College of Science (COS)

Orientation 2014
Parent Welcome
Pam Mabrouk, Associate Dean for Academic & Faculty Affairs

p.mabrouk@neu.edu

www.northeastern.edu/cos
Co-Presenters

Chris Egan, Biochemistry Co-op Faculty Member
Rachel Fretz-Cianci, Director of UG Advising
Nathan Richardson, Academic Advisor
Danielle Massey, Ann Grenell, Robyn MacIlroy, Academic Advisor
THANK YOU!
Goal for Today’s Session (45-min)

• Provide an overview of the College of Science, its programs, and support structure

• So that you leave here today confident that Northeastern was the right choice for you and your student
Outline of Today’s Session

• Overview of
  – the academic, experiential, and non-academic opportunities
  – Your student’s advising team and support services
  – General structure of the academic program
  – Co-op program

• Advice
Welcome to the College of Science!

Academic Excellence

- Vast Array of Academic Programs
  - BA, BS, and Plus One (BS/MS)
  - BS/PhD in physics
- Teaching and Research with Outstanding Faculty

+ Experiential Learning

- Co-op (four and five year options)
- Internships
- Study Abroad
- Service Learning

= The Northeastern Advantage
It’s An Exciting Time at Northeastern!

• University ranked #49 among National Universities in US News & World Reports

• 49,808 applications for admission fall 2014

• 526 freshmen joining COS this fall
  – Average GPA 4.10/5.00 (highest in the University)
  – Average combined SAT 1429
NEW COS FACULTY
FALL 2014

PETER BEX
Professor Psychology
Conducts theoretical and applied research in normally-sighted observers, in aging observers and in observers with visual impairments, including low vision and amblyopia

ANA-MARIA CASTRAVET
Associate Professor Mathematics
Algebraic geometry - birational geometry and moduli spaces, rational curves on fano manifolds and related arithmetic aspects, Mori Dream spaces - related invariant theory and computational aspects

GABOR LIPPNER
Assistant Professor Mathematics
Discrete mathematics with an emphasis on using methods from analysis, geometry, and topology

EMANUELE MACRI
Associate Professor Mathematics
Algebraic geometry – derived category theory

TING ZHOU
Associate Professor Mathematics
PDE theory and analysis of inverse problems in various imaging and tomography methods, theoretical designs of invisible cloaks

DORI WOODS
Assistant Professor Biology
Reproductive Biology, Stem Cell Biology, Regenerative Medicine, Aging

ROMAN MANETSCH
Associate Professor Chemistry & Chemical Biology joint w/ Pharmaceutical Sciences Bouvé & Faculty Fellow in the Center for Drug Discovery
Fragment-based lead discovery and hit-to-lead optimization focusing on malaria and other infectious diseases
Outstanding COS Faculty

BENJAMIN WEBSTER
Sloan Fellows

IVAN LOSEU

DAGMAR STERNAD
Robert D. Klein University Lecturer Award

SANJEEV MUKERJE
Electrochemical Society Fellow

BARRY KARGER
Top 20 Most Influential People in Analytical Sciences

ARUN BANSIL
University Distinguished Professors

ALBERT-LASZLO BARABASI
College of Science Majors

- Traditional majors, minors, double majors
- Combined majors
- BS-MS (PlusOne)
- BS-PhD (physics)
Academics

• Life Science Program
  – For undeclared students interested in Biology, Biochemistry, Behavioral Neuroscience, and Psychology
  – Direct entry into COS without need to specify a particular major

• Freshman Seminar

• Combined Majors
  – New for Fall 14:
    • Psychology/Criminal Justice
    • Biology/English

• Honors in the Discipline
  – Jr/Sr Year (>3.5 GPA)
    • Take 8 SH of Jr/Sr Honors Project
    • Write Thesis
Academics – Curriculum Flexibility

• Committed to ensuring students can complete their degree and fully participate in experiential education in a 4-year timeframe
  – NUTerm (Summer 1)

• At same time we remain committed to the 5-year 3-co-op option
Dialogues of Civilization

• 4-6-week long on site cross-cultural learning
• Application required
• NUTerm or Summer 2
• Two 4 SH courses
• 6 – 30 students
Undergraduate Research

- Opportunities for students from freshmen to senior
- Fall, Spring, Summer

- Academic credit
  - Independent Study
  - Honors in the Discipline (Jr/Sr and GPA> 3.6)

- Grant-funded

- Work study (financial aid)

- Volunteer
Jose Orozco, ‘12 biochemistry & mathematics

- American Heritage School
- Plantation, Florida
- Enrolled as Biology major
- Currently: MD/PhD Harvard Medical School
- Start: UR with Erin Cram (Biology) 5 semesters ’08-’11
- Summer ’09 UR with Paul Schedl (Princeton, molecular biology) gene regulation
- Summer ‘10 NIH Summer Internship program with Anton Jetten cancer research
- Summer ‘11 Memorial Sloan-Kettering Cancer Center with Lorenz Stutter stem cell research
- Matz co-op fellowship spring ’10
- Senior thesis: Mechanotransduction in C. elegans
- Last year: IRTA Postbac at NIH in Dr. Francis Collins’ lab
Pre-Health

- Pre-Health Advising
  - [http://www.northeastern.edu/prehealth/](http://www.northeastern.edu/prehealth/)
  - Sign up for a MedAppTrak account
  - Most medical schools do not recognize “AP” so consider taking General Chemistry or complete 2 years of chemistry (e.g., Organic Chemistry and Physical Chemistry)
Additional Advising Resources

Career Services (award-winning)

- Group workshops and one-on-one counseling (including choice of major, careers, etc.)
- Resources on majors, careers, and internships
- Self-assessment workshops and tools
- On-campus recruiting
- Fall/Spring Career Fairs
  - Internship
  - Co-op
  - Full-time employment
Additional Resources

- Peer Tutoring
  - CRLA Certified tutors
- Writing Center
- Math Center
- Chem Central
- Peer Advising Coaches (PACs)
- University Health and Counseling Services (UHCS)
- Student Athlete Support Services (SASS)
- Disability Resource Center (DRC)
  - 20 Dodge Hall, x2675
- Spiritual Life

Sacred Space
First-Year Living Learning Communities (LLCs): INUVate (Smith Hall)

- Opportunity for students with similar interests to become acquainted
- Offered in all major programs
- College-based, Honors, and thematic
College of Science Student Activities

- Actuarial Sciences Club
- American Chemical Society Club
- Biology Club
- Biochemistry Club
- Linguistics Club
- Math Club
- NEURONS
- NU Science Magazine
- Physics Club
- Pre-SOMA (osteopathic medicine)
- Psychology Club
- TERRA
Your Student’s Advising Team

- **COS Academic Advisor**
  - Located in the college advising office (206 MU)
  - Starting place for academic advice/ issues, university/college policies, transferring majors, NU Core, college requirements, academic progress and graduation clearance

- **Faculty Advisor**
  - Located in department in student’s major or program
  - Advice concerning major requirements, grad schools, career paths, experiential learning opportunities

- **Co-op Advisor**
  - Located in the college advising office (206 MU)
  - Teaches Intro to Experiential Education course, prepares student for co-op and conducts reflection activities upon student’s return from co-op
Who We Are: COS Academic Advisors

Rachel Fretz-Cianci - Director
TBD - Associate Director
Helene Tischler - Retention and Persistence Specialist
Katie Cameron - Academic Advisor
Jana Clark - Academic Advisor
Ann Grenell - Academic Advisor
Robin MacIlroy - Academic Advisor
Danielle Roberts-Massey - Academic Advisor
Nathan Richardson - Academic Advisor

Who We Are: COS Co-op Advisors

Dave Merry - Director, Psychology and Psych Ed (L-Z)
Katie Cameron - Chemistry
Lisa Campagnoni - Math, Physics/Applied Physics/Biomedical Physics
Chris Egan - Biochemistry
Tina Mello - Biology (M-Z)
Michelle Israel - Behavioral Neuroscience
Sarah Klionsky - Environmental Science, Environmental Studies
Charlotte Lam - Linguistics, Psychology, and Psych Ed (A-K)
Veronica Porter - Biology (A-L)
Academic Advising

Rachel Fretz-Cianci
*Director*

Robin MacIlroy

Katie Cameron

Danielle Massey

Jana Clark

Nathan Richardson

Ann Grenell

Helene Tischler
Degree Requirements

- **NU Core**: 128-136 Credits
- **Major Requirements**: Specific to the department
- **Electives**: Remaining classes to get to minimum credits for graduation
- **Minors & Double Majors**:
The NU Core
Set of University-Wide Requirements

The goal of the NU Core is to develop:

- The knowledge and skills to be life long learners
- The potential for success in many careers
- The ability to be thoughtful, global citizens and fulfilled human beings

**Advanced Writing in the Disciplines**

**Arts**
**Social Science**
**Humanities**
**Foreign Language***
*For Bachelor of Arts
**College Writing**
**Capstone**
**Comparative Study of Cultures**
**Science**
**Experiential Education**
**Math/Analytical Thinking**
Academic Progress

One Semester = 16-19 Credits

Normal Academic Progress

- 2.0 Cumulative GPA
- Earn at least 16 credits
Academic Progression

• Academic Progression for First-Year Students
  – Good Academic Standing = minimum 2.0 GPA and 16 semester hours each semester
  – Academic Probation = below 1.8 GPA and/or fewer than 12 semester hours each semester

• Academic progress monitored every semester by COS advisors

• FACT (Faculty Advisor Communication Tool) for informing students of academic difficulty in classes
Advising Tool:
MyPAWS Degree Audit System

- Student’s academic record as applied to progress toward program/degree
- Record of all transfer and AP credit
- Helpful when choosing courses for registration
Degree Audit

Degree Audits are also used for clearing degrees.

A completed audit is required in order to earn a diploma.
Communication Tool: MyNEU Portal

- Your student’s personal information gateway to Northeastern:
  - Personal, academic and financial records
  - All transactions: registration, tuition payments, degree audits
  - Campus announcements and notifications

- Students will have access to their confirmed fall schedule one to two weeks after orientation
New Announcements appear directly below the repositionable bar. Reorder by dragging Announcements to new positions. Move priority Announcements above the repositionable bar to pin them to the top of the list and prevent new Announcements from superseding them. The order shown here is the order presented to Students. Students do not see the bar and cannot reorder Announcements.

Create Announcement

NEW announcements appear below this line

1. CHEM 2331: RE: Please participate in the survey study
   Posted on: Monday, May 2, 2011
   Folks. A week ago I asked for your help in participating in a survey study to help me evaluate the benefits of reflective journaling. When the survey officially closed on Sunday only three of you had completed the survey. I really do need your help. Your participation means a great deal to me. It will only take 10-min of your time. I have re-opened the survey so that you can participate. The new deadline is Monday May 9th at noon. The survey is available at URL:
   http://www.surveymonkey.com/s/BDMx77T
   Thank you.
   Pam;

2. CHEM 2331: FINAL REMINDER Please participate in the survey study on reflective journaling
   Posted on: Saturday, April 30, 2011
Blackboard

- Vehicle for many NU courses
- Students can access course grades via smartphone or laptop
- Faculty can submit FACT (academic) warnings
Federal Education Rights and Privacy Act (FERPA)

*When a student turns 18 years of age or attends a postsecondary institution, the student, and not the parent, may access, seek to amend, and consent to disclosures of his or her education records.*

- Students have the right to decide who has access to their academic records.
- FERPA disclosure can be updated at any time through the student’s myNEU portal.
- Northeastern will, if asked, indicate that the student has restricted access to his or her records.

See URL: [http://www.northeastern.edu/registrar/ferpa.html](http://www.northeastern.edu/registrar/ferpa.html)
Dalal and Alaa Al-Homaizi, Northeastern psychology students who grew up in Kuwait, launched the campaign, SPEAK (Standing for Psychological Education and Awareness in Kuwait). - See more at: http://www.northeastern.edu/news/2012/01/speak/#sthash.maVkmXYk.dpuf
## Tuition and Time

<table>
<thead>
<tr>
<th>Traditional 4-Year No Co-op</th>
<th>4-5 Years, 1-3 Co-ops</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Semesters of Classes</td>
<td>8 Semesters of Classes</td>
</tr>
<tr>
<td>8 Semesters of Tuition</td>
<td>+ 6-18 Months of Co-op</td>
</tr>
<tr>
<td>128 - 136 Credits</td>
<td>8 Semesters of Tuition</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>128 - 136 Credits</td>
</tr>
<tr>
<td></td>
<td>Bachelor’s Degree</td>
</tr>
<tr>
<td></td>
<td>Up to 1.5 Years of Experience</td>
</tr>
<tr>
<td></td>
<td>Competitive Resume</td>
</tr>
<tr>
<td></td>
<td>Professional Connections</td>
</tr>
</tbody>
</table>
Cooperative Education

- Optional but highly recommended
- Co-op fulfills the NU Core Experiential Education Requirement
- Co-op is a real-world experience; students work full time as a critical member of an organization
- Co-op is a partnership between students, co-op faculty, and employers
- Students do not earn credit or pay tuition while on co-op, but they maintain full-time student status (health insurance, loan forbearance, use of campus resources)
Opportunities are Global

Out-of Region Co-ops

- Sea Life Park – **Honolulu, Hawai’i**
- Water Resources Research Institute – **Albuquerque, New Mexico**
- Amazon – **Seattle, Washington**

International Co-ops

- International School of Bremen – **Germany**
- Nat’l Geographic Scuba Instructor Training Intern – **Thailand**
- The Weizmann Institute of Science – **Israel**
College of Science Co-op

- 9 Full-Time Co-op Faculty
- 500+ Employers
- 1084 Placements in 2013-14 (> 90 % placement)
  - In 19 states and 27 countries
- 2 Co-op Cycles lasting 6 months each
  - January-June (Spring and Summer 1)
  - July-December (Summer 2 and Fall)
Co-op Is Part Of Northeastern’s DNA

- Intro to Co-op
- Reflective Journaling
- Academic Experience
- Co-op Experience
- Academic Experience
- Student & Employer Surveys
Intro to Co-op Course

• Normally taken during the sophomore year in most majors (biology majors take this course their freshman year)

• Transfer students can take as early as second semester of first year; co-op may be undertaken second year of residency

• Course teaches students:
  – How we learn
  – Mindsets and Mindfulness
  – Cognitive apprenticeship as model for learning
  – Review of co-op options
  – Practical hands-on experience in resume preparation, interviewing, etc.
How Does This Work?

• Student works with Advisors at outset to identify whether he/she wishes to pursue 4 or 5-year degree option
  • *AP credit in major-relevant science courses makes 4-year options easier to pursue*;
  • *In many majors, student electing 4-year options will need to take courses during NUTerm (Summer 1) their first year*

• Student can choose later on to opt from 4-year to 5-year option but moving from 5-year to 4-year is challenging as curricula for most science majors is progression-based
  • *Dropping courses, doing poorly in courses required for the major may make it extremely challenging to pursue 4-year options*
Representative Pattern of Attendance (POA)
4 Years, 2 Co-ops

<table>
<thead>
<tr>
<th>Year</th>
<th>FALL</th>
<th>SPRING</th>
<th>SUMMER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Year</td>
<td>4 Classes</td>
<td>4 Classes</td>
<td>2 Classes</td>
</tr>
<tr>
<td>2nd Year</td>
<td>4 Classes</td>
<td>4 Classes</td>
<td>2 Classes</td>
</tr>
<tr>
<td>3rd Year</td>
<td>6-month Co-op</td>
<td>4 Classes</td>
<td>2 Classes</td>
</tr>
<tr>
<td>4th Year</td>
<td>6-month Co-op</td>
<td>4 Classes</td>
<td>Co-op</td>
</tr>
</tbody>
</table>

NUTERM SUMMER 2

Vacation
### Representative Pattern of Attendance (POA)  
**5 Years, 3 Co-ops**

<table>
<thead>
<tr>
<th></th>
<th>FALL</th>
<th>SPRING</th>
<th>SUMMER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Year</strong></td>
<td>4 Classes</td>
<td>4 Classes</td>
<td><strong>Vacation</strong></td>
</tr>
<tr>
<td><strong>2nd Year</strong></td>
<td>4 Classes</td>
<td>6-month Co-op</td>
<td><strong>Vacation</strong></td>
</tr>
<tr>
<td><strong>3rd Year</strong></td>
<td>4 Classes</td>
<td>6-month Co-op</td>
<td><strong>Vacation</strong></td>
</tr>
<tr>
<td><strong>4th Year</strong></td>
<td>4 Classes</td>
<td>6-month Co-op</td>
<td><strong>2 Classes</strong></td>
</tr>
<tr>
<td><strong>5th Year</strong></td>
<td>4 Classes</td>
<td>4 Classes</td>
<td><strong>2 Classes</strong></td>
</tr>
</tbody>
</table>

5 Years, 3 Co-ops
## Representative Pattern of Attendance (POA)
### 5 Years, 3 Co-ops

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall</th>
<th>Spring</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(^{st}) Year</td>
<td>4 Classes</td>
<td>4 Classes</td>
<td>Vacation</td>
</tr>
<tr>
<td>2(^{nd}) Year</td>
<td>4 Classes</td>
<td>4 Classes</td>
<td>6-month Co-op</td>
</tr>
<tr>
<td>3(^{rd}) Year</td>
<td>6-month Co-op</td>
<td>4 Classes</td>
<td>2 Classes</td>
</tr>
<tr>
<td>4(^{th}) Year</td>
<td>6-month Co-op</td>
<td>4 Classes</td>
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</tr>
<tr>
<td>5(^{th}) Year</td>
<td>6-month Co-op</td>
<td>4 Classes</td>
<td>Co-op</td>
</tr>
</tbody>
</table>

- **NUTERM**
- **SUMMER**
- **SUMMER 2**

- Vacation
- Co-op
- 2 Classes

*Note: The pattern represents a typical schedule over 5 years, including 3 co-ops.*
NUTerm

• NUTerm is the new name for the Summer 1 term for freshmen

• Each major program has specific options for majors taking courses during NUTerm
  – Students will be informed about options during their orientation sessions with Academic and Head Advisors
  – Options may include electives, Dialogues, or specific coursework in the major
Advice to Give Your Students

Tell them to...

• Take ownership of their college career

• Stay on top of their academics
  – Reach out to faculty members and advisors
  – Get involved! (student government, gym, activities, service to the community, etc.)
  – Balance social and academic life

• Be open to new ideas
  – Explore academic options
  – Make the most of experiential learning opportunities
Advice for Parents

• Keep in touch with your student
• Allow your student to grow
• Encourage your students to make their own decisions and solve problems
• Let the Academic Advisors know if you have concerns that you feel need to be addressed
What’s Happening with your Students: Preparing for Advising and Registration Sessions

- **General Group Advising sessions today at 11:00**
  - Preparation for one-on-one advising meetings tomorrow
  - Complete advising worksheets for tomorrow’s sessions
  - Opportunity to ask questions in a smaller setting

- **Tomorrow at 11:30:**
  - Review of degree audits (myPAWS)
  - One-on-one advising and course registration
  - Schedules for pre-registered courses distributed
QUESTIONS?

College of Science
Student Services Office
206 Mugar
617-373-4475