

## Quick Facts about Majoring in Molecular Biophysics & Biochemistry\*

### The molecular basis of life

MB&B is for students interested in applying the tools of chemistry and physics to gain a mechanistic understanding of biology and medicine at the molecular level. Most of our majors go on to careers in medicine or scientific research after earning an advanced degree. We also have graduates working in teaching, journalism, and many other careers.

#### Features of the major

Faculty Advising: Two MB&B faculty members serve as academic advisors for each graduating class (see below for the current list of advisors). Majors can pick one of the advisors for their year and continue to see that same advisor regularly until they graduate. MB&B undergraduates should consult one of their Faculty Advisors for current information, advice, reference letters, and signing of their course schedules.

'18 **Julien Berro** (230 BASS) studies experimental, theoretical and computational approaches to understand how forces are produced in the cell.

'18 **Karla Neugebauer** DUS (C-123 SHM) studies transcription, pre-mRNA splicing and the organization of the cell nucleus.

'19 **Jonathon Howard** (334 BASS) studies motor proteins and cytoskeletal systems.

'19 **Christian Schlieker** (235A BASS) studies molecular mechanisms underlying nuclear envelopathies.

'20 **Enrique De La Cruz** (336A BASS; Head of Branford College) studies actin and myosin regulation, RNA helicases, and signaling enzymes.

'20 **Patrick Sung** (C-103A SHM) studies mechanism of DNA break repair in yeast and human cells.

'21 **Wendy Gilbert** (C-127 SHM) studies the post-transcriptional gene regulation in eukaryotic cells.

'21 **Mark Solomon** (218 BASS) studies cyclin-dependent protein kinases (CDKs) whose activities are required for cell cycle transitions.

#### Curriculum:

- Core required sequence: MB&B 300, 301 and 302 (Biochemistry and Biophysics)
- MB&B majors can take **two** terms of Research for Credit for a letter grade (MB&B 470/471)!
- This research for credit can be expanded on for your senior requirement, MB&B 490.
- Option to pursue a 4-year BS/MS degree
- For our required lab (MB&B 251L) is 0.5 credit, premed students can take with an MB&B # for this to count in medical school admissions as a chemistry lab credit or an MCDB# to count as a biology lab credit.
- Electives: *Pick two!*

MB&B 107a Being Human in STEM; MB&B218La Art and Biomolecular Recognition Laboratory; MB&B 330a Introduction to Dynamical Systems in Biology; MB&B 420a Macromolecular Structure and Biophysical Analysis; MB&B 425a Basic Concepts of Genetic Analysis; MB&B 435a Quantitative Approaches in Biophysics and Biochemistry; MB&B 443b Advanced Eukaryotic Molecular Biology; MB&B 445b Methods and Logic in Molecular Biology; MB&B 449a Medical Impact of Basic Science; MB&B 452b Biomedical Data Science: Mining and Modeling; MB&B 459a Writing about Science, Medicine, and the Environment

#### Working in a Research Lab

You can opt to volunteer, do a summer research internship, do work study, or take Research for Credit (MB&B 470/471) in any biomedical research lab at Yale. For tips on finding a lab and contacting the PI, see page 20 of our handbook\*!

#### Activities:

- Study halls during reading week attended by Profs and faculty advisors. Refreshments served!
- Monthly dinners with other majors, including our student advisory committee; Peer advising system.
- Undergraduate Research Symposia for summer, fall and spring (participation optional).

#### DUS and Undergrad Registrar

Karla Neugebauer (DUS) C-123 SHM, [MBBUndergrad@yale.edu](mailto:MBBUndergrad@yale.edu)

DUS Registrar: Elizabeth Vellali, CE26A SHM (737-2060) [MBBUndergrad@yale.edu](mailto:MBBUndergrad@yale.edu)

Assoc Dean for Science Education, MB&B Prof Sandy Chang, advises on pursuing the MD/PhD [s.chang@yale.edu](mailto:s.chang@yale.edu)

**For additional information on our faculty advising system and our Undergraduate Program, please visit:**

**<http://mbb.yale.edu/academic-programs/introduction-undergraduate-program>**

**\*The detailed MB&B Handbook is here! [https://mbb.yale.edu/sites/default/files/files/2017%20MBB\\_handbook.pdf](https://mbb.yale.edu/sites/default/files/files/2017%20MBB_handbook.pdf)**