

The background of the slide is a photograph of a modern building with a glass facade and a brick tower, likely a part of Duke University. The image is slightly faded to allow the text to be prominent. The text is overlaid on a semi-transparent white rectangular area.

Duke

**TRANSLATION
& COMMERCIALIZATION**

OTC Fellows Program 2024-2025

Information Session

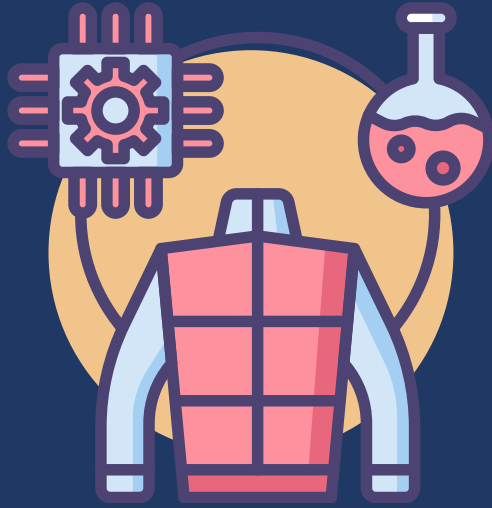
August 21st 2024

Program Co-Directors

Marianne de Bedout Mora

Aki Min

Structure Of The Talk



PART 1

OTC Basics



PART 2

Fellows Program

What Does OTC Do?

Innovative
research
for
benefit to
society



Submit
Ideas



Therapies
Diagnostics
Medical Devices
Software/IT

We handle everything!
<https://otc.duke.edu/technologies/>

Duke
TRANSLATION &
COMMERCIALIZATION

Take to
Market

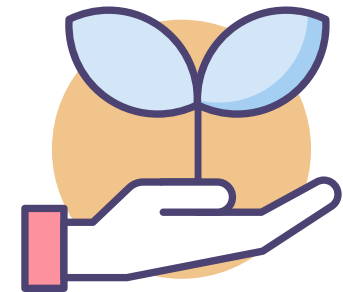


Legal Services

Licensing

Venture
Support

Translational
Resources



We take ideas & innovative research to industry

OTC Manages Duke's Innovation Pipeline



Impact: FY2024 Annual Report

\$82.5M	TOTAL REVENUE	302	INVENTION DISCLOSURES		
428	U.S. PATENT APPLICATIONS	6	START-UPS CREATED	8	EXCLUSIVE LICENSES
63	AGREEMENTS FORMED	\$1.1M		INVESTED THROUGH THE GILHULY ACCELERATOR FUND	
\$12.1M		DUKE CAPITAL PARTNERS INVESTMENTS			

Impact: Success Stories

Products on the Market

KRYSTEXXA
pegloticase

uplizna
inebilizumab-cdon

Myozyme
(α-glucosidase alfa)

RETHYMIC[™]

ORSERDU
elacestrant

Latisse[®]

IPOs

PRECISION
BIOSCIENCES

HUMACYTE[®]

POLAREAN
BREATHTAKING IMAGES

IKT Inhibikase
Therapeutics

evolv
technology

IONQ

Acquisitions

Actus
Therapeutics

Cereius

PHITONEX[™]

INNAVASC

predigen Biomeme

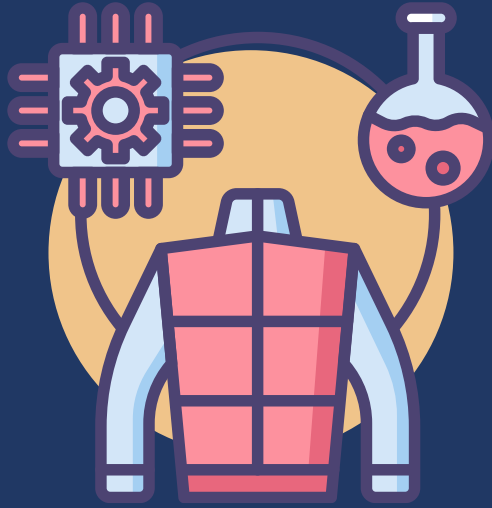
WARDEN BIO

VORANIGO[®] (vorasidenib) is

NOW FDA-APPROVED

for Grade 2 IDH-mutant astrocytoma
or oligodendroglioma

Structure Of The Talk



PART 1

OTC Basics



PART 2

Fellows Program

OTC Fellows Overview

Experiential Learning

Business Side of Science

Mentorship

Real-World Impact



Who is an OTC Fellow?

STEM Post-doc or graduate student (Ph.D. preferred)

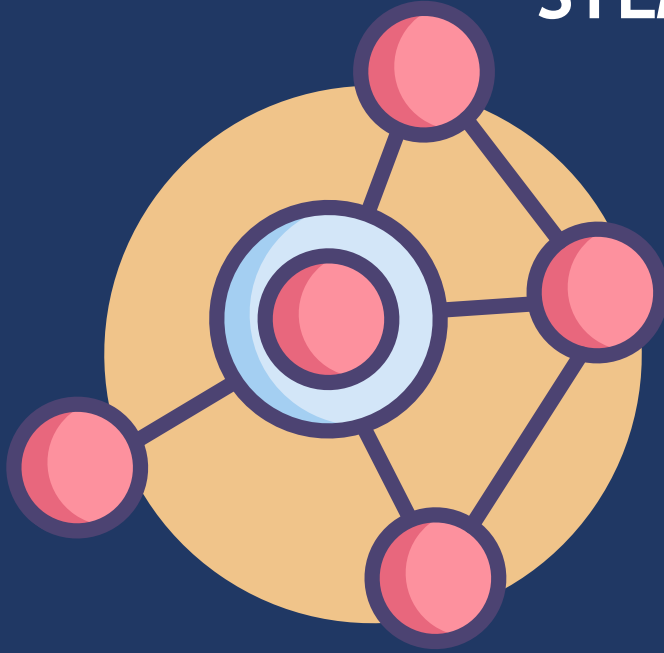
Passed Prelims/Quals (PhD Candidate)

Strong writing skills

Open to feedback

Demonstrated interest in careers
outside of academia

Ability to commit up to 20 hours per month



What do OTC Fellows **Gain**?

- Exposure to real research in and out of your field
- Understanding of tech in its scientific, business, and societal contexts
- Mentorship
- Exposure to alternative scientific careers
- Skills in:
 - Technology appraisal
 - Market research & analysis
 - Competitive landscape analysis
 - Patent and prior art search
 - Science and technical writing for a business audience



What do OTC Fellows **Gain**?

Critical professional skills and business acumen for careers in:

- STEM startups
- Large industry companies (pharma, chemical, engineering...)
- Consulting
- Venture Capital
- Marketing
- Business development
- Technical sales
- Licensing
- Patenting and IP protection
- Bench science in industry



Fellows Engagement Along Pipeline



What do OTC Fellows Do?

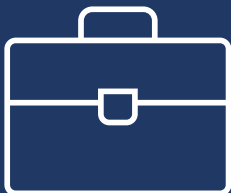
Technology Assessments

- Evaluate newly disclosed technologies
- 5 parts
 - Tech description
 - Application
 - Market research
 - Strategic assessment
 - Prior-art search
- Year round
- 7 hours per report
- Revisions from mentors and director

Duke TRANSLATION
& COMMERCIALIZATION

Tech#	T-00XXXX	AD Initials	*Can leave blank
Date Received by Fellow		Manager Initials	
Potential Inventor(s)		Fellow Initials	
Original Title	From IDF		
Improved Title (if necessary)	Keyword optimized, can be similar to descriptive title above, with SEO (search engine optimized) influence.		
Classifications	<p>Technology: Check document titled "Classifications" in Box account Applications (list for each different application): Check document titled "Classifications" in Box account</p> <p>Note- sometimes "Technology" and "Application" classifications can be the same.</p> <p>*You can have multiple classifications for each technology. Eg an MRI imaging software for lung cancer would be both of the following: Imaging: MRI By Clinical Application: Oncology</p>		
Keywords	These are keywords you would tag this invention by, for a google search.		
STAGE OF DEVELOPMENT	E.g. "prototype exists", "working software", "target only", "has in vivo data", "in vitro data only", "only at idea/proposal stage", etc.		
Any disclosures?	Include <u>any</u> public disclosures mentioned in the Invention Report, found in prior-art searches, or found during your own search. Note that neither a patent application nor the IDF itself is a disclosure. We want disclosures here that would impact the patentability.		
1a. Technology: Description	<p>Bullet-point description of the science:</p> <ul style="list-style-type: none">• What was the scientific context? What was already known in the field?• What was the discovery / contribution to previous knowledge?• What is the current supporting data? (e.g. in vitro, simulations, etc.)• What follow-on experiments are planned? (if discussed) <p>References (state any journal articles you used here):</p>		
1b. Technology: Product	What is the final product that will be available for sale? Is it a testing kit, an independent device, a software package, an attachment to an existing machine, or perhaps a new drug?		
2. Potential Applications	<p>Outline how this invention could be applied as a product or a service that addresses a commercial need</p> <ul style="list-style-type: none">• E.g., This product would be used in the field of <p>Feel free to include multiple uses for the invention</p> <ul style="list-style-type: none">• <u>e.g.</u> Say it's just a drug target for a disease, but that target is applicable in multiple other diseases. Where they could be of therapeutic relevance <p>References:</p>		

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Adapted from U-M Tech Transfer and Columbia Technology Ventures



Fellows Engagement Along Pipeline



What do OTC Fellows Do?

Marketing Summaries

- Used in OTC Business Development
- 2 parts
- One-page marketing flyer
- Identify potential industry partners

- 7 hours per report
- Revisions from mentors and director
- Starting in spring semester

Duke File (IDF) Number
IDF #: T007029

Meet the Inventors
[Brooke, Martin](#)


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Pratt School of Engineering
Department: Electrical & Computer Engineering (ECE)

Publication(s)

External Link(s)
[* From the lab of Martin Brooke](#)
[* From the lab of Stuart Pimm](#)
[* Blue Neel Forest Drones](#)

[PRINT OR DOWNLOAD PDF](#)

Drone and data capture system that measures biodiversity in remote, dense environments



Unmet Need
Biodiversity and ecosystems with large are of tremendous importance to conservation science and ecology, as well as human health, security, and economic growth. However, human encroachment on habitat continues to increase while at the same time the changing climate has ever-evolving impacts on wildlife and vegetation, putting biodiversity at serious risk. To face this, biodiversity conservation is a major point of interest to policy makers, and corporations are more readily adopting progressive biodiversity credit and offset programs as part of sustainability initiatives. For example, the United States and Australia have passed offset policies for corporations to establish conservation easements and purchase credits from conservation banks. These combined factors make accurately characterizing biodiversity and its change over time a scientific, economic, and tactical imperative.

However, biodiversity can be difficult to assess in remote or dense environments like rainforests. One existing strategy for measuring biodiversity relies on low-resolution, remote sensing that captures data from an aerial vantage above the forest canopy, but not from within the vegetation that makes up the forest, where much of the wildlife is visible. Another strategy relies on teams of people capturing data from within the environment. This process is considerably more challenging due to its time and labor intensity. Many natural regions can be hazardous for humans to access, where data can only be captured from vantage points high off the ground.

There is a need for a technology that can both access remote environments and maneuver within the dense environments to collect data and provide comprehensive measurements of biodiversity. There is also a need to improve the quantity and quality of biodiversity data.

Technology
Duke inventors have developed a drone and data relay system for high-resolution, 3D mapping, and image capture. This is intended to be used to measure biodiversity more accurately than existing strategies, especially in remote or dense environments. This technology would aid ecology research, conservation efforts, and biodiversity offset and credit planning.

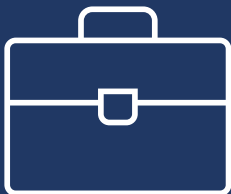
Specifically, the system is made up of a large, long-range drone that shepherds several smaller drones to a biodiversity study site. From there, the smaller drones navigate the study site and collect images, sounds, samples, and other biodiversity data. This technology also includes a multi-pronged data communication system, where the smaller drones use a radio frequency data link to either send data directly to a monitoring station or use the parent drone as a relay point. The parent drone then recaptures the smaller drones and flies them back to a monitoring station for additional data collection and battery replacement.

The inventors have successfully tested the radio frequency, data collection, and data relay of the drone system in multiple field tests. The inventors and their innovation were chosen as semifinalists for the XPRIZE Rainforest competition to further develop the system.

Other Applications
In addition to an application in conservation, this technology could also provide value to other industries, including agriculture, military, infrastructure, and shipping, which can require data capture in spacious, remote, or dense environments. This system could be used in crop-monitoring, search and rescue and reconnaissance missions, long-range mapping for infrastructure planning, and delivering packages in dense urban environments.

Advantages

- * Improves quality, quantity, and type of biodiversity data that can be measured
- * Makes measurement of previously inaccessible or difficult-to-access environments possible
- * Does not rely on cellular networks or satellite data communication, so the system can work in remote areas in all weather
- * Provides a more comprehensive picture of biodiversity in an area
- * Reduces hazard to biodiversity data collection teams



Nuts and Bolts

Paid (\$17/hour) 1 year program +

In Person

- Trainings
 - 3 x 2.5 hour
 - 1 x 1 hour
- 1 hour meet and greet
- Semi-regular events

Asynchronous

- ~14 hours per month
- 2 reports a month
- Weekly office hours
- Meet with other OTC staff



Application Instructions

Applications due by September 10, 2024 (11:59pm ET)

Email 1 page cover letter and 1 page resume (PDF) to:
OTCFellowsApplication@gmail.com

Visit <https://otc.duke.edu/otc-fellows-program/> for more info



[Marianne: md506@duke.edu](mailto:md506@duke.edu)

[Aki: asm90@duke.edu](mailto:asm90@duke.edu)





Thank you!

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