INNOVATION WITH IMPACT

A Celebration of Graduate Student Projects, Research, Teaching and Service

Cross-Disciplinary Exhibition of Graduate Student Work
Awards Ceremony and Reception
Rangos Ballroom, Cohon University Center
April 6, 2017
Order of Events

4:00-6:00 p.m.
   Exhibition of Graduate Student Work and Reception

5:00 p.m.
   Presentation of Carnegie Mellon University Graduate Student Service and Teaching Awards and Recognition of the 3 Minute Thesis Awardee

6:00 p.m.
   The exhibition and reception will close
2017 Graduate Student Service Award

Travis Carless
Engineering & Public Policy
College of Engineering

2017 Graduate Student Teaching Award

Doru Thom Popovici
Electrical & Computer Engineering
College of Engineering
PRESENTATIONS

College of Engineering

Biomedical Engineering
Alan Campbell
Polymer-Based Protein Engineering for the Modification of Redox Enzyme Activity, Stability and Electron Transfer Efficiency

Stephanie Beels, Pritham Aravind, Suyash Kela, Raafe Khan, Apratim Vidyarthi
Saudi Arabia in the Sun

Guruprasad Raghavan, Qinle Ba
Computational and Experimental Analysis of Organelle Networks

Elaine Soohoo
Computational Assessment of Design Parameters for a Torsional Ventricular Assist Device (tVAD)

Chemical Engineering
Rebecca Ball
Lipidoid siRNA Nanoparticles for Inflammatory Bowel Disease Therapeutics

Toni Bechtel
Nonlinear Relaxation Modulus via Medium Amplitude Oscillatory Shear (MAOS)

Nicholas Lamson
pH-predicted Behavior of Piperazine Derivatives as Transepithelial Permeation Enhancers

Rajarshi Sengupta
The Role of Surface Charge Convection in the Electrohydrodynamics and Breakup of Fluid Drops

Charles Sharkey
Effect of Particle Hydrophobicity on the Shapes of Non-Spherical Capsules

Civil & Environmental Engineering
Xiaoju Chen
Uncertainties of Energy Consumption for Industry Based on a Matrix-based Life Cycle Assessment Model

Kyle Gorkowski
Air Pollution Studies with the Aerosol Optical Tweezers

Yiming Gu
Bayesian-based Traffic State Estimation

Joe Moore
Differential Effects of Copper Oxide Nanoparticles and Cu2+ On Bacteria

Electrical & Computer Engineering
Xinlei Chen
HAP: Fine-Grained Dynamic Air Pollution Map

Amit Datta
Evaluating Privacy and Fairness in Data-driven Decision Systems

Sanghamitra Dutta
Short Dot: Computing Large Linear Transforms

Benjamin Elizalde
An Approach for Self-Training Audio Event Detectors

Ece Ozalp, Sungho Kim
Fabrication of Conductive Nanoporous Membranes

Viswa Tej Koganti
Applications of Eye-Gaze Tracking to Vehicular Path-Prediction

Swadhin Thakkar, Krishna Kumar, Sharath Rangan
Marauder’s Map

Diyi Yang
Identifying Semantic Edit Intentions from Revisions in Wikipedia

Energy Science, Technology & Policy
Yoolhee Kim
Potassium Oxygen Battery

Engineering & Public Policy
Matthew Babcock
Exploring How a Boundary Organization Network Increases Rancher “Buy-in” On Climate Issues in Montana
Barry Dewitt
Heterogeneity in Preferences for Health

Daniel Gingerich
Life-Cycle Air Emission Damages for Municipal Drinking Water Treatment

Brock Glasgo
Assessing the Value of Information in Residential Building Simulation

John Helveston

Daniel Sun, Timothy Bartholomew, Paul Welle, Sneha Shanbhag, Daniel Gingerich
Effect of Coal Quality and Air Pollution Control Devices on Trace Element Emissions at Coal-fired Power Plants

Fan Tong
A Spatial Assessment of Climate Change Damages and Air Pollution Damages from Light-duty and Heavy-duty Vehicles in the United States

Information Networking Institute
Vrushali Bhutada
Grace Hopper Conference

Manideep Konakandla
Security Research on Docker Containers

Elomar Souza
RailsConf 2016: Rails as Mature Platform for New Products

Material Science & Engineering
Yu-Han Liang
Liquid-metal-enabled Synthesis of High-aluminum-Containing III-nitrides by Plasma-assisted Molecular Beam Epitaxy for Device Applications

Ankita Mangal
Applied Machine Learning to Predict Stress Hotspots in Materials

Mechanical Engineering
Zack Francis
Spot Size Adjustments to Reduce Flaws and Expand Processing Space

Kosa Goucher-Lambert, Chris McComb
Impossible by Design? Fairness, Strategy, and Arrow's Impossibility Theorem

Hugh Li
Spatial Variation of Organic Aerosol and Source Identification of Temperature-resolved Carbon Fractions

Nathan Nakamura
Low Temperature Direct Synthesis of Mixed Amorphous-Crystalline TiO2 Thin Films Under Electromagnetic Excitation

Vikram Pande
Design Principles for Electrolytes in Li-O2 Batteries

Sneha Prabha Narra
Spatial Control of AM Solidification Microstructure Across Multiple Alloys and Processes

Avinash Siravuru
Optimal Control for Geometric Motion Planning of a Robot Diver

Phil Smith
Ultra-thin Silicon Solar Cells by Large-scale Electronic and Optical Interface Engineering

Mark Whiting
Automated Induction of General Grammars for Design

Hesham Zaini, Ayush Agrawal
Experimental Gait Analysis of Waveboard Locomotion

College of Fine Arts
Architechure
Javier Argota Sanchez, Camille Baumann-Jaeger, Scott Donaldson, Cecilia Ferrando
MS in Computational Design in Process

Camille Baumann-Jaeger, Javier Argota, Scott Donaldson, Cecilia Ferrando
ACADIA and Computational Design
Art
Shobun Baile  
Antisuicide Design

Alex Lukas  
Giant Concrete Arrows Dot the Landscape as Relics of Early Transcontinental Airmail Service

Daniel Pillis  
Virtual Newell Simon Simulation

Katie Rose Pipkin  
Xray Mutanegenesis as a Generative Practice

Music
Matthew Belliston  
Choral Conducting: Outside of the Gesture

Chen Liang  
A Comparative Evaluation on Statistical Models for Score Following

Chen Liang  
17th ISMIR Conference Funding

Dietrich College of Humanities & Social Sciences

Design
Michael Arnold Mages  
Uber and Language-Action Theory

Min Kim, Sarah-Marie Foley  
IxDA 2017

Min Kim, Tracy Potter  
Design: User Experience from Lisbon

English
Mary Glavan  
Parent Advocacy in Special Education Practice: Solving Problems in the Face of Personal and Professional Differences

CP Moreau  
From College to the Cubicle: A Multiple-voiced Inquiry Into the Literate Practices of Recent College Graduates Entering the Professional Work-place

Doug Phillips  
Approaches to Teaching Grammar

Bret Vukoder  
Selling Truth through Violence: The War Documentaries of the United States Information Agency

History
David Busch  
The University of the Movement

Susan Grunewald  
Assessing the Economic Contribution of German Prisoners of War in the Soviet Union, 1941-1956

Zhaokun Liu  
Negotiation on the Repatriation of U.S. Soldiers’ Remains from North Korea under the UN Banner

Matt Nielsen  
Amphibious Flight and Transboundary Water Politics: Runaway Slaves in the Lower Orinoco River Basin in the 18th Century
Meredith Soeder  
The Undetermined Place of Jazz in Post-World War II German Art Music

Tianxu Chen  
Lexical Inference in L2 Chinese: An Investigation of Morphological Awareness, Word Semantic Transparency and Contextual Cues

Qiong Li  
Use of Mitigation Devices in Heritage Learners of Chinese

Maria Pia Gomez Laich  
Comprehension of Indirect Meaning in Spanish as a Foreign Language

Tianyu Qin  
Computerized Dynamic Assessment of L2 Chinese Pragmatic Comprehension

Xiaofei Tang  
Use of Technology for Learning L2 Pragmatics

Aurora Tsai  
Fostering and Monitoring Higher Order Reading and Learning Skills in the Foreign Language Classroom

Philosophy

Remco Heesen  
When Journal Editors Play Favorites

Aidan Kestigian  
Using Blogs in the Political Theory Classroom

Psychology

Brian Chin, Seh-Joo Kwon, Sandy Chen, Morgan Morrison, Gowri Sunder, Sheldon Cohen, David Creswell  
A Novel Non-verbal Measure of Emotions

Cassandra Eng  
Infant Attention & Corresponding EEG: Potential Indicators of Childhood AD/HD

Katelyn Mascatelli  
Impact of Race, Class, and Gender on Person Perception

Vencislav Popov  
Semantic-episodic Interactions During Memory Retrieval

Casey Roark  
The Interaction of Perceptual Dimensions in Auditory Category Learning

Melissa Zajdel  
Illness Identity and Centrality

Social and Decision Sciences

Nikolos Gurney  
Filling in the Blanks: What Customers Assume About Potentially Valuable, but Missing, Information

David Hagmann  
The Influence of Loss Aversion on Explore-Exploit Decisions

Ania Jaroszewicz  
Yes I Can: Agency Moderates the Effects of Scarcity and Other Adverse States on Decision-Making

Talya Lazerus  
Beyond Information: The Role Of Emotion And Hunger In Perceptions Of Caloric Content

Statistics

Jisu Kim  
R Package TDA for Topological Data Analysis

Alan Mishler  
Filtering Tweets for Social Unrest

Alex Reinhart  
Point Process Modeling With Spatiotemporal Covariates for Predicting Crime

Giuseppe Vinci  
Auxiliary Regularization of Cortical Covariance
H. John Heinz III College

**Entertainment Industry Management**
Laila Archuleta
Producers Guild of America Conference

**Information Systems & Management:**
*Information Systems*
Arslan Aziz
Evaluation of Marketing Segments’ Significance and Their Attributes by Identifying the Most Important Features and Performing Segment Valuation Using Those Features.

Inchara Bellavara Diwakar
On Extracting Features from Asynchronous Multivariate Data Streams

Nirjhar Bera
Enabling Housing Connector Program to Serve Individuals with Disabilities Efficiently

Lujie Karen Chen
Riding an Emotional Roller-coaster: A Multimodal study

Jamie Diner
Audience Discovery: Valuation of Segments and Attributes

Abhinav Maurya
Making Personalized Skill Recommendations Using Bayesian Member-Job Matching

Christopher Worley, Justin Cole, Ben Simmons
Students for Urban Data Systems - Code for America Summit

**Public Policy & Management:**
*Arts Management*
Patrick Zakem
The 2016 Humana Festival of New American Plays

**Public Policy & Management:**
*Creative Enterprises*
Jane Bowers, Zining Xie
An Updated Picture of U.S. Dance Internationally

Mengdi Ding, Zaijun Wu
Emerging Technologies for Museums

Annesha Ganguly
How APAP Helped Me Build a Network

Beth Geatches
Association of Performing Arts Presenters 2017

Justin Gilmore
Nonprofit Technology Education Network Conference

Anne Marie Padelford, Jess Bergson, Mandy Ding, Kate Martin, Brett Crawford
Fueling Change via Smart Engagement with Existing & New Technologies

Amelia Nichols
Austin Film Festival Development Plan

Jessica Tkach, Marshall Bain, Jessica Yang, Yasmin Foqahaa, Ellen Murphy, Dervla McDonnell
Millennial Engagement at The Phillips Collection

Jonathon Weber
Of Value

Zining Xie
American Dance Abroad Synthesis Project

Shana Xu
Producers Guild of America Conference: Produced by New York

**Information Systems & Management:**
*Information Security Policy and Management*
Jason Bartolacci
Social Engineering in Action: Beating Contemporary Information Security Measures with an Old Fashioned Phone Call

**Information Systems & Management:**
*Information Technology*
Chad Hicks
NYC 3D Printing Expo Report
Public Policy & Management:

Public Policy Management
Mariah Farbo, Justin Cole, Krista Kinnard, Lauren Renaud
Do Good Data

Brian Gillikin
The GW/World Bank October Conference on Global SME Growth & Innovation

Britta Glennon
Does Offshoring Manufacturing Harm Home Country Innovation? Evidence from Taiwan

Guangwei Li
Bridge to Excellence? The Impact of International Coinvention on Multinational R&D in China

Yue Qiu
Sustainatopia 2016

Filipa Reis
The Impact of Time-shift Television on TV Viewership Behavior

Logan Plath
Characterization of Zinc Oxide Nanoparticles using Superconducting Tunnel Junction Cryodetection Mass Spectrometry

Tyler Womble
Synthesis, Characterization, and Polymerization of Resonance Stabilized Main Group Polyelectrolytes

Qing Ye
Source Contributions and Mixing State of Atmospheric Particulate Matter in Pittsburgh

Mellon College of Science

Biological Sciences

Surya Aggarwal
Regulation & Characterization of a Novel Pneumococcal Peptide Implicated in Biofilm Development

Rolando Cuevas
A Novel Streptococcus Pneumoniae Cell-cell Communication Peptide is a Virulent Determinant Involved in Early Biofilm Development

Katherine Lagree
C. Albicans Biofilm Formation

Chemistry

Sikandar Abbas
Effect of Plasmonic Substrates on Photo-stability of Organic Layers

Christian Legaspi
The Role of Local Environment on the Electronic Properties of a Novel Blue-emitting Donor-acceptor Compound

Physics

Devashish Gopalan
Magnetism and Proximity Effects in Layered Two-dimensional Materials

Sukhdeep Singh
Studying the Evolution of the Universe with Weak Gravitational Lensing

Xiaoou Zhang
Dark Excitons in Gapped Chiral Fermion Systems

School of Computer Science

Computer Science

Kristen Gardner
A Better Model for Job Redundancy: Decoupling Server Slowdown and Job Size

Christian Kroer
Dynamic Thresholding and Pruning for Regret Minimization

Stefan Muller, Ram Raghunathan
Hierarchical Memory Management for Parallel Programs

Ziv Scully
A Program Optimization for Automatic Database Result Caching

Tanmay Sinha
Towards a Technology Design for Fostering Curiosity in Groupwork
David Wajc
A Faster Distributed Radio Broadcast Primitive

Colin White
Clustering Under Natural Stability Assumptions

Goran Zuzic
Optimizations on Large Distributed Networks

Human-Computer Interaction Institute
Irene Alvarado
Highlights from the Open Vis Conference

Anhong Guo
Facade: Auto-generating Tactile Interfaces to Appliances

Rushil Khurana
CopyCat: Crowd-Enabled Electrical Muscle Stimulation (EMS) for Skill Transference

Meg Nidever, Clare Carroll, Catherine Chiodo, Adena Xin Lin, Jayanth Prathipati
Robin: Enabling Independence For Individuals With Cognitive Disabilities Using Voice Assistive Technology

Joseph Seering
Online Community Self-Regulation Techniques

Alexandra To
Treehouse Dreams: A Game-Based Method for Eliciting Interview Data from Children

Language Technologies Institute
Jing Chen
An Empirical Study of Learning to Rank for Entity Search

Machine Learning
Kirstin Early
Test Time Feature Ordering with FOCUS: Interactive Predictions with Minimal User Burden

Calvin McCarter
Large-Scale Optimization Algorithms for Sparse Conditional Gaussian Graphical Models

Mrinmaya Sachan
Machines Hit the School

Robotics Institute
Wen-Sheng Chu
Deep region and multi-label learning for facial action unit detection

Achal Dave, Jinyan Wang
Predictive Corrective Networks for Action Detection

Wenhao Luo
Distributed Knowledge Leader Selection for Multi-Robot Environmental Sampling Under Bandwidth Constraints

Nick Rhinehart
Learning Action Maps of Large Environments via First-Person Vision

Arun Srivatsan Rangaprasad
Complementary Model Update: A Method for Simultaneous Registration and Stiffness Mapping in Flexible Environments

Nitish Thatte
Balance Recovery Control for Amputees Using Powered Leg Prostheses
Marynel Vazquez
Methods for Studying Group Interactions in HRI

Tepper School of Business

Accounting
Eunhee Kim
The Market for Reputation: CEO Turnover and Firm Performance

Eungsik Kim
Accounting for a Positive Correlation Between Pension and Consumption Taxes

Economics

Financial Economics
Camilo Botia Chaparro
How Much Information Is Too Much Information? Lagged Disclosure, Bank Runs, and Risk Taking

Marketing
Michael Bernardi, Geoff Honda, Derek Jackman, Carol Marques
Reaching Out LGBT MBA Conference Overview

Francisco Cisternas Vera
The Impact of New Technologies on Firm-consumer Relationships

Julian Givi
Why Certain Gifts Are Great to Give But Not to Get: A Framework for Understanding Errors in Gift Giving

Yijin Kim
How Airbnb Affects Local Rental Market

Organizational Behavior and Theory
Erin Fahrenkopf
A Nudge To Enter: When Prior Organizational Experiences Spurs Entrepreneurial Activity

Alessandro Iorio
Divide and Rule: A Network Assessment of an Italian Anti-Interlocking Law

Yeonjeong Kim
Uncovering Moral Character Via Interview Questions

Anna Mayo
Field Evidence for Collective Intelligence in Business Unit Performance

Amanda Weirup
Will You Do Me a Favor? Responding to Favor Requests in the Workplace

University Program

Entertainment Technology Center
Alejandra Soto, Antonin Fusco
Learner’s Behavior Professional Development Card Deck

Jun Wang
AR and VR User Experience Design Practice

Integrated Innovation Institute
Joelle El Haynek
GHC - Empowering Women in Technology

Operation Management & Manufacturing
Gerdus Benade
Preference Elicitation for Participatory Budgeting

Nam Ho-Nguyen
Dynamic Data-Driven Estimation of Non-Parametric Choice Models
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