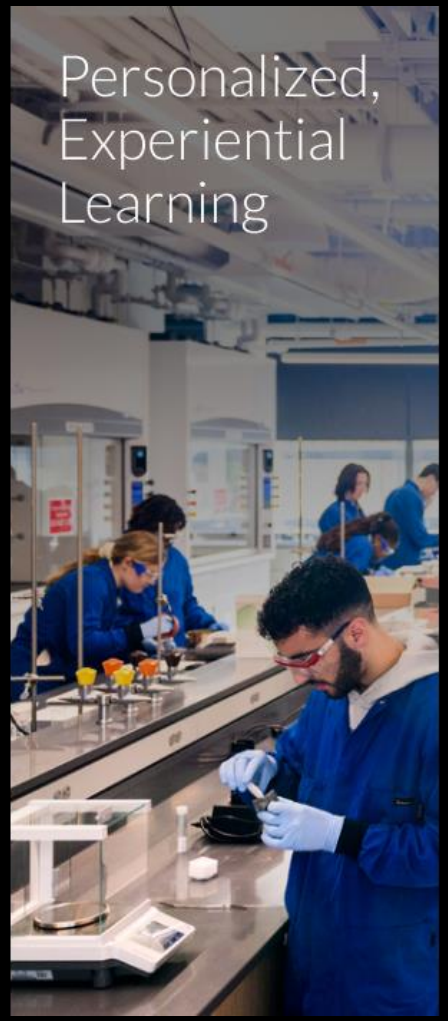
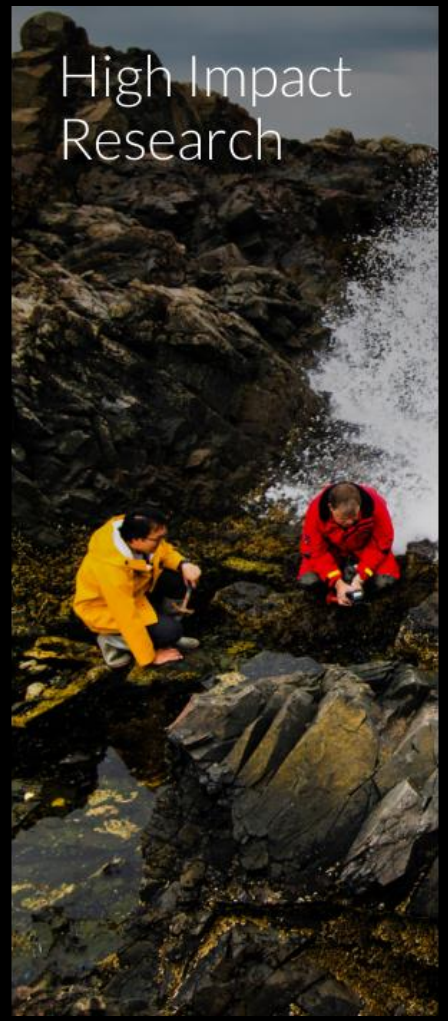
University Update

November 2023

Experience Unleashed





Office of the Provost
Key Appointments

David De Cremer
Dean, DMSB

Kellee Tsai
Dean, CSSH
Arriving Spring 2024

Srinivas T.
Senior Vice Provost,
Institutes, Centers and
Impact Engines

Impact Engine Pipeline

impactengines.northeastern.edu

ADA | AI-Augmented Socially Aware Product Design**

CBH | Cognitive and Brain Health

RWHN | Real World Health Navigator

iSUPER | Intelligent Solutions to Urban Pollutions for Equity and Resilience

eA2M | Diverse Workforce Development

C2C | City to City: Finding Equitable Solutions to Local Policy Problems

HEA(RT) | Healthcare Enabled by AI in Real-Time

C2P | Cradle-to-Prison Pipeline

BookNet | Building a dataset of narrative features

Office of the Provost Reviews

Carmen Sceppa

Gregory Abowd

Office of the Chancellor
Key Appointments and Current Searches

Key Appointment

Jon Relvas
Vice President,
Strategic Partnerships

Searches

Senior Vice Chancellor,
Education Innovation

Vice President,
Learning Enterprise Growth

Innovation Planning and Development Process

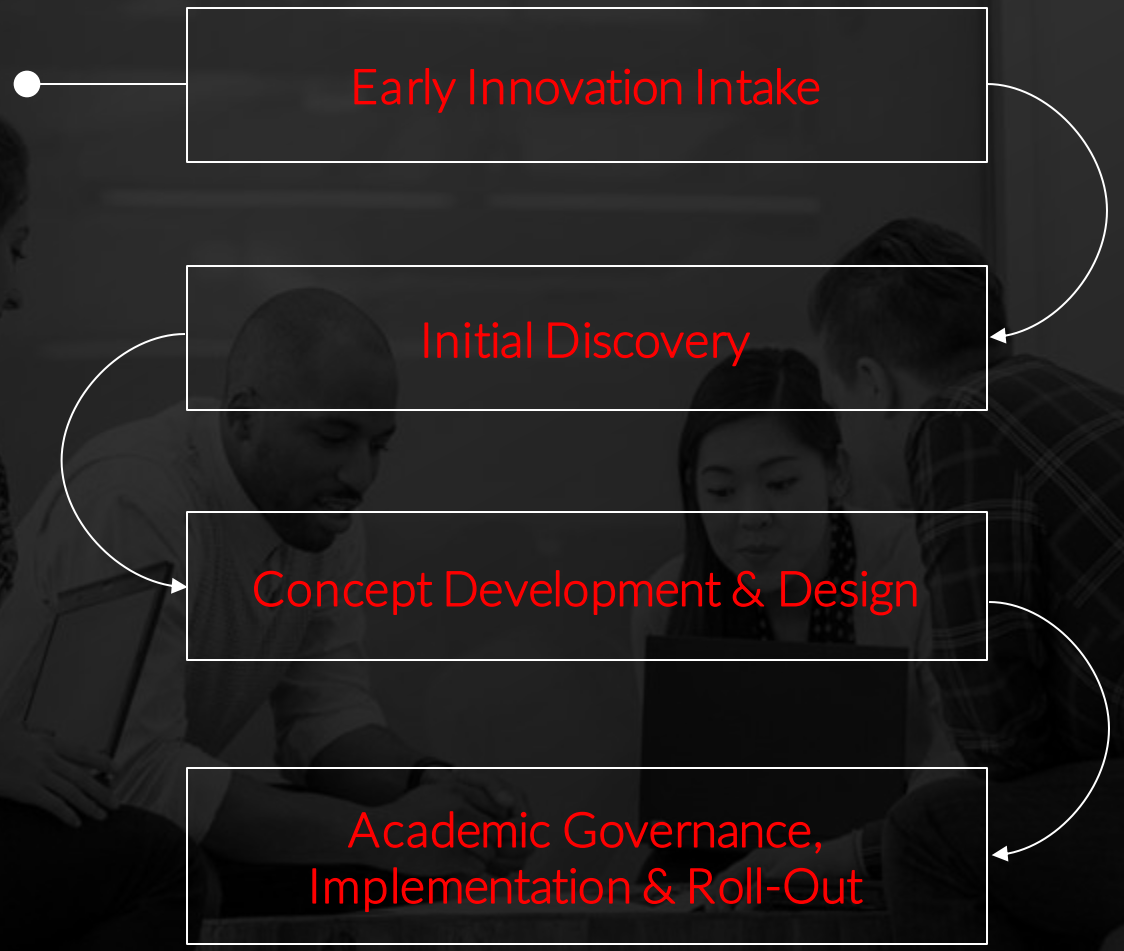
The Innovation Planning and Development Process follows four major phases.

1. Early Innovation Intake:
Collect early proposals and ideas to create a portfolio view of programs and products

2. Initial Discovery:
Refine concepts and conduct landscape analysis

3. Concept Development & Design:
Engage in deep primary and secondary research, create program design blueprints, build governance artifacts and refine the business case

4. Academic Governance, Implementation & Roll-Out:
Enters established governance process and proceed to implementation upon approval



Global Experiential Learning

1558 NU in Students

10 Partner Locations

Czech Republic, France, Germany, Ireland, Italy (Rome and Florence), Northern Ireland, Portugal, Scotland and Spain

1404 Global Scholars

Oakland and Boston

219 London Scholars

1213 Students participated in Dialogue of Civilization

89 Faculty

66 Programs

35 Countries

1120 Students participated on Study Abroad and Exchange

270 Fall

500 Spring

350 Summer

Personalized, Experiential Learning

Co-op Demand Increasing

5181 students on co-op

- Fall 2023 saw the most UG students hired in a recent co-op cycle
- 78% hire rate

5503 students on XN Projects

- 608 projects
- 362 sponsors
- 349 courses

Enrollment Management Key Metrics

96,641

Total Applications

50%

Yield Rate

27%

Underrepresented Minorities

660%

Early Decision Growth since 2015*

*772 in 2015
5872 in 2023

Undergraduate Enrollment

2018

18,029

students

Boston

2023

22,645

students

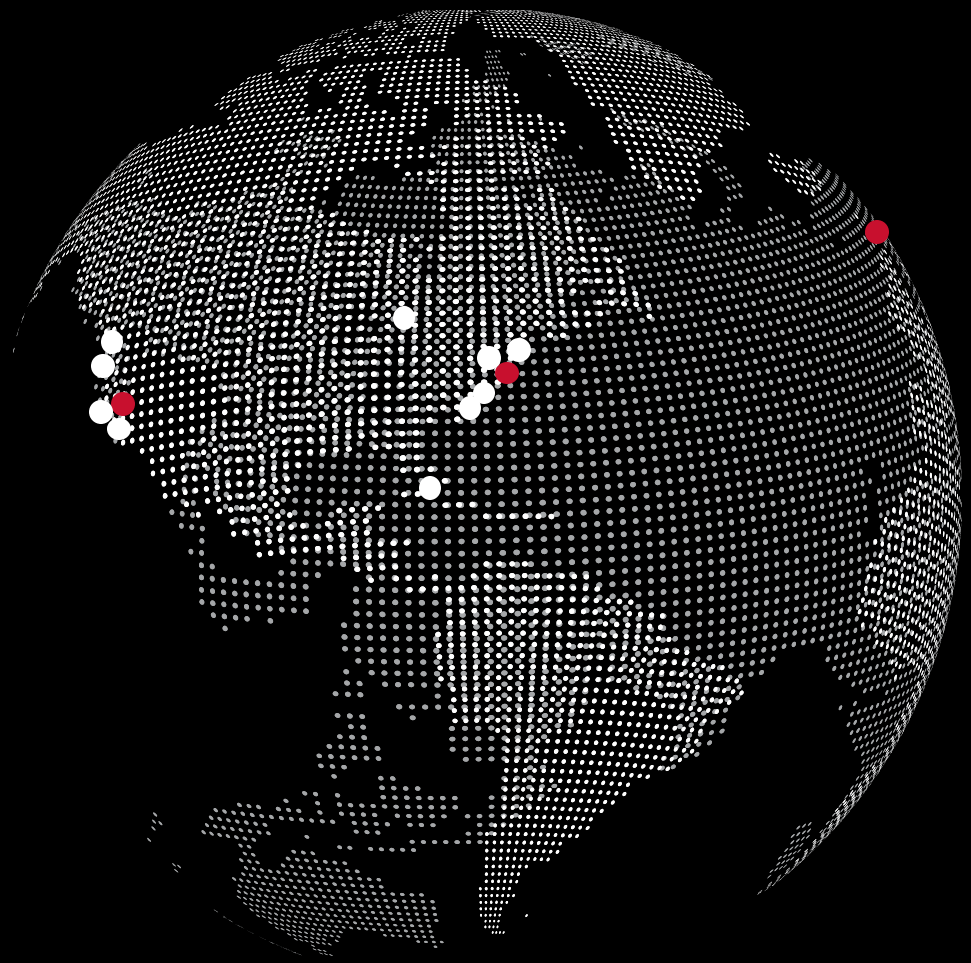
Boston, London, Oakland

Towards a more Inclusive Community

- Received, reviewed and monitored 40 3-year DEI action plans
- Created Communities of Practice across 7 themes
- Drafted “Experience Belonging,” an overarching DEIB strategy
- Worked with Advancement to align emerging DEIB strategy with Capital Campaign priorities
- Launched Inclusive Impact Innovation (I3) Fund; selected 5 projects in first cohort
- Building university-wide DEIB Learning Development program
- Administered 2023 “Many Voices, One Northeastern” climate survey

PhD Education

- **250+** PhD students and Postdocs embedded with our partners
- **90+** Partnerships
- **55+** LEADERs Fellows
- **$5M+** PhD Fellowships vs. $1.5M in FY20
  - ***56*** National Science Foundation (NSF) Graduate Fellowships Awarded
  - ***33*** Active NSF Fellows vs.1 in 2006
- New dual PhD with University College Dublin



Global Campus Overview

Boston

London

Oakland

Arlington

Burlington

Nahant

Charlotte

Miami

Portland

San Jose

Seattle

Toronto

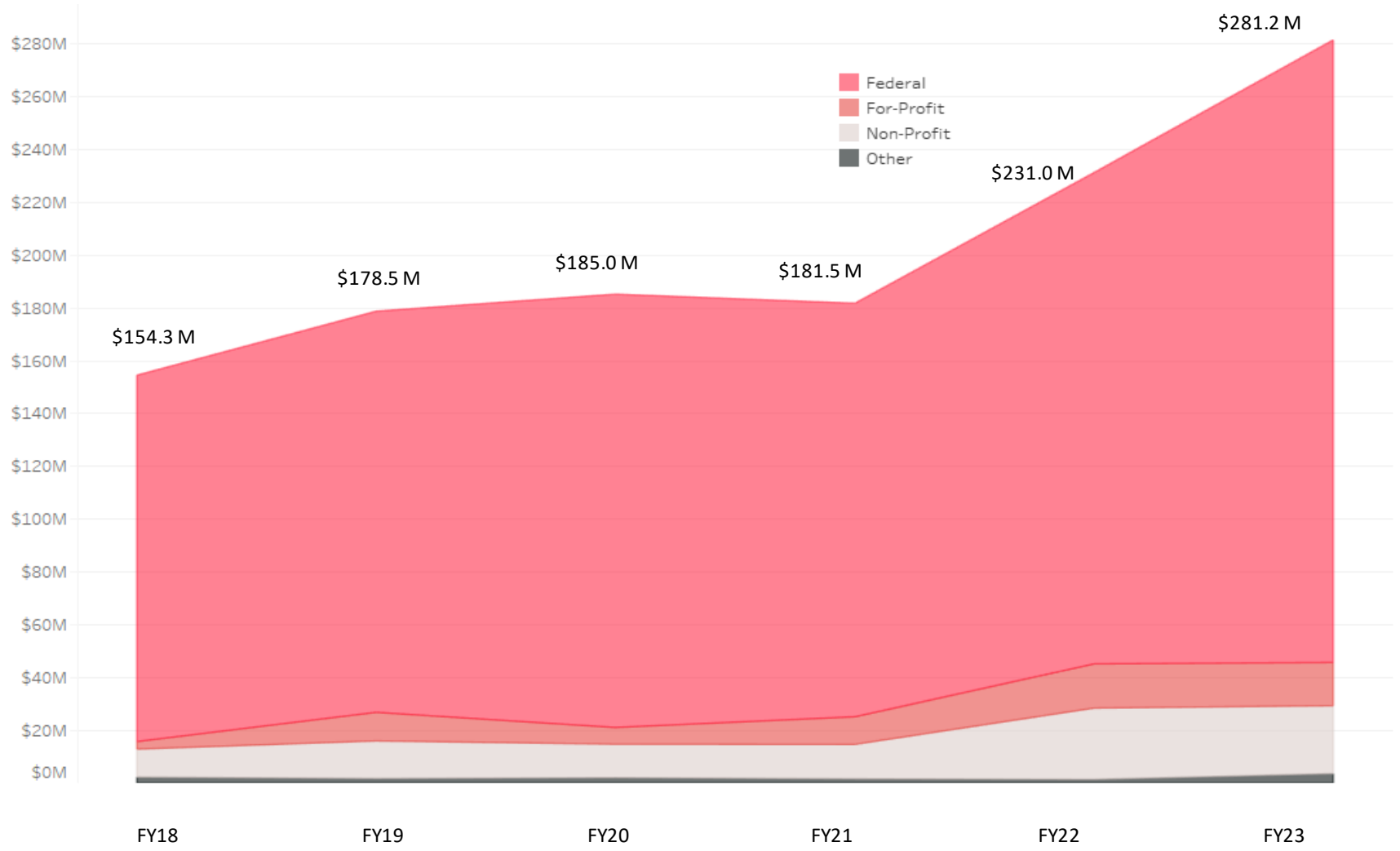
Vancouver

Undergraduate | Lifelong Learning | Research | Entrepreneurship

Awards*** by Agency Type ($M)

Funding Breakdown

Funding Agency	2023
Federal DHHS/NIH	$74M
Federal DOD	$67M
Federal NSF	$62M
Federal Other	$22M
Federal Sub	$11M
Total	$236M



*** Northeastern University + KRI LLC

Source: University Warehouse and KRI LLC Database
* Report does not include ORS Funding
** Data as of: 10/02/2023

Notable Research Award Successes


Alicia Modestino


Yakov Bart


Ozlem Ergun


David Kaeli

NRT-FW-HTF-HDR: PLATFORMS FOR EXCHANGE AND ALLOCATION OF RESOURCES (PEAR)- $3M

National Science Foundation Research Traineeships (NSF NRT)

It is critical that the developers of new digital platform technologies like ride-hailing apps and energy trading platforms no longer simply be trained as engineers and computer scientists, and that policy makers and regulators must understand the ecosystems around digital platforms.

Ozlem Ergun, David Kaeli, Alicia Modestino, Yakov Bart (COE/CSSH/DMSB)


Alessandro Vespignani

EPISTORM: The Center for Advanced Epidemic Analytics and Predictive Modeling Technology (CDC) $17.5M

To develop an innovation center designed to help detect and prepare the United States for the next outbreak of infectious disease, especially in rural areas, almost like a National Weather Service for epidemics and epidemic threats

Alessandro Vespignani, Sam Scarpino, David Lazer, Matteo Chinazzi, Mauricio Santillana, Jared Auclair (COS/Bouve'/Khoury/Roux/IEAI)


Akram Alshawabkeh

ECHO-PROTECT Cohort Study Site in Puerto Rico (NIH) $13.2M

The Environmental influences on Child Health Outcomes (ECHO) Program investigates the roles of a broad range of early exposures on five key child health outcomes among diverse populations. In collaboration with the larger ECHO Consortium, the ECHO-PROTECT cohort based in Puerto Rico will contribute data, biological samples, and knowledge that allow us to better understand how these exposures affect child health outcomes both in Puerto Rico and the U.S. mainland

Akram Alshawabkeh, David Kaeli, Tom Sheahan, Roger Giese, Justin Manjourides, Emily Zimmerman, Phil Brown (COE/Bouve'/CSSH)

Notable Research Award Successes

Carmen Sceppa (Bouve)

NIH U24- Resource Centers for Minority Aging Research National Coordinating Center (RCMARs NCC) (NIH) $620k

Aging is a complex issue that must not be viewed from a single lens. Older adults have the most to lose when the expertise of scientists from diverse backgrounds is absent and the most to gain from an approach that brings all perspectives to bear. The RCMAR National Coordinating Center addresses this issue by developing tools to support new researchers from diverse backgrounds and supporting a network of researchers in making scientific discoveries that eliminate health disparities and improve the health and well-being of older adults.

Earlene Avalon

Francesca Grippa (CPS)

Roxbury "A2M" Workforce Accelerator (Department of Education Community Project) $1M

Aims to provide scholarships and additional support for students in the program that puts them on fast-track learning to obtain a Master's degree at Northeastern University.

David Choffnes (Khoury, counts as FY'24 award)

Mid-scale RI-1 (M1:IP): SPHERE - Security and Privacy Heterogeneous Environment for Reproducible Experimentation (National Science Foundation) $3.4M to NU (sub to USC)

The SPHERE research infrastructure will offer a novel mix of experimentation capabilities, uniquely tailored to the needs of Cybersecurity & Privacy researchers and educators.

HanuSigh (COE)

Cody Dunne (Khoury)

Michelle Borkin (KRI)

NAVSEA Expeditionary Maintenance and Sustainment Program (Navy) - $6M

Programs on Advanced Manufacturing (Army Research Lab) - $6M

Sinan Muftu, Ozan Ozdemir (COE/KRI)

Angel Nieves

Kabria Baumgartner

Uta Poiger

Daniel Cohen

Reckonings: A Local History Platform for the Community-Archivist (Phase II) (Mellon Foundation) $1.5M

A Local History Platform for the Community-Archivist, a project that partners with community organizations to work alongside local BIPOC communities and individual citizens to document, reframe, and reckon with the under-recognized history and culture of their communities in Boston and in the New England region

Angel Nieves, Uta Poiger, Kabria Baumgartner, Daniel Cohen (CSSH/Library)

DM

Notable Research Award Successes

Kaushik Chowdhury

Cognitive Distributed Sensing in Congested Radio Frequency Environments (FREEDOM)

(Army Research Lab) - $13.05M

Deniz Erdogmus, Kaushik Chowdhury, David Luzzi, Josep Jornet, Tommaso Melodia, Matteo Rinaldi, Milica Stojanovic, Pau Closas, Edwin Marengo, Gunar Schirner, David Rosen, Lili Su, Rifat Sipahi, Laurent Lessard, Aanjhan Ranganathan (KRI/COE/Khoury)

Amanda Welsh (CPS)

Hiring Managers and Non-Degree Credentials: Motivations, Barriers, and the Business Case: Beyond the HR Function (Walmart) $500k

Lee Makowski (COE)

Fibrillar polymorphs in human brain tissue (NIH) $2.1M

Working with neuropathologists from MGH, his research group will be using x-ray scanning microscopy to observe changes in the molecular structure of amyloid plaques and neurofibrillary tangles during disease with the goal of better understanding the molecular mechanisms underlying Alzheimer's disease.

Milica Stojanovic

Gunar Schirner

Counter-UAS technologies- CUCKOO (ONR, sub from UMKC) - $1.7M

Gunar Schirner, Aanjhan Ranganathan, Pau Closas, Milica Stojanovic, Michael Allshouse, Vince Harris (COE/Khoury/KRI)

Salvatore D'Oro (COE)

TENORAN: Automated and fine-grained energy-efficiency profiling of Open RAN systems via high-fidelity standardized testing scenarios (Dept Commerce NTIA) $2M

The project will investigate new approaches to improve the energy efficiency of Open RAN systems.

Byron Wallace (Khoury)

Collaborative Research: RI: Medium: Expert-in-the-Loop Neural Summarization for Consequential Domains (NSF) $600k

And

Targeted Neural Text Summarization of Electronic Medical Records to Improve Imaging Diagnostics (NIH NLM) - $1.2M

DM

New Collaborative & Convergent Research Awards

Alisa Lincoln (CSSH/Bouve)

NIH Clinical and Translational Science Institute -- $937k

Dr. Lincoln will lead the community-academic partnership efforts focused on mental health and well-being, and support research in this area.

Carlos Cuevas

Understanding the Physical and Psychological Health and Wellness Needs of Minor Sex Trafficking Victims (NIJ) - $985k

Study of the short- and long-term physical and psychological consequences of minor sex trafficking in the U.S.

Carlos Cuevas, Amy Farrell, Alisa Lincoln (CSSH/Bouve)

Suzanne Garverich

Beth Molnar

Biology of Trauma Community Engagement Core (NIH center to Broad Institute)- $429k

Develop and implement strategies to increase community engagement in research.

Alisa Lincoln, Beth Molnar, Suzanne Garverich, Amantia Ametaj (Bouve/CSSH)

Mario Hernandez

Liza Weinstein

Geography and Justice in the Public Humanities (NEH)- $175k

Liza Weinstein, Angel Nieves, Mario Hernandez (CSSH/Mills)

Amy Farrell

Catrina Jaime

Evaluating the ACE Resource Network: Sacramento Initiative-- $598k (Anonymous donor)

Development and implementation of a community-partnered evaluation of the ACE Resource Network Sacramento Initiative

Alisa Lincoln, Amy Farrell, Catrina Jaime, Suzanne Garverich, Kate Hazen (Bouve/CSSH/Mills)

New Collaborative & Convergent Research Awards

Archiving the Black Web- $400k,

Andrew W. Mellon Foundation

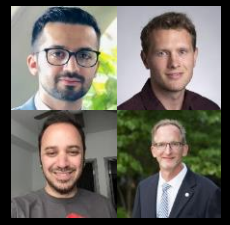
Project to develop a continuing education training program in web archiving that is aimed at memory workers collecting archival content documenting Black life, history, and culture.

Meredith Clark (CAMD)

Advancing experimental video storytelling inside local TV newsrooms through over-the-top (OTT) digital platforms to engage new audiences and strengthen democracy - $643k

Stanton Foundation

Mike Beaudet (CAMD)



Accelerating Skill Acquisition in Complex Psychomotor Tasks via an Intelligent Extended Reality Tutoring System -$850k,

National Science Foundation

This project will develop a new generation of intelligent tutoring systems that combine extended reality (XR), artificial intelligence (AI) and Internet-of-things (IoT) technologies to support training and assessment of complex skills required by modern, highly automated manufacturing facilities

Mohsen Moghaddam, Casper Harteveld, Mehmet Kosa, Kemi Jona (COE/CAMD/Chancellor's Office)

Gamma-Music Based Intervention for Mild Alzheimer's Disease - $122k,

National Institutes of Health

By bridging the gap between neurostimulation and behavioral intervention by combining music therapy with gamma- band neurostimulation, the present project aims to find a sustainable intervention that delays the progression of AD.

Psyche Loui (CAMD) in partnership/sub to Oscilloscape, LLC

Impact of federal policies on disparities at the end of life care among nursing home residents with Alzheimer's diseases or related dementia - $586k - NIH

Project to examine the effects of IMPACT on racial disparities in hospice care in NH residents with ADRD, and to characterize subgroups that are most likely to experience inadequate hospice care.

Ning Zhang (Bouve')

SCH: Enhancing Automated Prediction of Challenging Behavior in Individuals with Autism Using Biosensor Data and Machine Learning - $300k,

NIH (NCI, NBLM, OD)

Matthew Goodwin (Bouve')

Collaborative Research: Towards Task-Agnostic and Device-Agnostic Ankle Exoskeleton Control for Mobility Enhancement - $500k,

National Science Foundation

This project aims to revolutionize the field of lower limb exoskeletons by leveraging recent advancements in wearable sensing and machine learning.

Max Shepherd (Bouve')

Engineering Design and System Engineering- $100k,

National Science Foundation

This project aims to revolutionize the field of lower limb exoskeletons by leveraging recent advancements in wearable sensing and machine learning.

Tucker Marion (DMSB)

DM

A successful year for NSF CAREERs: 5 new FY23 Awards, 2 transfers

CAREER: Explorable Formal Models of Privacy Policies and Regulations, $223k
Chris Martens (CAMD)

CAREER: in situ Polymer Gelation in Confined Flows, $435k
Sara Hashmi (COE)

CAREER: Sedimentary signatures of large riverine floods to constrain risk and build resiliency, $460k
Samuel Muñoz (COS/COE)

CAREER: Securing Reconfigurable Hardware Accelerator for Machine Learning: Threats and Defenses, $112k
Xiaolin Xu (COE)

CAREER: Quantum defects in two-dimensional materials by local-symmetry-guided data-driven design, $195k (transfer)
Qimin Yan (COS)

CAREER: Enabling Users to Audit the Integrity of Their Cloud Services, $128k
Cheng Tan (Khoury)

CAREER: Resolving Uncertainty Visualization Reasoning Errors with Mental Model Design and Training, $86k (transfer)
Lace Padilla (Khoury/Mills)

DM

Early Career Winners from NIH, DOD, & other funders

Schmidt Futures AI 2050 Early Career Fellow- $300k
Funding bold, ambitious, multi-disciplinary AI research
Sina Fazelpour (CSSH)

Inter-American Photochemical Society Young Investigator Award

Camille Dreyfus Teacher-Scholar Award
Steven Lopez (COS)

Assured Wireless Operations Through Dynamic Data-Driven Open Radio Access Systems (AFOSR YIP)
Project to examine the algorithmic foundations and theoretical performance bounds of the dynamic, data-driven wireless systems of the future
Polymorphic Wireless Computing for Ultra-Wideband 6G Spectrum Dominance (ONR YIP)
Project on next-generation computing strategies that could help facilitate the technological leap needed to enable 6G wireless networks
Francesco Restuccia (COE)

Nano-Watt Power Machine-Learning Hardware using Precision Analog Computing.(DARPA YIP)
Project aims to realize ultra-low power (nano-watt level), analog computing, machine-learning (ML) hardware for applications at the edge that are otherwise not possible due to power consumption
Aatmesh Shrivastava (COE)

Cryogenically Enabled Ultrabroadband THz System-on-a-Chip (ONR YIP)
Project developing a small, integrated terahertz (THz) system to harness the frequency's enormous power in a more usable size
Xufeng Zhang (COE)

Predicting language and literacy growth in children with ASD using statistical learning
NIH high priority R56 - $727k
The study will yield critical knowledge for developing diagnostic tools to characterize implicit learning ability in young children with ASD.
Zhenghan Qi (Bouve')

Physiological and Developmental Role of Bacterial Ser/Thr Kinases
NIH R35 MIRA $1.9M
Project is focused on how bacteria develop resistance at the cellular level—knowledge that will be crucial to the development of more effective antibiotics
Elizabeth Libby (COE)

Implications of hospital-physician integration for urban-rural equity in access, care coordination, and outcomes
AHRQ/NIH K01 - $148k
Research focuses on how system-level integration of providers affects quality and equity
Brady Post (Bouve')

Implications of hospital-physician integration for urban-rural equity in access, care coordination, and outcomes
NIH Trailblazer - $628k
Interdisciplinary work to cure or improve diseases by modulating microbial metabolism in the gut.
Ben Woolston, Abigail Koppes, Ryan Koppes, Rebecca Carrier (COE)

Distributed Coordination of Autonomous Swarms with Limited or Absent Communication and Intermittent Data (ONR YIP)
Project to develop algorithms for non-verbal communication between unmanned, autonomous Naval ships
Sze Zheng Yong (COE)

Forced Labor in Supply Chains Data Hub (Laudes Foundation) - $275k
Project to use supply chain vulnerability theory as a framework to identify key vulnerabilities
Shawn Bhimani (DMSB)

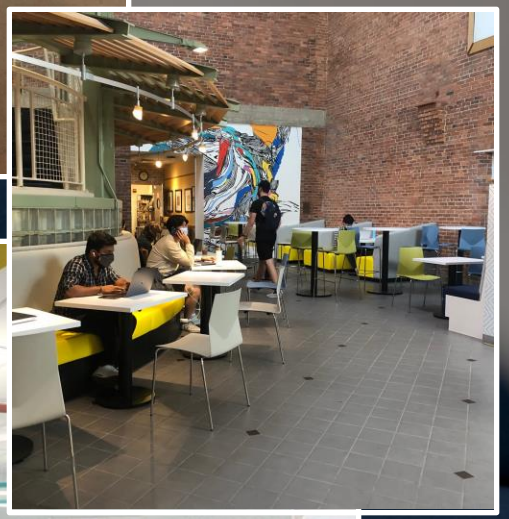
DM

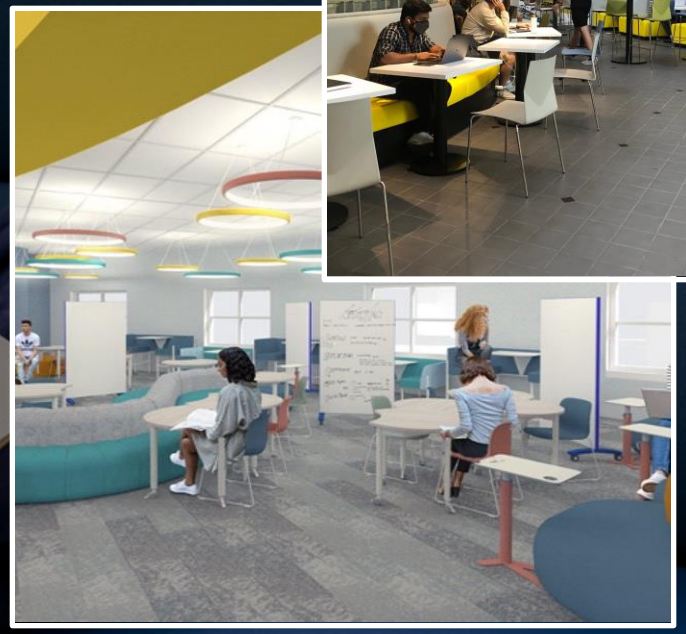
EXP

- **357,000** gross square feet
- **53** offices, **15** research neighborhoods
- **6** classrooms, **10** teaching labs
- **14,700** square feet makerspace

Study Spaces

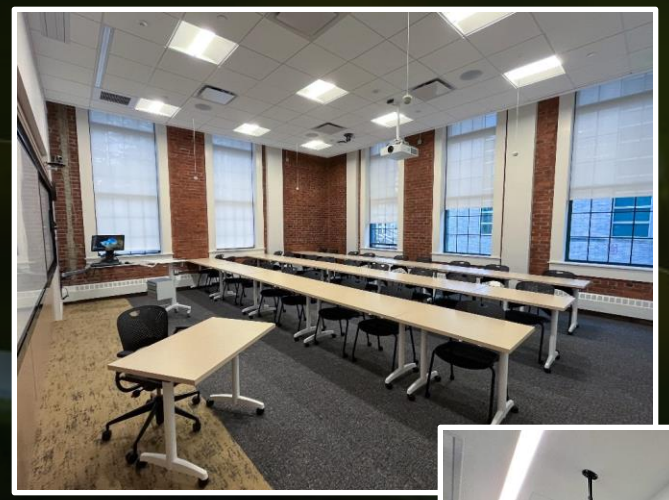
- Over **36,000 sf** of space was allocated for bookable student study space
- New flexible furniture is being added to **8 lobby locations**
- Flexible furnishings allow for various of sizes of groups and types of study
- Spaces are bookable via *Robin* platform

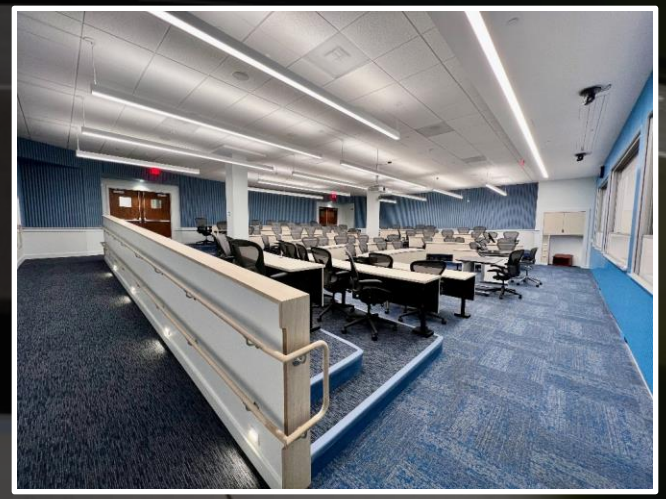




Classrooms

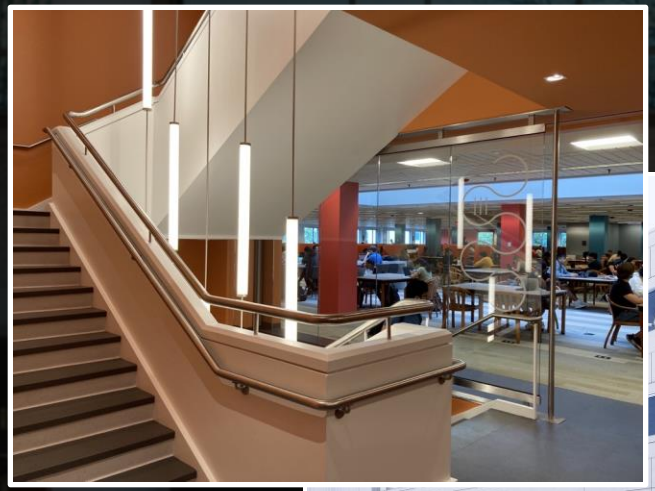
- **3** new classrooms were added on the Boston campus, converted from office space
- **13** additional classroom renovations in Boston
- **11** additional classrooms brought online in Oakland, ten existing rooms refreshed
- **22** Boston and **23** Oakland teaching spaces received Global Learning System AV technology



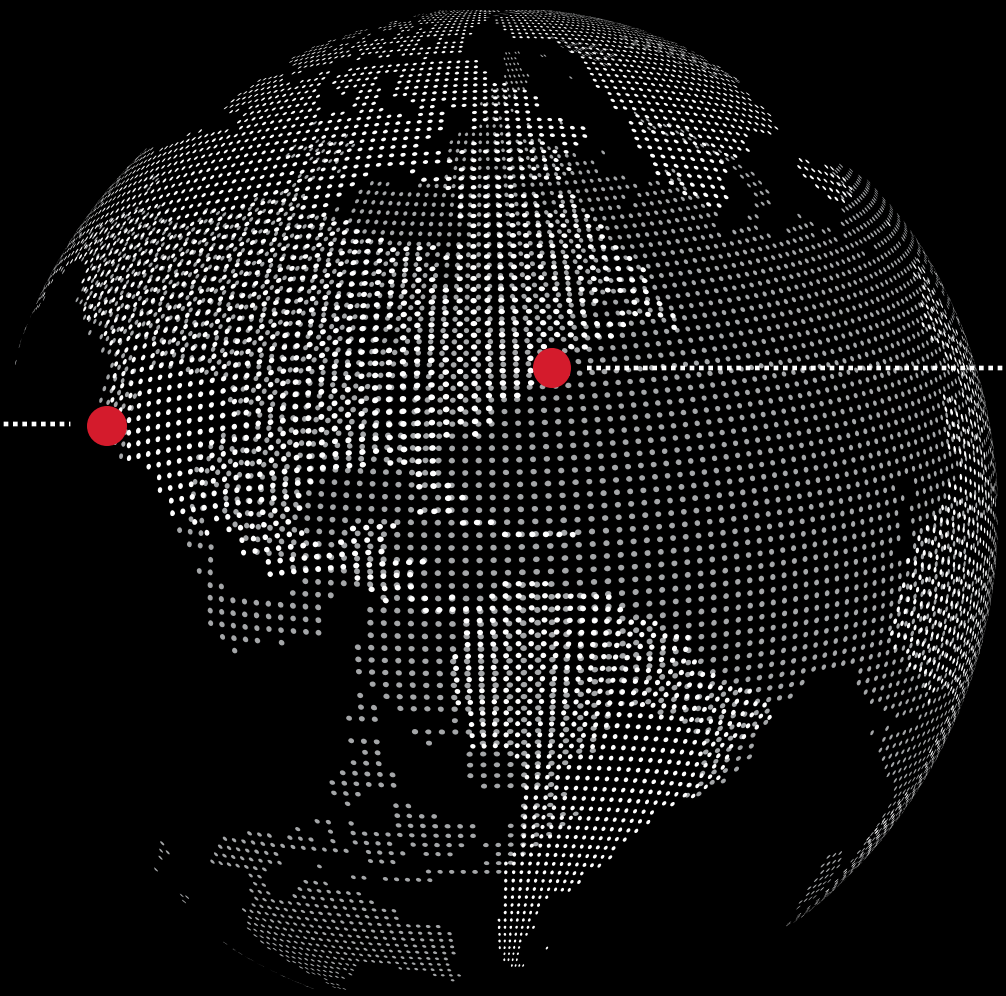


Snell Library

- Phased Renovation of 140,000 SF completing in Fall 2024
- Level 4 and basement scheduled to open October 2023 with new student study space, Archives and general collection.
- Level 1 currently under construction creating new entry and collaboration spaces.
- L2 and L3 Create “neighborhoods” co-locating related resources that highlight the study of Humanics. Includes makerspace and tech areas.



Faculty Profile – Fall 2023



Oakland Campus

70 T/TT/FTNTT

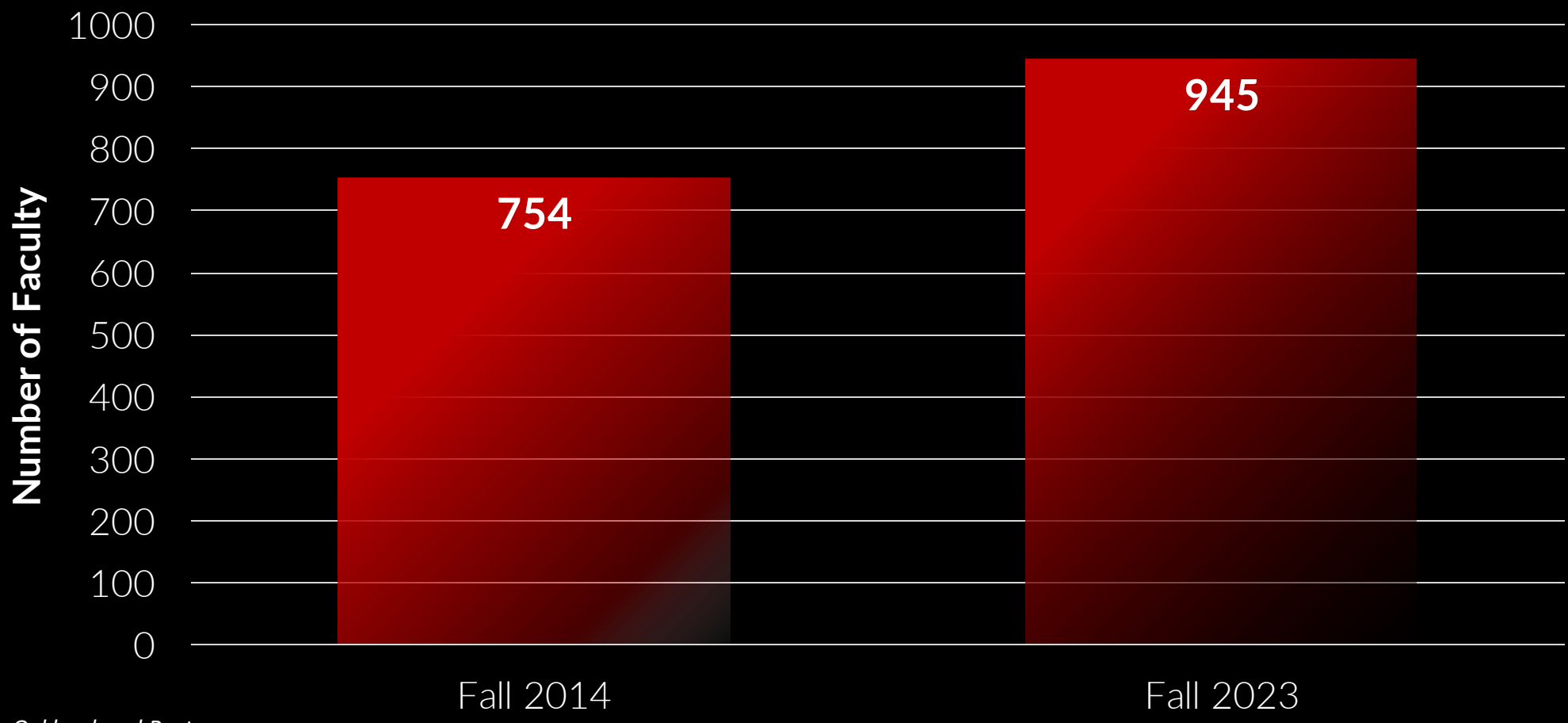
9 New Faculty for Fall 2023

Boston Campus

1,972 T/TT/FTNTT

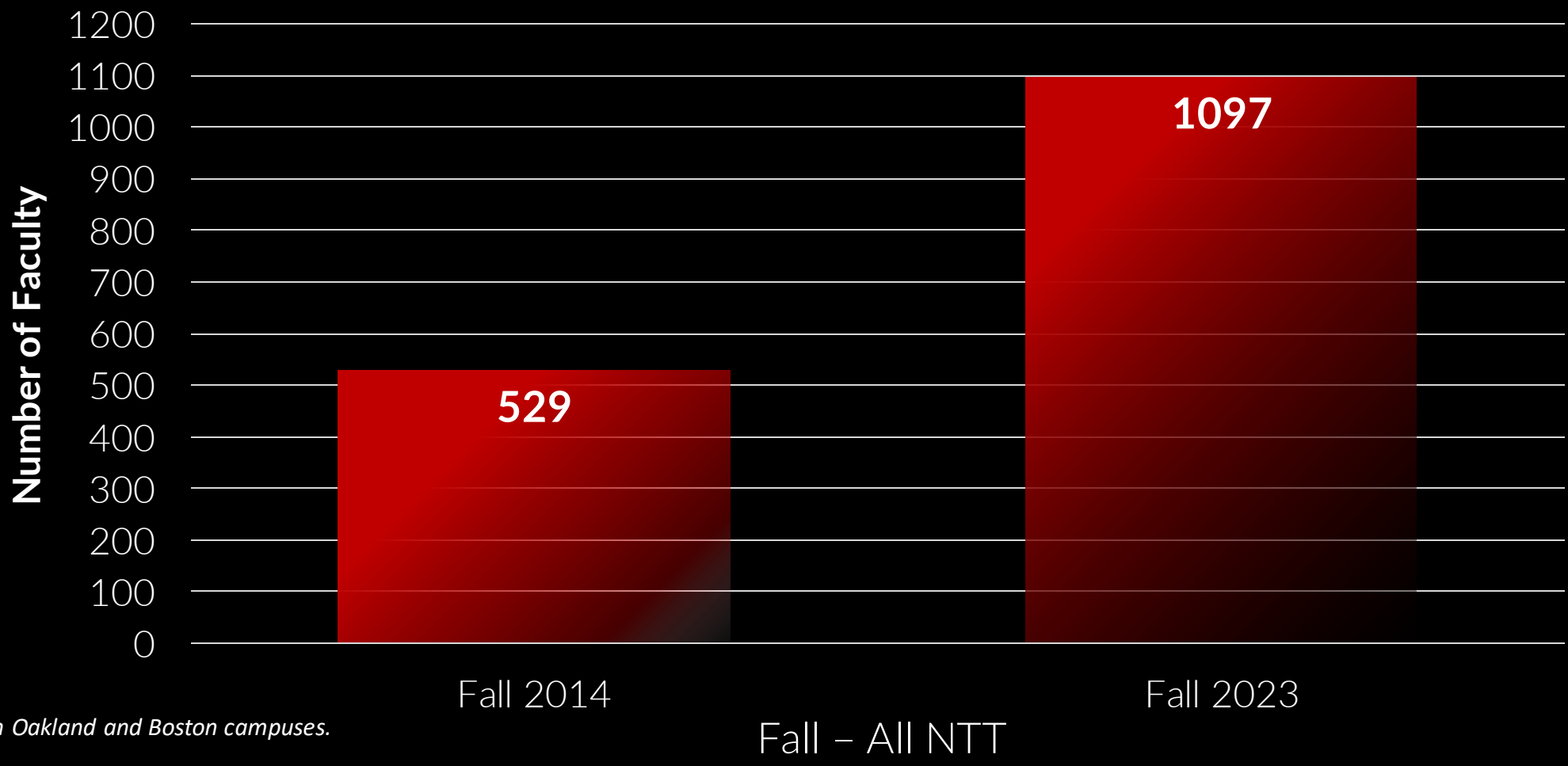
179 New Faculty for Fall 2023

Faculty: Full-Time T&TT Faculty Growth



Includes both Oakland and Boston campuses.

Faculty: Full-Time NTT Faculty Growth



Includes both Oakland and Boston campuses.


Thank you!