

# Students at the Center: Discovery and Innovation in Graduate Education

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# John North Hopkins

*The Genesis of Roman Architecture*  
(Yale, 2016)





# Joyce Nabisaalu

Doctoral student  
Design, Housing and Merchandising  
Oklahoma State University

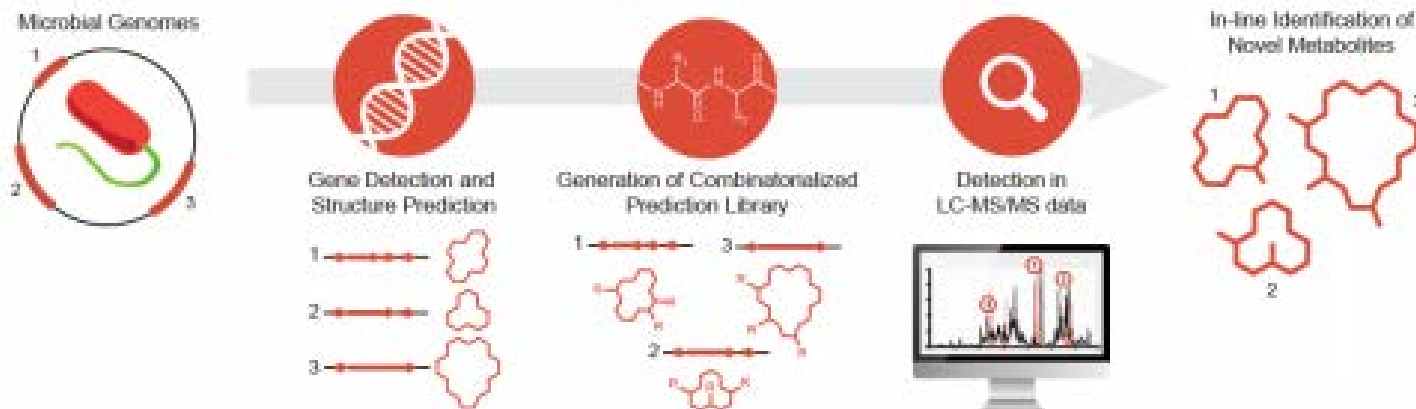




# Chad Johnston

*New Techniques for Identifying and Studying  
Microbial Natural Products*

## Genomes-to-Natural Products Discovery Platform (GNP)





# Four takeaways

- Graduate students are already at the center of knowledge production
- Ensuring continued opportunities for intellectual risk-taking may require us to rethink pedagogy, policy, and funding models
- Changes to Capstone projects may both follow from and drive preparation of our future scholars and innovators
- Strategies to document the impact of graduate student discovery and innovation

# Challenges for Graduate Schools

- Our funding structures do not always support independence and intellectual risk.
  - How will we prepare students to take productive risks?
- Our students will pursue jobs that may not yet exist.
  - How will we prepare students to be adaptable, lifelong learners?
- Career trajectories are becoming less linear.
  - How will we prepare students for the “portfolio career?”



*In light of these challenges, how can graduate schools foster discovery and innovation?*



# Design Thinking

*What am I trying to know or achieve?*



# Design Thinking in Practice

- Project-based assignments designed to resolve “wicked problems”
- Collaborations across disciplines in areas such as water resource management, climate change, and health

# New dissertation models

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*It's not a matter of simply rapping. I really happen to have a strategy being enacted.*

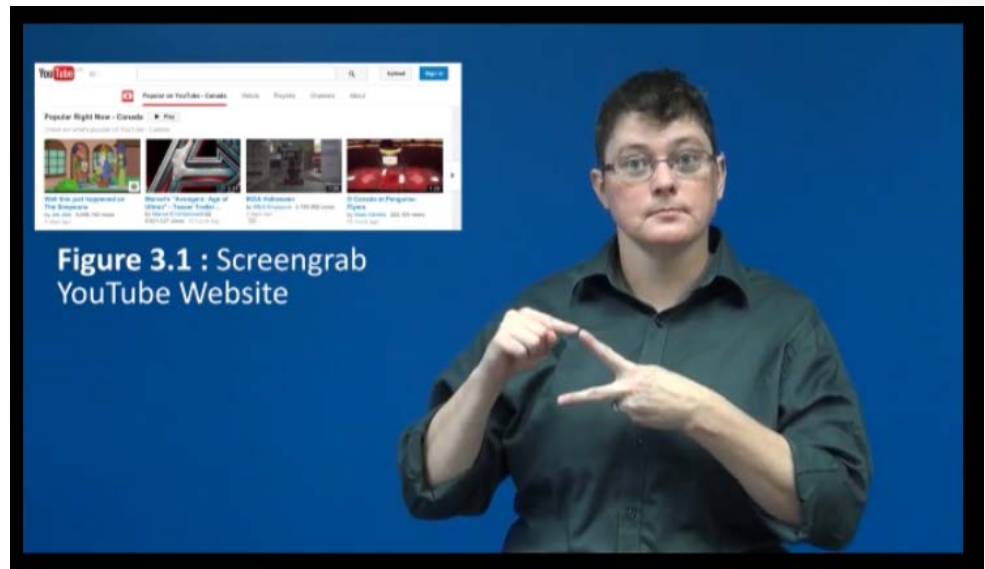
*A. D. Carson*



# New dissertation models

*This model is a bridge between the traditional approach and new approaches for deaf academics.*

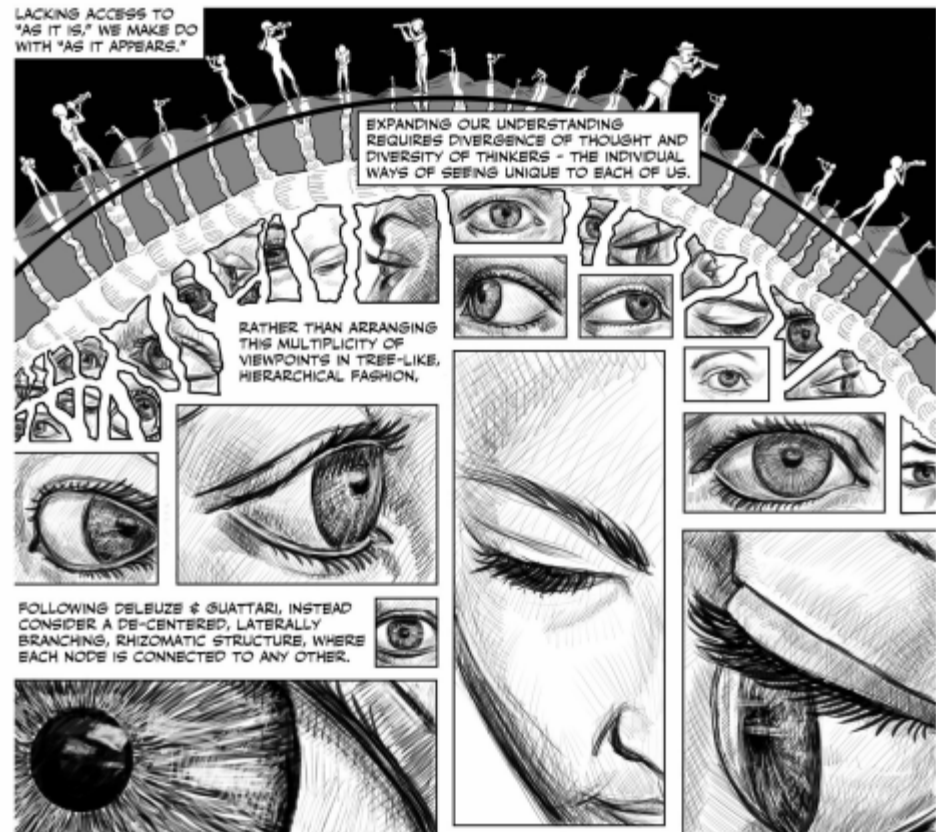
*Ellen Hibbard*



# New dissertation models

*We make sense of the world in ways beyond text—teaching and learning shouldn't be restricted to that narrow band.*

*Nick Sousanis*





# What do these three innovative dissertations have in common

- Invite diverse perspectives
- Make scholarship more accessible
- Make innovation in the humanities more visible
- Enable new modes of intellectual discourse
- Enable new ways of thinking



# New dissertation models: Policies

## Removing roadblocks

- Policies that preclude diverse formats
  - (e.g., margin requirements, single authorship)
- Policies that prevent diverse viewpoints from being represented
  - (e.g., English-language requirements)



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# New dissertation models: Policies

## Articulating possibilities

- Explicitly allowing diverse formats, languages, co-authorship
- Explicitly allowing different kinds of experts to serve on committees

(e.g., tribal leaders, musicians, artists)

Example: University of Wisconsin-Madison

# New dissertation models: Policies

## Increasing impact

- Requiring lay abstracts, video abstracts, or other short forms
- Requiring an epilogue or extra chapter explicitly outlining broader impacts
- Facilitating early conversations with external audiences

(e.g., scholarly press editors)

*How can graduate schools demonstrate the impact of student discoveries?*

# Professional Development and Advocacy through the 3MT<sup>®</sup>





# Using the 3MT<sup>®</sup> for Advocacy

- Identify inspiring stories through student participation
- Strengthen the voices of students as advocates
- Invite the entire community to participate
- Share highlights through social media and print outlets
- Engage business leaders, alumni and local/state policymakers as judges

# Tell Your Story via *GradImpact*

Preserving Art for the Education and Enrichment of Future Generations

**Claire Taggart**

Art Conservation, Winterthur/University of Delaware



Improving Access to Food Pantries for Food Insecure Populations

**Matthew Schwartz**

Social Work, University at Buffalo



Improving Airfield Safety During Extreme Weather Using Renewable Solar Energy

**Joseph Daniels**

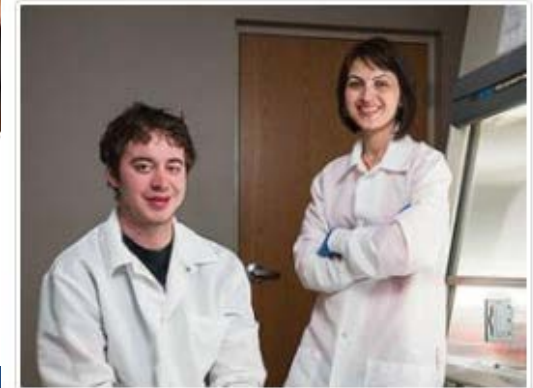
Civil Engineering, University of Arkansas



Developing a Breakthrough for Early Detection of Pancreatic Cancer

**James Froberg & Fataneh Karandish**

Physics & Pharmaceutical Sciences, North Dakota State University



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