

---

# **Working together**

**Daniel Hastings**

**Dean for Undergraduate Education**

**Fall 2006**



# Goal & Outline

---

- How we help you?
- DUE today
  - Mission - Vision - Current Organization
  - What do we do?
- Task Force goals
- Commons - how can we incentivize stronger participation
- Educational Innovation - how



# DUE Mission Statement

---

- We enroll, help educate and inspire some of the world's brightest students with a passion for learning and sense of self so they become the next generation of creative thinkers and leaders in a global society.
- We lead by promoting the excellence of a science and technology-centric education, ensuring access and opportunity without regard to financial resources, upholding rigorous academic standards, advancing innovation, developing mentoring relationships, strengthening respect for diversity, and serving as a catalyst for learning, exploration and discovery.



# DUE Vision & BHAG

---

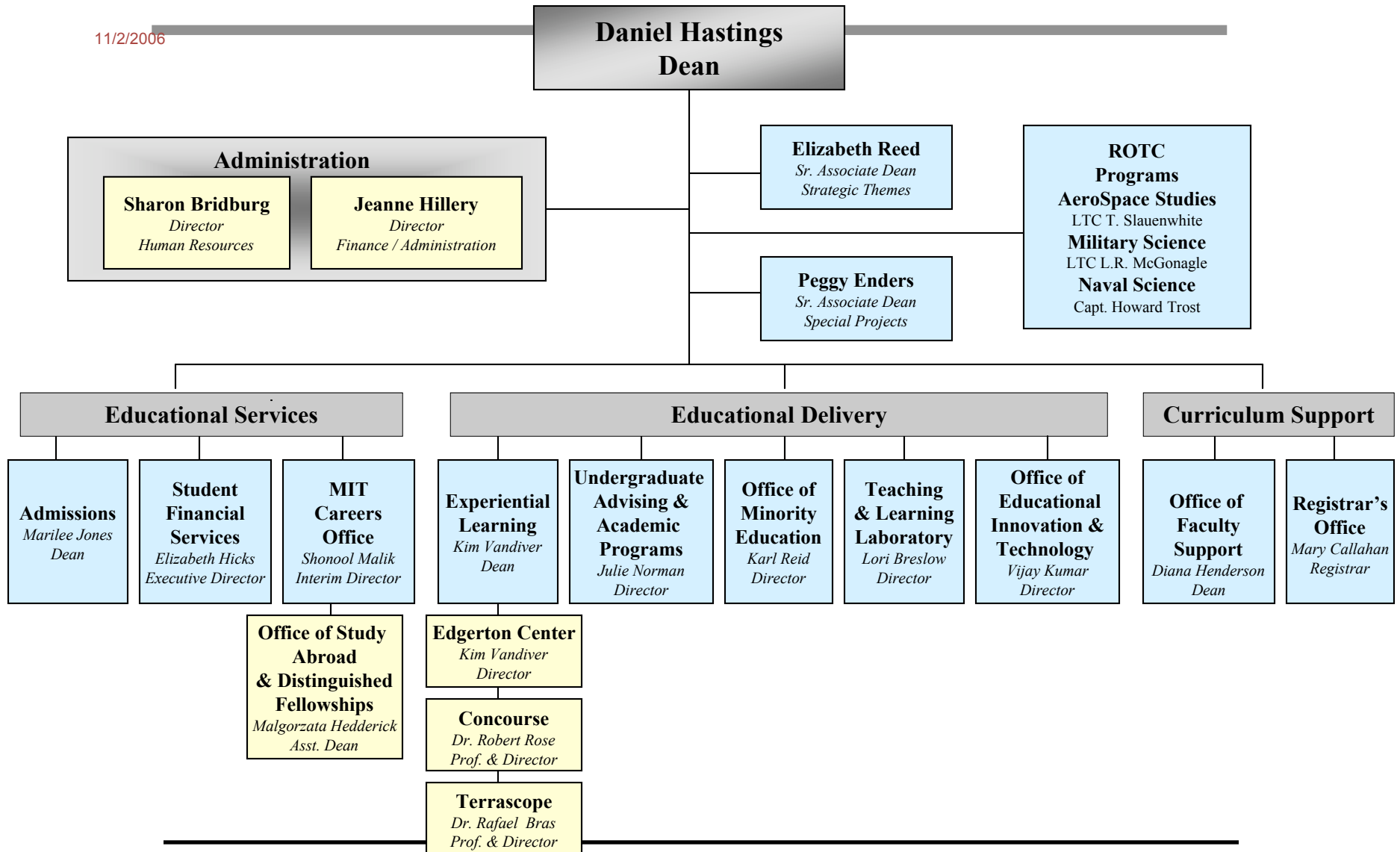
- We aspire to be the best in the world in shaping strategic partnerships and creating synergies to integrate learning and life at a research university.
- We will make the MIT educational experience the most sought after in the world
  - In rigor & critical analytic thinking
  - In creating new paradigms
  - In developing people



# OFFICE OF THE DEAN FOR UNDERGRADUATE EDUCATION

Organizational Chart

11/2/2006



# Office of Educational Innovation & Technology

---

- The Office of Educational Innovation and Technology is dedicated to the exploration, development and incorporation of innovative application of technology to support the Teaching and Learning needs of MIT.
  - Work with faculty, students, and staff in developing innovative uses of technology for teaching and learning, and its **integration** in the curriculum.
  - Support faculty efforts to demonstrate **global leadership** in educational innovation through the use of technology.
  - Collaborate and co-ordinate with other educational technology service providers at MIT and elsewhere to ensure that innovative technology applications are supported as **sustainable services** that best meet the needs of MIT academic programs, faculty and students.



# DUE Provides Faculty with . . .

---

---

- Education expertise
  - Research in learning
  - Information about innovations in pedagogy and technology
  - Assessment and evaluation design and implementation
- Infrastructure support
  - Classroom improvement and maintenance
  - Data on students, subjects, etc.
  - Scheduling of classes, classrooms, exams, and students
- Edgerton Center: Service Learning, UROP support
- Educational Technology Innovation Support
  - Locate and Develop materials and applications for educational innovation
  - Curriculum Integration
  - Educational Spaces and Platforms



# DUE Faculty Support, cont.

---

- Support for faculty as teachers and advisors
  - WebSIS for photo class lists, prereq reports, degree audits, student grade reports
  - Coordination of first-year instructors in the Science Core
  - Meetings with departmental undergraduate officers
  - Administration of
    - Subject Evaluations
    - Freshman Advisor Seminars
    - UROP
- Initiative and Committee support
  - Support for interdepartmental and interdisciplinary teaching initiatives
  - Support to the Task Force on the UG Educational Commons
  - MacVicars, d'Arbeloff projects, Alumni Teaching Funds, IAP
  - CUP, CAP, SOCR, COC, etc.



# DUE Student Support

---

- Identify, recruit, admit and enroll the best students in the world
- Ensure access without regard to financial need
- Run Freshman Orientation and Project Interphase to facilitate transition from high school to college, including helping students develop effective learning strategies
- Provide tutorial services, freshman exam reviews and facilitated study groups
- Manage first year and undeclared student advising systems, and administer fifth week flag process for freshmen
- Provide services related to enrollment, registration, tuition, degree audits and graduation
- Coordinate and offer “choice of major” programs and facilitate transition to sophomore year
- Administer the Undergraduate Research Opportunity Program



# DUE Student Support, cont.

---

- Provide access to experiential learning through Freshman/Alumni Summer Internship Program, Second Summer Program, K-12 teaching, D-Lab and other initiatives
- Promote and provide study abroad opportunities, including the Cambridge-MIT Exchange (CME)
- Promote and support students interested in Foreign Scholarship opportunities
- Oversee and manage the Communications Requirement
- Strengthen undergraduate academic and career advising, and facilitate mentor relationships
- Manage January Independent Activities Period
- Equip students with the tools to successfully transition from MIT to work or graduate study, and help them connect with employers, graduate or professional schools and other post-graduation options



# Educational Technology Support Areas (at present)

---

- Math/engineering software support
- New Media Literacy
- Geographical Information Systems
- Visualization tools for discipline specific instruction
- Teaching & Learning spaces
  - physical spaces – New Media Center (NMC), 1-142 PBL space, residence hall collaboration spaces
  - virtual spaces – Second Life, Wikis, Blogs, Stellar tools
- Technology tools for new courses
  - Project-based learning pilot courses
    - New 6.001 pilot course
- Applications for Digital Repositories
  - Visualizing Cultures; Metamedia;
  - Image Tools for Rotch Collectionl Stellar
- Research Tools for the Teaching -Learning
  - TEALSim adaptation for Biology



# DUE Themes

---

- **Enabling**
  - Catalyze the Undergraduate Commons
  - Champion information technology for the provision of information to the students and faculty
- **Strategic**
  - Develop a holistic student experience
  - Provide global opportunities to enable our students to appreciate and learn from other cultures
  - Advance from teaching to learning in our classrooms
  - Champion and increase pipeline diversity



# Goals for a revised educational commons based on TF

---

- To enable our students to make significant contributions to the solution of human needs on a global scale.
- To ensure that all students graduate with a general education foundation in science, mathematics, engineering, humanities, arts and social sciences.
- To increase freshman motivation and enthusiasm.
- To improve teaching and learning.
- To introduce sufficient curricular flexibility to encourage the entrée of our students into exciting new areas of science and technology;



# International Experiences

---

- 3. “MIT should make it clear that acquiring experience living and working with people from other countries is an essential feature of an undergraduate education, work to expand current international education programs that have proven successful in the MIT environment, and develop strategies to create other opportunities that are especially relevant to an environment that emphasizes science and technology.”*

“We should aim to allow every MIT student who wishes to undertake a meaningful study, work, or internship experience abroad to do so without financial or academic penalty.”

Global Education Opportunities @MIT (GEOMIT)  
established - Hazel Sive and Linn Hobbs, co-chairs

Charge: Suggest principles and some MIT wide strategy



# Task Force Recommendations

---

- The School Deans, along with the DUE, should undertake a consideration of factors that will lead to an increased number of faculty members advising first year students.
  - Included in this study should be recommendations in ways to affect materially the efforts of faculty members to advise first year students
- The School Deans, along with the DUE, should develop plans to ensure that the efforts made by faculty members to assist in the advising and mentoring of Undergraduates are acknowledged in annual salary reviews and in promotion and tenure cases



# What is the Commons

---

- Faculty involvement in reading admissions folders
- Faculty involvement in orientation (freshman picnic, FPOP)
- Faculty involvement in teaching GIRs
- Faculty involvement in freshman advising/mentoring and freshman seminars
- Faculty involvement in committees (CUP, CoD etc)
- Faculty involvement in commencement
- Housemasters, House Fellows
- UROP supervision and IAP activities
- Special programs teaching/leadership (e.g., ESG, IAP events)



# Faculty involved in first year

---

## Faculty Participation in First Year

	2002	2003	2004	2005	2006
Advising	65	61	59	61	66
Orientation					
Convocation	3	3	3	22*	24
Faculty Picnic	81	75	72	79	63
Facilitators**	7	7	4	7	3
FPOP#	5	5	5	7	10
First Yr Instrs***	43	53	42	40	24(F)

\* President Hockfield Changed Convocation to Include School Deans and Faculty House Masters.

\*\*Facilitate Diversity, Sexual Assault or Academic Integrity Programs

# Freshman Pre-Orientation Programs, \*\*\* Science GIR instructors



# Trends in Academic Year UROP Participation Rates and Funding Allocations

---

Period	# Students Participating	% Participating for Pay	Faculty Allocations (\$ millions)	Direct UROP Funding (\$millions)	Total Funding (\$millions)
AY 05-06	1,637	53%	1.43	0.69	<b>2.12</b>
AY 04-05	1,569	53%	1.36	0.67	<b>2.03</b>
AY 03-04	1,545	56%	1.39	0.62	<b>2.01</b>
AY 02-03	1,611	64%	2.00	0.64	<b>2.64</b>
AY 01-02	1,520	73%	2.93	0.54	<b>3.47</b>
AY 00-01	<b>1,503</b>	<b>70%</b>	<b>2.97</b>	<b>0.37</b>	<b>3.34</b>



# Questions

---

- Thoughts on the Task Force recommendations
- How do we get faculty more involved in the commons?
- How do we encourage educational innovation and increase the number of faculty who adopt those that are successful?



---

# BACKUP



# Ideas for new faculty?

---

- 1. Place the expectation on department heads to get all junior faculty engaged with undergraduates, including freshmen, from the beginning.
  - a. This can take the form of freshman advising or UROP supervision for example.
- 2. New faculty start up packages could include a supplemental component to support UROP students. They would only get the funds if they take on the UROP student
- 3. The new faculty orientation might include a component introducing participation in the commons and in particular working with students.



# The New General Institute Requirements

## Humanities, Arts, and Social Sciences Requirement (8 Subjects)

### *Foundational Subjects*

1 subject from each of 3 categories,  
1 of which must be from the First-Year Experience Program

HUMANITIES	ARTS	SOCIAL SCIENCES
------------	------	-----------------

Expository Writing (if necessary) or HASS Elective

### *Concentration Subjects*

4 subjects specified for each Concentration;  
Concentrations may allow HASS Elective as 4th Subject

## Science, Mathematics, and Engineering Requirement (8 Subjects)

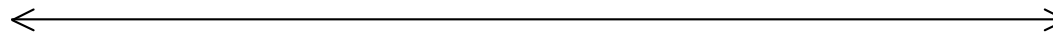
### *Required Subjects*

MECHANICS	SINGLE-VARIABLE CALCULUS	MULTI-VARIABLE CALCULUS
-----------	-----------------------------	----------------------------

### *Foundational Subjects*

1 subject from 5 of 6 categories

CHEMICAL SCIENCES	COMPUTATION & ENGINEERING	LIFE SCIENCES	MATHEMATICS	PHYSICAL SCIENCES	PROJECT-BASED EXPERIENCE
----------------------	---------------------------------	------------------	-------------	----------------------	-----------------------------



# Support for Educational Technology in DUE

---

- 1. Partner with faculty to investigate new and emerging technologies, and explore opportunities for their adoption to support education at MIT.
- 2. Establish links with departments to monitor emerging innovations and IT needs arising from entrepreneurial activities.
- 3. Track technology developments and initiatives globally to inform MIT initiatives.
- 4. Support MIT initiatives through the development, adoption & implementation of sustainable & educationally valuable software tools.
- 5. Implement test-beds for promising educational technologies and new services, to advance teaching and learning -
- 6. Develop plans for the incubation, early implementation, and the transitioning of delivery systems to core service providers ( IS&T, Libraries) as appropriate.
- 7. Engage with MIT departments, labs, and centers to integrate technology into the curriculum.

