**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.

Class of 2020: Professors **Enrique De La Cruz** (336A BASS) and **Chuck Sindelar** (CE25 SHM)

Class of 2021: Professors **Andrew Miranker** (318 Bass) and **Christian Schlieker** (235A BASS). Note, Professor Schlieker is substituting for **Wendy Gilbert** (C-127 SHM) while she is on sabbatical leave.

Class of 2022: Professors **Michael Koelle** (CE28 SHM) and **Candice Paulsen** (234 BASS)

Class of 2023: Professors **Matt Simon** (MIC 312A) and **Lillian Kabeche** (Location TBA). Note, these advisors are for freshman interested in knowing more about MB&B in advance of choosing a major.

You can also contact the DUS and Registrar directly at [MBBUndergrad@yale.edu](mailto:MBBUndergrad@yale.edu) or 203-737-2060

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/MCDB 301L) 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

**Fall-Michael Koelle**

CE28A SHM (737-5808) [MBBUndergrad@yale.edu](mailto:MBBUndergrad@yale.edu)

**Spring-Karla Neugebauer**

C123 SHM (785-3322) [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 The Molecular Biophysics and Biochemistry (MB&B) major is for students captivated by biology and for whom mechanistic understanding is primarily satisfied by engaging the subject at a molecular level. MB&B fosters creativity by integrating the scholarly and practical approaches of many disciplines. The result is a proud history of graduates who have leveraged their training for careers in medicine, research, entrepreneurship, pharma, teaching, consulting, journalism, law, policy and public service.

## Curriculum

* Core required course sequences in Biochemistry and Biophysics
* A required laboratory course with flexibility that allows premedical students to take as fulfilling medical school chemistry lab credit or biology lab credit
* Majors can take two terms of Research for Credit for a letter grade (MB&B 470/471)
  + Can be expanded upon for your senior requirement
  + Can be leveraged to waive out of required laboratory courses
* Electives (two are required) that span deep dives in biological concepts, tools and methods for quantitative biology as well as coursework with cross-listings to Educations Studies, English and History of Art.
* Option to pursue a 4-year dual BS/MS degree

## Advising

The Director of Undergraduate Studies (Andrew Miranker) and Registrar (Liz Vellali) oversee an advising structure that includes 6 faculty members and four peer-mentors.

Faculty: Two MB&B faculty members serve as academic advisors for each graduating class. Majors pick their advisor when they join the department and see that advisor regularly until they graduate. The faculty advisors are the primary point of contact for majors and should be regularly consulted for current information, advice, reference letters, and signing of their course schedules.

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Peer Mentors: A set of four junior and senior MB&B majors serve as peer mentors for students who are considering or entering the MB&B major. Peer mentors can give fellow students a sense of the experience of majoring in MB&B and practical advice on navigating the requirements and electives in our program. Feel free to contact any of these students for one-on-one advice, or attend one of their “peer-mentor dinners” which occur about once/month

## Brennan Carman [brennan.carman@yale.edu](mailto:brennan.carman@yale.edu) Class of 2020 Grace Hopper College

## Anna-Sophia Boguraev [anna-sophia.boguraev@yale.edu](mailto:anna-sophia.boguraev@yale.edu) Class of 2020 Grace Hopper College

## Raquel Sequeira [raquel.sequeira@yale.edu](mailto:raquel.sequeira@yale.edu) Class of 2021 Timothy Dwight College

## Cory Wu [cory.wu@yale.edu](mailto:cory.wu@yale.edu) Class of 2021 Grace Hopper College

## Working in a Research Lab

Do work-study a lab, secure a paid summer internship, or take Research for Credit (MB&B 470/471). Ask your advisor for tips on finding a lab, pay attention to our weekly newsletter and see other advice in this handbook.

## Noteworthy:

* Study halls during reading week attended faculty. Refreshments served!
* Monthly dinners hosted by Peer Mentors
* Weekly newsletter highlighting opportunities, events and pictures of the DUS’ and Registrar’s cats
* Undergraduate Research Symposia