This course begins with an introduction to the economics of ideas and uses the economics of ideas to evaluate the origins of invention and discovery, innovation, entrepreneurship, and the diffusion of new technology. The focus throughout is on the microeconomic and institutional foundations for phenomena that have been studied mostly at an aggregate level. The course focuses on (a) the micro-foundations of the knowledge production function (including the role of creativity and the impact of Science), (b) the impact of institutions and strategic interaction on the commercialization of new technology, and (c) the diffusion and welfare impact of ideas and technology. The course emphasizes how the unusual characteristics of ideas can result in social inefficiency, and how the microeconomic and institutional environment influences the gap between private and social welfare. The course includes a mixture (and explicit comparisons of) both theoretical and empirical research.

Requirements:

- two group homework assignments (due October 10th and November 21st);
- two individual “referee” reports (out of a possible seven pertaining to working papers which we have highlighted in red on the syllabus);
- a succinct individual paper proposal, three to five pages, on a topic germane to the class, due on the last day of class (December 14th);
Administration:
- readings, the current version of the syllabus, assignments, and class slides are available through Stellar;
- please contact Natalia Kalas, nresiak@mit.edu, for access to Stellar or other questions about course logistics;
- there are no "official" office hours; please feel free to make appointments with Scott or Pierre individually or together.

Schedule at a Glance

<table>
<thead>
<tr>
<th>Class</th>
<th>Topic</th>
<th>Date</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>Ideas, Innovation, and Economic Growth</td>
<td>September 12</td>
<td>Scott</td>
</tr>
<tr>
<td>Class 2</td>
<td>The Nature of Ideas and Innovation</td>
<td>September 19</td>
<td>Scott</td>
</tr>
<tr>
<td>Class 3</td>
<td>Open Science as an Economic Institution</td>
<td>September 26</td>
<td>Scott</td>
</tr>
<tr>
<td>Class 4</td>
<td>The Supply of Innovators</td>
<td>October 3</td>
<td>Pierre</td>
</tr>
<tr>
<td>Class 5</td>
<td>Incentives for Innovators: Contracting and Control Rights</td>
<td>October 10</td>
<td>Pierre</td>
</tr>
<tr>
<td>Class 6</td>
<td>Incentives for Innovators: Market-level Rewards</td>
<td>October 17</td>
<td>Pierre</td>
</tr>
<tr>
<td>Class 7</td>
<td>Guest Lecture</td>
<td>October 24</td>
<td>Dietmar</td>
</tr>
<tr>
<td>Class 8</td>
<td>Foundations of Entrepreneurial Strategy</td>
<td>October 31</td>
<td>Scott</td>
</tr>
<tr>
<td>Class 9</td>
<td>Entrepreneurial Strategy and Cumulative Innovation Systems</td>
<td>November 7</td>
<td>Scott</td>
</tr>
<tr>
<td>Class 10</td>
<td>Cumulative Innovation and Entrepreneurial Ecosystems</td>
<td>November 14</td>
<td>Scott</td>
</tr>
<tr>
<td>Class 11</td>
<td>Measuring and Evaluating Innovation Ecosystems</td>
<td>November 21</td>
<td>Pierre</td>
</tr>
<tr>
<td>Class 12</td>
<td>Measuring and Evaluating Entrepreneurial Ecosystems</td>
<td>November 28</td>
<td>Scott</td>
</tr>
<tr>
<td>Class 13</td>
<td>Guest Lecture</td>
<td>December 5</td>
<td>Christian/Danielle</td>
</tr>
<tr>
<td>Class 14</td>
<td>TBD</td>
<td>December 12</td>
<td>Scott</td>
</tr>
</tbody>
</table>
Class 1  Ideas, Innovation and Economic Growth  September 12


Class 2  The Nature of Ideas and Innovation  September 19


**Science, Scientific Competition, & Gatekeeping**


**Tools & Capital**


**Class 4 The Supply of Innovators October 3**

**Who Is (or Who becomes) an Innovator?**


**Immigration**


Superstars, Concavity and the Concatenation of Talent


Discrimination and Stratification


Manpower Analysis' Sad Track Record

Class 5  Incentives for Innovators: Contracts and Control Rights  October 10


PROBLEM SET #1 DUE!

Class 6  Incentives for Innovators: Intellectual Property, Prizes, and Secrecy  October 17


Prizes and Prize Design


**Economics of the Patent System**


Patenting and Firm Behavior


Patenting and Antitrust

Secrecy


Class 7  Guest Lecture—Dietmar Harhoff  October 24

**Economic Incentives and Outcomes in the International Patent System**

**Measurement Issues**


**Post-Grant Review and Litigation**


**Timing of Patenting and Examination**

Harhoff, Dietmar, Sebastian Stoll and Ilya Rudyk. 2017. Deferred Patent Examination, Unpublished manuscript, Max Planck Institute for Innovation and Competition, Munich. (to be distributed in mid-October)

**Data Resources**

Harhoff, Dietmar. 2017. A Stata Toolkit for PATSTAT Data. Unpublished manuscript, Max Planck Institute for Innovation and Competition, Munich. (to be distributed in mid-October)
Class 8  Foundations of Entrepreneurial Strategy  October 31


Class 9  Entrepreunarial Strategy and Cumulative Innovation Ecosystems  November 2


Class 10  Cumulative Innovation and Entrepeneurrial Ecosystems  November 14

Readings TBD.

Class 11  Measuring and Evaluating Innovation Ecosystems  November 21


Generalities


Connecting Phenomena to Measurement: Innovation Landscapes


The “Furious Fives”: Experiments, Regression/Matching, Diff-inDiff, RDD, IV


Novel Uses of Citation Data


Networks


**Econometric Minutia**


**PROBLEM SET #2 DUE!**

Class 12  **Measuring and Evaluating Entrepreneurial Ecosystems**  November 28


Class 13  **Guest Lecture: Danielle Li/Christian Catalini**  December 5

**Economics of Crowdfunding, Blockchain and Crypto Tokens**


Class 14  **The Economics of Artificial Intelligence**  December 12
Papers presented at the NBER Conference on the Economics of AI, September 2017, University of Toronto.