Team 2020 planning work

Background Materials
May 4, 2020
Role

Define all the switches that need to be turned-off to scale-back operations, or turned-on to return to different increased density operational states, and some sensible order for doing so, under different scenarios.

Objectives

Enable MIT to respond in a nimble manner to support our mission, values and the needs of the moment during this rapidly changing crisis.

To look ahead/forecast the key decisions that need to be made, by whom and when, and to bring these to the senior team, academic council, and members of the MIT community more broadly.
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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</thead>
<tbody>
<tr>
<td>Anthony Sharon (Lead)</td>
<td>Interim Deputy Executive Vice President</td>
</tr>
<tr>
<td>Dahlia Fetouh</td>
<td>Office of the General Counsel</td>
</tr>
<tr>
<td>Doreen Morris</td>
<td>Assistant Provost</td>
</tr>
<tr>
<td>Ian Waitz (Lead)</td>
<td>Vice Chancellor for Undergraduate and Graduate Education</td>
</tr>
<tr>
<td>Joe Higgins</td>
<td>Vice President for Campus Services and Stewardship</td>
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<tr>
<td>John Dozier</td>
<td>Institute Community and Equity Officer</td>
</tr>
<tr>
<td>Kate Trimble</td>
<td>Senior Associate Dean &amp; Director, Office of Experiential Learning</td>
</tr>
<tr>
<td>Krishna Rajagopal</td>
<td>Dean for Digital Learning, Open Learning</td>
</tr>
<tr>
<td>Mark Silis</td>
<td>Vice President, IS&amp;T</td>
</tr>
<tr>
<td>Ramona Allen</td>
<td>Vice President, Human Resources</td>
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<tr>
<td>Rick Danheiser</td>
<td>Chair of the Faculty</td>
</tr>
<tr>
<td>Ron Hasseltine</td>
<td>Assistant Provost for Research Administration</td>
</tr>
<tr>
<td>Sanjay Sarma (ex officio as Team 2021 lead)</td>
<td>Vice President for Open Learning</td>
</tr>
<tr>
<td>Stu Schmill</td>
<td>Dean of Undergraduate Admissions &amp; Student Financial Services</td>
</tr>
<tr>
<td>Suzanne Blake</td>
<td>Director of Emergency Management</td>
</tr>
<tr>
<td>Suzy Nelson</td>
<td>Vice President and Dean for Student Life</td>
</tr>
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</table>
Continuity working groups

• **COVID-19 Planning Team (Lead: Suzanne Blake)**
• Academic Continuity (Lead: Ian Waitz)
• Research Continuity (Lead: Ron Hasseltine)
• Business Continuity (Lead: Robin Elices)
• Medical Response (Lead: Cecilia Stuopis)
• Student and Res Life Continuity (Lead: Suzy Nelson)

• Communications (Lead: Alfred Ironside)
• Community (Lead: Tim Jamison)
• Space Planning (Lead: Krystyn Van Vliet)
• PPE (Leads: Joe Higgins, Elazer Edelman)
• Community Continuity (Leads: John Dozier, Maryanne Kirkbride, Tim Jamison)

Team 2020

• An “advanced planning squad” for the Continuity Working Groups
• And interface to Senior Team, Academic Council, and the MIT community

+ Task Force 2021 led by Rick Danheiser and Sanjay Sarma
  • Opportunities and challenges for the post-COVID MIT
Each continuity working group has dozens of dedicated people within it

For example: Academic and Student Life Continuity includes the following teams, each with many members:

- OVC Business and Staff Continuity (Mary Markel Murphy lead)
- Academic Policies and Regulations (Rick Danheiser lead)
- Supporting Remote Teaching and Learning (Krishna Rajagopal lead)
- Experiential Learning in a Virtual Environment (Kate Trimble lead)
- Responding to Academic Exceptions and Dislocations (Kris Prather lead)
- Internal and External Engagement and Communications (Michael Rutter and Alfred Ironside leads)
- Student Success Team (Lauren Pouchak, Elizabeth Cogliano-Young and Gus Burkett leads)
- Redesigning Important Programs and Events for a Virtual World (Judy Robinson and Stu Schmill leads)
- Student Support Services (David Randall and Suraiya Baluch leads)
- Building Residential Community and Providing Housing and Dining Services (David Freidrich and Judy Robinson leads)
- Other Spaces and Buildings in DSL (David Freidrich, Anthony Grant, and Gus Burkett leads)
- Business and Staff Continuity for DSL (Peter Cummings and Liz Green leads)
High level summary of Team 2020 work

Started by addressing some big picture questions
  • Campus capacity
  • Key decision triggers

Framing and analyzing different scenarios

Identifying near term needs and decisions
# Campus capacity

### ASSIGNABLE Space on Campus

**Draft for Discussion**

**April 1, 2020**

<table>
<thead>
<tr>
<th>Use</th>
<th>Spaces</th>
<th>Usable Area ft²</th>
<th>SF per Person</th>
<th>Density</th>
<th>People</th>
<th>SF per Person</th>
<th>Density</th>
<th>People</th>
<th>SF per Person</th>
<th>Density</th>
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<td>Residence Graduates</td>
<td>3,300</td>
<td>1,200,000</td>
<td>1,000</td>
<td>1,200</td>
<td>37%</td>
<td>1,300</td>
<td>923</td>
<td>48%</td>
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<td>Residents Undergraduates</td>
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<td>1,350,000</td>
<td>220</td>
<td>6,136</td>
<td>7%</td>
<td>220</td>
<td>6,136</td>
<td>7%</td>
<td>1,700</td>
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<tr>
<td>FSILG</td>
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<td>400,000</td>
<td>25</td>
<td>16,000</td>
<td>2%</td>
<td>25</td>
<td>16,000</td>
<td>2%</td>
<td>300</td>
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<tr>
<td>Research Labs</td>
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<td>800</td>
<td>2,125</td>
<td>20%</td>
<td>1000</td>
<td>1,700</td>
<td>25%</td>
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<td>Teaching Labs</td>
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<td>200,000</td>
<td>10</td>
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<td>1%</td>
<td>500</td>
<td>400</td>
<td>67%</td>
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<td>Classrooms</td>
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<td>270,000</td>
<td>10</td>
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<td>650</td>
<td>415</td>
<td>26%</td>
<td>1,700</td>
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<td>Offices</td>
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<td>2,400,000</td>
<td>250</td>
<td>9,600</td>
<td>4%</td>
<td>800</td>
<td>3,000</td>
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<td>Health Care</td>
<td>190</td>
<td>29,000</td>
<td>55</td>
<td>527</td>
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<td>135</td>
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<td>68%</td>
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<td>Campus Support</td>
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<td>308</td>
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<td>500</td>
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<td>Study Areas - Library</td>
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<td>190,000</td>
<td>200</td>
<td>950</td>
<td>29%</td>
<td>500</td>
<td>380</td>
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<td>General Use - Lounges</td>
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<td>1500</td>
<td>60%</td>
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<td>120%</td>
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<td>460</td>
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<td>700</td>
<td>164</td>
<td>88%</td>
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<td>Athletics</td>
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<td>300</td>
<td>1067</td>
<td>33%</td>
<td>800</td>
<td>400</td>
<td>89%</td>
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<td><strong>Total</strong></td>
<td><strong>33,670</strong></td>
<td><strong>8,824,000</strong></td>
<td><strong>3,000</strong></td>
<td><strong>2,941</strong></td>
<td>13%</td>
<td><strong>4,000</strong></td>
<td><strong>2,206</strong></td>
<td>17%</td>
<td><strong>10,380</strong></td>
<td><strong>850</strong></td>
</tr>
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</table>

**Assumptions:**

- Housing includes New Vassar, and Site 4 Graduate Residence
- Eastgate E55 is closed.
- Burton Connor is used as a medical support facility
Key decision triggers

• State and local government actions

• Medical/scientific and technological progress
  1. PCR testing (now), antibody testing (~1-2 mo.)
  2. Privacy-preserving contact monitoring and tracking: (~1 mo.)
  3. Therapeutics (~2-6 mo.)
  4. Vaccines (~9-18 mo.)

• Social/cultural/ethical standards
  • Returning to campus: a) health risks returning to campus are no worse than in other parts of one’s life, and b) campus activities don’t have a large impact on health of broader community.
  • What will be socially-accepted limits on behavior if they allow us to get back to work? (e.g., masks, high-risk populations work remotely; socially-distanced classrooms; labs work in shifts; less dense living environments; stepped-up cleaning)
COVID teaching and learning

How do we best prepare our teaching and learning enterprise for a range of scenarios?

In all scenarios, our goal is that this Fall we will deliver learning experiences for our students at a level of excellence that befits MIT’s mission.

EXAMPLES:
• Fully in-person teaching in the fall
• Fully remote teaching in the fall
• Starting semesters at different times and other “big block” options
• Some students are remote, others in-person
• Socially-distanced education “on-campus”
• Half the UG students on campus, half the time
• Three “full” semesters, students invited to campus for 2 of 3
• Moving from “managing” to “thriving”
  • What can we do that is special?
Quick facts on curriculum

• 250 programs (majors, minors, concentrations, grad, undergrad)
  o 1250 subjects taught per semester

• All have complex pre-requisite chains, double majors, minors, etc.
  o Must run optimization just to test student satisfaction of degree requirements

• We have first-year UGs taking grad classes, grad students taking UG intro to programming classes

• About 30% of the curriculum requires the physical campus
  o Labs, project classes, performance-based classes, design studios

• Very likely that we will have to be two-way remote-capable for all
  o Some high-risk faculty; international students w/o visas + some high-risk students

• Universities are based on the flow of people, significant disruptions to progression to degrees, deferrals, etc. cause a traffic jam

• Difficult to rewire, but will apply optimization approaches to help address
Socially-distanced education on-campus?

• What fraction of the curriculum can be delivered on the physical campus while maintaining social distancing?
  ○ Labs, project spaces, performance spaces, design studios, classrooms

• What are the appropriate practices for the experiential and residential education components?
  ○ UROPs, clubs, athletics, etc.

• Analysis of different teaching spaces is underway
Quick facts on housing (approximate)

• **7000 Grads**
  - Typically 40% in MIT facilities & 60% living off campus
  - Most in apartment-style housing (on- and off-campus)
  - Currently on-campus facilities have 1300 tenants (~60% density)
  - We don’t know how many off-campus students still in the area (most probably are); running surveys
  - Can add another ~300-600 to on-campus facilities (~70-85% density) while maintaining social distancing

• **4500 UGs**
  - 90% typically housed in campus facilities or in FSILGs
  - Mostly dorm style (doubles, triples, quads, some quints in FSILGs); shared bathroom facilities; some with dining halls, some with small group shared cook-for-yourself facilities
  - 200 on campus now, socially-distanced one per room in three dorms
  - Burton Conner offline for renovation; being used as support/care facility

• **500 others in on-campus housing**
  - Heads of house and their families, au pairs, graduate residence tutors, etc.
Key considerations for residential living

• How do we account for risks to individuals and overall population, so we can *ethically and safely live within the emerging new normal*?

• How do we take a creative path, defining *proactive measures that will allow for special, meaningful college experience*?

• How will our *assumptions about social distancing* measure up when put to the test? What is the *probability of success*?

• *Person + Environment = Behavior*: How do we increase the likelihood people will *comply with new norms* and behaviors?
Many things to consider

- **Quality of educational offerings** (all remote, part remote)
- **Student academic progression** (numbers of potential schedule dislocations?)
- **Impact on test, trace and treat thresholds for MIT community**
- **Impact on test, trace and treat thresholds for broader community around campus**
- **Financial sustainability** (paired down to only UG options, tuition, housing, instructional costs, PPE costs, etc.)
- **Equity** (to what degree does the option support this?)
- **Robustness to uncertain future** (e.g. preparing for remote teaching is a robust strategy)
- **Ease of implementation technically**
- **Ease of implementation behaviorally**
- **Impact on faculty** (health, teaching loads, etc.)
- **Impacts on staff** (health, different working hours, etc.)
- **Impacts on students** (health, costs, equity, etc.)
- **Impacts on student life goals** (desire to be with friends, experience the campus, distributional impacts)
- **Experiential learning and residential education** (UROPs, clubs, organizations, athletics, FSILGs, etc)
- **Interactions with other continuity challenges** (e.g. residential, research, business)
- **Confidence in planning estimates** (well understood or no)
- **Reputational impacts** (in or out of step with peers)
- **How well does option enable us to “dance”?** (rapidly reverse course and hunker down)
- **Longer term impacts** (e.g. deferrals)
- **Community economic impact**
Summary

• **Up-scaling physical research on campus as soon as feasible**
  o Largely separable, can run on its own timeline
  o Includes bringing back grad students (but does not imply regular access to campus)

• **Up-scaling residential education and academics**
  o Depends on a complex relationship among housing + curriculum + remote/non-remote education + behavior + costs
  o How many UGs can we bring back and when?
  o Will likely be applying social distancing protocols for all campus instructional and residential spaces
  o Very likely that we will need to be two-way remote-capable for all classes
    o High-risk faculty and students, international students without visas

• **Staff will be increased to enable the path ahead, while ensuring overall staff well-being**

• **All of the above is conditioned on meeting test, trace, and treat requirements which are a function of the population on campus (and off), and are uncertain due to both evolving understanding of the disease and rapid advances in testing and treatments**