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GRADUATE  
**SHOWCASE**

RESEARCH | CREATE | INNOVATE

## Program

November 16, 2018 | 8:00 AM – 5:00 PM

OFFICE OF  
**GRADUATE EDUCATION**

**RIT**

# Welcome to the 2018 Graduate Showcase!



**Twyla J. Cummings, Ph.D.**

Dean of Graduate Education

Greetings!

It gives me great pleasure to welcome you to the **11th Annual Graduate Showcase**. This event highlights the creative, innovative and entrepreneurial research and scholarship of graduate students from our colleges and degree granting units. The theme for this year's event is **Research | Create | Innovate** which clearly represents the interdisciplinary aspect of the research process at RIT.

RIT has reached an exciting juncture in its transition to a student-centered research university with research, experiential learning and creative endeavors noted as key goals in our strategic plan. The Graduate Showcase assist in achieving these strategic goals and is a recognition of the learning excellence that we engage in at RIT.

During today's program you will have the opportunity to see the wide range of research and creative projects from our students via oral presentations, poster and live demonstrations. Additionally, you will be welcomed by our new Provost, Dr. Ellen Granberg, and hear from four accomplished graduate alumni who will share their journey from graduate study to their current professional endeavors.

On behalf of the Office of Graduate Education I would like to sincerely thank our sponsors without whom this event would not have been possible. I would also like to thank our program participants, showcase steering committee and all of our volunteers for their dedication and hard work.

It is my hope that you will leave today's event with an even greater appreciation for graduate education at RIT and for our bright, dedicated students. Enjoy the day!

**Twyla J. Cummings, Ph.D.**

Dean of Graduate Education

# Event Speakers



**Dr. Ellen Granberg**  
Senior Vice President and Provost



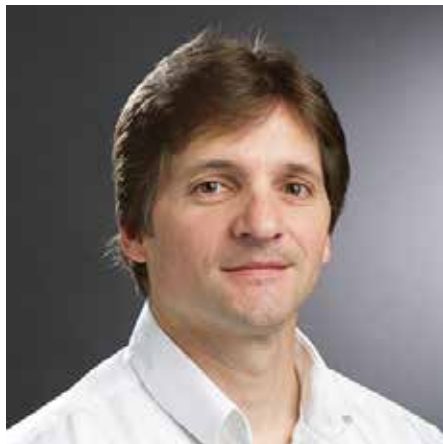
**Dr. Ryne Raffaele**  
Vice President Research



**Rauncie Ryan**  
Assistant Dean of Graduate Student Success



**Doreen D. Edwards, Ph.D**  
Professor and Dean, Kate Gleason College of Engineering



**Raymond Ptucha**  
Assistant Professor, Kate Gleason College of Engineering

## 2018 Graduate Showcase Steering Committee

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Karen Palmer  
Patricia Phillips

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Ray Ptucha  
Rauncie Ryan  
Akash Saha  
Karel Shapiro  
Pengcheng Shi





# Oral Presentations – Session A 10:15 AM – 11:30 AM



## A1 | Material Science | CIMS (Bldg. 78) Room 2120

Presenter	College	Presentation Title
Anthony P. Leggiero	KGCOE	Site-Specific Nanometal Deposition Towards High Conductivity Cu-CNT Hybrids
Mitsul Kacharia	KGCOE	Investigation of Radiative Emission in Quantum Well Based Solar Cell
Pancy Lwin	COS	Mathematical Model of the Vitreous Gel and its Mechanobiology: Linear and Nonlinear Responses of the Composite Network
Pritam Poddar	KGCOE	Layerless Additive Manufacturing of Carbon Fiber Reinforced Lattice Structures

## A2 | Engineering Design and Processes | CIMS (Bldg. 78) Room 2130

Presenter	College	Presentation Title
Hong Guo	KGCOE	Lubricating Ability of Ammonium-based Protic Ionic Liquids as Additives
Lucy Ying-Ju Chu	COS	Optical Radiation Pressure on a Diffractive Light Sail
Eloy Yague-Martinez	KGCOE	Finite Element Model for Analysis and Simulation of Strain Wave Gears
Prateek R. Srivastava	COS	Light Sailing using Thin Diffractive Films
Akshay Gaikwad	KGCOE	Effects of Laser Surface Texturing on Tribological Properties of Metals

## A3 | Mathematical Modeling I: Machine Learning and Signal Processing CIMS (Bldg.78) Room 2140

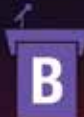
Presenter	College	Presentation Title
Miguel Dominguez	KGCOE	Sparse Batch Graph Convolutional Networks for 3D Inference
Sanjay Varma Rudraraju	GCCIS	Strategic Behavior and Manipulation in Gender-Neutral Matching Algorithms
Manoj Acharya	COS	TallyQA: Answering Complex Counting Questions
Zachariah Carmichael	KGCOE	Deep Positron: A Deep Neural Network Using the Posit Number System
Saurabh Buttan	GIS	On-Road Moving Vehicle Detection by Spatio-Temporal Video Analysis of Static and Dynamic Backgrounds

**A4 | Health Science and Technology I: Biomedical Engineering & Science**  
**CIMS (Bldg 78) Room 2170**

Presenter	College	Presentation Title
<b>Jwala Dhamala</b>	GCCIS	High-dimensional Bayesian Optimization of Personalized Cardiac Model Parameters via an Embedded Generative Model
<b>Sitong Zhou</b>	KGCOE	Red Blood Cell Mediated Capillary Hyperemia
<b>James A Krisher</b>	KGCOE	Shear-Induced Hemolysis in Rotational Medical Devices
<b>Evan Morrison</b>	COLA	Recognition of 2D Photo Representations of 3D Stimuli in Goldfish (Carassius Auratus)
<b>Mehdi (Aslan) Dehghani</b>	KGCOE	Isolation of Extracellular Vesicles Using Ultra-Thin Nano Membranes

**A5 | Sustainable Technology I: Recycling and Food Waste | SUS (Bldg. 81) Room 2140**

Presenter	College	Presentation Title
<b>Hema Madaka</b>	GIS	Water Footprint Assessment of Consumer Electronics
<b>Diana Rodriguez Alberto</b>	GIS	Sustainable Food Waste Management Through Integrated Anaerobic Digestion and Thermochemical Process
<b>Shweta Arora</b>	GIS	Multi-Criteria Sustainability Assessment of Food Waste Management Technologies
<b>Kanwal Shahid</b>	GIS	Costs and Benefits of Diverting Food Waste to Treatment Facilities in New York State

**Oral Presentations – Session B** 2:15 PM – 3:30 PM 

**B1 | Sustainable Technology II: Renewable Energy and Environment**  
**SUS (Bldg. 81) Room 2140**

Presenter	College	Presentation Title
<b>Daniel Anini Baah</b>	COS	Bioremediation of Agricultural Effluents from Western New York with Microalgae and Projecting Post Treatment Biomass for Biofuel
<b>Gillian Griffin</b>	GIS	Material Intensity of Urban Agriculture
<b>Mosunmola Odulate</b>	KGCOE	Conflict Minerals in Consumer Electronics and Lithium Ion Batteries

<b>Jessica Peterson</b>	GIS	Biochar via Pyrolysis of Local Biomass for Local Stormwater Treatment: Feasibility of a Transition to a Circular Economy
<b>Alexandra Leader</b>	GIS	The Consequences of Electronic Waste Post-Disaster: A Case Study of Flooding in Bonn, Germany

## B2 | Social Interdisciplinary Research | CIMS (Bldg. 78) Room 2120

Presenter	College	Presentation Title
<b>Shima Ghaheri</b>	CAD	Design vs. War
<b>Katherine Ray</b>	COLA	Uses and Gratifications of YouTube Beauty Vlogs
<b>Archit Jha</b>	GCCIS	Study of Accessibility Guidelines of Mobile Applications
<b>Emily Wilson</b>	COS	Academic Field Switching Patterns of RIT Graduates


## B3 | Mathematical Modeling II: Theory, Security, Taxes | CIMS (Bldg. 78) Room 2130

Presenter	College	Presentation Title
<b>Payap Sirinam</b>	GCCIS	Deep Fingerprinting: Undermining Website Fingerprinting Defenses with Deep Learning
<b>Mayur Dhanaraj</b>	KGCOE	Novel Algorithm for Adaptive Robust Subspace Learning
<b>Anjalu Linggi</b>	SCOB	Analysis of Tax Implications of the Tax Cuts and Jobs Act (TCJA): A Comparison with the American Jobs Creation Act (AJCA, 2004)
<b>Logan Bicknell</b>	CAD	Virtual Identification Application

## B4 | Astrophysical Observations & Modeling | CIMS (Bldg. 78) Room 2140

Presenter	College	Presentation Title
<b>Yashashree Jadhav</b>	COS	Monsters on the Move: A Search for Supermassive Black Holes Undergoing Gravitational Wave Recoil
<b>Emily Wilson</b>	COS	The Role of Convection in Determining the Ejection Efficiency of Common Envelope Interactions
<b>Kevin Cooke</b>	COS	The Evolution of Brightest Cluster Galaxies And Their Progenitors
<b>Jacob Lange</b>	COS	Rapid and Accurate Parameter Inference for Coalescing, Compact Binaries
<b>Daniel Wysocki</b>	COS	Reconstructing Phenomenological Distributions of Compact Binaries via Gravitational Wave Observations

Presenter	College	Presentation Title
Jade Myers	GCCIS	3D-Technologies: Increasing Access to Prosthetics in Low-Resource Areas
Meghan Lewis	CAD	Combining Wearable Technology and Interactive Design To Create a Screening and Support System for Perinatal Mood Disorders
Poornima Kalyanram	KGCOE	Interaction of Novel Fluorophores with Model Cell Membranes
S. Emma Sarles	SOIS	Development of Topography Monitors for a Variety of Inhaled Nicotine Delivery Systems
K. Jeselle Clark	COS	Using Pathway-Based Steady States to Prevent Epithelial-Mesenchymal Transition in Ovarian Cancer

**Poster Sessions & Demonstrations** 1:00 PM – 2:30 PM 

**Poster Presentations | Golisano Institute of Sustainability**

Presenter	College	Presentation Title
Ileana Hernandez	CAD	My Americans
Meghan Lewis	CAD	Combining Wearable Technology and Interactive Design To Create a Screening and Support System for Perinatal Mood Disorders
Pawan Padmakar Khake	CAD	User Preference in Detail-enhancement Adjustments for Images Captured by Cameraphones
Emily Shriver	CAD	Assessment of Media Consumers' Ability to Distinguish the Level of Post-Processing in Photo-Journalistic Images
Siqi Xu	CAD	Goam
Yueyue Zhang (Zoey)	CAD	Dog-GO: A Wearable Dog Leash Design Project
Amanda Hautmann	COLA	Associations Between PTSD Symptom Clusters and Impulsivity
Junhe Chen	SCB	Can Artificial Intelligence Detect Financial Fraud?
Shoufan Qiu	SCB	How Have the Big Four Been Adopting Blockchain Technology?
Mustafizur Rahman	SOIS	A Sustainable solution say NO to HDPE Milk Container for Fluid Milk
S. Emma Sarles	SOIS	Development of Topography Monitors for a Variety of Inhaled Nicotine Delivery Systems



<b>Morteza Maali Amiri</b>	COS	Using Deep Features for Image Registration
<b>Aayush Chaudhary</b>	COS	Motion Tracking of Iris Features to Detect Small Eye Movements
<b>Benjamin Hamilton</b>	COS	Variability in DOM Composition and Carbon Metabolism in Created Wetlands
<b>Chi Nguyen</b>	COS	The Cosmic Infrared Background Experiment 2 (CIBER-2): A Sounding Rocket Mission to Study Cosmological Structure Formation
<b>Daniel Anini</b>	COS	Bioremediation of Agricultural Effluents from Western New York with Microalgae and Projecting Post Treatment Biomass for Biofuel
<b>Evan Squier</b>	COS	The Influence of Herbivory on Submerged Macrophytes and Nitrogen Retention in Created Wetlands.
<b>Kelsea Jones</b>	COS	Practical modular synthesis of targeted imaging agents for MRI, PET, and PET-MRI
<b>Manoj Acharya</b>	COS	TallyQA: Answering Complex Counting Questions
<b>Michael McGowan</b>	COS	Effects of Prior Land Use, Carbon Availability and Hydrology on Nitrogen Cycling in Created Freshwater Wetlands
<b>Prateek R. Srivastava</b>	COS	Light Sailing using Thin Diffractive Films
<b>Sarah Goldsmith</b>	COS	Assessing Salt Marsh Vulnerability, Resilience, and Blue Carbon Potential using High Resolution Hyperspectral Imagery
<b>Shradha Shrestha</b>	COS	Ecological Impacts of Food Waste Digestate Disposal
<b>Eman Abdullah Alomar</b>	GCCIS	How We Refactor and How We Mine it? A Large-Scale Empirical Study on Refactoring Activities in Open Source Systems
<b>Harshad Golwalkar</b>	GCCIS	Collection of Training Data for a Video-Based Search Tool for ASL Dictionaries
<b>Jagannadh Pariti</b>	GCCIS	Development of Intelligent Mobility Cane for Blind and Deaf
<b>Jwala Dhamala</b>	GCCIS	High-dimensional Bayesian Optimization of Personalized Cardiac Model Parameters via an Embedded Generative Model
<b>Khaled Albusays</b>	GCCIS	Investigating the Usability of Audio-based Techniques to Convey the Hierarchical Nesting Structure of Code to Assist Non-Visual
<b>Larwan Berke</b>	GCCIS	Preferences and Requirements of Deaf and Hard-of-Hearing Users for Captions Generated through Automatic Speech Recognition
<b>Matthew Seita</b>	GCCIS	Automatic Captioning to Support Small-Group Communication between Deaf and Hard-of-Hearing People and their Hearing Colleagues
<b>Mohammed Alawad</b>	GCCIS	Learning Domain Shift in Simulated and Clinical Data: Localizing the Origin of Ventricular Activation from 12-Lead Electrocardio
<b>Oliver Alonzo</b>	GCCIS	Investigating Reading-Assistance Tools for Self-Directed Learning by Deaf and Hard-of-Hearing Computing Workers
<b>OMAR A.GARBIA</b>	GCCIS	Non-invasive Epicardial and Endocardial Electrocardiographic Imaging for Scar-related Ventricular Tachycardia

<b>Paula Conn</b>	GCCIS	Modeling and Comparing the Efficacy of Various Methods for Teaching Accessibility
<b>Peter Yeung</b>	GCCIS	Learning American Sign Language (ASL) Through Real-Time Practice
<b>Prashna K Gyawali</b>	GCCIS	Deep Generative Model with Beta Bernoulli Process for Modeling and Learning Confounding Factors
<b>Sandesh Ghimire</b>	GCCIS	Improving Generalization of Sequence Encoder-Decoder Networks for Inverse Imaging of Cardiac Transmembrane Potential
<b>Sanjay Varma Rudraraju</b>	GCCIS	Strategic Behavior and Manipulation in Gender-Neutral Matching Algorithms
<b>Sedeeq Al-khazraji</b>	GCCIS	Using Data-Driven Approach for Modeling Timing Parameters of American Sign Language
<b>Sovantharith Seng</b>	GCCIS	Understanding Users' Decision of Clicking on Posts in Facebook with Implications for Phishing
<b>Sushant Kafle</b>	GCCIS	Modeling Acoustic-Prosodic Cues for Word-Importance Prediction in Spoken Dialogues
<b>Kanwal Shahid</b>	GIS	Costs and Benefits of Diverting Food Waste to Treatment Facilities in New York State
<b>Sherwyn Millette</b>	GIS	Material Flow Analysis in Support of Circular Economy Development: Plastics in Trinidad and Tobago
<b>Shweta Arora</b>	GIS	Multi-Criteria Sustainability Assessment of Food Waste Management Technologies
<b>Dania Khan</b>	KGCOE	Probabilistic Electric Load Forecasting for Rochester Institute of Technology using Quantile Regression
<b>Dylan J. McIntyre</b>	KGCOE	Interfacing Copper and CNTs with Conductive Adhesion Metals for Enhanced Composite Temperature Stability
<b>Glenn Packard</b>	KGCOE	Scalable Self-Aligned LTPS TFTs on Glass with Flash Lamp Annealing
<b>Indranil Joshi</b>	KGCOE	Efficient Nanomanufacturing of Carbon Nanotube Arrays
<b>Karen Soule</b>	KGCOE	Enhanced Conductivity & Electrical Performance Retention of Carbon Nanotube Yarns via Densification & Chemical Doping
<b>Kosar Samadi</b>	KGCOE	Improving Mechanical Polishing in Template-Based Nanomanufacturing of Carbon Nanotube Arrays Via Polishing Wet Etching Method
<b>Olivia V Scheibel</b>	KGCOE	Electrochemical Sensing With Carbon Nanopipes
<b>Pooja Chandrashekar Patil</b>	KGCOE	Design and Fabrication of Spin-Motive-Force Device
<b>Sitong Zhou</b>	KGCOE	Red Blood Cell Mediated Capillary Hyperemia
<b>Mayur Dahanraj</b>	KGCOE	Algorithms for Adaptive L1-Norm Principal-Component Analysis
<b>Zachariah Carmichael</b>	KGCOE	Deep Positron: A Deep Neural Network Using the Posit Number System

<b>Mohamed Elimam</b>	RIT- Dubai	Centralized Peer-to-Peer Energy Trade
<b>Rawad Raidan</b>	RIT- Dubai	Impact of grid-connected PV systems on the energy consumption profiles of Dubai residences

**Demonstrations | Golisano Institute of Sustainability**

<b>Presenter</b>	<b>College</b>	<b>Demonstration Title</b>
<b>Chad Cooper</b>	CAD	LaunchPad – The RIT Virtual Reality Arenas Experience
<b>Andrea Gonzalez Esteche / Anthony Gutierrez</b>	CAD	Rwanda Wheelchair Giving access to Rwandian Children
<b>Dan Gabber</b>	CAD	Elevating Digital Fabrication onto a Spiritual Level
<b>Ahmed Zia Sheikh</b>	GIS	Comparative Analysis of Plug-in Hybrid Vehicle vs Extended-Range Electric Vehicle

**College of Art and Design Art Exhibition | Golisano Institute of Sustainability**

<b>Drishti Bhandari</b>	<b>Kayla Cantu</b>	<b>Ryan Zimmerman</b>
<b>Gracia Nash</b>	<b>Kerina Mangiaracina</b>	<b>Tracy Shih-Tung Cheng</b>
<b>Ho-Chan Kim</b>	<b>Laural Hartman</b>	<b>Yang Chenyue</b>
<b>Jeff Leavitt</b>	<b>Madeline Smith</b>	<b>Yeasaul Lee</b>
<b>Kathleen Johnson</b>	<b>Marika Ratkeviciute</b>	

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