

# Industry-Academia Partnerships to Enhance Supply Chain Security

Dr. Nikos Passas

School of Criminology and Criminal Justice

**Northeastern  
University**





Northeastern  
University

# 2022 At a glance

Note: All statistical data is for the 2021-2022 academic year unless otherwise noted.

## Global learning

# 149

countries where Northeastern has provided experiential learning opportunities, **up from 60** in 2006

# 14 campuses

in the U.S., U.K., and Canada

Boston\*

Arlington, VA

Burlington, MA

Charlotte, NC

London\*

Miami

Nahant, MA

Oakland, CA\*

Portland, ME

San Francisco

San Jose, CA

Seattle

Toronto

Vancouver

\*flagship campuses offering the full undergraduate student-life experience,

# 2,400+

partners in our Experiential Network have provided **13,000 learners** at all levels of study with **3,000 real-world projects** since 2015

# 19,957

students enrolled in graduate degree and certificate programs

# 12,127

co-op placements, **up from 6,301** in 2006–2007

# 2,934

co-op employers worldwide

## Student admissions

91,000

undergraduate applications for fall 2022, **7% acceptance rate**

1487

mean two-part SAT score for fall 2022 freshmen, **up from 1230** in 2006

77%

of fall 2022 freshmen in top 10% of their high school class, **up from 38%** in 2006

\$390.4M

in financial aid grants for 2022-2023, **up from \$121.4M** in 2006-2007

## Student life

24%

increase in underrepresented\* minority students since 2020

71%

increase in freshmen underrepresented\* minority students since 2006

541

campus organizations with **28,735 student participants**

3

Northeastern pitchers selected in the Major League Baseball draft

20%

increase in freshmen underrepresented\* minority students since 2020

16,652

students, or **34% of the student body**, are international, fall 2022

7

Northeastern ice hockey players selected in the NHL draft, the most of any NCAA school

*\*Underrepresented minority students include Hispanic/Latino, Black/African American, American Indian or Alaska native, and native Hawaiian or Pacific islander*



# \$230.7M

in external research awards, a **374% increase** since 2006

# 28

faculty earned awards for early career achievement, including **13** National Science Foundation CAREER Awards

# 96%

increase in applications to research PhD programs since 2010

# \$176M

in research expenditures from external research awards, **up 244%** since 2006

# 26

PhD students have NSF Graduate Fellowships, **up from 1** in 2006

# 863

faculty hires (tenured and tenure-track) since 2006, including **61 for 2021-2022**

# \$1.3B

is the ambitious goal of **Experience Powered by Northeastern**, a fundraising campaign launched in fall 2022 to garner philanthropy in the next five years for six priorities:

- Student Opportunities
- Faculty Excellence
- Research
- Diverse Connections
- Entrepreneurship
- Global Exploration

# \$99.2M

raised in gifts and pledges, FY 2021-2022

# 23,069

individual donors from **72 countries**, including **10,288 first-time donors**

# 634

corporations and foundations made **\$63M** in gifts and pledges

## Outcomes

93%

of graduates are employed full time or enrolled in graduate school **within 9 months of graduation** (multi-year average since 2006)

91.2%

six-year graduation rate for 2016 entering freshmen

91%

of employed 2021 graduates are in jobs related to their major

## Alumni network

300,000+

alumni in **181 countries**

49

Northeastern communities worldwide

11,500+

participants from **149 countries** engaged in **337 programs and events**

*U.S. News & World Report*  
National Rankings

**Top 50 university**  
10 consecutive years

**44**  
ranking, 2023

**1**  
ranking for internships in 2023

Northeastern University

# Ways to Engage

---

- Students
- Faculty
- Researchers



# Experiential Learning – The cornerstone of our educational model

---

- For over 100 years, Northeastern has been a world leader in cooperative education (co-op)
- Alternating semesters of academic study with periods of full-time work enable students to transform work across academic and professional contexts.
- Co-op helps students explore or refine potential career paths, make valuable industry connections, broaden perspectives, and acquire the skills and knowledge needed to succeed. This integrated experience makes them highly competitive thanks to relevant skills, prior practice and employer input.
- Presence in all seven continents allowing co-op employer partners and students to gain early access in tapping the competitive job market on a global stage. Northeastern's network yields co-op opportunities across all industries and sectors: 149 countries and 2934 partners



# Co-op Structure

---

- 6-month co-op cycles
- Up to 3 co-ops
- Professional Pre-Co-op Class
- Assigned Co-op Coordinator
- Support from supervisor/mentor
- Reflection and evaluation





# Industry/Employer Benefits

---

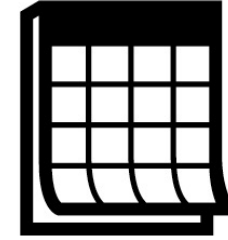
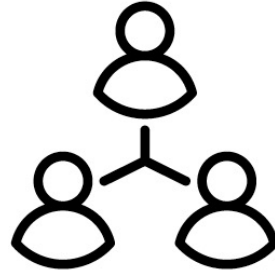
- A simple, cost-effective way to meet hiring needs
- Flexible co-op time frames
- Talented students contribute to your workplace or lab
- Opportunity to assess students, do background checks where needed, and create a pipeline for future full-time hires
- Diversify your workforce and get a fresh perspective and enthusiasm



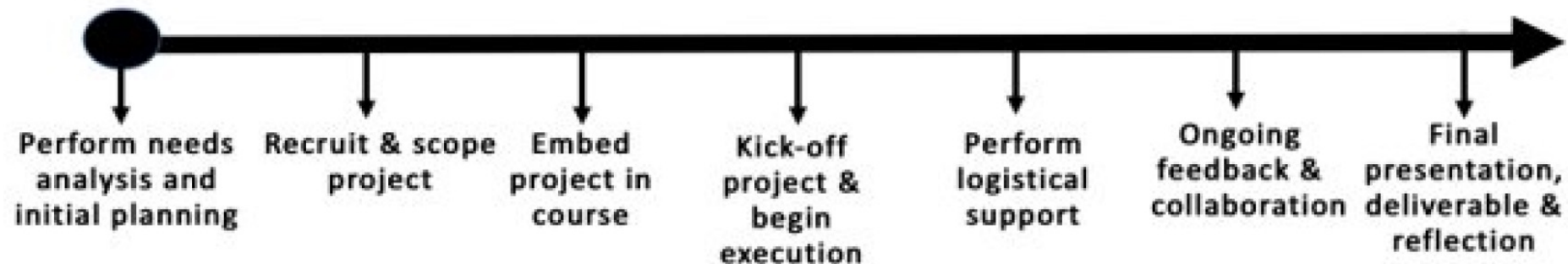
# Involvement in Educational and Research Programs I

- Coop and internships – opportunity to train and test future employees in supply chain security
- Custom Talent Pipelines: Customized full-time and internship strategies that will connect you to NU students and help brand your organization on campus, enhancing your full-time talent hiring needs
- Experiential network (XN model): Project-based experiences where industry leverages graduate and u/graduate students to complete short-term projects virtually, giving students a chance to solve real-time business challenges
- Professional Studies, Training and Certificate programs
- Partner with faculty to design curriculum and experiential opportunities for students that address the unique challenges of your company and industry

# The XN Model



- All short-term virtual projects
- 6-8 week project durations
- Students dedicate 6-8 hours per week
- Faculty - sponsor partnership



# Practical Steps

---

- Identify your company needs and areas you would like to engage with NU
- For student projects: complete a job description or an XN project scope
- Email your contact and schedule a call with one of us
- Discuss advertisement options for your company and jobs



# Involvement in Educational and Research Programs II

---

- Experiential PhD
- Fund students (Scholarships and Fellowships)
- Partner for data analysis, technological innovation, legal reform, policy development
- Sponsor research (Grants and Gifts for basic and applied research, policy development, evaluation projects)
- Help organize, participate in or finance conferences, workshops, publications, Dialogues of civilizations programs
- Endow a Chair
- Support a Center for Research, Policy, Outreach, Impact





# Experiential PhD is Built on Partnerships



To Industry +

**PhDs & Postdocs to Partner:**

- LEADERS
- Experiential Fellowships
- STARS Fellowships

From Industry +

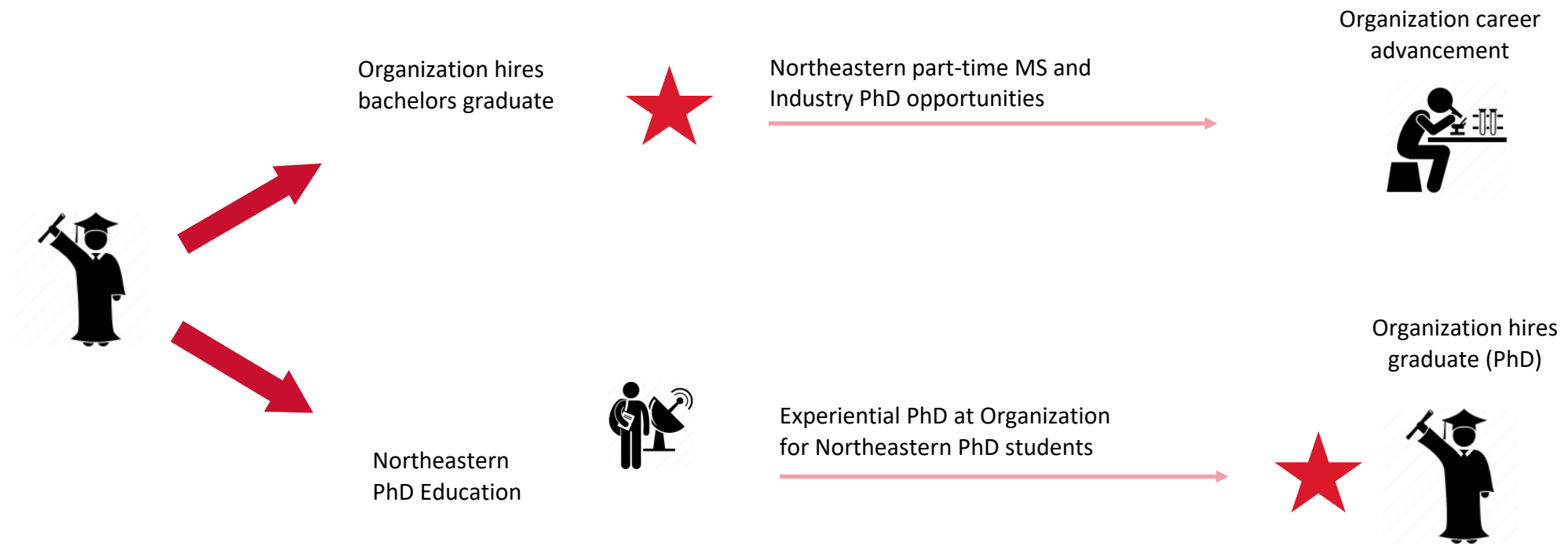
**Employees to PhD Program:**

- Industry PhD

# PHD ENGAGEMENT PATHWAYS ENABLE CUSTOMIZED PHD

PhD Engagement Pathway	Eligibility	Description	Value to Partner
Industry PhD	Employee who is a Northeastern PhD student	Employee does PhD research at Organization site(s)	PhD student co-mentored by Organization & Northeastern scientists; employee development
Experiential PhD Fellowship	Admitted Northeastern PhD student	PhD student does PhD research at Organization site(s), can be 2 – 5 years	PhD student co-advised by Organization & Northeastern scientists; advances Organization research
STARS Recruitment Fellowship	Admitted Northeastern PhD student	2-year recruitment fellowship to diversify PhD cohorts	Organization – STARS Fellowships (funded by Organization)
LEADERS Fellowship	Enrolled Northeastern PhD student	Flexible internship at Organization site(s) supported in professional development training by NU; varies from 4 months (40 hours / week) to 12 months (20 hours / week)	Ability to engage PhD students on short-term projects that require advanced skills; preview too soon to graduate PhD students

# ADAPTIVE PATHWAYS TO DEVELOPING THE FUTURE WORKFORCE



1. Partnership in PhD Education
2. Customized Experiential PhD pathways to diversify workforce

# CUSTOMIZED EXPERIENTIAL PHD PATHWAYS TO WORKFORCE DEVELOPMENT

Customized PhD engagement pathways maximize opportunity to diversify PhD hires, either as full-time employees at Organization (a) or as full-time PhD students at Northeastern (b). Organization may choose to offer fellowships to NU PhD students interested in LEADERS and in Experiential PhD Fellowships where they perform research at one or more Organization sites as shown in (c) through (h).

	PhD Year 1	PhD Year 2	PhD Year 3	PhD Year 4	PhD Year 5
a)	Employee pursues Northeastern PhD via Industry PhD				
b)	Experiential PhD Fellowship				
c)	STARS Recruitment Fellowship		Experiential PhD Fellowship		
d)	STARS Recruitment Fellowship		LEADERS @ Organization	Experiential PhD Fellowship	
e)	STARS Recruitment Fellowship		LEADERS @ Organization	Experiential PhD Fellowship	
f)	Alternate NU Funding	LEADERS @ Organization	Experiential PhD Fellowship		
g)	Alternate NU Funding	Alternate NU Funding	LEADERS @ Organization	Experiential PhD Fellowship	
h)	STARS Recruitment Fellowship		Alternate NU Funding	LEADERS @ Organization	Alternate NU Funding

# Example: Medical Supply Chains

---

- NSF Funding for research into detection and disruption of illegal supply chains
- Consortium of universities, industry, government agencies, international organizations, NGOs
- Multi-disciplinary team: law, criminology, computer sciences, engineering, pharmaceutical sciences
  - Understand illicit flows and criminal networks
  - Big data analytics (clustering of illegal online sellers, visualization, tool for detection, investigative, mitigation and due diligence efforts)
  - Authentication of product technologies
  - Improve regulatory framework and national/international controls
  - Enhance integrity of supply chains and quality of medicines
  - Fighting corruption in health care
- Growing network and capabilities
  - Partnerships in Europe, Africa, Asia, M. East, Americas
  - Global Institute for research, innovation, standardization, education, awareness raising, capacity building





# Explore the ways you can make your impact:



Annual Giving



Endowment Support



Family Philanthropy  
Program



International Advancement



Gift Planning



Corporations and  
Foundations



Women Who Empower



Donor Recognition  
Societies

# Key message

---

- We are not trying to sell you what we have
- We listen, partner and produce what you need
- We do not compete
- We seek to advance knowledge and create shared value



# Resources

---

- <https://careers.northeastern.edu/cooperative-education/>
- <https://careers.northeastern.edu/employers/>
- <https://careers.northeastern.edu/experiential-network/>
- <https://careers.northeastern.edu/employers/>
- <https://phd.northeastern.edu/network/overview/>
- <https://phd.northeastern.edu/network/experientialphd/>
- <https://phd.northeastern.edu/stars/>
- <https://phd.northeastern.edu/leaders/>
- <https://advancement.northeastern.edu/giving/>
- <https://giving.northeastern.edu/>
- Co-op and XN contacts:
  - Aspa Papanastasiou, Associate Director, Global Partnerships, Employer Engagement and Career Design: [a.papanastasiou@northeastern.edu](mailto:a.papanastasiou@northeastern.edu)
  - Laura Engels, Director, XN Projects. Employer Engagement and Career Design: [l.engels@northeastern.edu](mailto:l.engels@northeastern.edu)
- Prof. Nikos Passas contact:
  - email: [n.passas@northeastern.edu](mailto:n.passas@northeastern.edu)
  - Phone: 617-373-4309

