant I

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