

# **Office of Instructional Programs**

Senior Vice Provost Helen Chen

# **Office of University Interdisciplinary Programs**

Senior Vice Provost Rob Dunn

# Wolfpack 2030: Powering the Extraordinary

- Goal 1:** Empower students for a lifetime of success and impact.
- Goal 2:** Ensure preeminence in research, scholarship, innovation and collaboration.
- Goal 3:** Expand and advance our service to North Carolina and beyond — defining the standard for a 21st-century land-grant university.
- Goal 4:** Champion a culture of equity, diversity, inclusion, belonging and well-being in all we do.
- Goal 5:** Improve university effectiveness through transformative technologies, cutting-edge processes and actionable data.
- Goal 6:** Lead in developing innovative partnerships, entrepreneurial thinking and applied problem-solving.
- Goal 7:** Elevate the national and global reputation and visibility of NC State.

# Creation of OIP and OUIP

2021

**Jul 1:** SVP Miller steps back from DELTA and Continuing Education to focus on Entrepreneurship

**Oct 15:** Provost's Office announces planned retirements of SVPs Larick and Miller, and planned reorganization

**Nov 9:** Search for SVP IP begins

**Nov 30:** Search for SVP UIP begins

**Dec 1:** Interim SVP IP Courtney Thornton in place

2022

**Jan 1:** SVP Larick retires, reorganization begins

**Jan 17:** Interim SVP UIP Rob Dunn in place

**Apr 27:** Helen Chen named SVP IP

**Jun 3:** Rob Dunn named SVP UIP

**Jul 1:** SVP Miller retires

**Aug 1:** Helen Chen arrives on campus

# About Helen Chen

- Joined NC State in 2022
- Professor of Computer Science and Engineering
- Was head of the Division of Experience-based Learning and Career Education and associate provost at the University of Cincinnati
- Previously dean of College of STEM at Johnson C. Smith University



# Office of Instructional Programs



**Digital Education and Learning  
Technology Applications (DELTA)**



**NC State Continuing and  
Lifelong Education (NCSCaLE)**

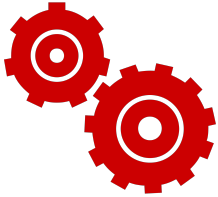


**Universitywide  
Instructional Programs**

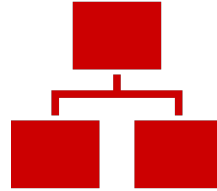
**Programs  
and services  
include:**

- New program planning and development support
- Partnership development support
- Enterprise academic and emerging technologies support
- Professional development
- Course design and production
- Online program branding, marketing and communications
- New academic initiatives, including integration of for- and not-for-credit, on- and off-campus, hybrid and distance programs

# Academic Planning



Policy, Process  
and Practice



Academic  
Structure



Program  
Offerings



Academic  
Partnerships

# Innovative Programmatic Offerings



## Traditional

- Course
- Certificate
- Subplan
- Degree Program



## Alternate

- Noncredit Courses
- Micro-Credentials
- Stackable Credentials
- Digital Badges
- Industry-Recognized Certificates



## Experiential

- Apprenticeship
- Competency-Based Learning
- Prior Learning Assessment
- Flexible Pathways to Degree

# Digital Education and Learning Technology Applications (DELTA)

## About

DELTA fosters the integration and support of digital learning in NC State's academic programs, while also supporting online and distance education (DE) programs.

**Budget:** \$15.5M

**Employees:** 113 staff

## Activities (FY22)

**Help Desk and Training:** Resolved 6,708 help desk calls; offered 120 workshops

**Enterprise Academic Technology:** 740k hours of Zoom meetings; 6.5M livestream and lecture capture views

**Classroom Support:** 1,650 hours in 10 DELTA classrooms; 228 NC State classrooms now support classroom capture

**Online and DE:** 147k SCHs delivered; 124 programs were active; 52k exams proctored



**Vice Provost**  
Donna Petherbridge

# NC State Continuing and Lifelong Education (NCSCaLE)

## About

NCSCaLE develops and delivers market-driven continuing and lifelong education programs and services for individuals, organizations and communities in NC and beyond.

**Budget:** \$22.6M

**Employees:** 156 staff  
(permanent and temporary)

## Activities (FY22)

**Events/Programs:** 1,269 (vs. 672 in FY21)

**Participants:** 95k (vs 36k in FY21)

**Contracts/Grants:** Center for Urban Affairs and Community Services generated \$9.4M

**Internal Partnerships:** Working with Data Sciences Academy and Colleges of Design and Management on non-credit programs

**Digital Skills Bootcamps:** Offered with ThriveDX, 100+ graduates successfully secured employment



**Vice Provost**  
Mark Bernhard

# Institute for Advanced Analytics

## About

The Institute prepares data savvy individuals for leadership in a digital world. The Institute's flagship program is the Master of Science in Analytics.

**Budget:** \$2.6M

**Employees:** 20 faculty and staff positions

## Activities (AY21-22)

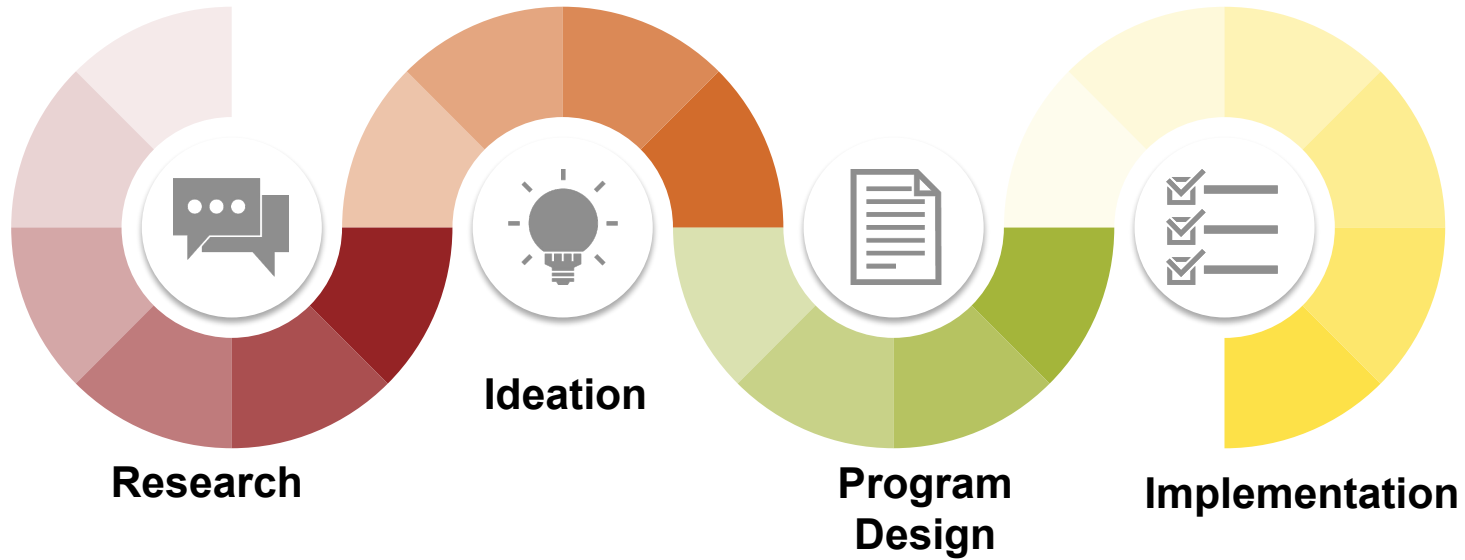
**Admissions:** For the 2022 admissions cycle, received 661 applications; acceptance rate was 24% and 122 students enrolled, with an average undergraduate GPA of 3.67.

**Outcomes:** Class of 2022 (15th cohort) graduated 115 students (94% graduation rate); employment at graduation was 100%, with an average base salary of \$107,900.



**Goodnight Director**  
Michael Rappa

# Academic Planning Process



# Partnerships and Collaboration

## NC State Groups

Council of Deans  
Assoc. Deans for Academic Affairs  
Administrative Board of the  
Graduate School (ABGS)  
Courses and Curriculum  
Committee (UCCC)  
Council on Undergraduate  
Education (CUE)  
Office of University Interdisciplinary  
Programs Advisory Committee  
SACS Substantive Change  
Review Team

## Provost's Office



Fashaad Crawford



Adrian Day



Rob Dunn



Heidi Hobbs



Margery Overton



Katharine Stewart



Kelly Wick

## Liaison



**THE UNC  
SYSTEM**

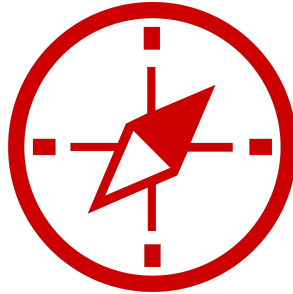


# 30-60-90 Day Plan



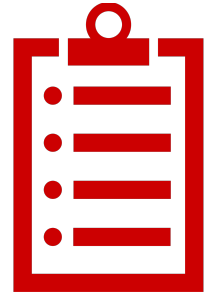
## Learning (0-30)

Focus on culture, high priority projects, and process



## Aligning (30-60)

Align on vision for the future



## Executing (60-90)

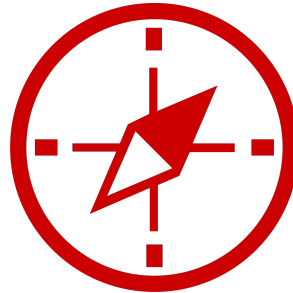
Set up for long-term execution efficiency

# 30-60-90 Day Plan



## Learning (0-30)

- Understand key responsibilities of the OIP
- Build relationships and trust
- Assess project/process/team



## Aligning (30-60)

- Align OIP roles against Provost's Office vision
- Communicate OIP vision with stakeholders
- Explore challenges



## Executing (60-90)

- Focus organization on updated priorities
- Ensure teams are unblocked and unlocked
- Take initiative on high priority projects

# Outcomes

- Degree programs
- Certificate programs
- Program modality
- Department name changes
- CIP code changes
- Bilateral agreements
- Discontinuation



# Lessons Learned to Date

- Strong sense of ownership and pride (in their programs/schools)
- Excitement about the new strategic plan
- Innovative and collaborative thinkers and doers
- **Needs**
  - Desire to better understand program development timelines, policies, processes and funding models
  - Need support to facilitate cross-unit collaboration
  - Look for entrepreneurial/experimental opportunities to build innovative, high-impact academic offerings to meet learners where they are

# OIP's Five Pillars



Fostering  
Universitywide  
Collaboration



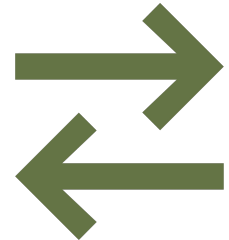
Supporting  
Faculty/Staff  
Engagement and  
Innovation



Innovating Programs  
and Delivery



Accelerating  
Entrepreneurial  
Initiatives



Expanding External  
Partnerships

# 1. Fostering Universitywide Collaboration



## 2. Supporting Faculty/Staff Engagement and Innovation

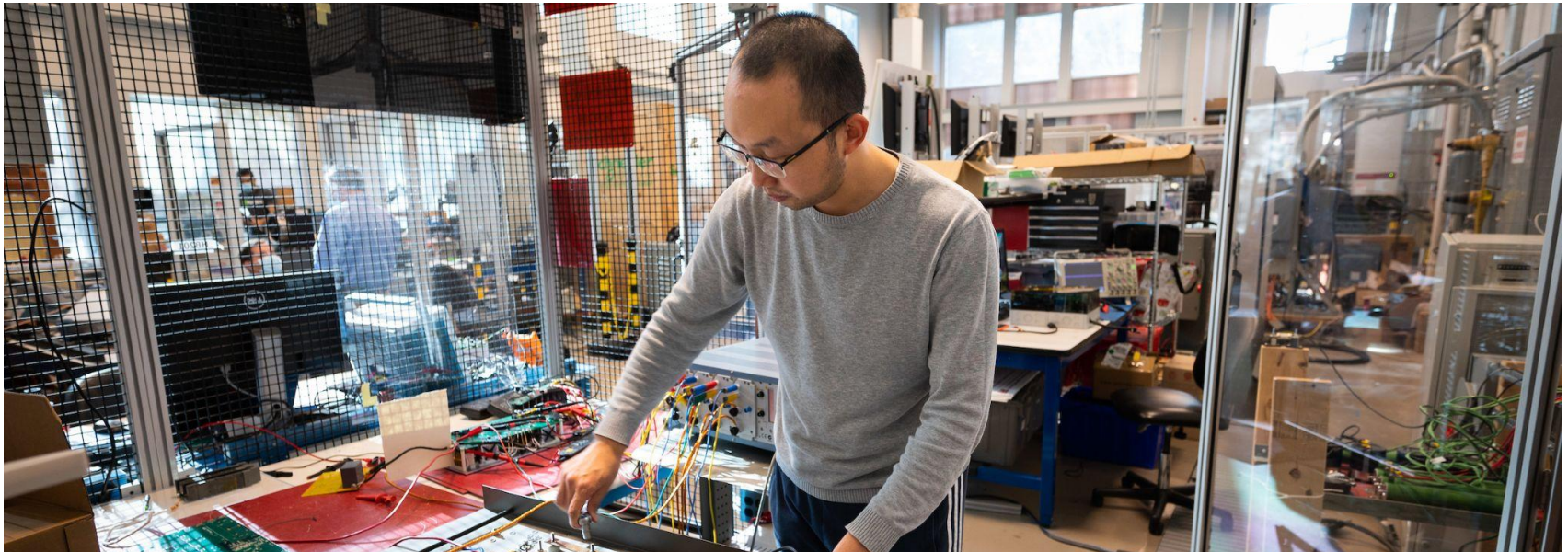


### 3. Innovating Programs and Delivery





## 4. Accelerating Entrepreneurial Initiatives



## 5. Expanding External Partnerships



# What's Next

## Ongoing

**Strategic and ongoing communication** with internal and external constituents share the vision of OIP

Work with the Graduate School and the University College to **review standard operating procedures and guidance documents**

## Fall 2022

**Launch the OIP website** with up-to-date SOPs, forms, resources and newsletters

Work with Office of University Interdisciplinary Programs (OUIP) to develop **interdisciplinary courses and curriculum governance** structure.

## Spring 2023

Create community, resources and professional development to **support interdisciplinary courses and programs**

Work with Office for Faculty Excellence (OFE) to promote and support **faculty engagement in program development**

Work with Office of Assessment and Accreditation on **SACSCOC reaffirmation program-related items**, e.g. dual degrees, MOUs and off-sites

Develop **summer school planning strategy** to promote timely completion

# **Wolfpack 2030: Powering the Extraordinary**

## **FY22-24 Implementation Plan**

Identify the infrastructure to coordinate for-credit/non-credit learning pathways

Develop and implement lifelong learning strategies for the target audience

Develop new certificate offerings to meet the needs of learners

Envision and execute an inclusive process to update the Gen Ed Program

Provide additional opportunities for student engagement in high impact practice

Maximize learning technologies and pursue teaching excellence

# Questions



# About Rob Dunn

- Joined NC State in 2005
- William Neal Reynolds Distinguished Professor in the Department of Applied Ecology
- Interdisciplinary ecologist (from ant genomics to fermented food pre-history)
- 200 peer-reviewed papers and seven books

# Office of University Interdisciplinary Programs



Faculty  
Clusters



Academies



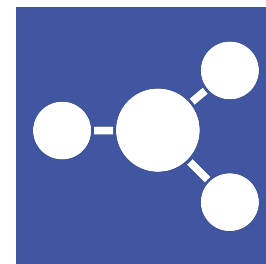
Integrative Sciences  
Initiative and Building



Innovation and  
Entrepreneurship



Shelton  
Leadership Center



Biotechnology  
Program



Coastal  
Resilience and  
Sustainability



Long View



Plant Sciences  
Initiative



University - Museum  
Partnership



Wicked  
Problems



?



L'ÉGLISE ET L'UNIVERSITÉ DE LA SORBONNE D'APRÈS UNE GRAVURE DU XVII<sup>e</sup> SIÈCLE.





# **60 Departments and More Disciplines**

# The Land Grant Mission Requires Interdisciplinarity

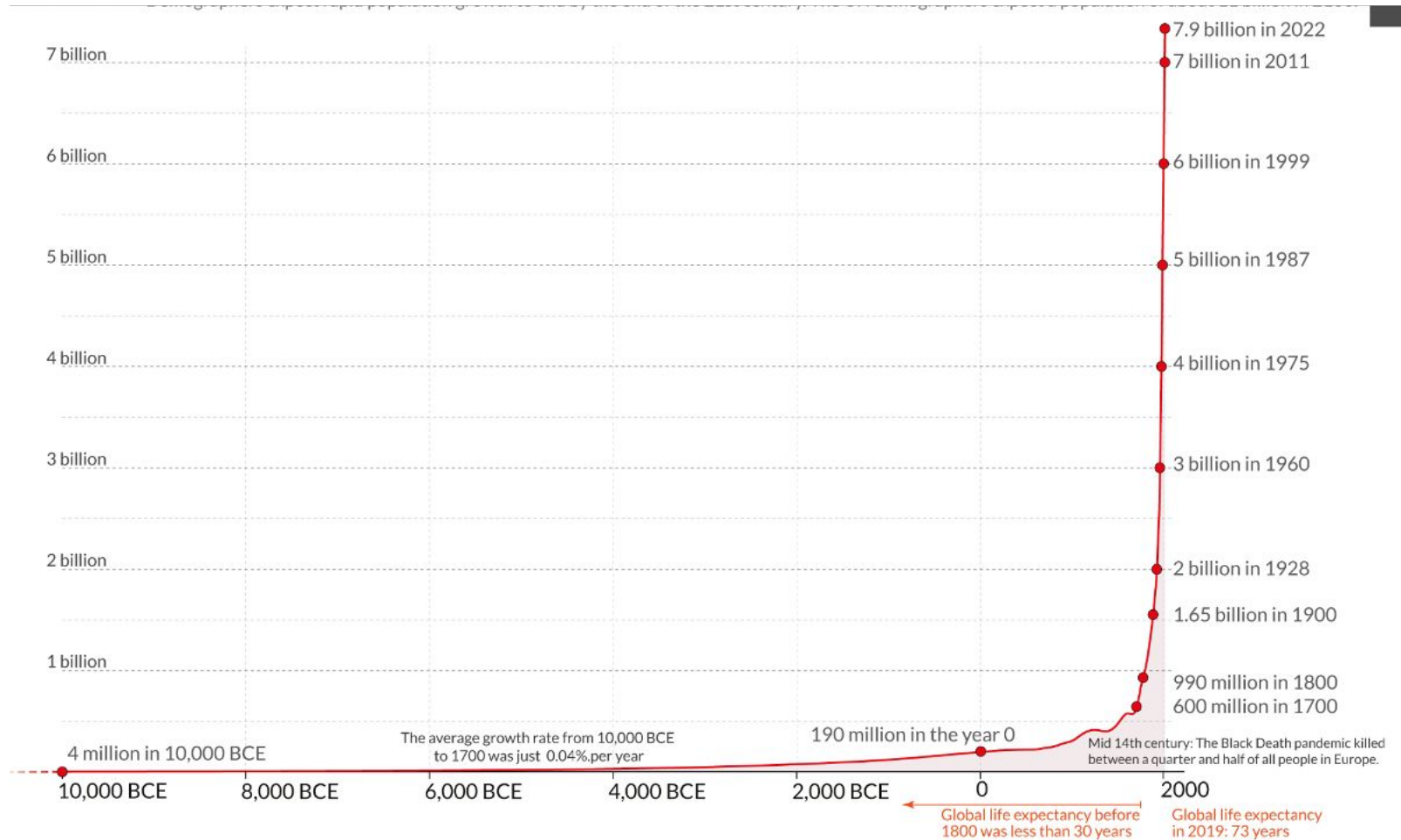




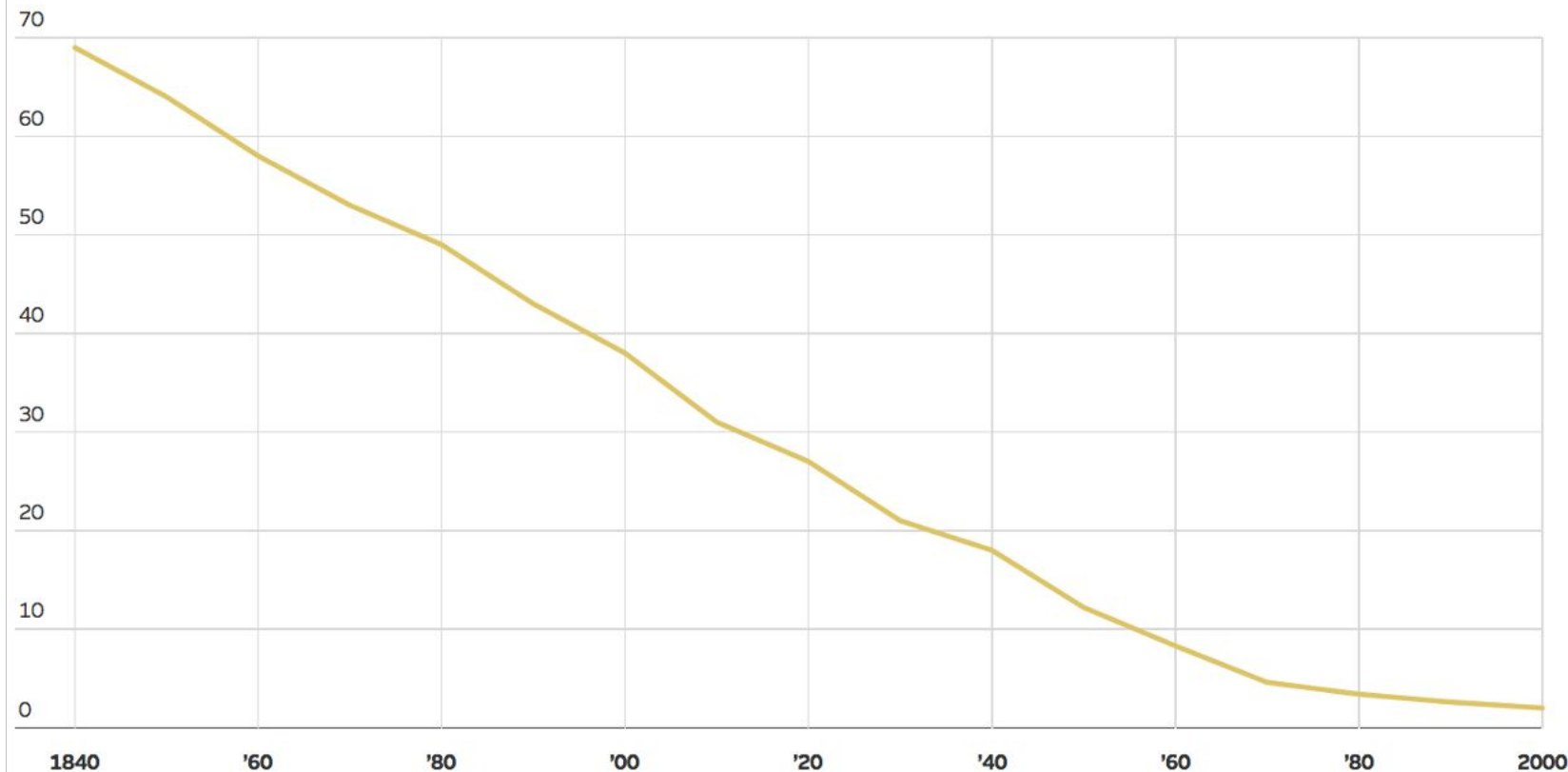
# Problem-Based Research, Education and Engagement are Foundational



**But the Nature of the State and  
World Have Changed**



## % of American workforce in agriculture, 1840-2000



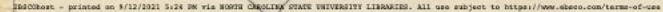
Source: USDA,







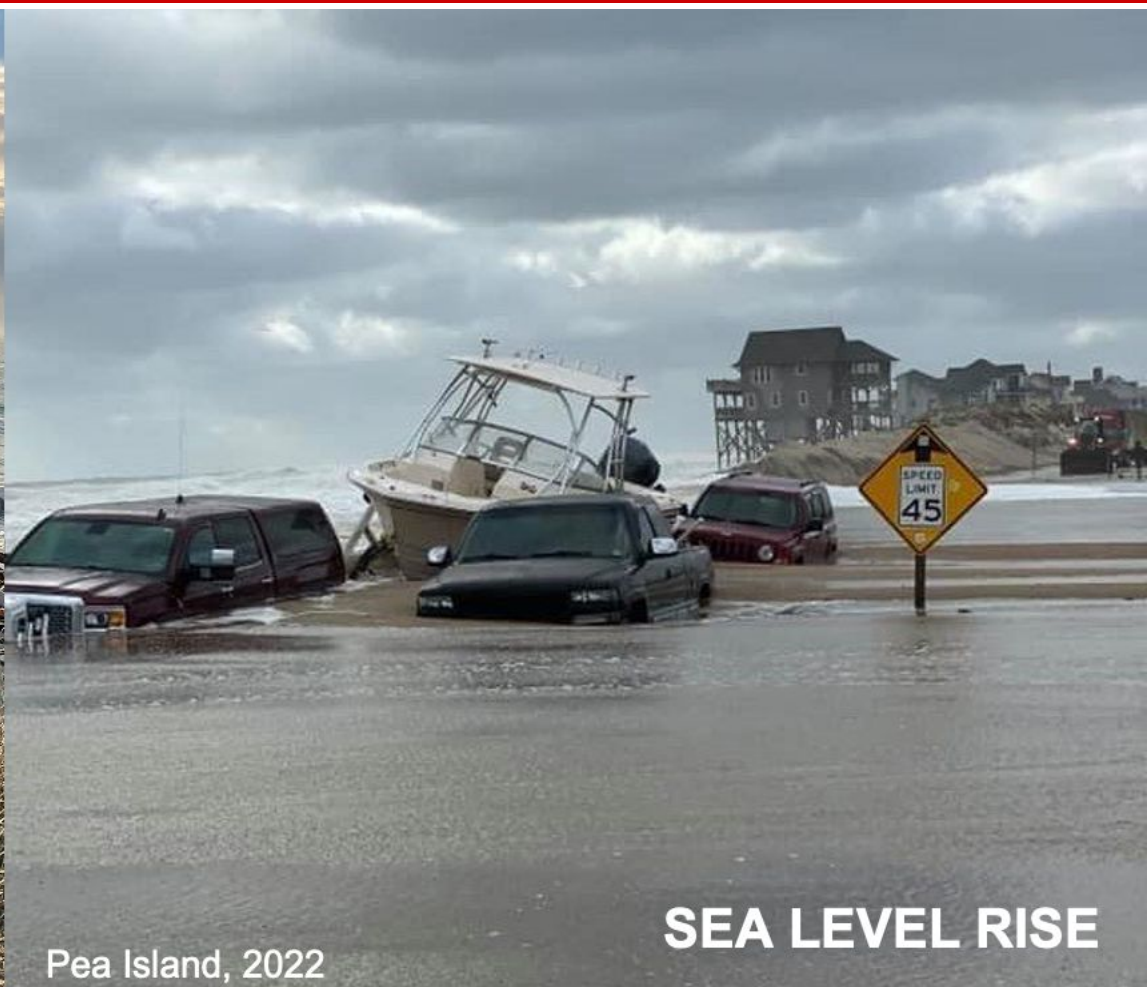
PUSHWAGNER, SOFT CITY - THERE GOES  
THE SUN. DRAWN BETWEEN 1968 AND 1975



# Change in the Challenges



Cape Hatteras, 2022

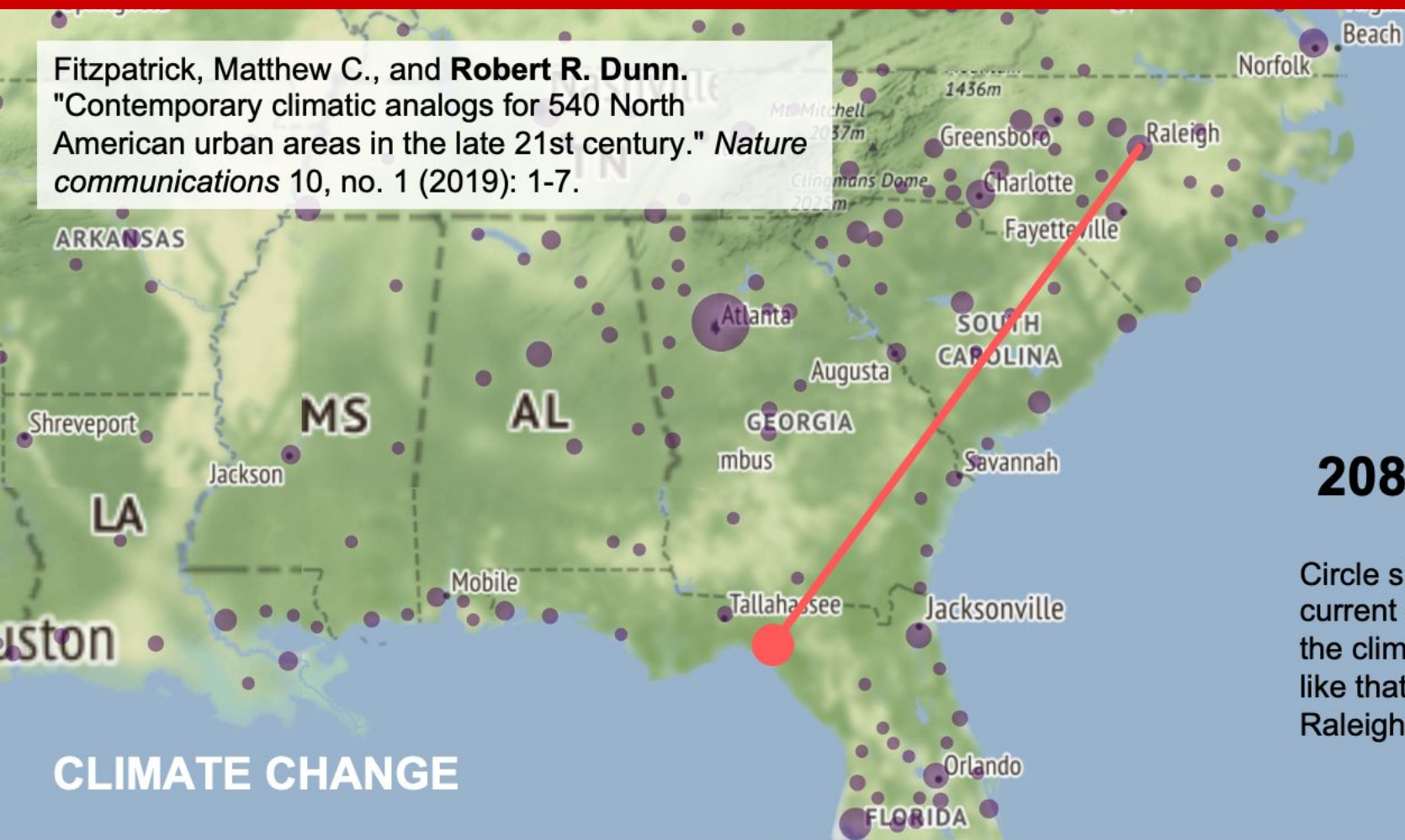


Pea Island, 2022

**SEA LEVEL RISE**



Fitzpatrick, Matthew C., and **Robert R. Dunn**.  
"Contemporary climatic analogs for 540 North  
American urban areas in the late 21st century." *Nature  
communications* 10, no. 1 (2019): 1-7.



**2080**

Circle shows the  
current cities with  
the climates most  
like that future  
Raleigh will face.

**CLIMATE CHANGE**

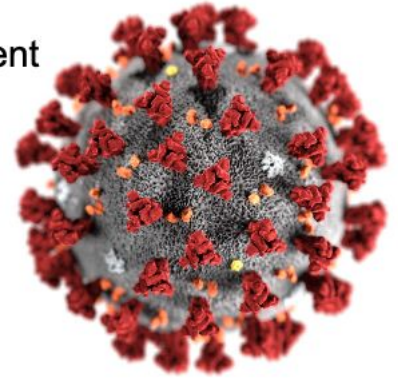


Genius Germ, Anna Dumitriu

New antibiotic resistant pathogens

## GLOBAL HEALTH CHALLENGES

New emergent  
pathogens



New vectors



*Anopheles gambiae*, photo by Alex Wild







**We need to produce more food that is more nutritious despite climates and conditions that are less conducive to agriculture.**



# Office of University Interdisciplinary Programs



*Installation by Tomás Saraceno*



# Interdisciplinarity Across Our Mission



## Education

- Undergraduate curriculum
- Graduate training



## Research and Scholarship

- Addressing complex problems
- Creating interdisciplinary tools



## Engagement

- Includes outreach, extension, translation and tech transfer

# Two Levels of OUIP

- 1) Direct reports and dotted lines
- 2) Interdisciplinarity on the campus at large

# Two Levels of OUIP

- 1) **Direct reports and dotted lines**
- 2) Interdisciplinarity on the campus at large

# Direct Reports and Dotted Lines



Debbie Acker



Fred Gould



Bob Kelly



Rachel Levy



*Science Engagement*



Steve Markham



Joshua Pierce



Adrian Percy



Erin Seekamp



Sid Thakur



# Direct Reports and Dotted Lines



Debbie Acker



Fred Gould



Bob Kelly



Rachel Levy



*Science Engagement*



Steve Markham



Joshua Pierce



Adrian Percy



Erin Seekamp



Sid Thakur

# Chancellor's Faculty Excellence Program

**20**  
interdisciplinary  
clusters

**80+**  
faculty hires

Bioinformatics

Emerging Plant  
Disease and  
Global Food  
Security

Geospatial  
Analytics

Leadership in  
Public  
Science

Sustainable  
Energy Systems  
and Policy

Carbon  
Electronics

Environmental  
Health  
Science

Global Environmental  
Change and Human  
Well-Being

Microbiomes  
and Complex  
Microbial  
Communities

Synthetic and  
Systems  
Biology

Data-driven  
Science

Forensic  
Sciences

Global Water,  
Sanitation and  
Hygiene

Modeling the  
Living  
Embryo

Translational  
Regenerative  
Medicine

Digital  
Transformation  
of Education

Genetic  
Engineering and  
Society

High-  
dimensional  
Integration of  
Biological Systems

Precision  
Medicine

Visual  
Narrative

# Chancellor's Faculty Excellence Program

## TOOLS

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Bioinformatics

Geospatial  
Analytics

Leadership in  
Public  
Science

Synthetic and  
Systems  
Biology

Data-driven  
Science

Digital  
Transformation  
of Education

High-  
dimensional  
Integration of  
Biological Systems

Visual  
Narrative

# Chancellor's Faculty Excellence Program

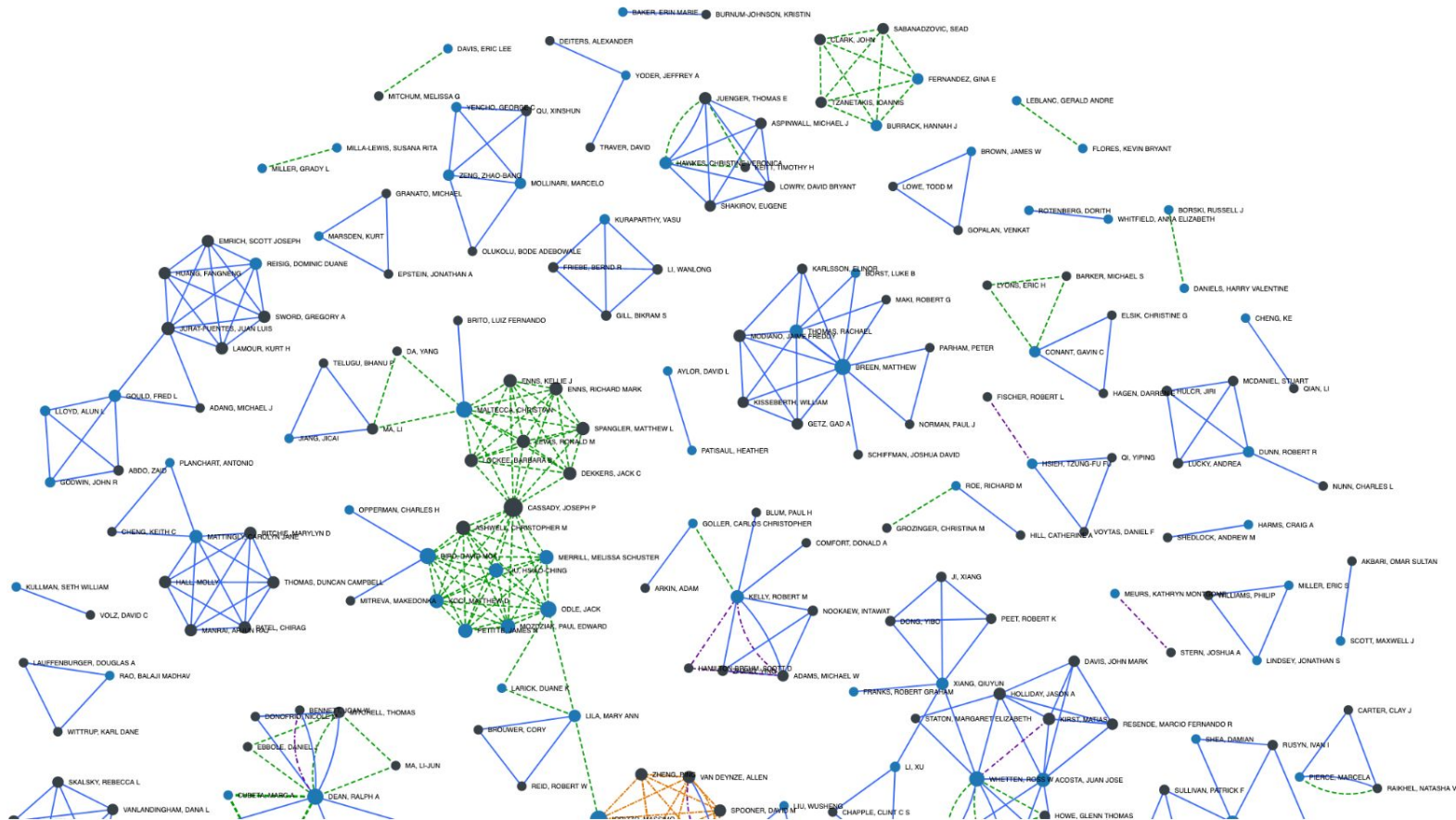
## TOOLS

Energy  
Agriculture  
Humans  
Water  
Climate  
Change

Bioinformatics	Emerging Plant Disease and Global Food Security	Geospatial Analytics	Leadership in Public Science	Sustainable Energy Systems and Policy
Carbon Electronics	Environmental Health Science	Global Environmental Change and Human Well-Being	Microbiomes and Complex Microbial Communities	Synthetic and Systems Biology
Data-driven Science	Forensic Sciences	Global Water, Sanitation and Hygiene	Modeling the Living Embryo	Translational Regenerative Medicine
Digital Transformation of Education	Genetic Engineering and Society	High-dimensional Integration of Biological Systems	Precision Medicine	Visual Narrative

Showing:

- MY INSTITUTION
- NATION



# Lessons from Clusters

- 1) There are two key models of NC State interdisciplinarity, instrumental and problem-based
- 2) There is an unrealized potential for synergies among interdisciplinary units
- 3) Problem-based contexts offer a potential place for such synergies (boundary items)
- 4) Interdisciplinary units (and colleges) can benefit from cross-cutting endeavors
- 5) There are still many “orphan” labs
- 6) **Funding interdisciplinarity has paid off (3:1)**



# Clusters 3.0?

Deep End

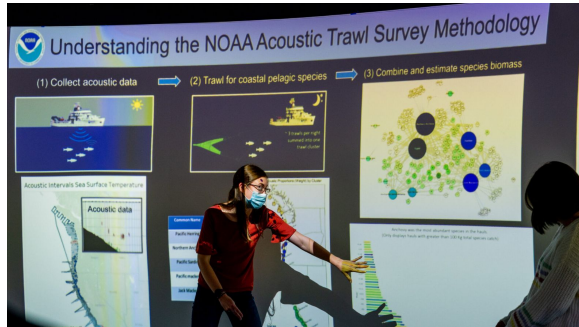


# Academies

At NC State, an academy is a **strategically-focused university-level interdisciplinary unit** with the potential for and **goal of working with all 10 colleges**.

The work of the academies will **address all three pillars of the university's land-grant mission**: excellent teaching, the creation and application of knowledge, and engagement with public and private partners.

# Academies



## Data Science

Established March 2021



## Genetics and Genomics

Established November 2021



## Global One Health

Established September 2022

# Data Science Academy

## Focus

Data science as a language and a critical skill in all sectors

Accelerating data-intensive discovery, teaching and service

Increasing skills, capability and involvement by faculty, students and staff, as well as industry and government partners

Building community, communication and collaboration

## Activities

**DSC-495-XXX:** One-credit project-based courses on 17 topics

**Data science consulting:** 1-on-1 collaborative support by graduate RAs, in coordination with Libraries

**Events:** Career expo, DataFest, Hot Topics in Data Science

**Interdisciplinary seed grants:** \$20-50k in collaboration with Research and Innovation (over \$300k in first year)



**Executive Director**  
Rachel Levy

# Data Science Academy

**\$1.4M**  
in external gifts  
and grants in  
first year



**\$1.2M** to recruit and mentor 4 two-year **postdocs** who will study **ADAPT** course model



**\$110K** to be part of Capacity Accelerator Network to **build workforce capacity** in data science for social good



**\$60K** from Consortium for Mathematics and its Applications for **K-12 Data Explorers** program



ALFRED P. SLOAN  
FOUNDATION

**\$50K** for **national conference** with NC State Libraries and Academic Data Science Alliance on **data science consulting corps**

# Genetics and Genomics Academy

## Focus

Building a greater understanding of genetics and genomics to enhance the flourishing of societies and ecosystems

Leveraging collaborations across NC State life sciences research and training to enhance understanding of the genetic and genomic underpinnings of life on earth, sustain biodiversity and enhance social equity

## Activities

**Genetics and Genomics Scholars:** Umbrella program across 16 life sciences programs, open to current and incoming PhD students

**Research Interest Groups:** Five universitywide groups meeting regularly to share research interests and exchange ideas

**Events:** Weekly seminar series, annual retreat



**Executive Director**  
Fred Gould



# Global One Health Academy

## Focus

Building upon NC State's strengths in plant health, animal health, biodiversity health and the health of human societies

Interdisciplinary approach, combining internal resources with current and new partnerships to advance education, research, engagement, innovation and workforce and economic development

## Thematic Areas

**Research:** Driving food and water solutions; combating infectious diseases; and addressing climate change-health disparities

**Education:** Undergraduate, graduate and leadership

**Engagement:** In North Carolina and globally



**Executive Director**  
Sid Thakur

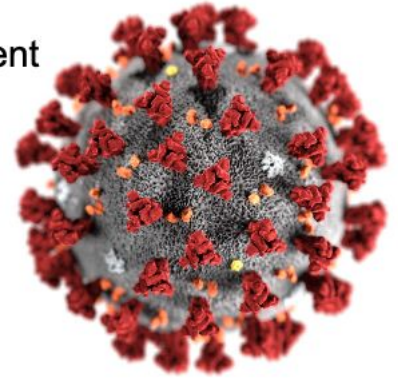


Genius Germ, Anna Dumitriu

New antibiotic resistant pathogens

## GLOBAL HEALTH CHALLENGES

New emergent  
pathogens

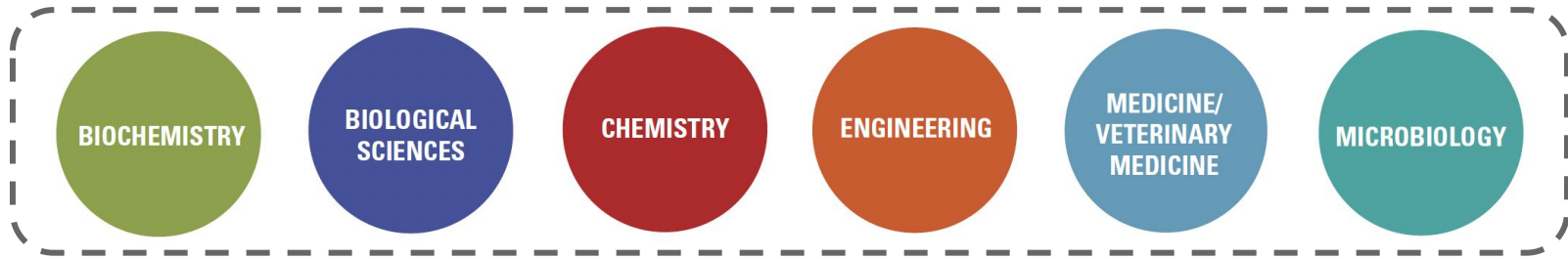


New vectors



*Anopheles gambiae*, photo by Alex Wild

# Integrative Sciences Building and Initiative



Key themes and technologies will serve to connect

# Integrative Sciences Initiative

- 1) A flowering of research based around the key technologies in the building (here we learn from the success of the cores)
- 2) A new undergraduate first year program that unites disciplines (and their examples)
- 3) A new context for industry partnerships (centered on molecules)
- 4) Working groups that pull scholars together from across campus and disciplines (here, learning from GES)



**Director**  
Joshua Pierce



NC STATE University Libraries

# FOCUS

SPRING 2021

## The New Hill Library

Pentair Fellows 2 | Libraries coronavirus response | Personal Librarian Program





**We need to produce more food that is more nutritious despite climates and conditions that are less conducive to agriculture.**



# N.C. Plant Sciences Initiative and Building

**Improving the World**  
Through Plant Science Innovation





# The Average User Will be in 2126/2122



# The Long View Project

Conversations on the Future, Near and Far



**KENAN INSTITUTE**

ENGINEERING, TECHNOLOGY & SCIENCE

**NC STATE UNIVERSITY**

# Two Levels of OUIP

- 1) Direct reports and dotted lines
- 2) **Interdisciplinarity on the campus at large**



# Challenges/Opportunities

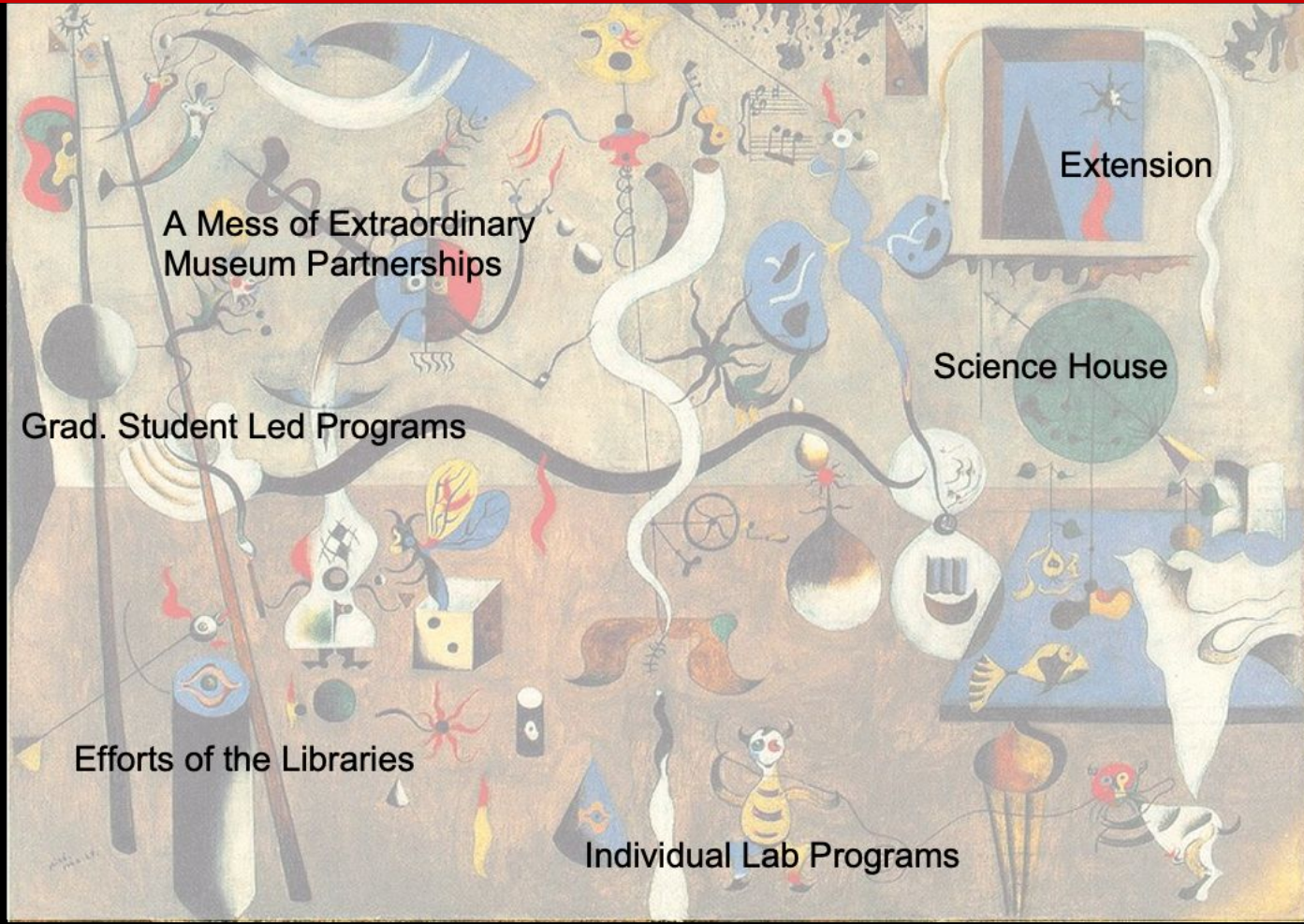
**(in response to listening sessions and the occasional angry email)**

- 1) How do we create streamlined scenarios for interdisciplinary courses and degree programs (multiple paths)? Working with Helen Chen
- 2) How do we (Helen, Rob, Grad. School) create the best scenarios for interdisciplinary graduate programs?
- 3) What forms of cooperation with ORI make the most sense with regard to nucleating interdisciplinary research?
- 4) How do we best incentivize and reward faculty who work interdisciplinarily?
- 5) How do we deal with the radically divergent merit systems in different departments with regard to interdisciplinarity? (e.g., author rules)?
- 6) What other centralized services do we need to best serve interdisciplinarity while also serving colleges?

# Challenges/Opportunities

(in response to listening sessions and the occasional angry email)

- 1) How do we create streamlined scenarios for interdisciplinary courses and degree programs (multiple paths)? Working with Helen Chen
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**8 joint faculty hires (even more adjunct appointments)  
1.6 million visitors projected this year (one of the most visited natural history museums in the world).**



# Director of Science Engagement



North Carolina State University  
Raleigh, NC

Partnering with  
University Libraries



Greg Raschke

Apply on Tarta.ai

Apply directly on Gigzio.com

 Full-time

## Job highlights

Identified by Google from the original job post

## Qualifications

- Bachelor or Masters Degree from an accredited college or university with five to seven years of experience in a relevant field

## Responsibilities

- In addition, they will help connect and expand new programming being developed by individual interdisciplinary programs that report to the Office of University...



# OUIP Units, Initiatives and Programs

Biotechnology  
Program

Coastal  
Resilience and  
Sustainability  
Initiative

Data Science  
Academy

Genetics and  
Genomics  
Academy

Global One  
Health  
Academy

Innovation and  
Entrepreneurship

Integrative  
Sciences  
Initiative and  
Building

Long View

Plant Sciences  
Initiative

Shelton  
Leadership  
Center

University -  
Museum  
Partnership

Wicked  
Problems

TOOLS

PROBLEMS

TOOLS/PROBLEMS

# An Example Synergy (OUIP + OIP) + new Associate Vice Provost



# Monthly meetings

JANUARY							FEBRUARY							MARCH							APRIL						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
26	27	28	29	30	31	1	30	31	1	2	3	4	5	27	28	1	2	3	4	5	27	28	29	30	31	1	2
2	3	4	5	6	7	8	6	7	8	9	10	11	12	6	7	8	9	10	11	12	3	4	5	6	7	8	9
9	10	11	12	13	14	15	13	14	15	16	17	18	19	13	14	15	16	17	18	19	10	11	12	13	14	15	16
16	17	18	19	20	21	22	20	21	22	23	24	25	26	20	21	22	23	24	25	26	17	18	19	20	21	22	23
23	24	25	26	27	28	29	27	28	1	2	3	4	5	27	28	29	30	31	1	2	24	25	26	27	28	29	30
30	31	1	2	3	4	5	6	7	8	9	10	11	12	3	4	5	6	7	8	9	1	2	3	4	5	6	7
MAY							JUNE							JULY							AUGUST						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7	29	30	31	1	2	3	4	26	27	28	29	30	1	2	31	1	2	3	4	5	6
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27
29	30	31	1	2	3	4	26	27	28	29	30	1	2	24	25	26	27	28	29	30	28	29	30	31	1	2	3
5	6	7	8	9	10	11	3	4	5	6	7	8	9	31	1	2	3	4	5	6	4	5	6	7	8	9	10
SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
28	29	30	31	1	2	3	25	26	27	28	29	30	1	30	31	1	2	3	4	5	27	28	29	30	1	2	3
4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10
11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17
18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24
25	26	27	28	29	30	1	23	24	25	26	27	28	29	27	28	29	30	1	2	3	25	26	27	28	29	30	31
2	3	4	5	6	7	8	30	31	1	2	3	4	5	4	5	6	7	8	9	10	1	2	3	4	5	6	7





OUIP Social meetings

# Identifying the Most Sensible Structure



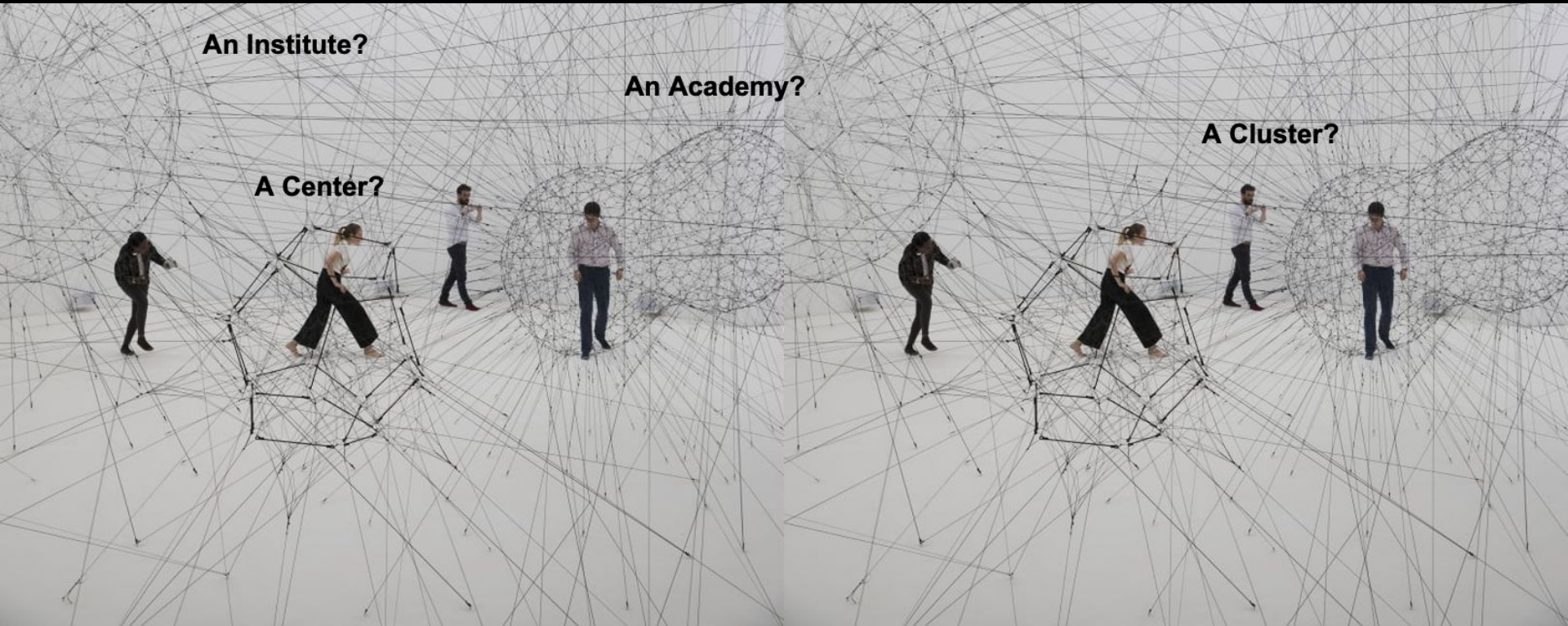


**An Institute?**

**An Academy?**

**A Cluster?**

**A Center?**



# Advisory Committee



Debbie  
Acker



Matthew  
Booker



Jennifer  
Capps



Helen  
Chen



Adrian  
Day



Eric  
Dorfman



Jason  
Delborne



Kimberly  
Granger



Rachel  
Levy



Joshua  
Pierce



Jamila  
Simpson



Cranos  
Williams





Image from BBC News

# Questions