

# GRADUATE PROGRAM IN APPLIED PHYSICS

## Overview

Northwestern

Applied Physics

McCORMICK SCHOOL  
OF ENGINEERING

WEINBERG COLLEGE  
OF ARTS & SCIENCES

N

# Affiliation: 2 Schools and 6 Departments

WEINBERG COLLEGE  
OF ARTS & SCIENCES

&

McCORMICK SCHOOL OF  
ENGINEERING

Physics &  
Astronomy

Chemistry

Earth & Planetary  
Sciences

Northwestern  
Applied Physics

Materials Science

Electrical and Computer  
Engineering

Biomedical Engineering

N

# Program Team

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Weinberg  
Co-Director

Lincoln Lauhon



McCormick  
Co-Director

Pedram Khalili



Admissions  
Chair

Jens Koch



Director of  
Graduate Studies

Clarence Morales



Program  
Assistant

# Your contacts



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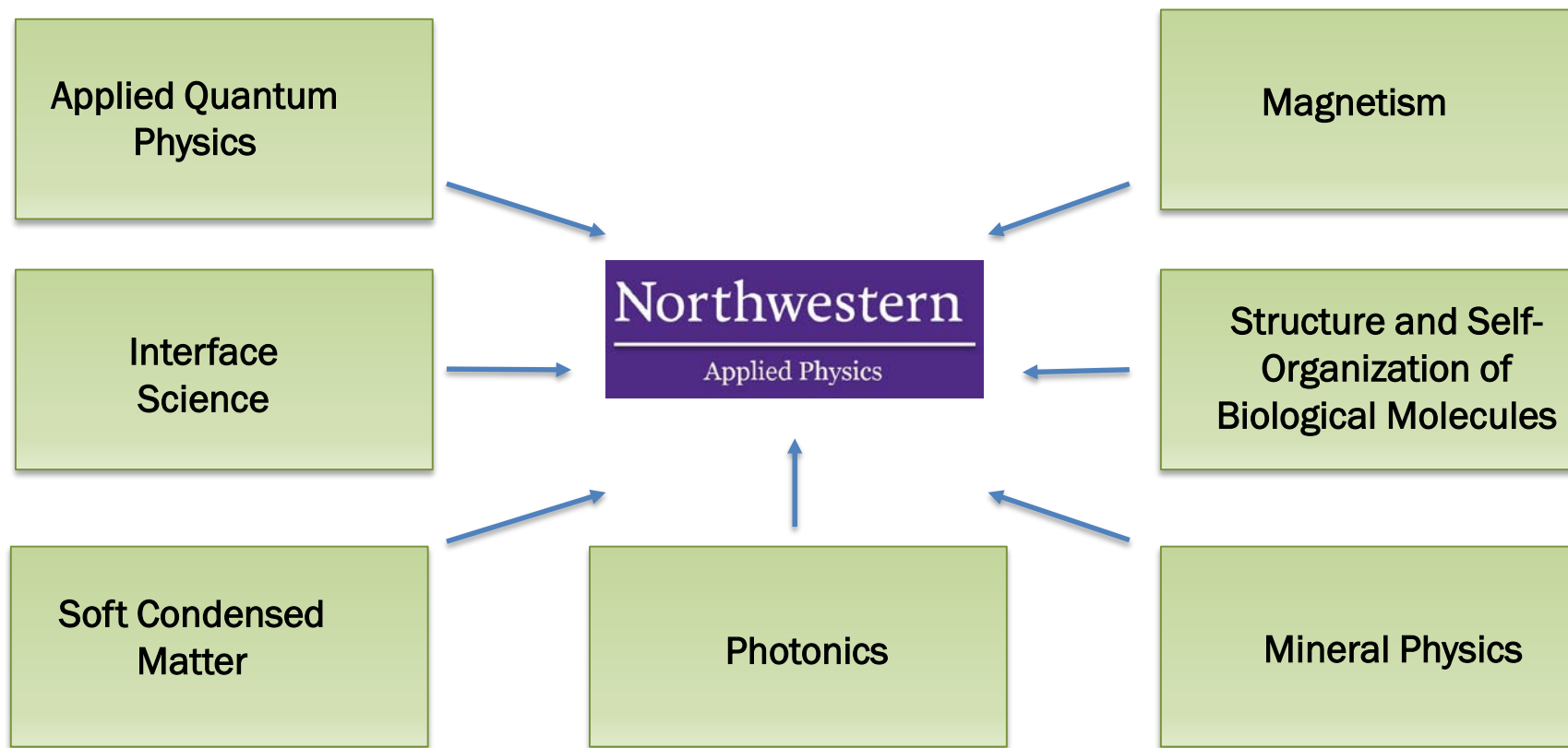
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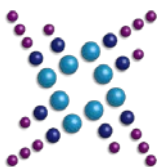


# Core Disciplines



# N

# Collaborative Research Centers and Institutes



Materials Research Center  
Northwestern University



INTERNATIONAL INSTITUTE  
FOR NANOTECHNOLOGY  
*Northwestern University*

**CAPST** 

Center for **Applied Physics and Superconducting Technologies**

 Fermilab  
Northwestern



Chemistry of  
Life Processes  
Institute



Applied Physics

McCORMICK SCHOOL  
OF ENGINEERING

WEINBERG COLLEGE  
OF ARTS AND SCIENCES

Northwestern

# Why become an AP student at NU?

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#1

## **We need you:**

your skills and talent, your unique ideas and perspective

#2

## **Unique Research Opportunities**

- interdisciplinary, multiple departments
- many faculty members (experiment, theory)
- new QIS centers

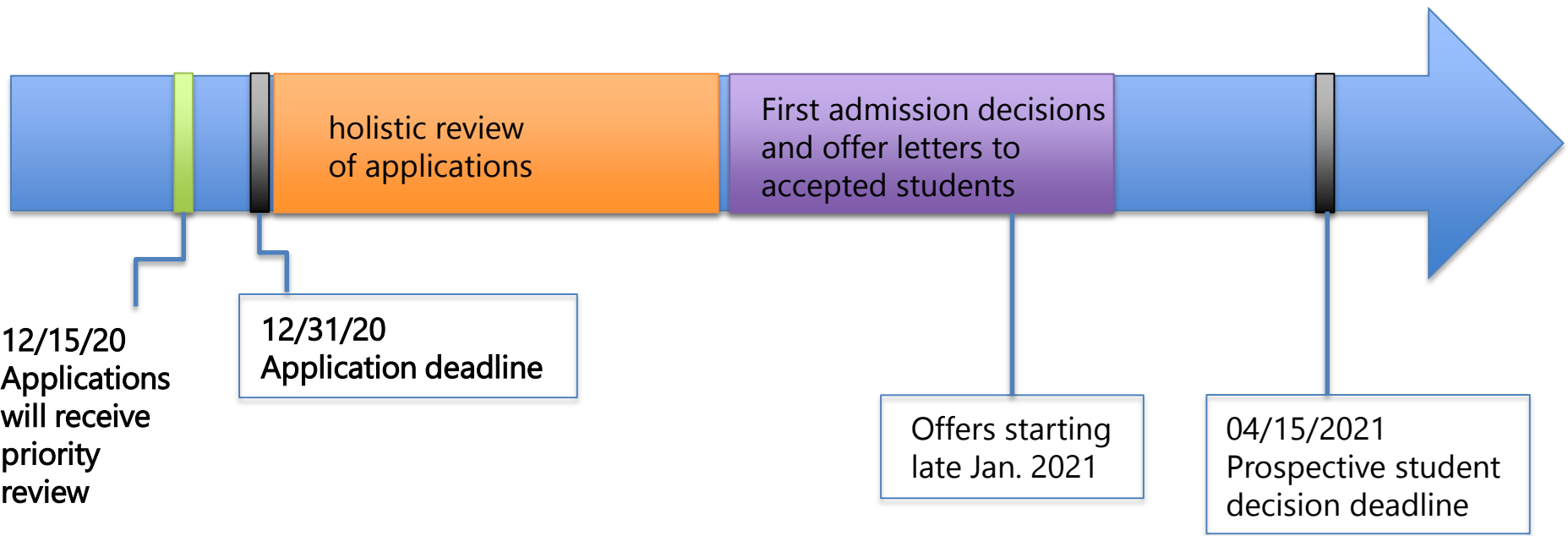
#3

## **Start your own research early (second quarter!)**

interact with AP students and faculty doing research in a variety of disciplines



# Applying to NU Applied Physics: Timeline

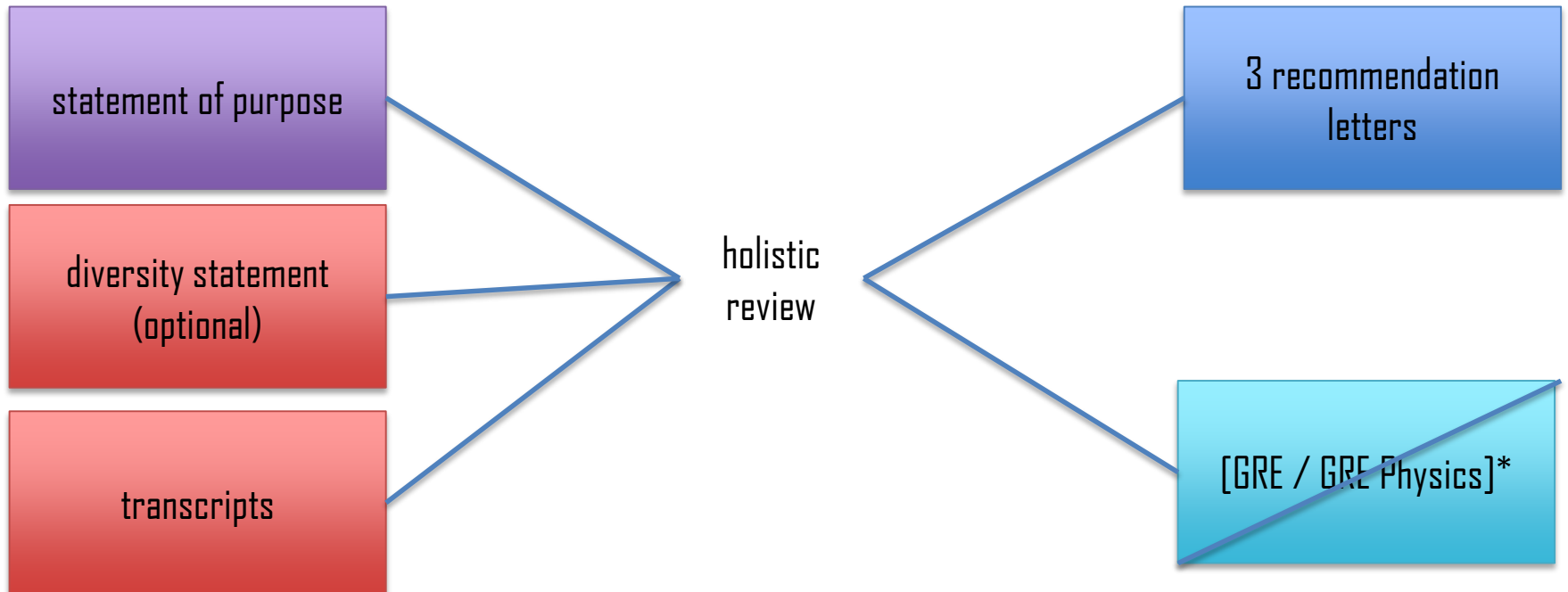






# Applying to NU Applied Physics: Application

## Content of your application



*\* Not required for applications submitted in 2020 for fall 2021 enrollment*

# Applying to NU Applied Physics: Statement of Purpose

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- ➔ **Tell your story!**  
The admissions committee and faculty want to get to know you
- ➔ **Why Applied Physics?**
- ➔ **What inspires you?** What drives you? What makes you different?
- ➔ Mention **faculty you might be interested** in working with.
- ➔ If applicable, mention any **research experience**.
- ➔ **Mention obstacles you faced**,  
and how you managed to overcome them.  
Resilience and determination are strengths!

A white letter 'N' inside a dark purple square.

# Program Components & Goals

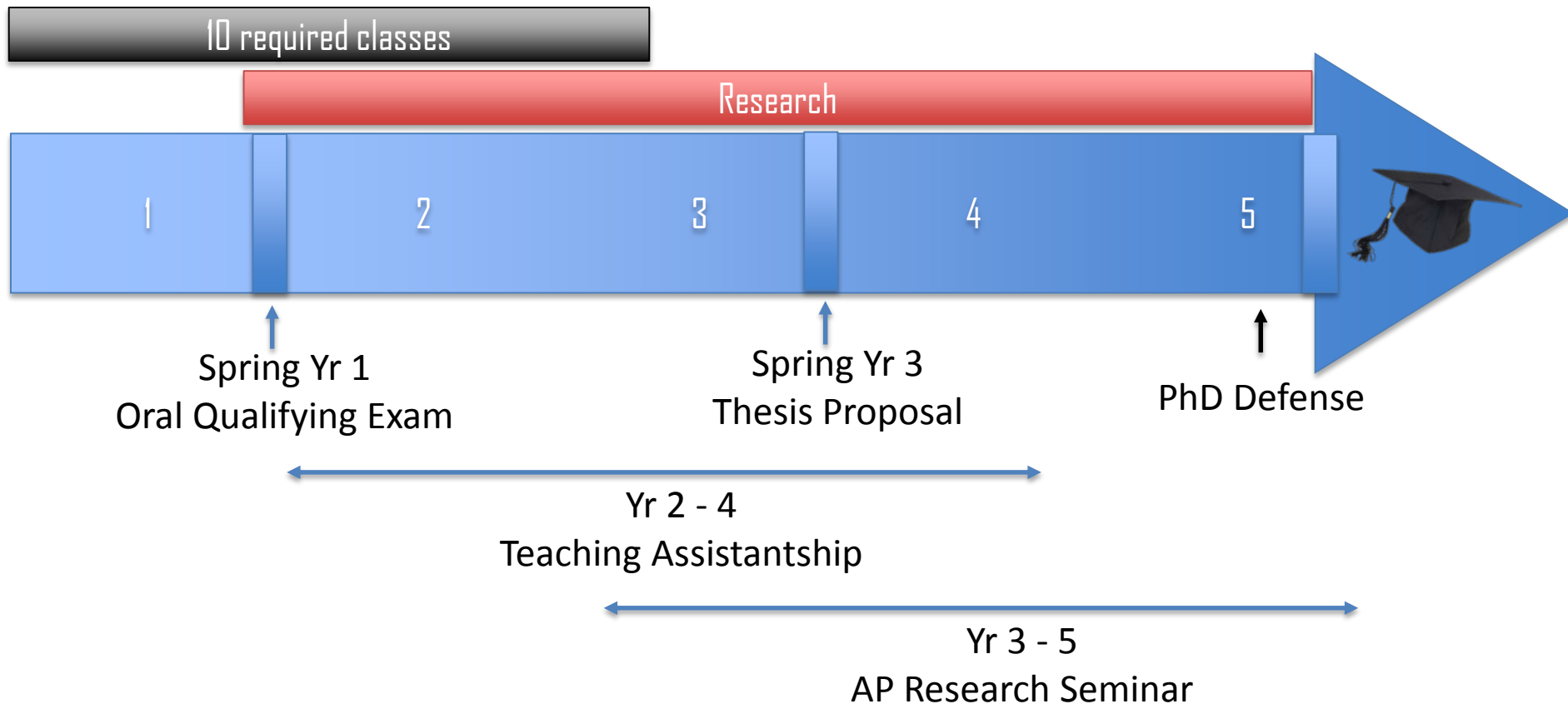
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provide you  
with a  
solid foundation  
in **physics**

enable you  
to become an  
**independent  
researcher**

prepare you for  
and assist you in  
planning and realizing your  
**career plans**

# PhD Timeline: 5-year program





# Professional Development

Northwestern

POLICIES CALENDAR CONTACT RESOURCES FOR YOU

THE GRADUATE SCHOOL

Search this site

Admissions Academics Funding Diversity Professional Development Campus Life About

HOME > PROFESSIONAL DEVELOPMENT

Professional Development

Career Paths

Core Competencies

Professional Development Funding

Careers and Job Search

## Professional Development

The Graduate School at Northwestern University (TGS) offers a variety of resources and programming to contribute to the professional development of our graduate students and postdoctoral fellows.

In addition to providing direct services (such as workshops and speakers), TGS serves as a gateway to programming and resources across campus. TGS partners with several University offices to provide skill acquisition in five major **Core Competencies**. In addition, students are encouraged to explore the **Career Pathways**, where professional development opportunities and resources are organized by career path, in a timeline format. Finally, TGS offers

### OUR PARTNERS

- Center for Civic Engagement
- Office of Fellowships
- Center for Leadership
- Office of Postdoctoral Affairs
- Searle Center for Advancing Learning and Teaching

- Career Exploration
- Leadership and Management
- Speaking and Presenting
- Teaching
- Writing and Research



# Applied Physics Faculty



~ 50 faculty members in:

- Biomedical Engineering
- Chemistry
- Earth and Planetary Sciences
- Electrical and Computer Engineering
- Materials Science and Engineering
- Physics and Astronomy



# Courses

## First Year

Start your own  
research

## Second Year or later

### Fall

**MAT SCI 401:** Chemical & Statistical Thermodynamics of Materials  
or **PHYS 416:** Introduction to Statistical Mechanics (Winter Yr1)

**PHYS 412-1:** Quantum Mechanics

**PHYS 411-1:** Methods of Theoretical Physics

**GEN ENG 519:** Responsible Conduct of Research Training

### Winter

**PHYS 412-2:** Quantum Mechanics

**PHYS 414-1:** Electrodynamics

**PHYS 416-0:** Introduction to Statistical Mechanics  
or **MAT SCI 401:** Chemical & Statistical Thermodynamics of Materials  
(Fall Yr1)

### Spring

**MAT SCI 405:** Physics of Solids  
or **PHYS 422-1:** Condensed Matter Physics (Fall Yr2)

### Fall

**PHYS 422-1:** Condensed Matter Physics  
or **MAT SCI 405:** Physics of Solids (Spring Yr1)

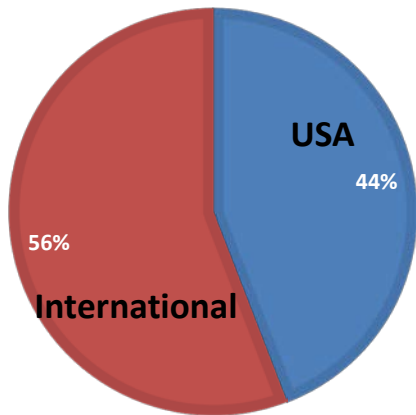
### Fall or later

**Computational Methods of Applied Physics**  
**Experimental Methods of Applied Physics**  
**2 Electives**

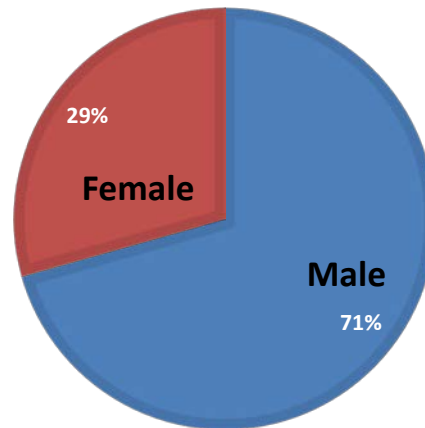


# Statistics

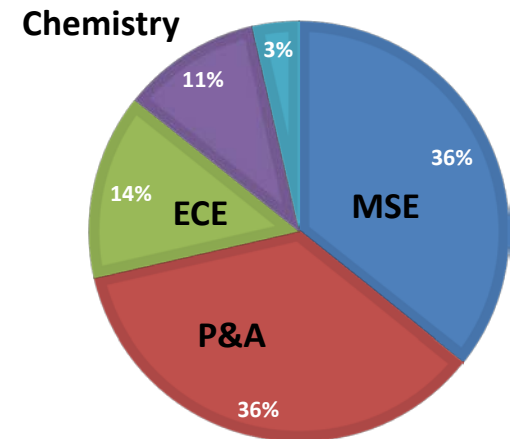
BY CITIZENSHIP



BY GENDER



BY AFFILIATED DEPARTMENT



As of Sept. 2020





# Where do our Alumni work?

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ACADEMIA



NATIONAL LABS



INDUSTRY

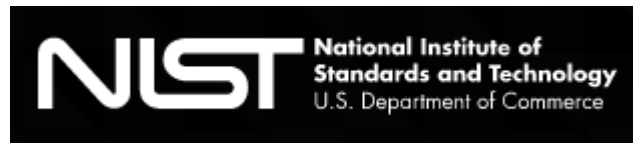


FINANCE

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## Where do our Alumni work? Examples

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# Beyond Northwestern



## City of Evanston

- Population of ~75,000.
- Convenient, quiet.
- Quick and easy connections to downtown Chicago. (Metra: ~20 mins)

## City of Chicago

- Population of 2.7M
- Great museums, restaurants, sports, culture,...
- And beaches!

