Team-based Interdisciplinary Cancer Research Training

CABTRAC, October 30, 2024

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NCI Cancer Center
A Cancer Center Designated by the National Cancer Institute

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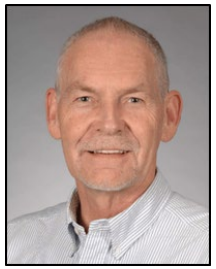
Team-based Interdisciplinary Cancer Research Training (TICaRT) Program – NCI T32 CA257923


Dietmar Siemann
PI


Lizi Wu
Co-I


Andrew Judge
Co-I

Premise

Advances in fundamental understanding of cancer and its clinical management **rarely occur in isolation** but typically represent team-based research endeavors

Belief

Early **exposure** of trainees to **interdisciplinary** education and **training** coupled with **team-based learning** will better position them for **successful cancer** research **careers**

Unique

No existing NCI-funded T32 programs devoted to team-based training and near-peer mentoring

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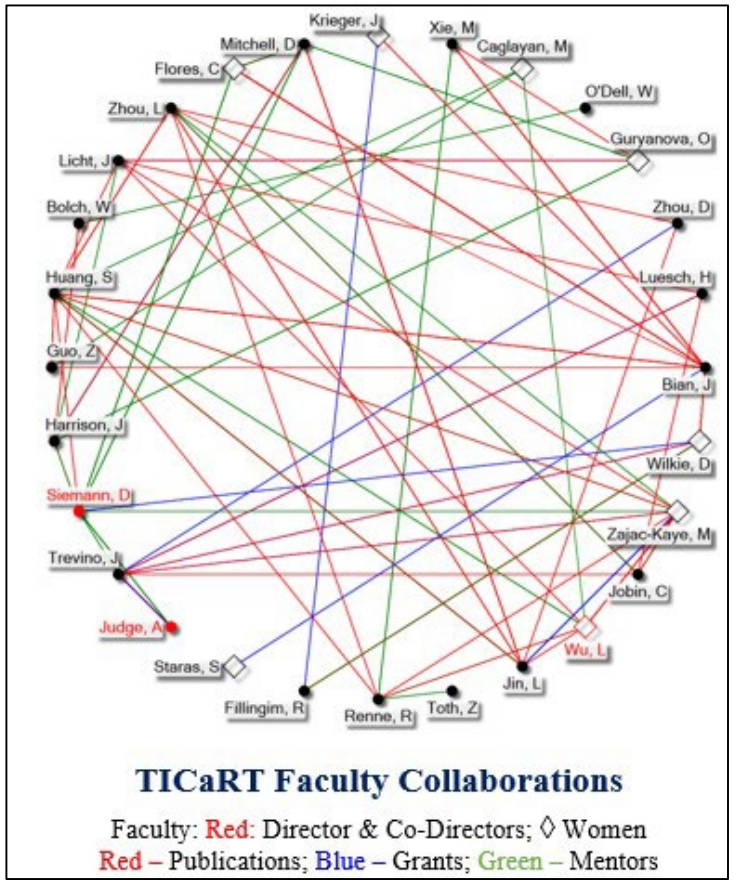
TICaRT Faculty

30 basic science and clinical faculty from
- 9 Colleges and 22 Departments
- 11 PhD Programs
- 4 UFHCC Research Programs

Faculty in various career stages including junior faculty

Participating PhD Programs
Biomedical Engineering
Biomedical Sciences
Chemistry
Computer & Information Science
Epidemiology
Mass Communication
Medical Sciences
Nursing Sciences
Pharmaceutical Sciences
Rehabilitation Sciences
Veterinary Medical Sciences

Participating Colleges



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Fundamental Principles

- To tackle a scientific question of interest to both team members that neither could address on their own
- To embrace the concept of near-peer mentoring

Eligibility Criteria

Team Project

- must be cancer focused

Teams

- must be interdisciplinary (cross-departments, cross-colleges)

Trainees

- must be U.S. citizens/permanent residents

Mentors

- must have R01 or R01-equivalent peer-reviewed extramural funding (one cancer focused)

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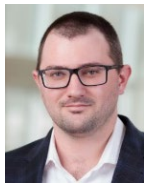
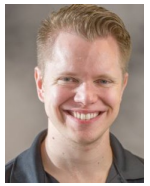
First Cohort of Teams

- Selected in Spring 2021
- 3 post-doc – graduate student teams
- 1 graduate – graduate student team
- Appointed August 2021
- 2-year terms

 	**Andrew Maxim** Grad Student, Computer Science	**Eric Cooks, PhD** Postdoc, Advertising	Virtual Human Voice Customization Impact on Cancer Screening
 	**Peter Dib** Grad Student, Anatomy & Cell Biology	**Derek Leas, PhD** Postdoc, Medicinal Chemistry	Discovery and Development of Novel Cancer Therapies
 	**Nicholas Hiers** Grad Student, Biochemistry	**Daniel Stribling** MD/PhD Student, Molecular Genetics	Identification of miRNA-Associated Therapeutic Targets
 	**Rachel Newsome** Grad Student, Medicine-Gastroenterology	**Bayli DiVita-Dean, PhD** Postdoc, Neurosurgery	The Gut Microbiome in Combinatorial Cancer Therapy

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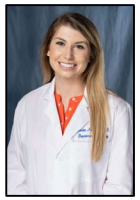
 	**Sarah McMahon, PhD** Postdoc, Molecular Genetics & Microbiology	**Alexis Smith** Grad Student. Medicinal Chemistry	PROTAC-mediated Degradation of the Latency-Associated Nuclear Antigen (LANA) to Target KSHV Latency
 	**Jeremy Ducharme, PhD** Postdoc, Physical Therapy	**Madison Carelock** Grad Student, Pathology, Immunology & Laboratory Medicine	Utilizing Proteolysis Targeting Chimeras against BCL-2 and BCL-X for Clearing Senescent Cells to Reverse Therapy-induced Cachexia
 	**Jordan McKean, MD** Resident, Surgery	**Nathan Hart** Grad Student, Chemistry	Pancreatic Ductal Adenocarcinoma Biomarker Detection/Validation via Intelligent Microrobotic Chip Device
 	**Meghann Wheeler** Grad Student, Epidemiology	**Breanne Freeman** Grad Student, Medicinal Chemistry	Optimizing Lung Cancer Risk Assessment: from Bench to Trench

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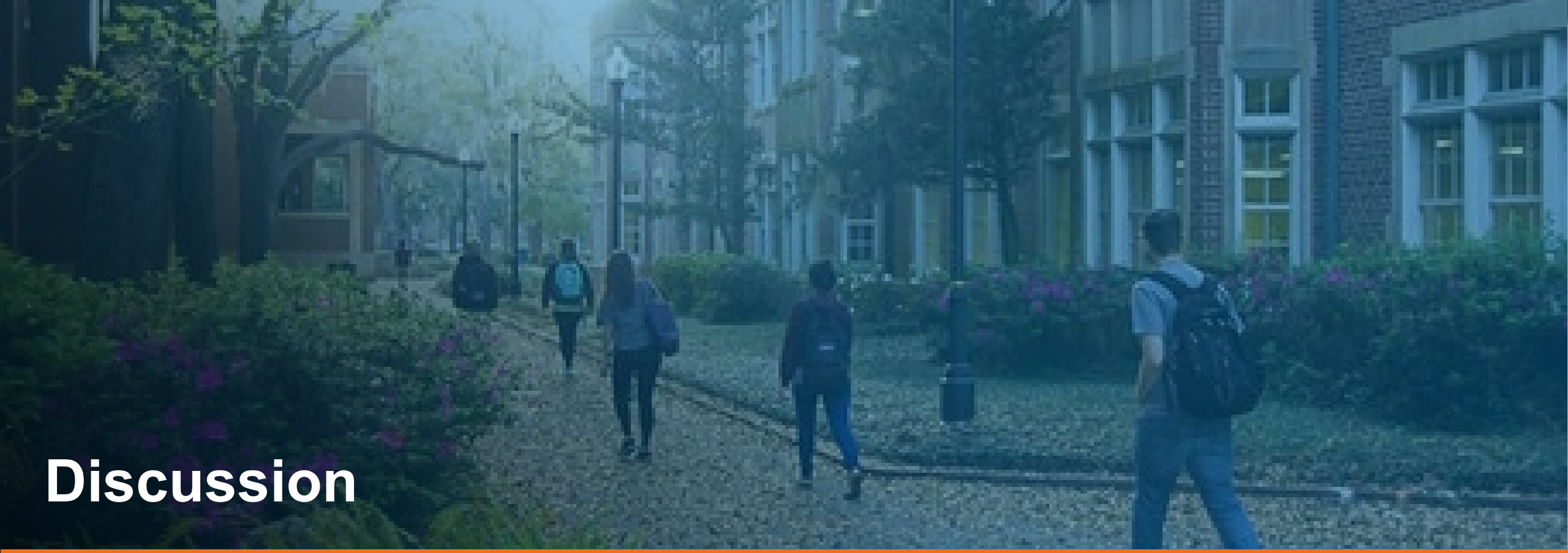
Benefits and Outcomes

- The divergence in the partners' backgrounds and expertise in team-based collaboration:
  - meant that only through active collaboration could there be project advancement
  - required reliance of each partner on the other to provide essential knowledge and skills
  - developed team skills to navigate the collaboration process
  - necessitated a collaboration that called for a significant level of trust between partners
- The team science training experience:
  - exposed each team member to the riches and limitations of other scientific disciplines
  - enhanced participant growth by forcing each to step outside of their own project comfort zone
  - commonly resulted in continued collaborations well beyond the training period
  - provided life experience benefits beyond science
  - led to new / enhanced faculty / lab collaborations



Discussion

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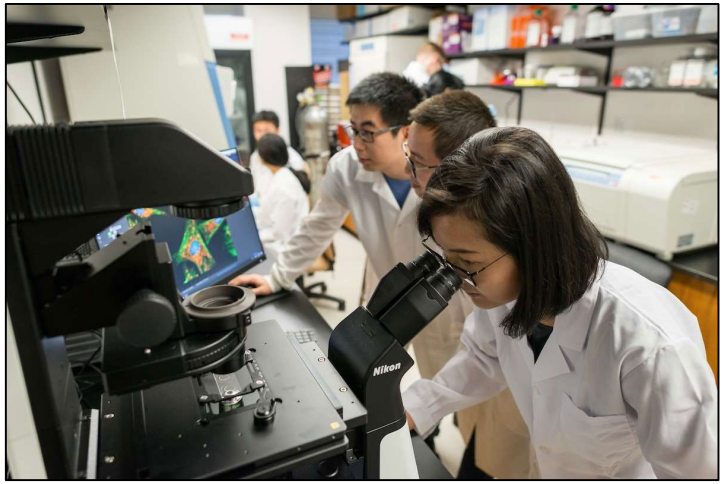
STRONGER Program

Summer Training in Research and Oncology for the Next Generation of Researchers

GOALS

- Provide opportunities for undergrads from non-R1 institutions to conduct cancer research and enhance their research experience/portfolio
- Increase the pool of successful applicants to health-related PhD programs
- Enhance the cancer research workforce of the future



12-week summer internship

- Focus on team science & near-peer mentoring (intern with graduate student)
- Graduate students develop proposals for mini-grants for summer research projects
- Graduate students present projects in 3M thesis format
- Speed-networking session and rankings and mentor-intern matching
- Graduate students lead projects with interns

Summer 2024 Participants

Name	Undergraduate institution	Major(s)
Temilade Adewale	Rochester Institute of Technology	Biomedical Sciences
Marqus Colon	Nova Southeastern University	Biology; Honors in Major
Martin Gonzales	Ave Maria University	Biochemistry
Sarah Jusino	Ave Maria University	Biology
De'Ilaijah Lucas	Keiser University	Biomedical Science
Divya Sinha	Keiser University	Biomedical Sciences
Oneilia Yearde	Florida Memorial University	Biology

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