



Undergraduate Research and Prestigious Scholarships

Division of Undergraduate Academic Affairs

ur.umbc.edu

2018-19
Annual Report



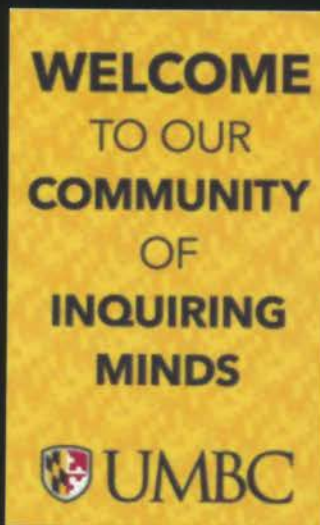


URCAD dance performer Kristina Soetje

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(Photos by Michael Mower, Devon Fick, and Marlayna Demond)



Mission

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. We **reach together** to help students **explore every angle** of their research and academic goals, and **extend beyond** the classroom to empower them to **claim their futures**.



Message from the Director

2019 marks the close of my second year as the Director of Undergraduate Research and Prestigious Scholarships. The goals for this past year were to maintain continuity of programming and increase the number of students who participate, including applicants for prestigious scholarships. I am happy to report that we had a banner year for these numbers. 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. URCAD was attended by almost 2,500 guests, including visitors from local community colleges and middle/high schools, and there were a record number 362 student presenters.

URCAD's Alumni Keynote speaker was Dr. Eric Grollman ('07 Sociology/Psychology), a Black queer non-binary intellectual activist and Assistant Professor of Sociology at the University of Richmond. Their presence provided the perfect opportunity to engage LGBTQ student researchers at URCAD, and we had a number of presentations and performances that embraced marginalized groups and LGBTQ activist themes. I partnered with the LGBTQ Faculty and Staff Association to co-sponsor the keynote event. We funded a record number of Travel Awards (19). We engaged more unaffiliated students than ever before. With the recommendation of the URA committee to engage more transfer students, we implemented a change to the URA application process to allow students more time to prepare their applications, and moved the application deadline from February to May. This change resulted in a record number of applications- 108, the most ever in the history of the URA program. As a result, we were able to select 81 students as URA Scholars. Beyond the numbers, the quality of research and creative work that our students are producing is truly inspirational.

A few of the accomplishments I am most proud of for this year include successfully nominating and advising Evan Avila, UMBC's first Truman Scholar in fifteen years, through the rigorous application and interview process. I formed a committee of dedicated faculty and staff to oversee the Truman selection and preparation process, and collaborated with folks like emeritus Provost, Dr. Arthur Johnson, and Maryland Delegate and gubernatorial candidate (and Truman Scholar), Heather R. Mizeur, to give Evan some extra support. Linda Wiratan, last year's Goldwater Scholar, was a finalist for the Rhodes Scholarship, and the 2019 valedictorian, proving that excellence builds upon itself. We had a 400% increase in prestigious scholarships applicants and new implementations included sending applicants to an etiquette dinner to prepare them for interviews. I am currently working with a number of very talented early-career students who will no doubt, be very competitive future applicants for these scholarships.

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. We've formed a new partnership with Dr. Christine Mallinson, Founding Director of the Center for Social Science Scholarship, and offered four additional CSSS URA awards. 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 the student successes of this year, and I look forward to what the future holds!

April L. Householder

April L. 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 have 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.

National Data on Undergraduate Research

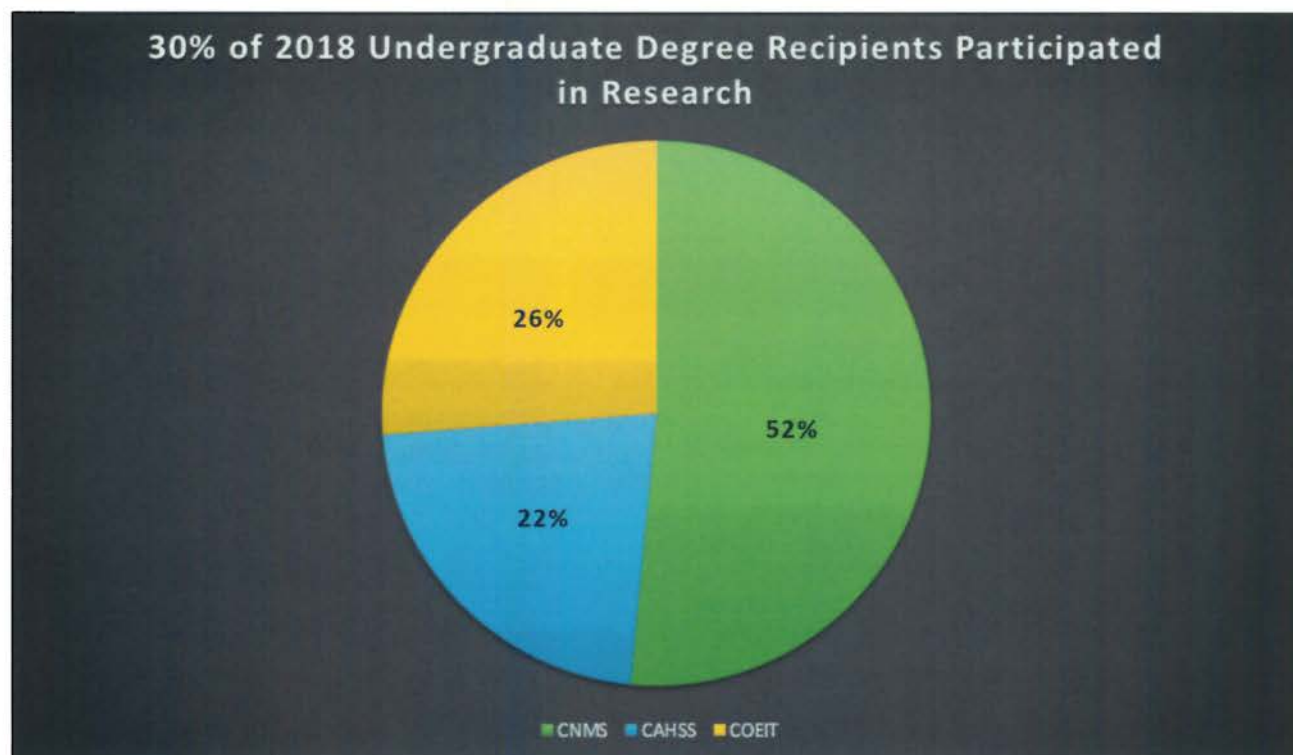
UMBC is a national leader in undergraduate research, with 30% of undergraduate degree recipients participating in formalized research. The Council on Undergraduate Research reports that nationally, peer institutions have 17-27% participation rates.

Table 1: NSSE and Symposia Data *

Institution Name (Data Year)	Total Undergraduate Enrollment	NSSE Count of Seniors Responding Had "Done" Research	NSSE Percent-ages of Seniors Responding Had "Done" Research	Symposia Participation
The Ohio State University (2010)	41348	2434	22.4%	540 (-5.22% of senior class)
University of Missouri (2009)	23042	NA	27%	143 (-2.48% of senior class)
University of Nebraska-Lincoln (2010)	17627	265	26%	220 (-4.99% of senior class)
University of South Carolina (2009)	17874	531	14%	132 (-2.95% of senior class)
Utah State University (2008)	13179	NA	25%	100 (-3.03% of senior class)
University of Wisconsin – Eau Claire (2008)	10096	NA	25%	588(-23.3% of senior class)
Weber State University (2009)	23001	NA	17%	89 (-1.55% of senior class)
* A full list of references is available in Supplemental Materials in the Spring 2012 issue of the <i>CURQ on the Web</i> .				

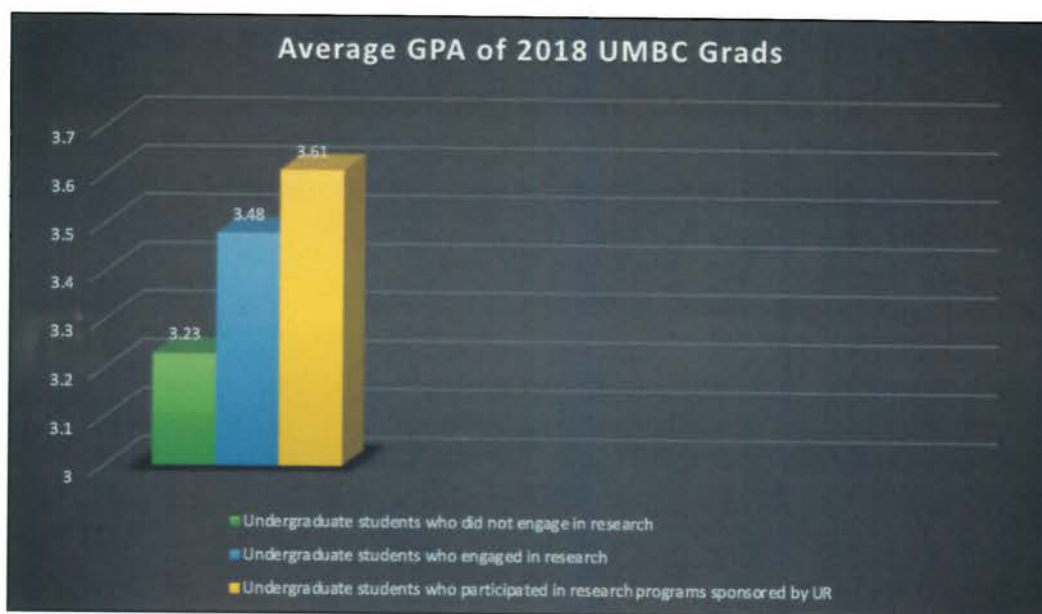
Wilson, Angela. "Using the National Survey of Student Engagement to Measure Undergraduate Research Participation". *CUR Quarterly*, Council on Undergraduate Research, Spring, 2012, Volume 32, Number 3 , pp.9-14.

2018 UMBC Graduates

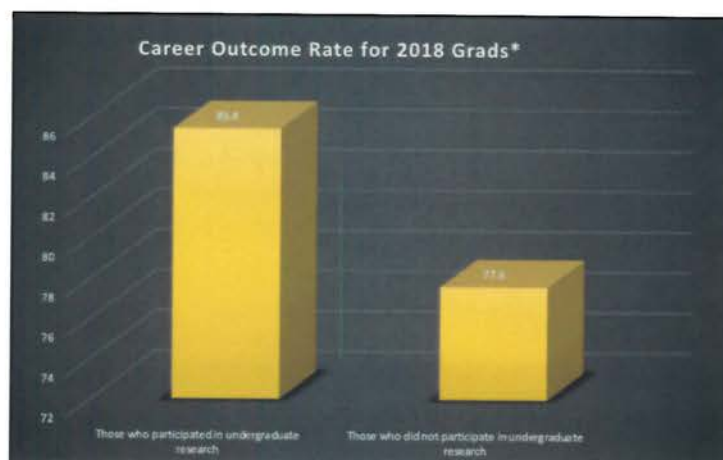


Data on pp. 7-8 was collected on 2,342 undergraduate degree recipients (2018) for the UMBC Career Center's First Destination Report.

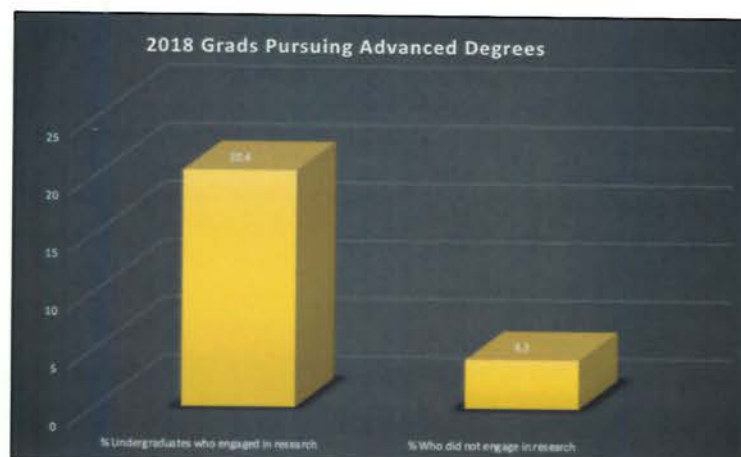
Campus- wide Data on 2018 Undergraduate Degree Recipients who Engaged in Research



(Does not include prestigious scholarships applicants)



*Total % of students who are employed and/or pursuing an advanced degree



Sample of Graduate & Professional Schools

In addition to University System of Maryland institutions, UMBC graduates will be attending:

Boston University
Carnegie Mellon University
Columbia University
Drexel University
Emory University
Georgetown University
George Washington University
Georgia Institute of Technology
Johns Hopkins University
New York University

Northwestern University
Ohio State University
Oxford University
Pennsylvania State University
Princeton University
Texas A&M University
University of California, Berkeley
University of Chicago
University of North Carolina
University of Pennsylvania
Vanderbilt University
Wake Forest University
Yale University

Degrees Being Pursued After UMBC

2% **2nd Bachelor's**

3% **Dual Degree (MD & PhD)/Other**

11% **Professional Degree**

27% Medicine, 35% Law, 38% Other (Vet, Pharm, PT, etc.)

25% **Doctoral**

59% **Master's**



2019 Exceptional Grads

who participated in undergraduate research and prestigious scholarships



Lucas McCullum will attend Stanford University's interdisciplinary master's program in computational and mechanical engineering



Gabriela Salas will earn a Ph.D. to pursue sociological research on reproductive health



Valedictorian Samiksha Manjani will pursue a combined J.D. and M.S.W. degree



Mia Rickenbach, founder of Create Freedom, a new Baltimore City non-profit that combines her love of the arts and commitment to increasing public awareness of human trafficking



Zachary Little, winner of NSF's Graduate Research Fellowship. He'll soon begin an M.S. at North Carolina State University in biological and agricultural engineering



Alexia Petasis is pursuing a teacher's assistant program in France

19

Travel
Awards

20

Student
workshops

1st

Truman
Scholar since
2004

5,664

members of
the research
community
reached

369

URCAD
presenters

3 Knight-
Hennessey
applicants

By the Numbers

2,000

copies of the
*UMBC
Review*
distributed

2,482

URCAD
attendees

1

Rhodes
finalist

55

URA
Scholars

1/3

of students who
participate in
UR programs
are unaffiliated

500

REU
database
entries

30%

of all
undergraduate
degree recipients
**engaged in
research** while at
UMBC



Faculty Support

Reach Together

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 DiCuirici
English

Erin Durham
Humanities Librarian
Albin O Kuhn Library & Gallery

Amy Everhart
Information Systems

April Householder
Undergraduate Research and Prestigious Scholarships

Molly Jones-Lewis
Ancient Studies

Hye-Won Kang
Mathematics and Statistics

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

Kathy Sutphin
College of Natural and Mathematical Sciences

Jodi Kelber-Kaye
Honors College

Jason Kestner
Physics

Felipe Filomeno
Political Science and Global Studies

URA Committee

Gregory Szeto
Chemical, Biochemical, and Environmental Engineering

Eric Brown
Interdisciplinary Studies

Mariajose Castellanos
Chemical Engineering

Daniel Ritschel
History

Viviana Cordova
Visual Arts

Thomas Cronin
Biological Sciences

Carolyn Forestiere, Chair
Political Science

Jeffrey Gardner
Biological Sciences

Vin Grabill
Visual Arts

Doug Hamby
Dance

April Householder
Undergraduate Research and Prestigious Scholarships

Renee Lambert-Breiere
Modern Languages, Linguistics, and Intercultural Communication

Andrea Kleinsmith
Information Systems

Alan Kreizenbeck
Theatre

Bernard Lohr
Biology

J. Vanderlei Martins
Physics

Tim Oates
Computer Science and Electrical Engineering

Michele Osherow
English, Judaic Studies

Jinglai Shen
Dept. of Math and Statistics

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

Jim Fishbein
Chemistry

Colin Studds
Geography and Environmental Systems

Laura Ting
Social Work

Shari Waldstein
Psychology

Chunming Yuan
Economics

Sym . bi . o . sis:

UR supports faculty by providing resources for effective mentoring, and extra credit assignments for encouraging their students to attend URCAD.

Goldwater Committee

April Householder

Committee Chair
Undergraduate Research and
Prestigious Scholarships

Gregory Szeto

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

Truman Committee (*new for 2019)

Stephen Freeland

Interdisciplinary Studies

Lori Hardesty

Shriver Center

David Hoffman

Student Life

Laura Hussey

Political Science

Jodi Kelber-Kaye

Honors College

Chrstine Mallinson

Language, Literacy and Culture Program

Jess Myers

Women's Center

Hannah Schmitz

Public Service Scholars Program

Rehana Shafi

Sherman STEM Teacher Scholars Program

Brian Souders

Fulbright Program Advisor

Joby Taylor

Shriver Peaceworker Program

"I have been on UMBC's Undergraduate Research Award Committee since 2008 and I am now honored and happy to become its new Chair. I hope to continue Vin Grabill's excellent work in helping undergraduates develop research projects that they can complete as part of their education at UMBC. It is important to me that students feel empowered to apply what they have learned in our classrooms to self-driven innovative projects that will not only provide direct research experience, but will also help the academy grow. I look forward to working with April Householder and the other members of the URA committee in this mission."

- Dr. Carolyn Forestiere
New URA Committee Chair



URA Committee Chair, Dr. Carolyn Forestiere

Travel Awards Committee

Devon Fick

Undergraduate Academic Affairs

Timothy Phin

Ancient Studies

Bedrich Sousedik

Mathematics and Statistics

Laura Ting

Social Work

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.



Mentoring

Students reported feeling more connected to the faculty

- for 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 for students to travel, present, and publish

“Undergraduates are the spark that drives the research productivity in our lab. Such young minds are full of energy and curiosity, and it is contagious. My role as a research mentor is just to decide which of their own ideas we will work on as a team. As a result, Abby and I have presented and published several articles together.”

- Dr. Fernando Vonhoff

Research Professor, Biological Sciences, and URA Mentor

Faculty reported that students made major contributions to research, learned high levels of research skills, and recommended a professional development plan (additional courses, skills, experiences) that strengthened their career potential. They observed high levels for their mentees for the following:

- Professionalism/work ethic/dependability
- Initiative/self-motivation
- Judgement- reaching logical decisions
- Teamwork/collaboration- liked and respected by others and can work within a team structure
- Communication- express ideas clearly and concisely
- Feedback- accepts and uses constructive criticism
- Technology- can use relevant digital technologies to complete tasks and solve problems
- Leadership- can leverage strengths to achieve a common goal
- Intercultural Fluency- demonstrates openness, inclusiveness, and sensitivity
- Career Management- can identify and articulate career skills, knowledge, abilities, and areas for professional growth

20.4% of grads who engaged in undergraduate research are **pursuing advanced degrees** vs. 4.2% 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**

(9/10, or 90% of prestigious scholarships applicants were engaged in undergraduate research)

Higher **career outcome rate***
(85.4% vs. 77.6%)

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.



FUND YOUR RESEARCH, SCHOLARSHIP, OR CREATIVE WORK

UNDERGRADUATE RESEARCH AWARD

ALL DISCIPLINES WELCOME!

GET UP TO \$1500

Undergraduate Research Awards (URA)

For 2018-19, **59** applications were received (in the requested amount of \$84,415) and **53** URA projects were funded (55 students, including group projects, ▼ 13), for a total of **\$74,443**.

New partnership with the Center for Social Science Scholarship (Dr. Christine Mallinson), to offer 4 new CSSS URAs, which provide up to \$1,500 to undergraduate researchers whose work, in collaboration with a faculty mentor, uses social science to explore the world or address socially relevant concerns.

Unaffiliated students (students not participating in an honors/scholars program) continued to rise, indicating that we are reaching students who are not 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 24, 2019. The URA Scholars and their mentors for 2018-19 are:



Tarek Antar
Examining the Role of Parental and Peer Religious Socialization in the Development of Muslim-American Adolescents' Religious and National Identities
Psychology
 Dr. Charissa Cheah



Peter Bailier
Synthesis of a PEG hydrogel and collagen mesh to protect surface bound electrochemical aptamer-based biosensors from catalyzed degradation by RNase
Chemical, Biochemical and Environmental Engineering
 Dr. Jennie Leach



Adnan Baker-Agha
Nylon-inspired Polymers Containing Reversible Iron-chelated Linkages
Chemistry
 Dr. Paul Smith



Koje Bonsu
Analysis of Glycolytic Multienzyme Complex Formation
Chemical, Biochemical, and Environmental Engineering
 Dr. Gregory Szeto



Kevin Chen
Uncovering the Link Between a Sugar-induced Change in Gut Microbiome and Metastatic Castration Resistant Prostate Cancer
Biological Sciences
 Dr. Charles Biebreich



Eric Cheung
Centralizing Gene Expression Patterns with Mathematical Databases
Biological Sciences
 Dr. Daniel Lobo



Nicole Couturier
Monitoring Blood Biomarkers of Immune Responses before and after Therapy in a Mouse Melanoma Model
Chemical, Biochemical, and Environmental Engineering
 Dr. Gregory Szeto



Lorraine Dell'Acqua
An Investigative Analysis of Potential Change in D1-D2 Receptors of Rat Brains Exposed to Threshold Levels of Particle Radiation
Psychology
 Dr. Susan Bachus



James Raynard Dizon
Testing Nanoparticle-Delivered Antimalarials for Treatment of Lupus
Chemical Engineering
 Dr. Gregory Szeto



Anna Feerick
Detection of Contaminants within Chesapeake Bay Water, Sediment, and Oysters
Chemical Engineering
 Dr. Lee Blaney



David Fialkow
Characterizing the Mechanical Oscillatory Properties of Nanostructures
Physics
 Dr. Matthew Pelton



Alex Getachew
The Impact of Arts Integration on the Learning Identity of Sixth Grade Students in Anne Arundel County Public Schools
Interdisciplinary Studies
 Dr. Vickie Williams



Casey Haines
*Response of Eastern Bluebirds (*Sialia sialis*) to Playbacks of Male and Female Vocalizations*
Biological Sciences
 Dr. Kevin Omland



Jordan Harper
Modeling Democratic Practice: Aligning Faculty Teaching Practices with University Democratic and Civic Aspirations
Interdisciplinary Studies
 Dr. George Musgrove



Phillip Hilliard
Automated Analysis and Prediction of Entity-based Sentiment Framing
Computer Science and Electrical Engineering
 Dr. Frank Ferraro



Mark Horton
Human-in-the-Loop Model Improvement and Implementation for Efficient Deep Reinforcement Learning
Computer Engineering
 Dr. Tinoosh Mohsenin



Adursh Iyer
Searching for Gamma-ray Emission from Black Hole Jets
Physics and Mathematics
Dr. Eileen Meyer



Hannah Jackson
Second Language Acquisition through Improv
Modern Languages and Linguistics
Dr. Tania Lizarazo



Matthew Kane
Cats and Rats vs. the Bahama Oriole: Assessing the Threat of Invasive Species to a Critically Endangered Species
Biological Sciences
Dr. Kevin Omland



Caroline Larkin
Inferring Mathematical Dynamic Models of Tumor Sub-clonal Interactions to Predict Optimal Treatment Targets
Biological Sciences
Dr. Daniel Lobo



Kasey Mannion
An Exploration in the Development of Contemporary Dance
Dancer
Mr. Doug Hamby



Cierra McKoy
Geographic Variation in the Vocalizations of an Endangered Oriole
Biological Sciences
Dr. Kevin Omland



Stephanie Milani
Integrating Ethical Reasoning into the Abstract Markov Decision Process Framework
Computer Science and Electrical Engineering
Dr. Marie desJardins



Morgan Miller
Giving a Voice to the Voiceless History
Dr. Dan Ritschel



Rachel Morin
Microscopic Processes that Shape the High Energy Universe: An Artist View for the Rest of Us
Physics
Dr. Markos Georganopoulos



Karla Negrete
Preparation of Gel Polymer Electrolyte with Enhanced Ionic Conductivity for Zn Based Batteries
Mechanical Engineering
Dr. Deepa Madan



Adam Ng
Conservative Responses to British Fascism in the 1930s
History
 Dr. Dan Ritschel



Howard Nicholson
Therapeutic Drug Monitoring Biosensors
Chemical Engineering
 Dr. Jennie Leach



Drue Nixon
Ella and Ida Summer Camp
Interdisciplinary Studies
***Entrepreneurship URA**
 Mr. Gib Mason



Anna Gifty Opoku-Agyeman
The Impact of Early Childhood Malaria on Educational Attainment in Ghana
Mathematics and Economics
 Dr. Tim Gindling



Angela Ossana
Infrared Emission Spectroscopy Techniques
Chemical Engineering
 Dr. Bradley Arnold



Hye Jin Park
The Role of Marital Quality and Parenting in Korean-American Children's Social Problem-solving Reasoning Skills
Psychology
 Dr. Charissa Cheah



Dhruvil Patel
Nylon-inspired Polymers Containing Reversible Iron-chelated Linkages
Chemistry
 Dr. Paul Smith



Rishit Patel
Effect of Electronic Liquid Components on Morphology and Electrophysiology of Olfactory Tissue
Biological Sciences
 Dr. Weihong Lin



Alexia Petasis
Confronting Social Issues through Translational Choreography
Interdisciplinary Studies
 Mr. Steven McAlpine



Zane Poffenberger
The Italian State: How do Political Party Manifestos Impact and Shape National Policy towards the Migrant Crisis?
Political Science
 Dr. Carolyn Forestiere



Raj Purohit
An Aspergillus nidulans PodB Mutant to Express High Levels of Recombinant GFP
Chemical Engineering
 Dr. Mark Marten



Mia Rickenbach
*Create Freedom Theatre *Entrepreneurship URA*
 Mr. Nate Sinnott



Victoria Rottman
The Effects of Stream Contaminants on Terrestrial Ecology
Environmental Science & Geography
 Dr. Christine Hawn



Joy Roy
Centralizing Gene Expression Patterns with Mathematical Databases
Biological Sciences
 Dr. Daniel Lobo



Jeremy Rubin
Data Analysis to Understand the Key Roles of Histone Methyltransferases in the Modification of Chromatin to Regulate Gene Expression
Mathematics and Statistics
 Dr. Erin Green



Scott Sainz
Alternative Theatrical Lighting Control System
Theatre
 Mr. Adam Mendelson



Arman Setser
Quantum Error Correction Using A Gradient-based Optimization Approach
Physics
 Dr. Jason Kestner



Miles Smith
Multidisciplinary Piezoelectric Energy Harvesting Research for Wind Turbine Monitoring Systems
Mechanical Engineering
 Dr. Soobum Lee



Kristina Soetje
Species Abundance and Richness Outcomes of 2018 Mudslide Deposits on Montecito, California Beaches
Environmental Science and Visual Arts
 Dr. Colin Studds



Meredith Sperting
The Role of Remote Sensing Technology in Improving Wind Power Predictions
Mechanical Engineering and Mathematics
 Dr. Ruben Delgado



Ariana Taj
Prostate Specific P53 Knockout Model
Biological Sciences
 Dr. Charles Bieberich



Aline Thompson
Red Streaks Under a Silver Sun: Trans Embodiment in "Mirror's Edge"
Gender and Women's Studies
 Dr. Amy Bhatt



Manos Tzorizakakis
A Calorimetric Approach to Structure-Reactivity Correlation in Epoxide Cross-linking Reactions
Chemical Engineering
 Dr. Lisa Kelly



Mia Wessel
Synthesis of Gadolinium-containing Dendrons for Enhanced Magnetic Resonance Imaging of Cancer
Chemistry and Biochemistry
 Dr. Marie-Christine Onuta



Linda Wiratan
Effect of Jasmonic Acid Analog Induced Defense on Circadian Rhythm in Arabidopsis
Biological Sciences
 Dr. Hua Lu



Briana Yancy
Nesting Habitat Requirements of the Critically Endangered Bahama Oriole
Geography and Environmental Science
 Dr. Kevin Omland

URA Spotlight: David Fialkow

Characterizing The Mechanical Oscillatory Properties Of Nanostructures

Characterizing the nature of mechanical vibrations of fabricated nanostructures is of special interest because it provides the opportunity to study mechanics at scales in time and space that are faster and smaller than what is currently possible. At these scales, the nanostructures and the liquids they are suspended in exhibit new effects not ordinarily seen. Direct visual observation of these structures in dynamic situations is not possible, but there does exist a way to work backwards by studying their optical response. Specifically, gold nanostructures strongly scatter light at particular wavelengths due to oscillations of the electrons in the nanostructures. These collective electron movements, or plasmon resonances, are in turn coupled to the structure's states of mechanical vibration. I will be using the software suite COMSOL Multiphysics to model these mechanical vibrations and the effect they have on a nanostructure's optical response, with the end goal of then comparing our model to experimental optical response data currently being gathered by graduate students working with various nanostructure samples (cubes, rods, spheres, etc.)

Mentor: Dr. Matthew Pelton (Physics)



David speaks to the Wisdom Institute at URCAD about his experiences as a returning student and researcher

"To me URCAD is a special day in which the culture of UMBC is embodied. As an older transfer student who's been on a tough journey (this is my 4th college!), the strong emphasis on mentorship through research here has been a massive change-maker for me. The time I've gotten to spend in Dr. Pelton's Nanoscale Physics group and the support of the URA scholarship have provided me with glimpses of a future I hadn't considered and have helped me learn how to reach for those possibilities, such as getting a Ph.D. I've come to see UMBC as a land of opportunity and a place to grow, and those are exactly the kind of things to look for in a university."

- David Fialkow

URA Scholar, URCAD Presenter, and URCAD Wisdom Institute Speaker



URA Practicum

The 2018-19 URA Scholars were the inaugural cohort to participate in the mandatory URA PRAC. Employers and graduate admissions offices like to see practica recorded on student transcripts because it indicates that the internship, co-op or research position was a significant learning experience, approved and vetted by the University. The Practicum supplements the URA Scholars program by tracking progress and providing support, structure, and professional development. Upon successful completion, students receive a "Research Experience" notation on their transcript. Benefits:

- Give and receive formal feedback from mentor
- Streamline the URA process, with clear learning goals, deadlines, and evaluations
- Formal notation of research experience on transcript
- Students can earn a Professional Edge Badge to display on public profiles such as LinkedIn, plus opportunities to meet employers and be featured as a Researcher of the Week

Intern/Co-op/Research Report

Undergraduate Research Award Scholars, Fall 2018



The Career Center collects data on URA Scholars' research experiences through the zero-credit Intern Success Practicum. The information below was garnered from our end-of-semester evaluations, submitted by students and their faculty mentors.

Overview of Internships, Co-ops & Research

Experiences Reported: 52

Majors Represented:

Biological Sciences
Chemical Engineering
Chemistry & Biochemistry
Computer Engineering
Computer Science
Dance
Economics

Environmental Science & Geography
Gender & Women's Studies
History
Interdisciplinary Studies
Mathematics
Mechanical Engineering
Modern Languages & Linguistics

Physics
Political Science
Psychology
Statistics
Theatre
Visual Arts

Students' Self-Reported Career Growth

NACE Career Readiness Competency	Sig. Increased	Increased/Slightly Increased	No Change
Critical Thinking/Problem Solving	32%	62%	6%
Oral/Written Communications	17%	57%	26%
Teamwork/Collaboration	15%	60%	26%
Digital Technology	19%	53%	28%
Leadership	18%	59%	23%
Professionalism/Work Ethic	29%	47%	25%
Career Management	24%	58%	18%
Global/Intercultural Fluency	12%	48%	40%

Student Insights

"I have developed a greater passion for the work that I am researching and a better understanding of academic historical research. In essence, my experience as a URA scholar has taught me what it means to do academic research and be an historian."

"A lot has changed in my experimental design and original plan, as I faced numerous obstacles and spent most of the summer troubleshooting. I expected it to be easier, but I had to go through a lot of trial and error to get the result wanted."

"Before I started on this URA, I had no plans to do research or machine learning work after graduation. Now, I have found that I really enjoy the research process and I have really changed my career goals."

Continued ➡

Student Comments on the Practicum

"What I enjoyed about my experience is the support and guidance I was given access to. By knowing that I have a set of advisers and mentors to support me in my journey, I became more confident in doing my research."

"I liked having a second source of support and mentorship."

"I enjoyed the opportunity to learn more about my field and contribute to my lab with my work, and the Career Center was very helpful in facilitating a good experience through consistent updates and the Mid-Semester Review."

"I liked how the Practicum course was organized to provide URA scholars with a tentative outline of how our research should progress over time and what goals need to be met over this time period. This allowed me to stay on track with my project and allowed me to assess in real time what tasks I needed to accomplish to remain on schedule."

Faculty Mentor Ratings of Student Career Competencies

NACE Career Readiness Competency	Outstanding	Very Good	Good	Adequate/Below
Critical Thinking/Problem Solving	50%	36%	10%	3%
Oral/Written Communications	43%	47%	7%	3%
Teamwork/Collaboration	53%	23%	23%	0%
Digital Technology	60%	27%	13%	0%
Leadership	33%	53%	7%	7%
Professionalism/Work Ethic	57%	28%	14%	3%
Career Management	47%	43%	10%	0%
Global/Intercultural Fluency	60%	30%	10%	0%

Faculty Mentor Evaluation Comments

"[The student] really impressed me this semester with his ability to articulate his future plans. He did such a good job at the LDI conference in networking, in being fearless to talk to anyone and in developing relationships that will serve him now and in the future."

"[The student] is extremely organized and on top of things, often keeping me and other group members more organized too! He works hard and is getting better at troubleshooting (something all students have to learn to do in this kind of work). He has gone above and beyond in trying to understand the science behind the work he is doing, and has voluntarily read papers and advanced texts."

"Her technical writing is good, though it can be tightened. This is a common issue that many starting researchers can have and it is something she will develop over time. Communication during in-person meetings is productive, though more frequent communication during the week could help accelerate certain design and modeling decisions."

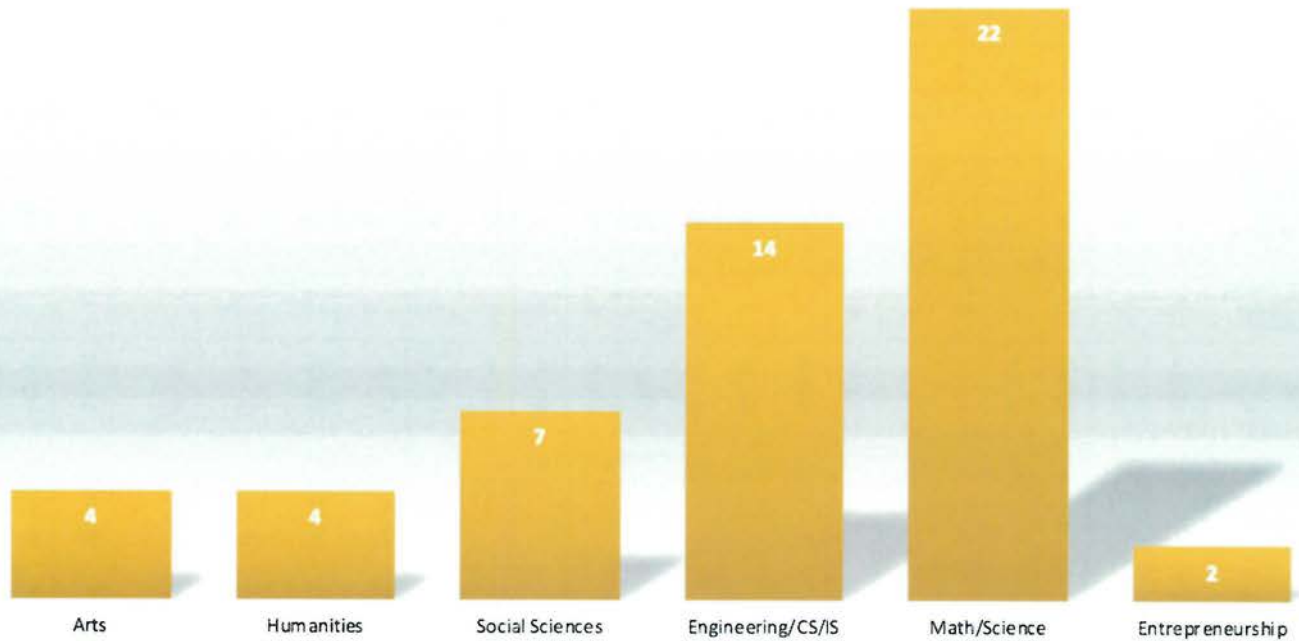
"While on the trip sponsored by my URA, I realized how fortunate I am to go to a school that has a program like this. Already, professionals in the industry have told me how it's surprising to hear of a college with a theatre program that embraces and encourages development to this extent. Someone today shared how his experience was 9 hours of hemp (which is common jargon for backstage physical labor, having to do with running counterbalance battens by hemp rope) and 1 hour of professional development, outside labor. It's important to me that I express how thankful I am to you and UMBC for the opportunity you have given me. My project is a culmination of a few thousand dollars the school has invested into my research and creative expression. The school should be proud at how readily accessible and expansive the resources available for one student to make use of are. Makes me a proud scholar. I am always happy to share my process and encourage other students to take advantage of the same resources. "

- Scott Sainz

URA Scholar, Theatre: Lighting Production and Design Major

URA Data

URA Projects by Discipline (2018-19)



of URA Projects Funded (1999-2019)



URA Awards by Discipline, Year, and Total Funding

Year Awarded	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		
Discipline:																						REC	FND
Arts	NA	NA	6	11	5	13	18	14	11	24	17	13	10	8	6	12	8	9	8	4	16	13	
Humanities	NA	NA	6	12	2	4	10	4	9	3	7	7	7	4	2	4	7	10	5	7	5	3	
Math & Science	NA	NA	8	18	11	25	23	16	10	14	25	21	25	27	24	28	40	30	27	23	32	27	
Engineering, CS, IS	NA	NA	4	3	3	3	6	7	7	4	6	7	13	17	16	13	21	9	13	18	22	17	
Social Sciences	NA	NA	6	5	5	4	11	14	9	13	27	12	18	7	18	7	11	11	13	7	19	14	
ENTR (began in 2018)																				2	2	0	
SS URA (began in 2019)																					7	4	
Total Applications	57	34	30	49	26	51	76	56	50	58	82	60	73	63	66	64	87	69	89	59	103	78	
Total Number of Projects Funded	25	20	27	27	NA	17	26	36	33	33	47	49	49	47	51	49	60	54	66	53	78		
Total Funding	\$30,000	\$28,650	\$29,600	\$32,403	NA	NA	\$34,000	\$49,000	\$44,735	\$51,590	\$69,374	\$74,850	\$76,751	\$74,100	\$74,500	\$74,965	\$72,230	\$75,021	\$81,935	\$74,443	\$89,743	\$5,460 (SSSC)	
	Funding by College																						
CAHSS															\$17,700	\$28,845	\$23,383	\$29,581	\$22,611	\$20,520	\$34,605		
COEIT															\$20,400	\$16,300	\$16,500	\$9,250	\$19,000	\$20,800	\$21,465		
CNMS															\$31,500	\$24,850	\$37,150	\$31,600	\$36,885	\$28,623	\$32,173		

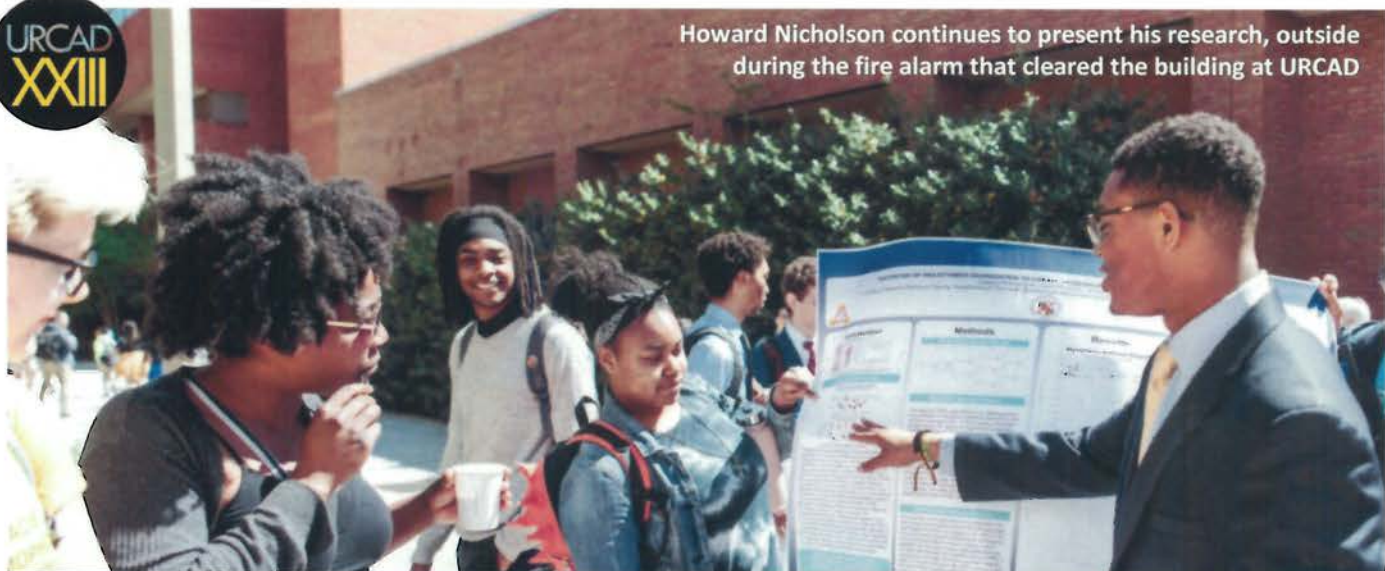
Feedback from the 2018-19 URA Scholar Self Evaluation (n=51)

"This whole experience has really taught me some important skills when it comes to writing a scientific paper, working in a team, and meeting deadlines. This project has proved to be a lot more work than I expected, but I feel like I have benefited greatly and I look forward to progressing further. I think that my writing abilities have significantly improved throughout this semester and I am much better at synthesizing information from different sources."

"When I began, I knew I would face a lot of failure and disappointment when conducting experiments. I never realized just how often my experiments would fail, and the skills I have acquired just to trouble shoot has allowed me to grow as a person. The ability to think creatively and critically about how to solve problems is one of the more important skills I developed this semester."

"I have developed a greater passion for the work that I am researching and a better understanding of academic historical research. In essence, my experience as a URA scholar has taught me what it means to do academic research and be an historian."

"I had not perceived research as such a diverse field. By talking with other URA scholars and being encouraged and supported to go to conferences, I have learned how varied and broad research can be. I now expect more of myself and have more confidence in my work after becoming a URA scholar."



Undergraduate Research and Creative Achievement Day (URCAD)

The 23rd Annual URCAD event featured presentations by a record **362** students, and an attendance of almost **2,500**. Students presented oral and poster presentations, dance performances, films, music, theatre performances, and computer engineered video games. Alumnus Dr. Eric Grollman (Psychology/Sociology, '07) provided the keynote address. **91** unaffiliated students participated. Feedback from the 2019 Post-URCAD Presenter Survey:

"I spent a lot of time with a fellow presenter and we helped each other with our PowerPoint, speaking ideas, and then practiced speaking. She and I were already classmates and friends but this experience helped bring us closer together as we acted as accountability buddies."

"I was offered a paid internship as a direct result of having game design and presentation experience."

"It helped me prepare for my career in graduate school and helped me get a feel for what public speaking is like."

"URCAD solidified my drive and love of research and made me want to further question and explore at a deeper level."

"URCAD made me feel part of the greater UMBC community as one who not only has interest in research, but using that research to educate others and exchange ideas and perspectives on issues facing our world today."

"I appreciated how the ambiance of URCAD is not intimidating and instead uplifts new presenters to get them out of their comfort zone."

"I was able to polish my skills for delivering information about what I do as a music educator and why it's important to people who are outside of my content area and may not understand content-specific discourse."

"I have become much more confident in my ability to understand and clearly articulate the research I'm conducting in my lab to my other lab members, including my graduate student mentor, and faculty PI."

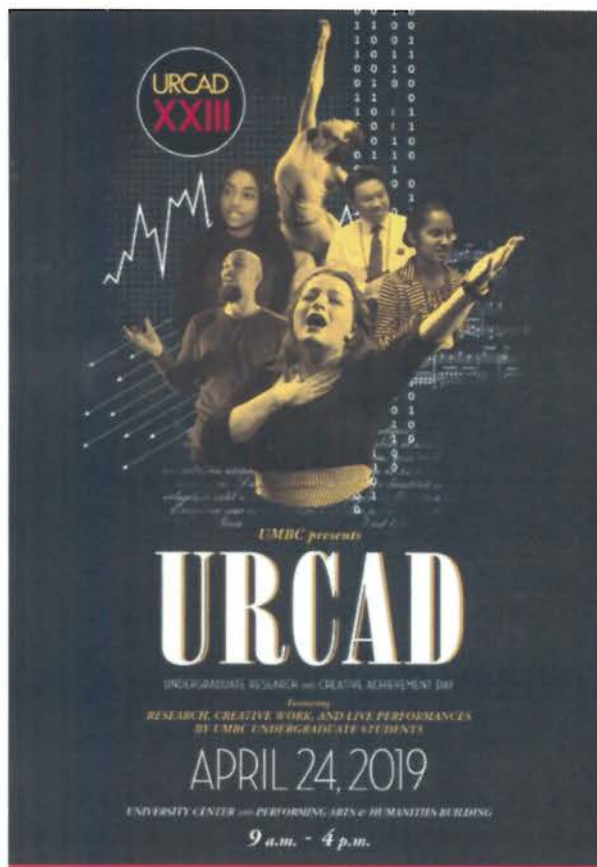
"This process allowed me to see that creative research also counts as research, and learned about how to present creative research in an academic manner."



Still from Julia Blurton-Jones' animated film, "Traitor"



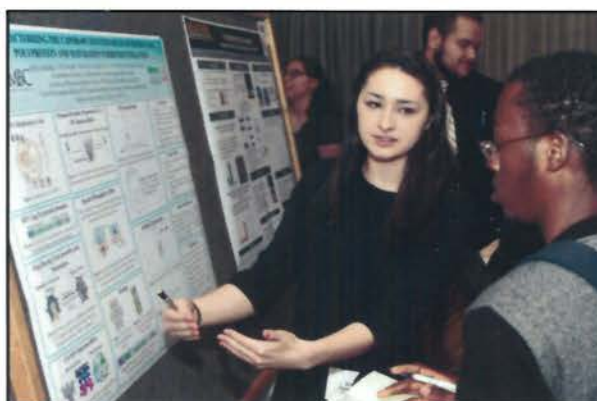
Teresa Whittemore's "When Eve and Eve Bit the Apple"



Interactive virtual reality demonstrations by engineers



Light Show by Lighting Design major, Scott Sainz



Emily Cannistraci, Chemistry and Biochemistry, presents her poster on HIV inhibitors

2019 URCAD Alumni Keynote Speaker

Dr. Eric Grollman

'07 Sociology and Psychology, UMBC

'13 Ph.D. Sociology, Indiana University

Professor of Sociology, University of Richmond



This event was sponsored by a generous donation by the UMBC LGBTQ FSA.

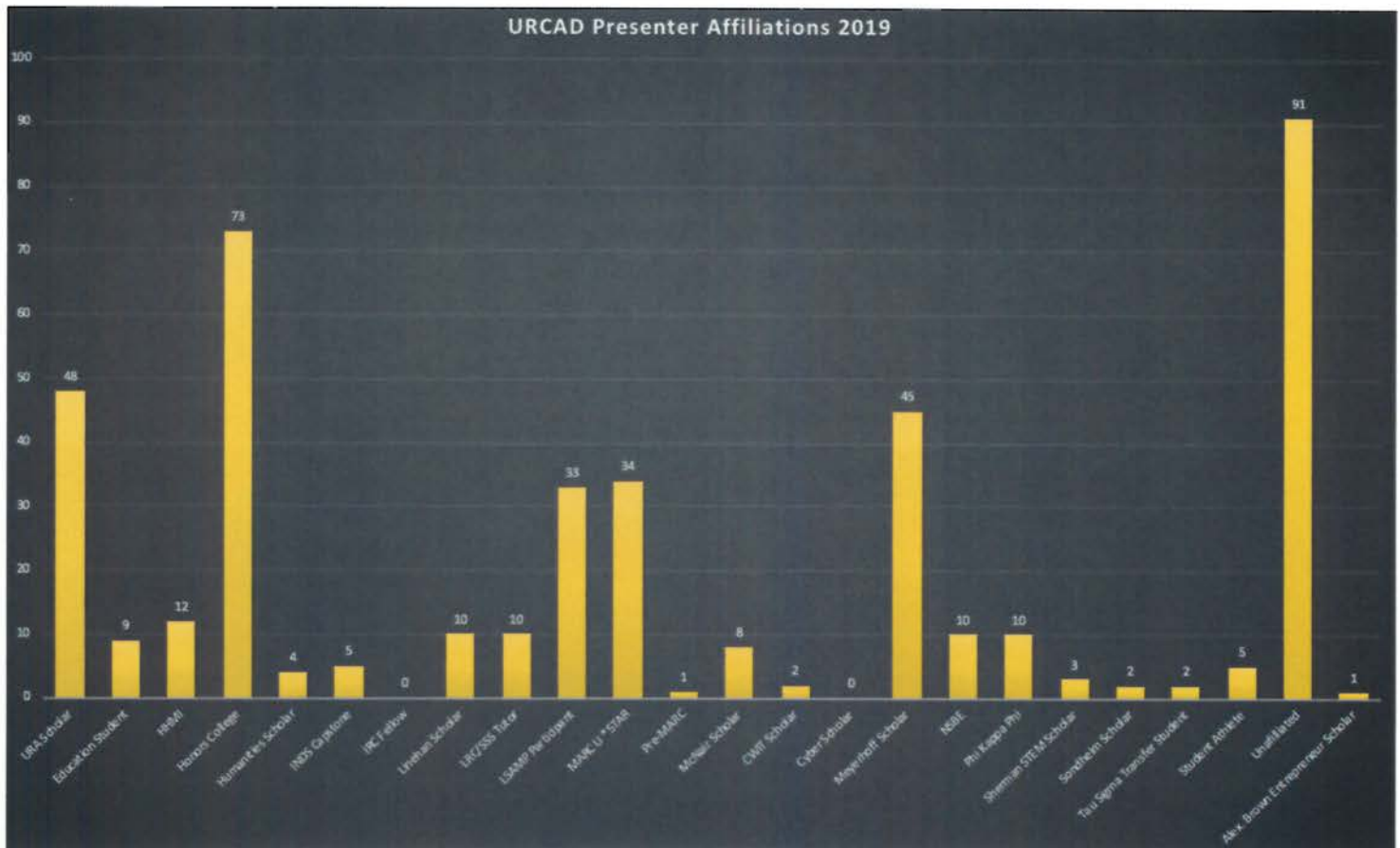
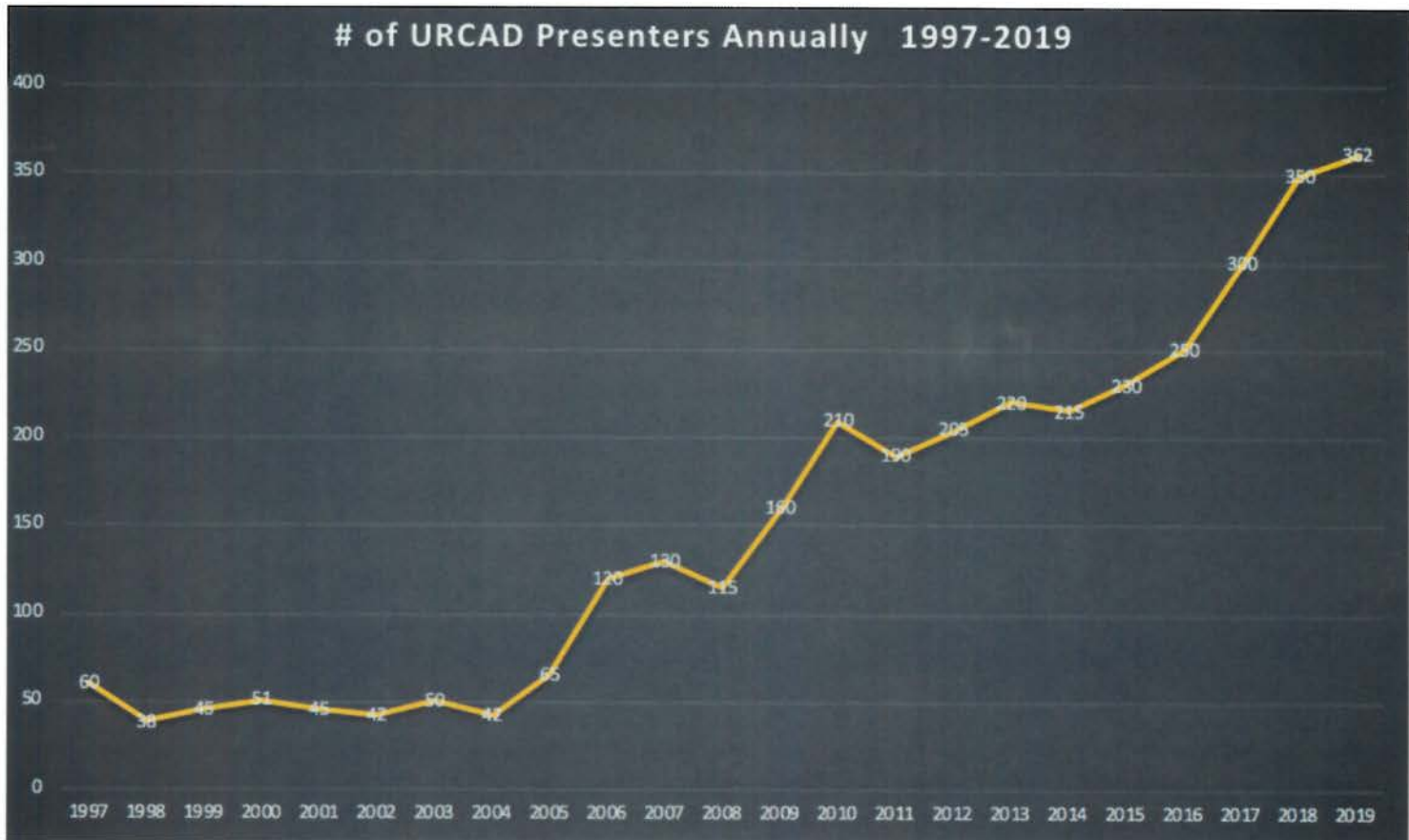
Dr. Eric Anthony Grollman (they/them/theirs) is a Black queer non-binary intellectual activist and Assistant Professor of Sociology at the University of Richmond. They received their Ph.D. in Sociology from the Indiana University, in 2013. Their research spans three areas: the negative impact of discrimination on victims' health; sexual orientation differences in social and political attitudes; and, the limits of dominant group members' tolerance of marginalized groups. They recently co-edited an anthology entitled *Counternarratives from Women of Color Academics: Bravery, Vulnerability, and Resistance* with Dr. Manya C. Whitaker. In promoting social justice in and through sociology, they founded the blog *ConditionallyAccepted.com* (a weekly career advice column for marginalized academics on *Inside Higher Ed*), co-founded Sociologists for Trans Justice, and pursued various initiatives to address sexual violence in academia.

Dr. Grollman ('07) began at UMBC as a Meyerhoff Scholar majoring in math before deciding to double major in sociology and psychology, and earn a certificate in gender and women's studies. They served as secretary of the Freedom Alliance, and secretary and then president of the Student Events Board. As a scholar-activist, they pushed for the creation of a campus resource center for LGBTQ students ("the Rainbow Center"), using their honors thesis research to document the prevalence of anti-lesbian and -gay attitudes on UMBC's campus as evidence that such a center was needed. They presented the findings of their honors thesis at URCAD in 2007, published their thesis in the *UMBC Review* in 2008, and later co-authored a paper in *International Journal of Sexual Health* with their advisor, Dr. Ilsa Lottes, using their honors thesis data.

"I was incredibly honored to be invited to speak at URCAD— my first time back on campus in over a decade. Of course, I was blown away by the incredible work of current students; I was impressed to hear about categorizing daddy long legs, multiple studies on reproductive and sexual health, and even one incredible study in my area of research (the health consequences of discrimination). But, what proved most memorable was returning "home" to UMBC— the site where I was deeply supported in becoming a scholar and an advocate. This visit re-solidified my commitment to science that makes the world a better place, so much so that, in the weeks after, I decided to write a book that will serve as a handbook for future scholar-activists."

- URCAD Keynote Speaker, Dr. Eric Grollman

URCAD Data



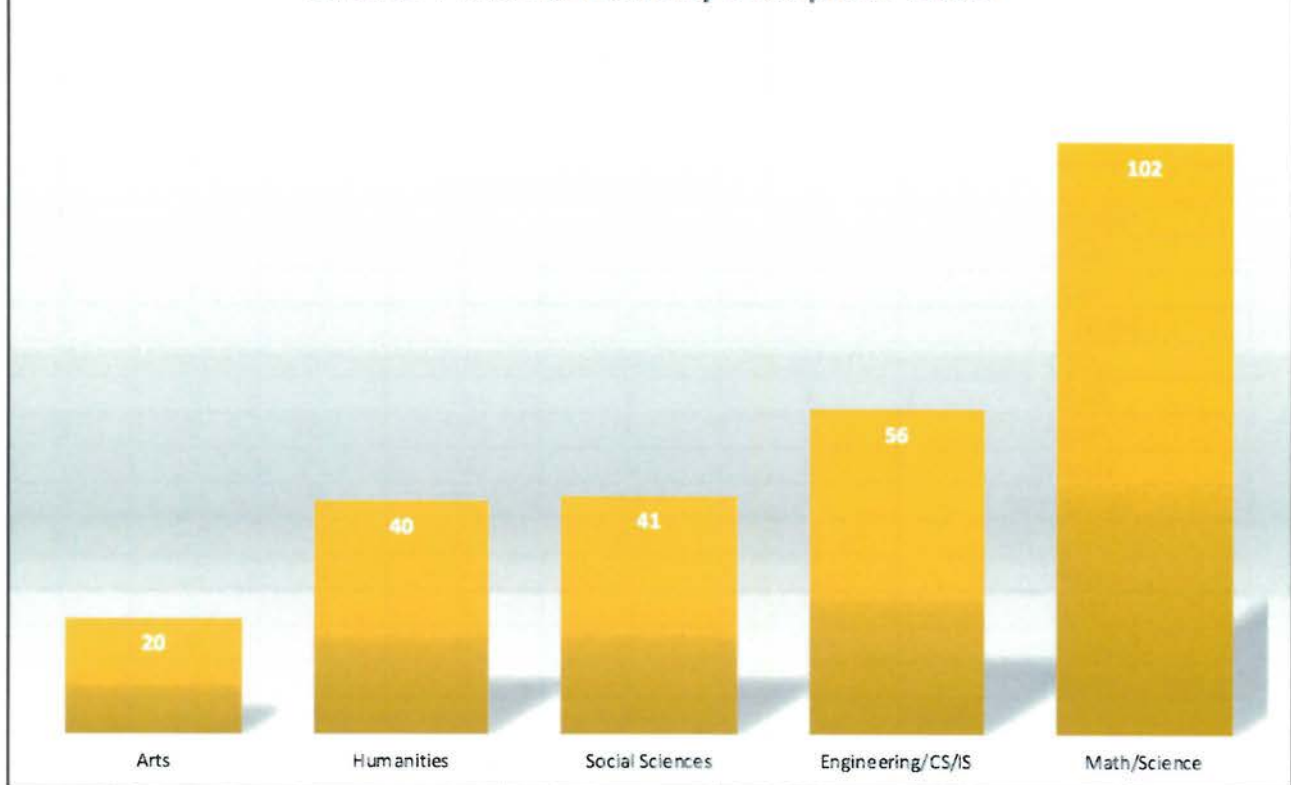
Note: Students could identify more than one affiliation.

URCAD Presentations by Year and Discipline

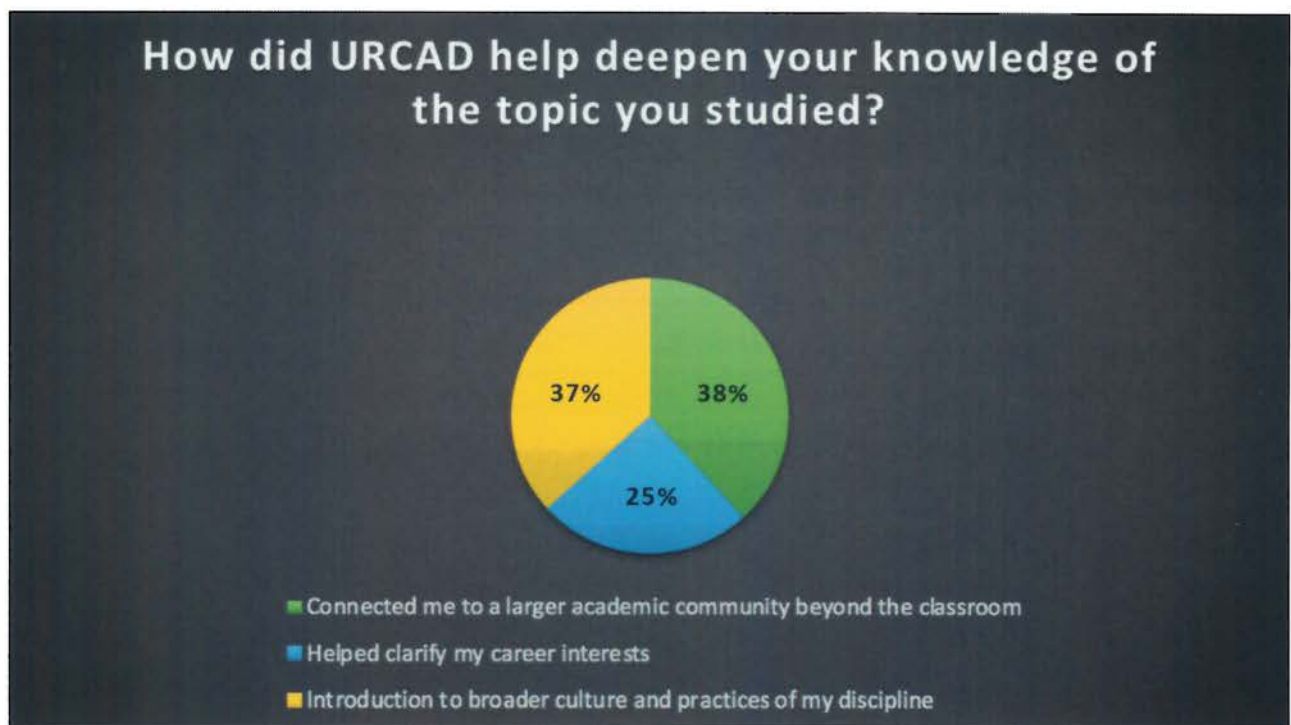
Department	Number of Presentations					
	2019	2018	2017	2016	2015	2014
Aging	0	1	1	0	0	1
INDS	7	1	7	4	4	2
Social Work	1	0	1	2	0	2
ARTS	20	28	27	37	24	11
Dance	6	6	4	5	9	3
Music	3	6	6	10	2	3
Theatre	4	2	0	2	1	2
Visual Arts	7	13	17	20	12	3
HUMANITIES	40	26	36	41	27	31
AMST	3	2	4	0	2	4
ANCE	2	6	7	9	6	7
Asian Studies	1	0	0	0	0	0
English	3	7	4	11	5	4
Gender + Women's Studies	9	3	1	0	1	0
History	16	2	7	19	3	10
MCS	2	2	4	0	1	1
MLLI	4	4	8	2	5	3
Philosophy	0	0	1	0	4	2
SOCIAL SCIENCES	41	74	58	59	59	40
AFST	0	3	1	2	1	0
Enconomics	1	0	1	0	3	1
Education*	7	16	13	17	26	
Geography	9	3	6	2	0	0
Global Studies	1	1	2	2	0	0
HAPP	1	2	2	2	3	3
POLI	5	16	3	8	2	3
PSYCH	16	30	29	25	19	25
SOCY/ANTH	1	3	1	1	5	8
CNMS	102	84	81	83	81	100
Biochem/Molecular Bio	6	10	7	19	8	14
Bioinformatics	6	0	4	2	4	2
Biological Sciences	47	36	36	35	38	45
Chem and BioChem	23	22	22	19	23	18
Math and Stat	7	8	6	4	3	12
Physics	13	8	6	4	5	9
COEIT	56	44	31	36	26	32
Chemical Engineering	23	16	13	12	10	12
CSEE	22	16	14	13	10	14
Information Systems	5	9	1	1	0	3
Mechanical Engineering	6	3	3	10	6	3
Total*	269	265	233	262	221	219
UNAFFILIATED SCHOLARS	91	90	87			

Note: Some students are listed in multiple majors

URCAD Presentations by Discipline 2019

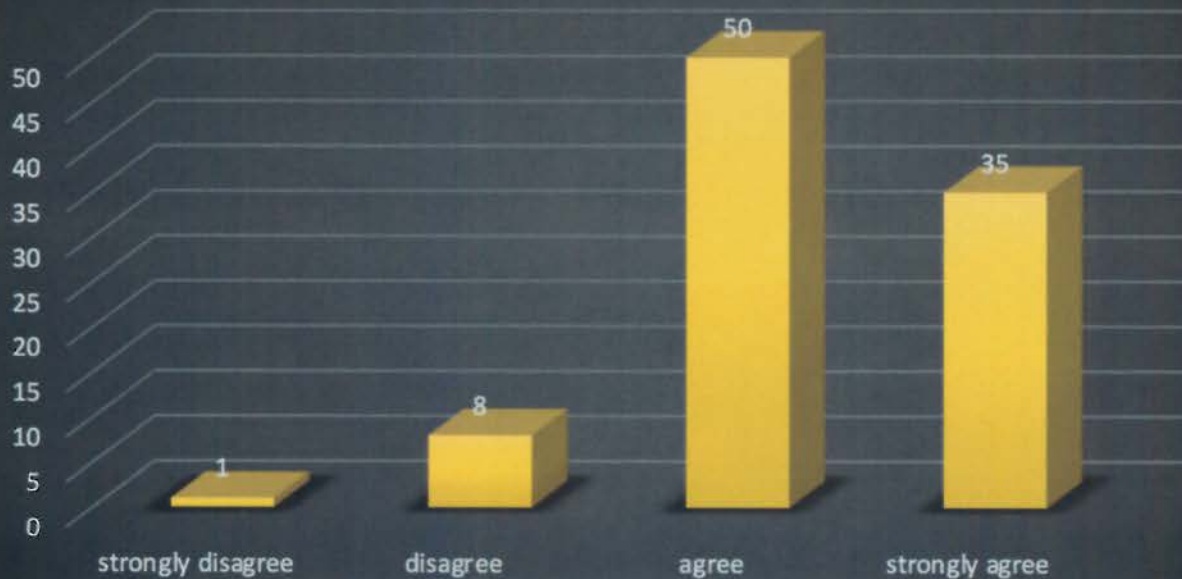


2019 Post-URCAD Presenter Survey Results (n=94)



- "I learned that it's huge fun! I presented most effectively after the first 2 or 3 people stopped by my poster because I was able to describe the main points and takeaway messages of my poster more concisely the more I spoke to people."
- "My experience at URCAD and being a URA scholar has helped me gain opportunities such as applying for a Fulbright scholarship and applying my research skills to my internships (as I did with my internship in the House of Delegates)."

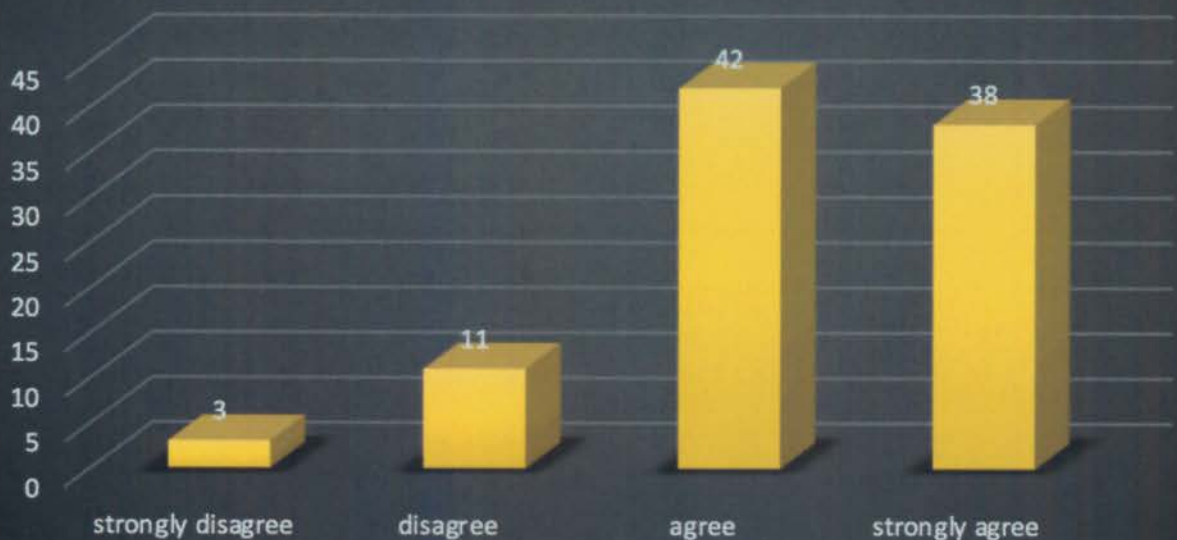
Did URCAD help improve your public speaking abilities?



What did you learn about delivering an effective presentation?

- "I learned how to condense and effectively explain almost a year's worth of work to a variety of audiences; some educators and some non-educators."
- "I now understand that confidence and practice are 90% of the work."

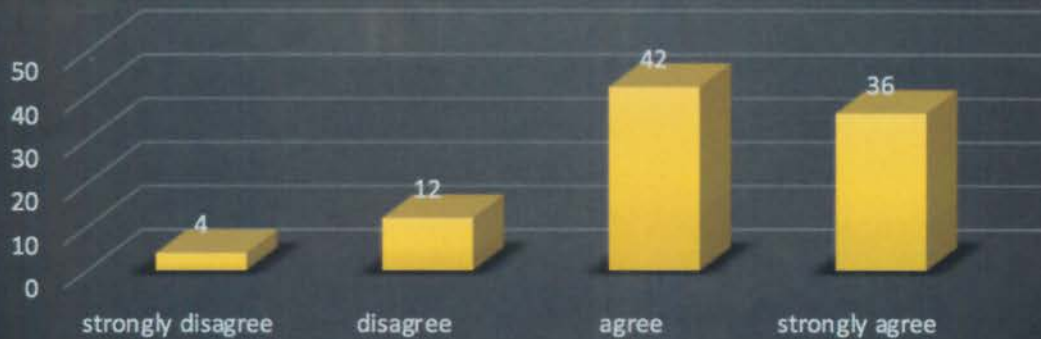
Did URCAD help strengthen your critical thinking skills?



How?

- "Answering poster questions on-the-spot, from surface-level or unrelated questions to deeper technical questions, was helpful for articulating my research as well as taking in feedback and future directions."
- "I had to know how to break down the scientific concepts in both an academic and general audience manner, meaning I had to know my information inside and out. I had to know how to connect my scientific information to real-world applications in the same manner."

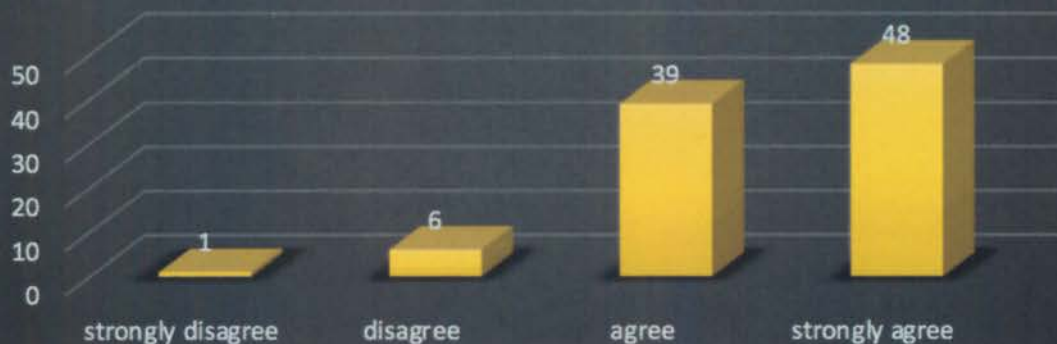
Did URCAD help strengthen your relationships with your research collaborators (mentors, research team, graduate students)?



How?

- "I was able to meet frequently with my faculty mentor about my project. Additionally, I was able to work closely with two graduate mentors who were able to guide me in every step of the research process."
- "Doing research and presenting what I did were two different activities. Dr. Blaney, Michael Fleming and the whole Blaney Lab were there to help me both on the material and other soft skills which strengthen our relationships."

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

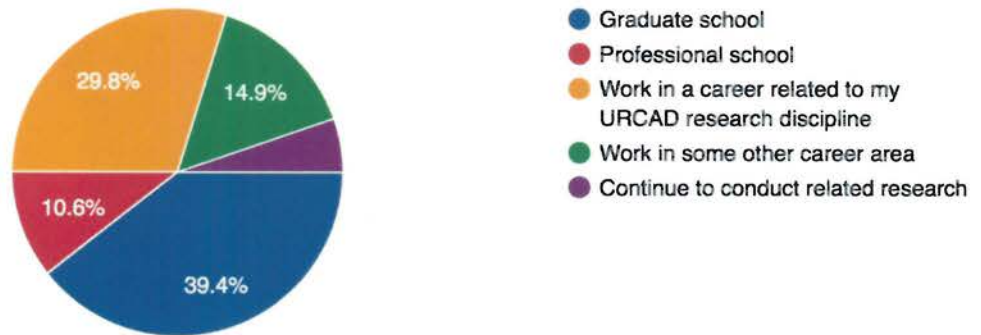


How?

- "If I am selected to interview for graduate programs, I will need to be able to communicate my research to faculty and others."
- "Research, presenting, and public speaking are skills that I can use in my upcoming internship and future career."

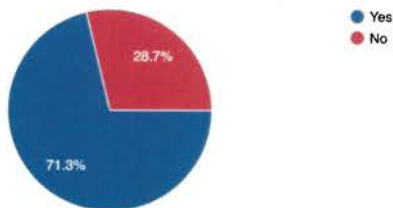
Please indicate what your immediate plans are following graduation from UMBC

94 responses



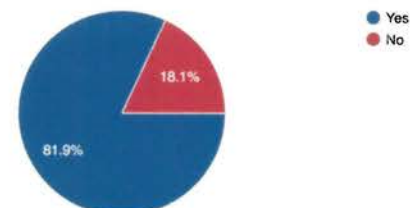
Did participating in URCAD help you feel connected to the larger UMBC community outside of your specific classes or discipline?

94 responses



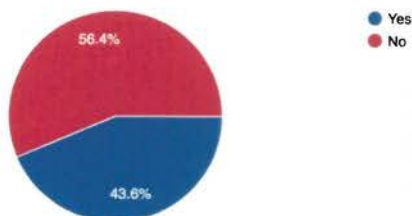
Did conducting research help you to integrate ideas learned inside the classroom with outside-the-classroom experiences (or vice-versa)?

94 responses



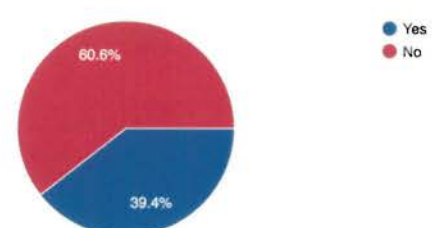
I will be continuing to conduct research related to my research discipline immediately after graduation

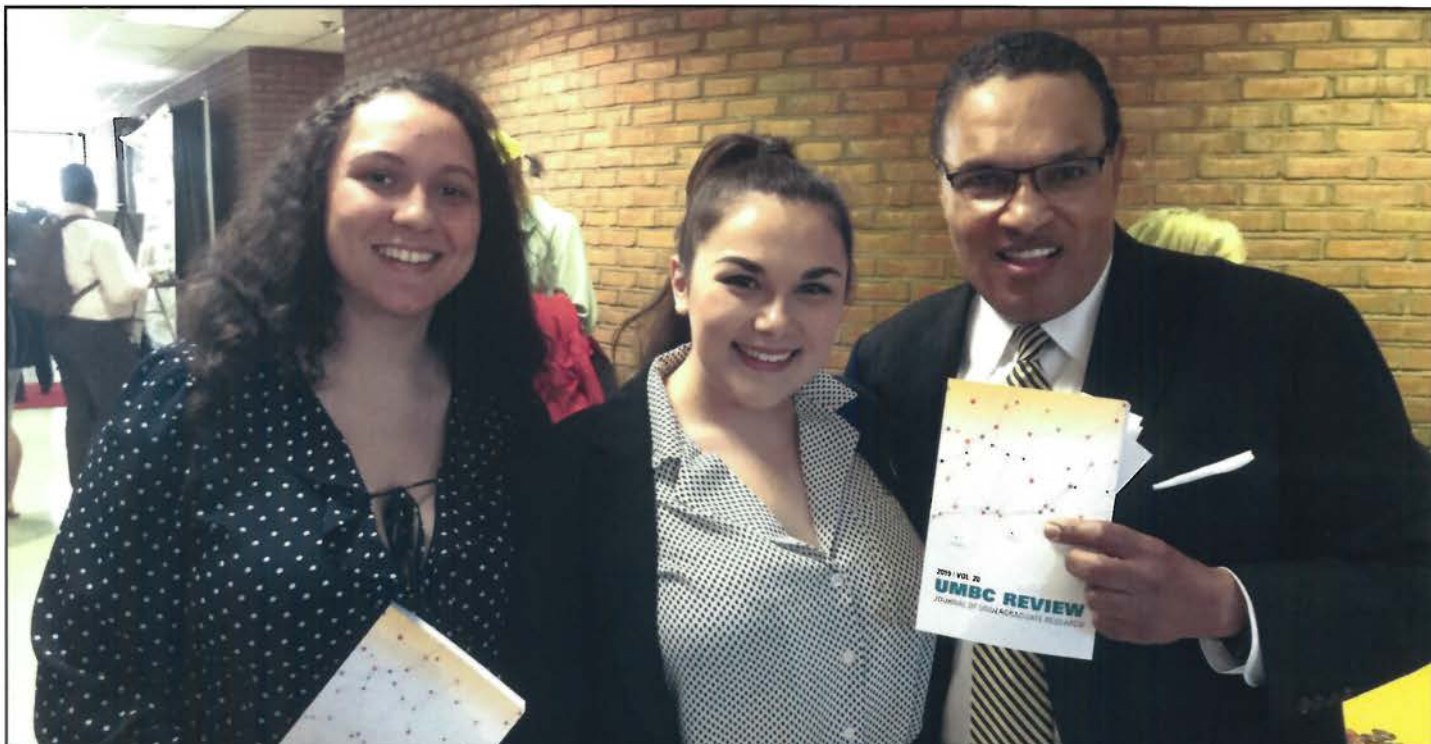
94 responses



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

94 responses





UMBC Review

Journal of Undergraduate Research

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 premieres every April, at URCAD.

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Travel Awards

Brian Hanson, Morgan Freeman, and Adam Der, winners of the Best Student Paper Award at the IEEE conference, Bangkok, Thailand

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 for FY 2018-19: \$10,000
- 18 students funded in the amount of \$9,950 (▲ 3)
- Students traveled to Bangkok, Sao Paulo, Kyoto, Anchorage and other exciting cities, to present their work!



"I travelled to the Annual Biomedical Research Conference for Minority Students (ABRCMS) in Indianapolis, Indiana from November 14th-18th, 2018. At this conference I was able to present the research that I have been working on for the past 9 months. This experience taught me about how to be a professional in the scientific community and how to share my research with a broad audience. I also learned the importance of networking and growing a strong network in my future field of work. I was able to meet many people through this conference, including a multitude of graduate schools such as Harvard, Duke, and Vanderbilt. I also met many UMBC alumni that are current scientific researchers, including Dr. Victoria D'Souza and Dr. Kafui Dzirasa. ABRCMS was a great benefit to me, I was able to become more confident in my presentation skills and my ability to teach my research to an audience. I was also able to learn more about potential Ph.D. programs that I want to apply to and make contacts that will benefit me in these programs."

- Brittany LaFaver
2018 Travel Award Recipient

2018-19 Travel Award Recipients

Ricardo Cardoza, \$500

"An-Pet Based Formaldehyde Vapor Sensor"
14th Annual IEEE International Conference on
Nano/Micro Engineered and Molecular Systems
Bangkok, Thailand

Markele Cullins, \$200

"Filling the Void: Putting the Queer in Afrofuturism"
Mid-Atlantic Popular and American Culture Association
Conference
Baltimore, Maryland

Collin David, \$750

"Borderland"
Sao Paulo Contemporary Composers Festival
Sao Paulo, Brazil

Lorraine Dell-Acqua, \$500

"Brain Responses to Painful Heat Differ Based on
Race/Ethnicity: A Pilot Study"
International Association for the Study of Pain
Boston, Massachusetts

Adam Der, \$500 (*Best Student Paper Award)

"Fabrication of a Wearable Temperature Sensing
System for CIPA Patients"
14th Annual IEEE International Conference
Bangkok, Thailand

Anna Feerick, \$750

"Nitrogen Trichloride Detection in Indoor Pool Air
Using Proton Transfer Reaction Mass Spectrometry"
American Meteorological Society 18th Annual
Student Conference
Phoenix, Arizona

Morgan Freeman, \$500 (*Best Student Paper Award)

"Fabrication of a Wearable Temperature Sensing
System for CIPA Patients"
14th Annual IEEE International Conference
Bangkok, Thailand

Casey Haines, \$500

"Female Song in Eastern Bluebirds"
Animal Behaviour Conference 2019
Chicago, Illinois

Brian Hanson, \$500 (*Best Student Paper Award)

"Fabrication of a Wearable Temperature Sensing
System for CIPA Patients"
14th Annual IEEE International Conference
Bangkok, Thailand

Matthew Kane, \$1,000

"Bahama Oriole Project"
American Ornithological Society Meeting
Anchorage, Alaska

Brittany Lafaver, \$500

"Identification of Nucleocapsid Binding Sites Within the
HIV Genome"
Annual Biomedical Research Conference for Minority
Students (ABRCMS)
Indianapolis, Indiana

Michael LaScola, \$500

"Generation and Analysis of dp1 Mutants in the Green
Alga, *Volvox carteri*"
ABRCMS
Indianapolis, Indiana

Fayokemi Ojo, \$500

"SenseBox: A DIY Prototyping Platform to Create Audio
Interfaces for Therapy"
13th Annual Conference on Tangible, Embedded, and
Embodied Interactions
Tempe, Arizona

Shabnam Parsa, \$500

"Sexual Selection in the Rainbow Darter"
ABRCMS
Indianapolis, Indiana

Shirin Parsa, \$500

"The Effect of Sleep Hormones on Cancer Cell Growth"
ABRCMS
Indianapolis, Indiana

Ghazal Ramezanifoukolaei, \$750

"The Role of the 5'-Leader in HIV Infection"
ABRCMS
Indianapolis, Indiana

Jordan Troutman, \$500

"Understanding Bias Without a Ground Truth"
MIT Undergraduate Research Technology
Conference
Boston, Massachusetts

Brendan Witt, \$500

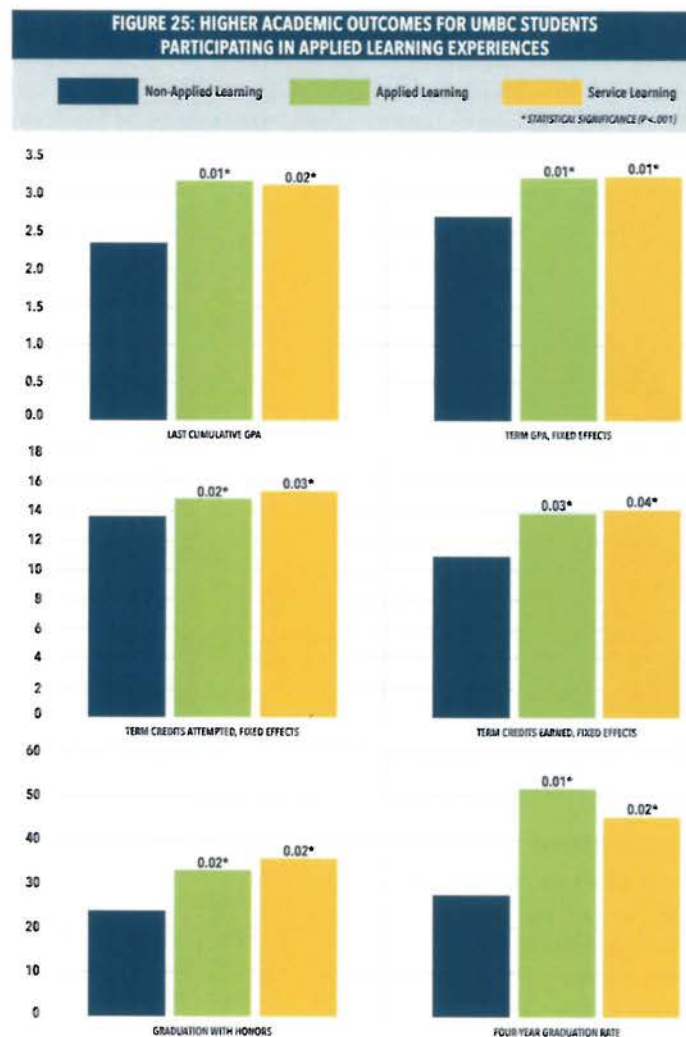
"A Study of User Intent in Immersive Smart Spaces"
Pervasive Computing (PerCom) 2019
Kyoto, Japan

Research Opportunities

Explore every angle

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. Future implementations will include developing a system for tracking served students.
- UR maintains a **database of summer research opportunities** growing to over 500 entries. We have partnered with Career Services, Meyerhoff, and others to maintain the entries.



¹ Penniston, Thomas. (2014). *The Impacts of Service Learning Participation Upon Post-Secondary Students' Academic and Social Development*. Dissertation, University of Maryland, Baltimore County.



Prestigious Scholarships

Claim your future

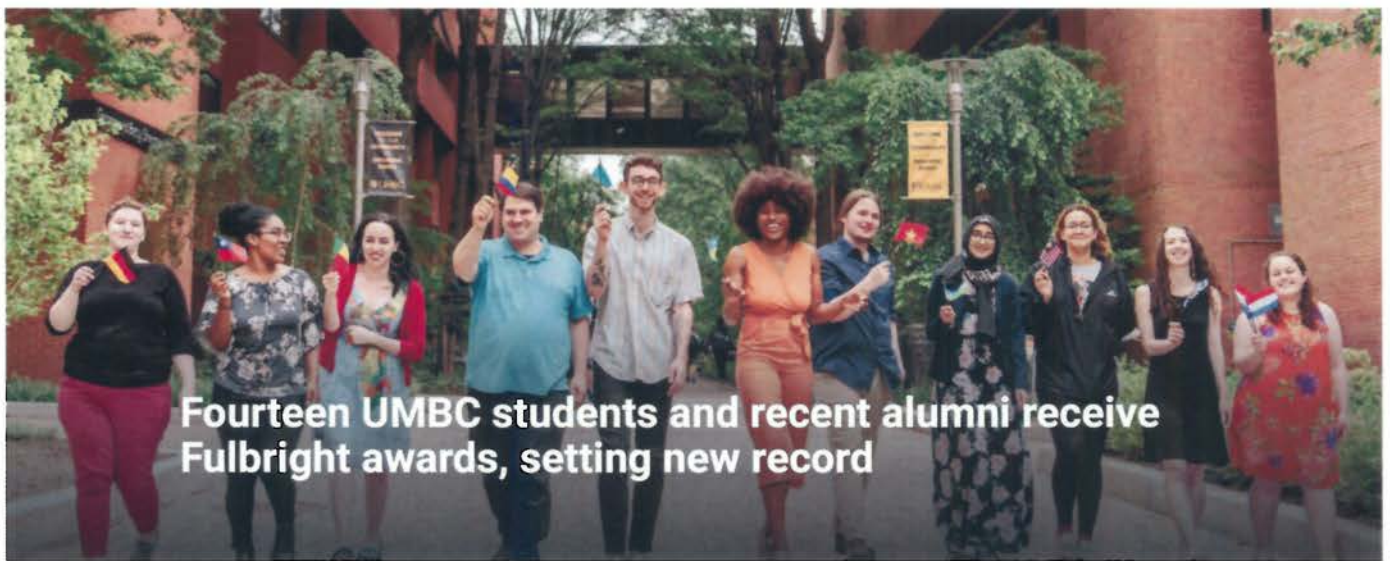
Prestigious Scholarships provides support for students to study within the U.S and abroad, by providing funding for graduate school and research opportunities. These scholarships are recognized as some of the most prestigious in the world, and their purpose is to develop outstanding students into leaders 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, etc., when students come forward.



Evan Avila ('20, Economics/Political Science, 4.0), is UMBC's first Truman Scholar in 15 years. He is passionate about using tax reform to solve the structural disadvantages that marginalized populations face when trying to achieve long-term financial security. His mentor is Dr. Doug Lamdin and he is a member of the Honors College and is a Sondheim Scholar. He has interned at the U.S. Census Bureau and is president of the Volunteer Income Tax Assistance Program (VITA). In 2018, He won the iOme Challenge, and will compete next year for the Rhodes scholarship.



Linda Wiratan ('19 Biological Sciences, 4.0), was Valedictorian, a Goldwater Scholar, Rhodes finalist, URA Scholar, and URCAD presenter. Her ongoing research at UMBC under the mentorship of Dr. Hua Lu examines the mechanisms for crosstalk between the circadian clock and plant innate immunity. She is a member of the Honors College and has published four articles in major scientific journals, as well as poetry and prose. She will be attending Harvard University to earn a Ph.D. in cell biology on a fellowship that was given to a non-ivy league student for the first time ever.



Fourteen UMBC students and recent alumni receive Fulbright awards, setting new record

In 2018-19, the Prestigious Scholarships office developed and sent forward:

- **Evan Avila** for *Truman (Winner)*
- **Linda Wiratan** for *Rhodes (Finalist), Gates*
- **Connor Ganley** for *Rhodes, Gates, and Knight-Hennessy*
- **Yasmin Graham** for *Rhodes, Gates, Knight-Hennessy*
- **Rebekah Kempske** for *Marshall, Knight-Hennessy*
- **Elizabeth Cook** for *Frederick Douglass Global Fellowship*
- **Stephanie Milani** for *Soros, NSF GRFP*
- **Cameron Walkup** for *Udall*
- **Jade Reinholdt** for *Critical Language Scholarship*
- **Alexandra Seas and Yaw Owusu-Boaitey** for *Goldwater*

Fulbright Scholars (Advised out of the International Education Services Office) 14, ▲ 6, a UMBC record):

Research Assistant Awards

Jessica Linus '19, health administration and policy, Rwanda

English Teaching Assistant Awards

Jennifer Bohlman '19, M.A., ESOL, Germany

Liam Connor '19, information systems, Vietnam

Dymond Elliot '19, psychology and MLLI, Malaysia

Chanler Harris '19, ancient studies, Taiwan

Leah Ginty '14, MLLI, and M.A. '19, TESOL, Benin

Bryce Moore '19, MLLI, Kazakhstan

Manneha Qazi '17, biological sciences, Uzbekistan

Michael Schapiro '19, M.A., TESOL, Colombia

Corey Simon, '18, MLLI, and M.A. '19, intercultural communication, Uruguay

Kelly Wan '18, global studies and financial economics, South Korea

M.A./M.S. Study Awards

Rebekah Kempske '19, mechanical engineering, Delft University of Technology, Netherlands

Jacob Schubbe '18, mechanical engineering, Lappeenranta University of Technology, Finland

Julian Tash '19, Asian studies and history, Taiwan



Prestigious Scholarships Spotlight: Evan Avila

"I want to pursue a career in economics to inform policy that can dismantle structural barriers to economic equality for immigrant communities," says **Evan Avila** a junior majoring in economics and political science. "As a first-generation American from a Mexican-Peruvian immigrant family, I understand well how mastery of English is fundamental to economic prosperity in this country," Avila says. "Through the Esperanza Center," he explains, reflecting on a community group he maintains a strong connection with, "I help my community refine their English skills to better defend their rights as essential participants in U.S. economic growth." Now, he'll be even better positioned to do this work. Avila, a Sondheim Public Affairs Scholar, has just been named a 2019 recipient of the distinguished Harry S. Truman Scholarship, an affirming recognition of both his achievements and his potential. Avila becomes the fourth Truman Scholar in UMBC history. He follows **Alicia Wilson '04**, political science, who was selected in 2003 and now serves as a senior vice president and senior legal counsel for Port Covington Investments. "It is thrilling to welcome Evan into the Truman Scholarship Program. I have had the pleasure of having dinner with him and entrusted with knowing his dreams," says Wilson. "This award is a huge step in the direction of fulfilling his vision to help some of the most vulnerable populations realize their dreams." After an intensive application and panel interview process, Avila was chosen for one of just sixty scholar positions out of 840 applicants nationwide. Now, he joins a network, built over the past 40 years, of over 3,000 scholars dedicated to public service in the United States and around the world. These past recipients now serve in leadership positions at the highest levels.

The award grants Avila \$30,000 toward a competitive graduate school of his choice. In addition, scholars gain access to continuous leadership development programs, such as the Truman Scholars Leadership Week and the Summer Institute. Scholars also benefit from mentorship by top leaders in government agencies, nonprofit organizations, public and private educational institutions, and advocacy organizations. UMBC has a rigorous selection process to nominate a student for a Truman Scholarship. It begins with recruitment from scholars programs, research initiatives, and departments across campus. **April Householder**, director of undergraduate research and prestigious scholarships, guides a committee that works with candidates. They prioritize the most important factor for Truman applicants: their ability to demonstrate a strong potential as a change agent in their chosen field. "Evan has taken on endeavors that some students might not see as exciting—income tax preparation, working for the U.S. Census Bureau, being an English language tutor, and writing policy proposals about retirement—and turned them into deeply meaningful experiences," reflects Householder. "His work is inextricably linked to empowering people that are invisible to many: immigrants, retirees, and the poor."

Dreams, words, actions

Avila will spend his senior year finalizing his law school applications. He plans to pursue both a J.D. degree and a master's of law in taxation, to specialize in taxation and employee benefits law. His goal is to work for the IRS before informing policy on Capitol Hill. Avila began to prepare for these opportunities last summer as an intern at the U.S. Census Bureau and Treasury Department. This summer he will begin to fulfill his dream of working in Capitol Hill as an intern in the Senate Committee on Health, Education, Labor, and Pensions. He will also present his winning iOME challenge policy proposal, *Rethinking Millennial Retirement: Policy Recommendations for a Gig Economy*, at the inaugural Latinxs Making Money Moves Conference hosted by Latinos for a Secure Retirement coalition in Washington, D.C. The proposal provides innovative policies to help millennials save for retirement. It will also soon become course material at UMBC in the Erickson School of Aging Studies course How Boomers are Revolutionizing Aging. As workers, families, and students face unpredictable retirement, Avila, who has worked with these communities, takes these issues personally. "These trends will lead to greater wealth inequality and division," says Avila. "My driving ambition is to combine the intersections of financial services, taxation, and employee benefits to address this significant challenge." (continued)

Banner image (l to r): Simon Stacey, director of the Honors College, and members of the UMBC Truman Selection Committee: Lori Hardesty, associate director of the Shriver Center; Avila; David Hoffman, director of the Center for Democracy and Civic Life; April Householder; Brian Souders, Fulbright program advisor.

A purpose-driven life

UMBC's Sondheim Public Affairs Scholars program has nurtured Avila's desire to serve communities most affected by structural inequalities. Notably, the program requires scholars to engage in, and reflect on, applied learning opportunities. Avila began by volunteering as a tax preparer with the UMBC Volunteer Income Tax Assistance (VITA) program, which helps low-income households prepare their taxes for free.

During his sophomore year, when VITA's leadership was graduating, Avila secured funding to continue the program and became its president and site manager. This year VITA reached a milestone by helping 500 clients for the season, 145 more clients than last year.

While he worked in the VITA program, Avila received support from the Shriver Center, which provides opportunities for engaged scholarship and applied learning, for his work at the Esperanza Center. The Shriver Center acknowledged Avila as a France-Merrick Scholar for his commitment to service, leadership, and civic engagement on the UMBC campus and in Baltimore City. He is also a member of UMBC's Honors College and board member of UMBC's Financial Literacy Education Committee.

Avila credits **Arthur Johnson**, provost emeritus and former director of the Sondheim program, for his mentorship in shaping his path in public service. Johnson has written and spoken often about the meaningful legacy of Walter Sondheim, the program's namesake. In 2015, he wrote in USM's *The Faculty Voice*, "Mr. Sondheim's career was an ideal model for illustrating the values of public service and dedication to the public interest." Johnson explained that Sondheim "led Baltimore City school integration and the transformation of Baltimore's inner harbor." He wrote, "We want our students to understand what a 'life of purpose' looks like and the good it can accomplish, no matter their chosen career path."



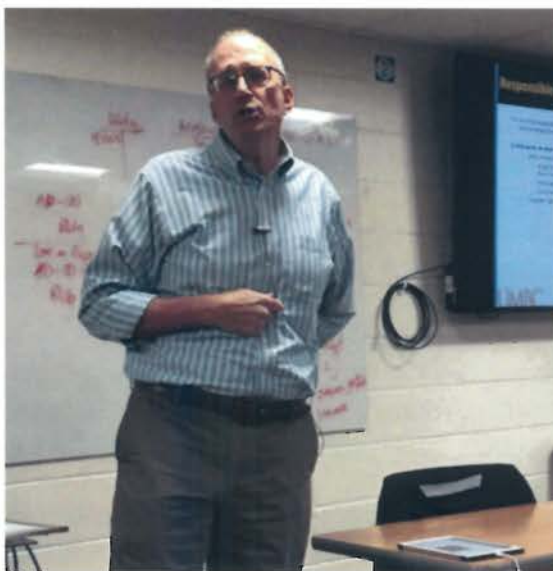
In becoming a Truman Scholar, Avila joins other Sondheim Scholars who have been recognized through prestigious honors. **Rosa Rada** '17, food systems policy, was a Truman Scholar finalist and became a Bill Emerson National Hunger Fellow through the Congressional Hunger Center. In 2016, **Zainab Alkebsi** '09, political science, was admitted to the Bar of the United States Supreme Court through a historic swearing-in of deaf and hard of hearing attorneys. **Ari Ne'eman** '10, political science, co-founder of the Autism Self-Advocacy Network, was appointed by President Obama to the National Council on Disability. *The Financial Times* named **Greg Lowe** '05, political science, among its Top 100 LGBT+ executives in 2017, as global head of resilience and sustainability at Aon. The Sondheim program also has strong global reach and regional impact, with seven Fulbright Student Scholars and three Newman Civic Fellows. "In the Sondheim Public Affairs Scholars Program, we seek to support students who want to live impactful lives," says **Laura Hussey**, associate professor of political science, and director of the program. "Evan is already doing that and with great excellence, integrity, and care for people."

Prestigious Scholarships applicants attend etiquette dinner



New Implementations for Prestigious Scholarships

- Institutional nomination and selection processes established, and committee formed for the Truman Scholarship:
 - Lori Hardesty, Assistant Director, Shriver Center
 - Laura Hussey, Associate Professor of Political Science and Director of Sondheim Public Affairs Scholars Program
 - Jodi Kelber-Kaye, Associate Director, Honors College
 - Jess Myers, Director, Women's Center
 - Rehana Shafi, Director, Sherman STEM Teachers Scholars Program
 - Hannah Schmitz, Program Coordinator, Public Service Scholars Program
 - Joby Taylor, Director, Shriver Peacemaker Program
 - David Hoffman, Student Life
 - Stephen Freeland, Director, Individualized Studies
 - Christine Mallinson, Director Social Science Research Center, MLLI Faculty
 - Brian Souders, Fulbright Program Advisor
- Held information sessions for students
- Produced videos for students applying to Knight-Hennessy and Frederick Douglass Global Fellowship
- Held mock interviews for finalists
- Dining and interview etiquette seminar for nominees with Cathy Hanson, International School of Protocol, 10/19/18
- Support for students traveling to interviews
- Published list of runner up/honorable mention and bios of post-graduate achievements
- Director met with Sonia Pereira, Universidade do Porto, (July, 2018) to increase her understanding of UMBC and establish contacts that will help grow the quantity and quality of international research cooperation between our two institutions
- Co-nominated (with Honors College) Valedictorian, Linda Wiratan
- Partnered with Study Abroad and Fulbright offices to recruit quality applicants
- Created website for the UMBC U.S. Fulbright Program (for IES)



Workshops for URA Scholars included presentations by Wendy Martin, Tim Sparklin, and Vivian Armor

Partnerships

Reach Together

This year, we have 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. April Householder also serves as a member of the INDS Committee (ISC), where she reviews and approves INDS degree proposals.
- 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). 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 (10/22), and other prestigious scholarships applicants.
- **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 (10).

"The Undergraduate Research office and the Career Center at UMBC have formed a partnership designed to enhance and cultivate research skills, professional competencies of undergraduate students engaged in research across disciplines. Through the newly-created Research Practicum course designed specifically for URA Scholars, students acquire solid understanding of the qualities and skills needed to conduct research while also learning how to effectively navigate the landscape of working in a research setting with both scientific peers and supervisors within their research fields. Through this collaboration, students and research mentors work in tandem with career professionals to create structure to their experience while also encouraging students to evaluate and reflect on how they have grown as a researcher and how their work connects to both their short- and long-term career goals. Beyond the Practicum, the Career Center supports the work of Undergraduate Research by advising UMBC students as they submit applications for competitive research experiences off campus. Career Center advisors also actively encourage students to participate in other opportunities through the Office of Undergraduate Research, such as presenting at URCAD and submitting work to be published in The UMBC Review."

- Kacie Lawrence and Susan Hindle
URA Practicum Coordinators

Campus-wide Partnerships

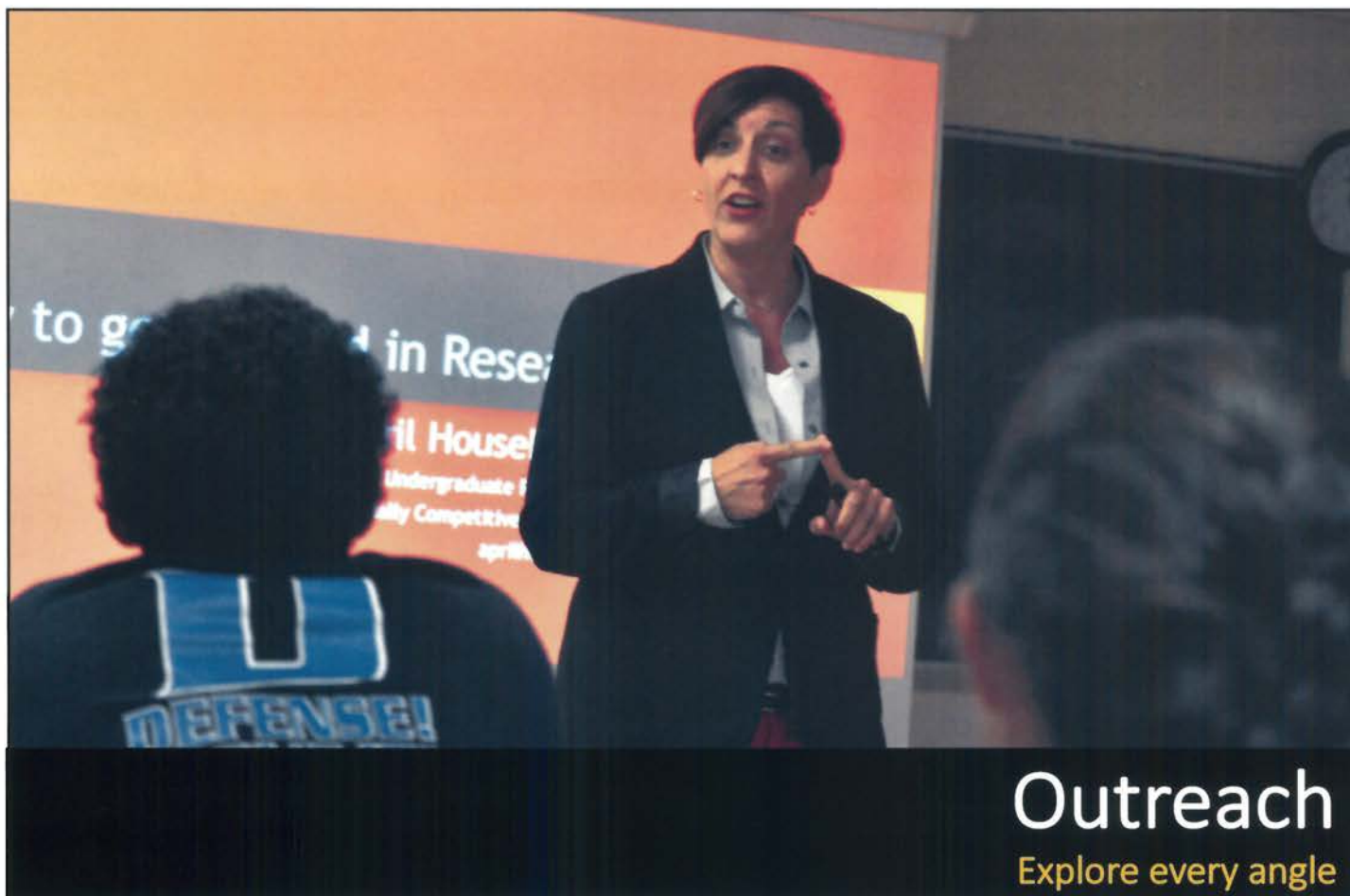
- **Erin Durham, Research Librarian** was added to URCAD committee. She collaborated on the URA workshop series to provide literature review presentations.
- April Householder provided workshops for **LSAMP and McNair** student researchers, **the Honors College, Meyerhoff Program, Women's Center, CWIT, Career Services, and Transfer Student Network.**
- Partnered with Sudan Hindle (Career Services) and Professor Laura Ott (College of Natural and Mathematical Sciences and Director, Science Education Research Unit and Active Learning Coordinator, STEM BUILD @ UMBC, to create an **Ethical Guidelines for Research (EGR)**. The EGR is distributed on our website and to the URA scholars and mentors via URA PRAC.
- Developed the **Center for Social Science Scholarship** Undergraduate Research Award (CSSS URA) with Dr. Christine Mallinson, Director of the new CSSS. Four students received the inaugural award.
- Developed the **Phi Kappa Phi Honor Society** Undergraduate Research Award. Darin Gilchrist is the recipient of this year's award for the CNMS/COEIT/INDS group for his work entitled "Structural Determination Of HIV-1 MAL Minimal Packaging Region." This research was conducted in conjunction with Canessa Swanson, and under the direction of Dr. Michael Summers, Chemistry and Biochemistry. Leah Prescott is the recipient of this year's award for the CAHSS/SOWK/ERICKSON group for her work entitled "Do You C What I C: Sight-Reading Melodies in C Major." Working under the direction of Nana Vaughn in the Music department, Leah examined 22 sixth and seventh grade violinists in a concert orchestra classroom and their ability to read simple melodies in C major. Each student received a check for \$500.



Darin Gilchrist (L) and Leah Prescott (R), winners of the 2019 PKP Undergraduate Research Award



- The synergy continues between the **International Education Services Office** and UR/PS. April Householder serves on the **Fulbright** interview selection committee. Rebekah Kemske applied for prestigious scholarships but won a Fulbright this year, as did Morgan Zepp (URCAD presenter). David DiMaria and Brian Souders also participated in mock interviews for international prestigious scholarships awards. Householder and Souders teamed up for presentations to the Honors College, and for students interested in international scholarships. UAA web designer, Michael Mower, created a new website for Fulbright and Fulbright Bootcamps were held in the UAA conference room.
- A new partnership with **Career Services** was forged this year to enroll the 2018-19 URAs in the Research Internship Practicum (PRAC). Expectations were: 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 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, McNair Scholars Program, LGBT FSA, and Biological Sciences** department all contributed funding to support URCAD.



Outreach

Explore every angle

We offer group workshops as well as one-on-one support to students who are just getting started in research, or who are interested in pursuing prestigious scholarship opportunities. This includes helping students find mentors, summer research opportunities, preparing for graduate school, improving their writing skills, and connecting them with other resources for student success, both on and off-campus.

"I wanted to reach out and say thank you for all of the work you (and countless other staff) put in to make this year's URCAD happen. This was the first time I was able to see my research (on Korean Shamanism) in a way that seemed more relevant and important than just for a grade in a class. I also wanted to thank you, as a few weeks ago I received an email notifying me that I had been recommended to the Fulbright scholarship and your name was listed as one of the faculty members to mention my name, so this year's URCAD has really been something very special for me. (I have been meeting with Dr. Souders and am applying to an ETA award in South Korea by the way!)"

All in all, I am very happy and grateful to everyone that has put in the effort to keep URCAD running so students like myself get a chance show off something they are passionate about! I wish I had done this sooner but hopefully I will find more equally exciting opportunities in my post-graduate career!"

- Carley Mackenzie, URCAD Participant (Asian Studies)

- In 2018-19, there were over **162 (▲ 42)** walk-ins or appointments made for one-on-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
- **91** students presented at URCAD who were unaffiliated with scholars or honors programs, like the one quoted above



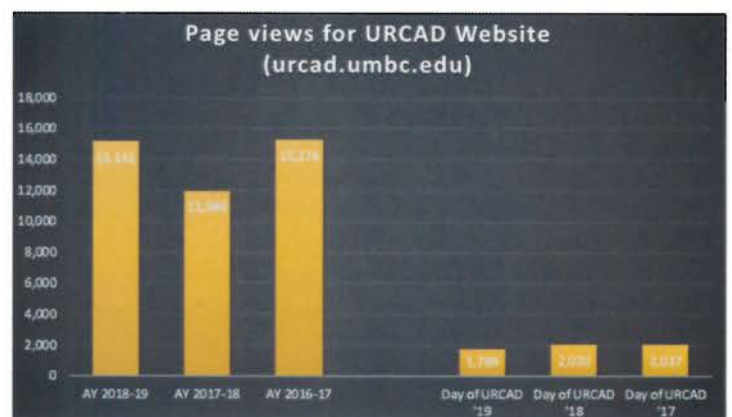
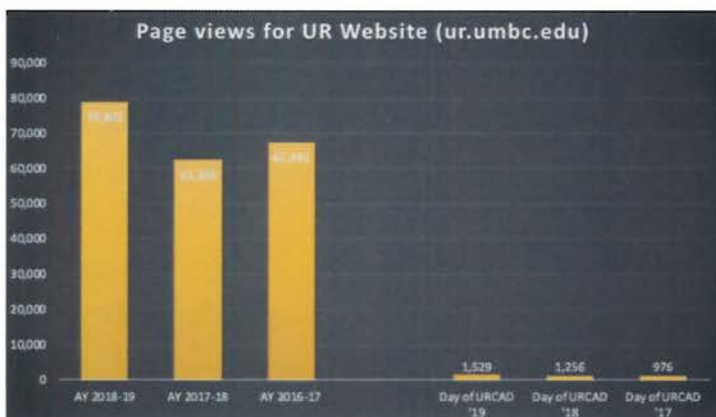
Karis Barnett and her lab-mates, winners of the URCAD Selfie Contest

UR website (ur.umbc.edu)

Publicity and Marketing

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 has **26,261 users** and received **78,802** (▲ 16,507) **visits** in 2018-19. 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 **15,141** (▲ 3,155) **times this year**, and **1,789 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** (@UR_at_UMBC, 325 followers, ▲ 58) and **Instagram** (#urumbc, 125 followers) accounts this year. 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.



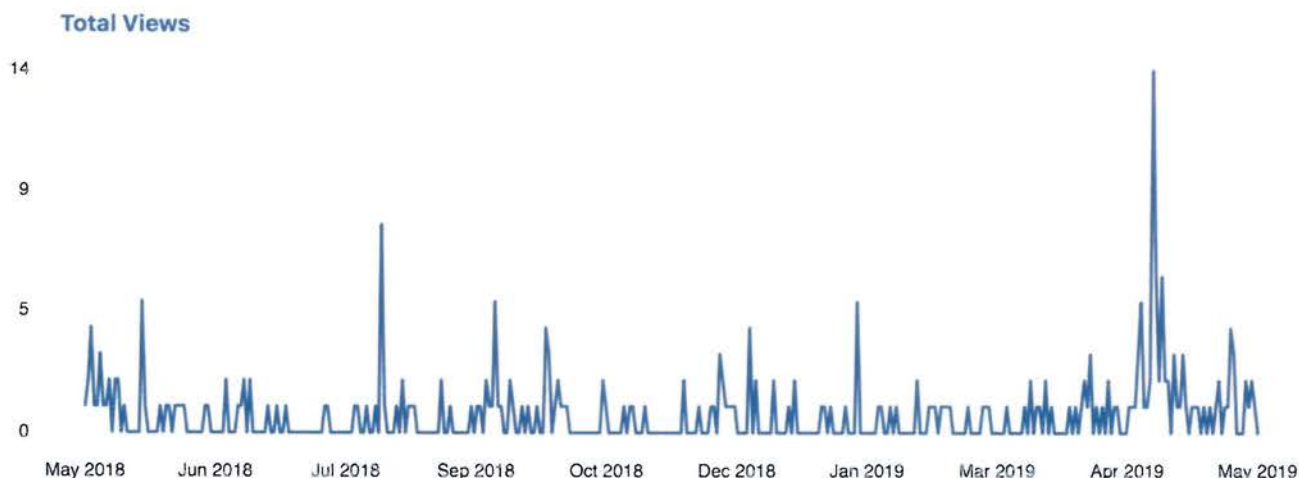
Sample Facebook post featuring Researcher of the Week, Abby Cruz, with 769 people reached



Sample Instagram post with "periodic pun" advertising URCAD

Our Facebook page has **827 followers** (▲ 54), and in the last year, has generated **787 "likes"** on posts. Our peak views happen in the months leading up to URCAD in April (see below).

Total Views Facebook monthly views



myUMBC Group

The Undergraduate Research myUMBC group has **2,488 members** and **1,165 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.



Staff member Devon Fick assists students

The URA Award: It'll Blow You Away!
Provides Up to \$1500 to Support Research: Open All Majors

Meet Sharon. She has decided to apply for a URA Award

"There are three different awards this year," noted Sharon, who was interviewed while blow drying her exquisite curly hair. "You've got the usual award, open to all majors and worth up to \$1,500 and then you've got the Social Science award and the entrepreneurship award. Pretty amazing opportunity. And the deadline isn't until May 1st, so I've got plenty of time!"

"It's all out my application online once I'm done with my hair," she added. "And it's open to all majors!"

URA's 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, as long as they will remain enrolled at UMBC long enough to complete the proposed work.

[Visit Website](#) [Download Flyer](#)



Sample myUMBC posts promoting URA awards and the URCAD Selfie Contest

URCAD Selfie Contest Winner: Mia Rickenbach
Best Selfie with Family Member

Congratulations to URCAD presenter and two-time URA Scholar, Mia Rickenbach, winner of the URCAD Selfie Contest in the category: **Best Selfie with a Family Member!**

Mia's mom stayed all day, and proudly supported her research presentation and morning session talk, thanks mom!

Mia will receive a \$25 gift card to the UMBC Bookstore!

[Visit Website](#)



Printed Materials

- **UMBC Retriever**- advertising for programs and events, in both printed and on-line formats
- **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 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. This year, OIA created several videos for URCAD to promote and summarize the event.

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.)
- **Table at Major Event**
- **Presence at new student orientations**



Connor Ganley, 4.0 is a member of the Men's Swimming and Diving team

Student Athletes

Extend Beyond

They swim! They run! They score! But did you know that UMBC's Student Athletes also conduct research and create art? Joe Sherburne was chosen as the America East's men's basketball Scholar-Athlete of the Year. Check out these **Student Athletes** who presented their research and creative work at URCAD or who are URA Scholars:



Matthew Kane (Omland Lab) presents his research on the Bahama Oriole at URCAD

2019 URCAD Presenters

Brittany Driscoll (Women's Swimming and Diving)

3-D Reconstruction Of Stomatopod Brain

Keller Falkenstein (Men's Lacrosse)

So Now You Like The Confederacy?

Western Maryland's Change in Civil War Support

Matthew Kane, *URA Scholar (Cross Country/Track and Field)

Nest Predation Of The Bahama Oriole (*Icterus Northropi*)

by The Black Rat (*Rattus Rattus*) On Andros

Ilia Rattsev (Men's Swimming and Diving)

Extrapolating New Molecular Connections From

Cancer Genomic Data

Miles Smith, *URA Scholar (Men's Cross Country)

Piezoelectric Energy Harvesting Research For Self-sustainable

Wind Turbine Monitoring Systems

Prestigious Scholarships Applicants

Connor Ganley (Men's Swimming and Diving) for Rhodes, Knight-Hennessy, Gates. Connor will be attending Johns Hopkins University to pursue a Ph.D. in Chemical Engineering and Materials Science

"URCAD and prestigious scholarships provide opportunities for our student-athletes to demonstrate their academic acumen. They are high achievers in both realms and can flex their academic muscle with undergraduate research."

- Jessica Hammond-Graf
Deputy Athletics Director



URCAD and Wisdom Institute Founder, Emeritus Dean Diane Lee

History

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 re-organized 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.



Staff

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 2018-19 was \$101,000.

Full-time

April Householder (90% UR, 10% PS)

Director of Undergraduate Research and Prestigious Scholarships

Support Staff

Devon Fick

Administrative Assistant II

Michael Mower (Shared with UAA)

IT, Web, and Graphic Design Specialist

Denise Kedzierski (Shared with UAA)

Administrative Assistant I

Ingrid Nkenlifack and Alexis Stevenson (Shared with UAA)

Student Office Assistants

Undergraduate Research and Prestigious Scholarships

Division of Undergraduate Academic Affairs

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