

# Catholic University Research Day

**April 15, 2016**



**THE CATHOLIC UNIVERSITY OF AMERICA**

# 2016 RESEARCH DAY PROGRAM

8:30-9:40	Poster Session	Heritage Hall, McGivney Foyer
9:50-10:00	Welcome – Provost Andrew Abela	Gowan 126
10:00-10:30	Keynote #1 – Dr. Robin Darling Young	Gowan 126
10:40-12:10	Oral Presentations – Session 1	(Multiple locations)
12:10-1:30	Lunch; Poster Sessions	Caldwell Hall Aud.; Heritage Hall; McGivney Foyer
1:30-2:00	Keynote #2 – Dr. Michael Mermagen	Caldwell Hall Auditorium
2:10-3:50	Oral Presentations – Session 2	(Multiple locations)
4:00-5:00	Award Ceremony – Provost Andrew Abela	Heritage Hall

## *Oral presentations - Schedule and locations*

### **MORNING PRESENTATIONS: 10:40-12:10**

Session 1a: Byron Auditorium (Law School)  
Session 2a: Gowan 126  
Session 3a: Hannan 108  
Session 4a: Koubek Auditorium (Architecture building)  
Session 5a: John Paul Hall (School of Music)  
Session 6a: McGivney 106

### **AFTERNOON PRESENTATIONS: 2:10-3:50**

Session 1b: Byron Auditorium (Law School)  
Session 2b: Gowan 126  
Session 3b: Hannan 108  
Session 4b: Koubek Auditorium (Architecture building)  
Session 5b: Ward Recital Hall & John Paul Hall (School of Music)  
Session 6b: McGivney 106

## *Lunch options*

*Food will be available for purchase at the following food trucks:*

### **Lemongrass (Vietnamese)**

<http://www.lemongrasstruck.com/>

### **Dirty South Deli - American Southern cuisine:**

<http://dirtysouthdeli.com/>

### **Fava Pot (Middle Eastern):**

<http://favapot.com/>

### **Swizzler:**

<http://www.swizzlerfoods.com/#home-section>

Food trucks will be parked in front of Mullen Library; participants are invited to eat on the CUA Lawn or in the Caldwell Auditorium

## *Oral presentations – Speakers and titles*

### **MORNING PRESENTATIONS: 10:40am-12:10pm**

*Please note: each speaker will present for 15 minutes, in the order listed on the program.*

#### **Session 1a (Byron Auditorium - Law School) – Chairperson: Mary Leary**

- *Understanding the Genetic Basis of Parkinson's Disease*
  - o Abhijit Sarkar, Physics
- *Enhancing the Autonomy of Underwater Vehicles*
  - o James McMahon, Engineering CS
- *Towards Sustainable Water Resource Planning in Siem Reap City, Cambodia: Integrating Traditional Khmer Ecological Values in a Tourism Hot-Spot*
  - o Charles Hostovsky, Architecture
- *The Identity of Early America through Art*
  - o Maria Thurber, Art
- *Dissemination and Implementation Science in Health Care*
  - o Maureen (Molly) Bowers, Psychology
- *Throwing Away the Key: How American Juvenile Justice Lost Its Way*
  - o Cara Drinan, Law

#### **Session 2a (Gowan 126) – Chairperson: Julia Young**

- *Plato's Hammer: The Art, Science, and Philosophy of Computing and Where It Might Take Us*
  - o Patricio Simari, Electrical Engineering and Computer Science
- *The Joint Comprehensive Plan of Action will force social and political changes in the Islamic Republic*
  - o Dennis Nilsen, Politics
- *Modeling human craniofacial diseases in an organism without a cranium or a face*
  - o Ann Corsi, Biology
- *Contrasting al-Qaeda and Islamic State Propaganda and Their Respective Effects on the Radicalization of Muslim Post-migrants in Britain and France*
  - o Daniel Heesemann, Sociology
- *Probability as a Guide to Water Retention in the Kidney*
  - o Barbara Medvar, Physics
- *Neuroscience and contemplative architecture*
  - o Julio Bermudez, Architecture

#### **Session 3a (Hannan 108) – Chairperson: Duilia de Mello**

- *The Influence of the Bauhaus in Latin American Social Housing*
  - o Carlos Reimers, Architecture
- *The Model Rocket Project: Trajectory Simulation, Propulsion Experiments, and Flight Testing*
  - o John Brewer, Mechanical Engineering
- *The Pope and the Peregrine: The Problem with Labeling the Pope a Liberation Theologian*
  - o Matthew Gummess, Theology
- *Keeping our Wallets Green and our Rivers Blue: Sustainable Waste Water Treatment with Anammox*
  - o Heather Stewart, Physics
- *Memory and the Traumatic Past*

- o Taylor Sias, Modern Languages
- *Defending from Anthrax: Cell Membrane Pores and Drug Design*
  - o Ekaterina Nestorovich, Biology

**Session 4a (Koubek Auditorium, Architecture) – Chairperson: Arash Massaoudieh**

- *It's not just for bread anymore: learning about human disease genes using baker's yeast*
  - o John Choy, Biology
- *We're Not Happy Unless We're Unhappy: Conquering Negativity in the Workplace to Repair Company Culture and Increase Profitability*
  - o Joe McDonald, Admissions
- *Adaptive Robot Motion Planning in Unstructured Environments*
  - o Andrew Wells, Engineering
- *Promoting Healthy Growth of Infants and Young Children,*
  - o Rebecca Robert, Nursing
- *Moral luck: Should we be concerned?*
  - o Kevin Rensch, Philosophy
- *Design of a Novel magnetic Tweezers and its use for Studying DNA-Compacting Proteins*
  - o Roberto Fabian Jr, Physics

**Session 5a (John Paul Hall, School of Music) – Chairperson: Nikita Fitenko**

- *Brazilian Nationalist Representation in the Text and Musical Setting of Heitor Villa-Lobos Choros No. 10: Rasga o coração (Tear Open my Heart)*
  - o Thomas Rohde, Music
- *In Paradisum (Performance)*
  - o John Tafone, Music
- *Handedness of molecules in the origins of life*
  - o Greg Brewer, Chemistry
- *Chaucer and the Virgin Mary*
  - o Megan Murton, English
- *From Elizabethan Poets to Contemporary Composers: Two New Compositions for Solo Cello (Performance)*
  - o Stephen Gorbos and Robert Baker (co-presenters), Music

**Session 6a (McGivney 106) – Chairperson: Ralph Albano**

- *Keratin 19 - a fibrous protein that tangles cells into cancer*
  - o Justin Chung, Biology
- *Music: A Controlled Substance in Early Modern England*
  - o Joseph Mann, Music
- *Understanding the Development of Depression: How do Attention, Thinking Styles and Mindfulness Affect Mood?*
  - o Katherine McMorran, Psychology
- *It's in the Game: Competition and Sports as Effective Pedagogy in the Humanities*
  - o Christopher Born, Theology and Religious Studies
- *Developing the Survivor of Torture Psychosocial Well-being Index (SOT-PWI)*
  - o Joan Hodges-Wu, Social Service
- *Galaxy Evolution Across Cosmic Time*
  - o Tommy Wiklind, Physics

## **AFTERNOON PRESENTATIONS 2:10pm-3:50pm**

*Please note: each speaker will present for 15 minutes, in the order listed on the program.*

### **Session 1b (Byron Auditorium - Law School) – Chairperson: Mary Leary**

- *Bioinformatics Used to Advance Zika Virus Vaccine Research*
  - o Mark Pettinato, Biomedical Engineering
- *Memory Variants in John's Gospel: Implications for Research, Teaching, and Learning*
  - o Andrew Montanaro, Theology and Religious Studies
- *Does Impulsivity and Perceived Stress in Childhood Predict Risky Behavior in Adolescence?*
  - o Alissa Forman-Alberti, Psychology
- *How the U.S. Human Rights Advocacy Network Targeted North Korea as the World's Worst Violator of Human Rights*
  - o Andrew Yeo, Politics
- *Bacillus anthracis: Anthrax as Bioterrorist Weapon and Public Health Threat*
  - o Briana Silva, Biology
- *Measuring the World: The Intersection of Science, Adventure, and the Narrative,*
  - o Amanda Sheffer, Modern Languages

### **Session 2b (Gowan 126) – Chairperson: Prasad Senesi**

- *Research and Internships at The Vitreous State Laboratory,*
  - o Ian Pegg, Physics
- *Imaging of Buried Objects*
  - o Toan Vo Dai, Engineering CS
- *iAge: Personalized Technologies for Facilitating Health, Wellness and Successful Aging*
  - o Binh Tran, Biomedical Engineering
- *A Regulatory Balancing Act: Ensuring that Fracking can Thrive in America's Future*
  - o Brendan Johns, Law
- *Investigations of the Progression of Cancer Cell Migration and Invasion*
  - o Emma Azurin, Biology
- *From Combustion Science to Tools for Proteomics: Elementary Processes in the Gas Phase*
  - o Vadim Knyazev, Chemistry

### **Session 3b (Hannan 108) – Chairperson: Doina Cristina Ionescu**

- *The fun of being a bibliographer*
  - o Therese-Anne Druart, Philosophy
- *Contactless Detection and Monitoring of Human Vital Signs*
  - o Tuan Phan, Engineering EECS
- *Supermassive Black Holes and Active Galaxies: Study of a Nearby Friend, NGC4151*
  - o Jullianna Denes Couto, Physics
- *Affordable-Adaptable Housing*
  - o Begoña Blasco, Architecture
- *Drones That Could Fly and Swim: Conceptual Design Study*
  - o Robert Leeson, Mechanical Engineering
- *Size Matters*
  - o Vijay Sookdeo, Mathematics

### **Session 4b (Koubek Auditorium, Architecture) – Chairperson: Ian Boxall**

- *Powering Developing Countries' Industrialization with Renewable Energies: a Saving Grace for our Planet*

- Tongele Tongele, Mechanical Engineering
- *Lex Orandi est Lex Credendi: The Influence of the Laity and the Liturgy on the Doctrinal Debates of the Immaculate Conception*
  - Nicolas Novak, Theology and Religious Studies
- *Getting to the fat of the matter in alcoholic fatty liver disease*
  - Jennifer Groebner, Biology
- *The Christian Communities of the Middle East Project: Creating a Collaborative Cultural Heritage Project (with Community Members and Scholars in Mind)*
  - Ryann Craig, Semitics
- *How Transportation Network Companies (Uber & Lyft) Will Effect Transit in Washington, DC Metro Region*
  - Sharada Strasmore, Architecture
- *Employees and Organizational Social Purpose: Will Employees Sacrifice Pay to Work for a More Socially Responsible Organization?*
  - Douglas Frank, Business and Economics

**Session 5b (Ward Recital Hall & John Paul Hall, School of Music) – Chairperson: Nikita Fitenko**

- *Lecture Recital: Visions de l'Amen for Two Pianos by Olivier Messiaen (Performance) Ward Recital Hall*
  - Ivo Kaltchev, Music
- *Melodramas of Franz Liszt (Performance) Ward Recital Hall*
  - Jason Solounias, Music
- *Piano music of Arvo Part (Performance) Ward Recital Hall*
  - Anna Nizhegorodtseva, Music
- *Coping with the contemporary American city - Reversing modernist decay (John Paul Hall)*
  - Vail De Capite, Architecture and Planning
- *Connections of Social Influences and Prevention Education on Youth Illicit Drug Use (John Paul Hall)*
  - Christopher Shar, Social Service
- *Understanding the primary causes of age-related osteoarthritis: steps to better treatments? (John Paul Hall)*
  - Christopher Raub, Engineering

**Session 6b (McGivney 106) – Chairperson: Melissa Grady**

- *The Voices of Ethiopian Immigrant Women*
  - Sarah Moore Oliphant, Social Service
- *Urban Planning in response to Cathedral Building*
  - Timothy Farina, Architecture
- *The Impact of World War II on the Transformation of Catholic Liturgical Life*
  - Bill Dinges, Theology and Religious Studies
- *A Copula-based model to identify the parameters of run and tumble bacterial motility*
  - Xiaomeng Liang, Engineering
- *Does Land Tenure Security Matter for Adoption of Sustainable Agricultural Technology? Evidence from Agroforestry in Nigeria*
  - Oladipupo Ayodele, Business and Economics
- *The Voice as the Link Between Heaven and Hell: The Virgin Mary in Late Medieval Narrative*
  - Vanessa Corcoran, History

## *Musical performances*

**All performances will take place from 12:15 to 1:30 p.m, in the following locations:**

**1. Pryzbyla Plaza (rain location: Caldwell Hall)**

- Marbelly Davila, various selections for guitar solo
- Red Line a Cappella
- Gabriel Jaar & John Martin, several original and cover songs (soft rock) for electric guitar and vocal

**2. John Paul Hall (Ward Hall)**

- Piano Division students, various popular classical music selections for piano solo and piano ensemble
- Bryan Lilley and Musical Theatre Division students, Broadway music selections

*(Please note: Food and drinks are allowed in John Paul Hall)*

## *Oral presentations – Speakers, time, and location*

<i>Name</i>	<i>Session</i>	<i>Location</i>	<i>Time</i>
Ayodele, Oladipupo	6b	McGivney 106	2:10-3:50
Azurin, Emma	2b	Gowan 126	2:10-3:50
Baker, Robert	5a	John Paul Hall, School of Music	10:40-12:10
Bermudez, Julio	2a	Gowan 126	10:40-12:10
Blasco, Begona	3b	Hannan 108	2:10-3:50
Born, Christopher	6a	McGivney 106	10:40-12:10
Bowers, Maureen (Molly)	1a	Byron Auditorium, Law School	10:40-12:10
Brewer, John	3a	Hannan 108	10:40-12:10
Brewer, Greg	5a	John Paul Hall, School of Music	10:40-12:10
Choy, John	4a	Koubek Auditorium, Architecture Bldg	10:40-12:10
Chung, Justin	6a	McGivney 106	10:40-12:10
Corcoran, Vanessa	6b	McGivney 106	2:10-3:50
Corsi, Ann	2a	Gowan 126	10:40-12:10
Craig, Ryann	4b	Koubek Auditorium, Architecture Bldg	2:10-3:50
De Capite, Vail	5b	Ward Recital Hall & John Paul Hall, School of Music	2:10-3:50
Denes Couto, Jullianna	3b	Hannan 108	2:10-3:50
Dinges, Bill	6b	McGivney 106	2:10-3:50
Drinan, Cara	1a	Byron Auditorium, Law School	10:40-12:10
Druart, Therese-Anne	3b	Hannan 108	2:10-3:50
Fabian Jr, Roberto	4a	Koubek Auditorium, Architecture Bldg	10:40-12:10
Farina, Timothy	6b	McGivney 106	2:10-3:50
Forman-Alberti, Alissa	1b	Byron Auditorium, Law School	2:10-3:50
Frank, Douglas	4b	Koubek Auditorium, Architecture Bldg	2:10-3:50
Gorbos, Stephen	5a	John Paul Hall, School of Music	10:40-12:10
Groebner, Jennifer	4b	Koubek Auditorium, Architecture Bldg	2:10-3:50
Gummess, Matthew	3a	Hannan 108	10:40-12:10
Heesemann, Daniel	2a	Gowan 126	10:40-12:10
Hodges-Wu, Joan	6a	McGivney 106	10:40-12:10
Hostovsky, Charles	1a	Byron Auditorium, Law School	10:40-12:10
Johns, Brendan	2b	Gowan 126	2:10-3:50
Kaltchev, Ivo	5b	Ward Recital Hall & John Paul Hall, School of Music	2:10-3:50
Knyazev, Vadim	2b	Gowan 126	2:10-3:50
Leeson, Robert	3b	Hannan 108	2:10-3:50



<i>Name</i>	<i>Session</i>	<i>Location</i>	<i>Time</i>
Liang, Xiaomeng	6b	McGivney 106	2:10-3:50
Mann, Joseph	6a	McGivney 106	10:40-12:10
McDonald, Joe	4a	Koubek Auditorium, Architecture Bldg	10:40-12:10
McMahon, James	1a	Byron Auditorium, Law School	10:40-12:10
McMorran, Katherine	6a	McGivney 106	10:40-12:10
Medvar, Barbara	2a	Gowan 126	10:40-12:10
Montanaro, Andrew	1b	Byron Auditorium, Law School	2:10-3:50
Murton, Megan	5a	John Paul Hall, School of Music	10:40-12:10
Nestorovich, Ekaterina	3a	Hannan 108	10:40-12:10
Nilsen, Dennis	2a	Gowan 126	10:40-12:10
Nizhegorodtseva, Anna	5b	Ward Recital Hall & John Paul Hall, School of Music	2:10-3:50
Novak, Nicolas	4b	Koubek Auditorium, Architecture Bldg	2:10-3:50
Oliphant, Sarah Moore	6b	McGivney 106	2:10-3:50
Pegg, Ian	2b	Gowan 126	2:10-3:50
Pettinato, Mark	1b	Byron Auditorium, Law School	2:10-3:50
Phan, Tuan	3b	Hannan 108	2:10-3:50
Raub, Christopher	5b	Ward Recital Hall & John Paul Hall, School of Music	2:10-3:50
Reimers, Carlos	3a	Hannan 108	10:40-12:10
Rensch, Kevin	4a	Koubek Auditorium, Architecture Bldg	10:40-12:10
Robert, Rebecca	4a	Koubek Auditorium, Architecture Bldg	10:40-12:10
Rohde, Thomas	5a	John Paul Hall, School of Music	10:40-12:10
Sarkar, Abhijit	1a	Byron Auditorium, Law School	10:40-12:10
Shar, Christopher	5b	Ward Recital Hall & John Paul Hall, School of Music	2:10-3:50
Sheffer, Amanda	1b	Byron Auditorium, Law School	2:10-3:50
Sias, Taylor	3a	Hannan 108	10:40-12:10
Silva, Briana	1b	Byron Auditorium, Law School	2:10-3:50
Simari, Patricio	2a	Gowan 126	10:40-12:10
Solounias, Jason	5b	Ward Recital Hall & John Paul Hall, School of Music	2:10-3:50
Sookdeo, Vijay	3b	Hannan 108	2:10-3:50
Stewart, Heather	3a	Hannan 108	10:40-12:10
Strasmore, Sharada	4b	Koubek Auditorium, Architecture Bldg	2:10-3:50
Tafone, John	5a	John Paul Hall, School of Music	10:40-12:10
Thurber, Maria	1a	Byron Auditorium, Law School	10:40-12:10
Tongele, Tongele	4b	Koubek Auditorium, Architecture Bldg	2:10-3:50

<i>Name</i>	<i>Session</i>	<i>Location</i>	<i>Time</i>
Tran, Binh	2b	Gowan 126	2:10-3:50
Vo Dai, Toan	2b	Gowan 126	2:10-3:50
Wells, Andrew	4a	Koubek Auditorium, Architecture Bldg	10:40-12:10
Wiklind, Tommy	6a	McGivney 106	10:40-12:10
Yeo, Andrew	1b	Byron Auditorium, Law School	2:10-3:50