



**Spring 2021 Syllabus**  
**18.418/HST.504: Topics in Computational Molecular Biology**

**Instructor: Bonnie Berger** [bab@mit.edu](mailto:bab@mit.edu)

**TA: Maxwell Sherman** [maxas@mit.edu](mailto:maxas@mit.edu)

**Monday & Wednesday 11:30 AM - 1:00 PM**

The location for the class is Virtual

Course Website: <https://math.mit.edu/compbiosem/spring21/index.html> This is a seminar-based course which covers recent research topics in computational molecular biology. This year we will hear from luminaries and rising stars across four broad fields of computational biology: population genetics, cancer & disease genomics, single-cell transcriptomics, and CRISPR & protein-folding prediction.

The course will consist of Class Presentations on Mondays and Guest Lectures on Wednesdays:

<b>Feb 17</b>	Intro to the Course	<b>Apr 7</b>	Alexis Komor
<b>Feb 22</b>	Class Discussion	<b>Apr 12</b>	Class Presentation
<b>Feb 24</b>	Bonnie Berger Talk	<b>Apr 14</b>	David Jones
<b>Mar 1</b>	Class Presentation	<b>Apr 21</b>	Guest Speaker
<b>Mar 3</b>	Trey Ideker	<b>Apr 26</b>	Class Presentation
<b>Mar 9</b>	Class Presentation	<b>Apr 28</b>	TBA Guest Speaker
<b>Mar 10</b>	TBA Guest Speaker	<b>May 3</b>	Student Presentation
<b>Mar 15</b>	Class Presentation	<b>May 5</b>	TBA Guest Speaker
<b>Mar 17</b>	TBA Guest Speaker	<b>May 10</b>	Student Presentation
<b>Mar 24</b>	TBA Guest Speaker	<b>May 12</b>	Cole Trapnell
<b>Mar 29</b>	Class Presentation	<b>May 17</b>	Student Presentation
<b>Mar 31</b>	Sarah Teichmann	<b>May 19</b>	Serena Nik-Zainal
<b>Apr 5</b>	Class Presentation		

**Coursework:**

- **Weekly reading** (50% of grade): To help you develop fluency in computational biology, each week students will be assigned to read 1-2 primary research papers relevant to the work of the upcoming speaker. Students will write and submit a one-page review of the papers due by email at midnight on the day before the talk (usually Tuesday).
- **Class presentations** (25% of grade): Each student will give a 40-minute presentation on a topic related to one of the talks. We will provide guidance on topic choice.
- **Attendance & Participation** (25% of grade): The class will meet synchronously on Zoom and students are expected to make all efforts to attend and participate. We will do our best to accommodate students when synchronous attendance is not possible.
- Zoom Link: <https://mit.zoom.us/j/91842580282> Please access Zoom with your institutional account (mit.edu)