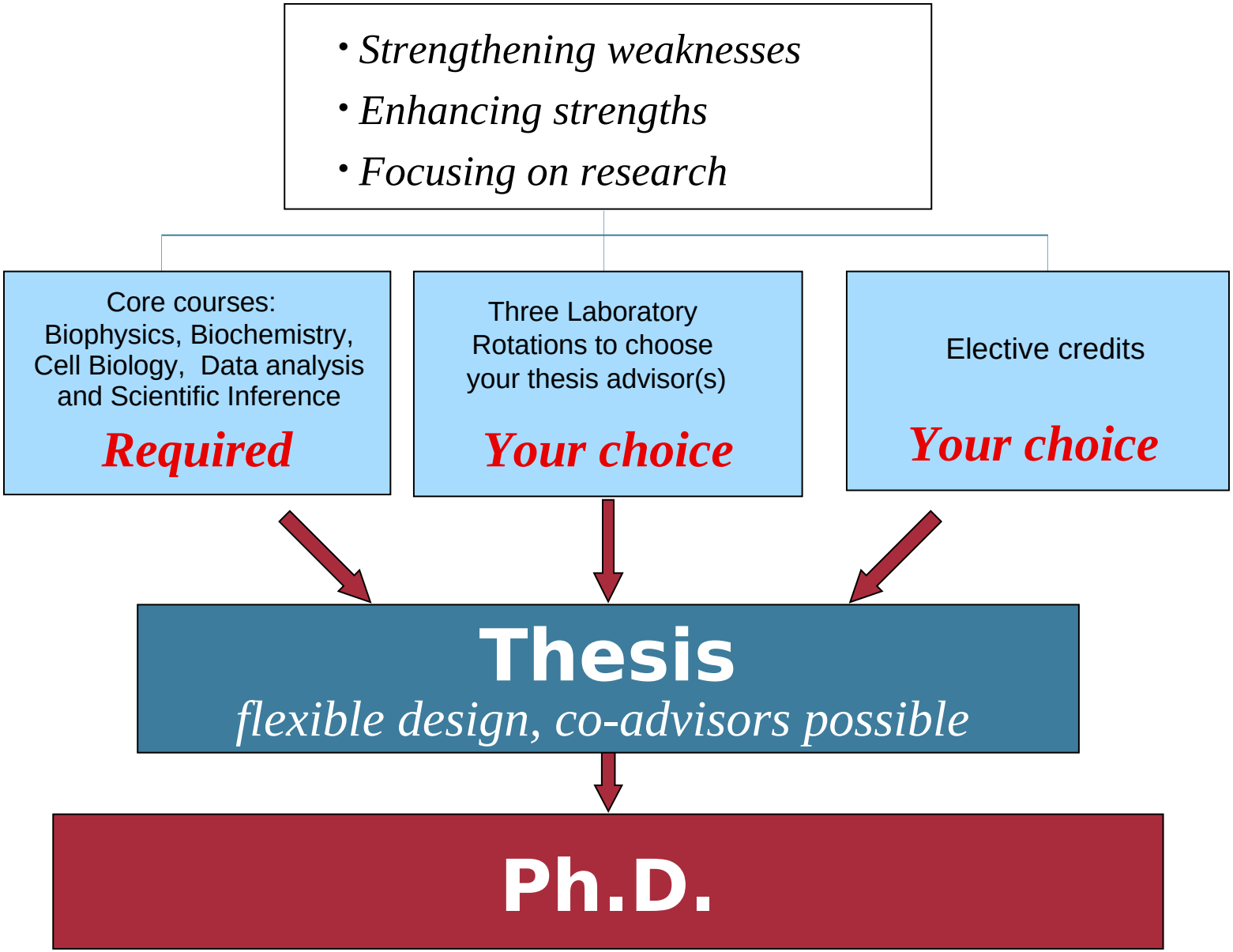
BBCB Curriculum Overview



Curriculum - PhD

Year 1 Fall

Rotation
Cell Biology & Biochemistry (BIOM 6000), Macromolecular Biophysics (BBCB 5080)
Elective/Independent Study*

Year 1 Spring

Rotation
Structural & Mechanistic Biochemistry (BBCB 5090), Data analysis and Scientific Inference (BBCB 5100)
Elective/Independent Study*

Year 1 Summer

Rotation
Pre-dissertation research

Year 2. Fall/Spring

Complete 2 elective requirement if necessary*
Attend Structural Biology Training Grant (SBTG) Tier 1 weekly meetings
Pre-dissertation research

Year 2 Spring

BBCB7050 Candidacy Exam Prep Course (1/2 credit)
Candidacy Exam

Yearly

Responsible Conduct in Research (RCR) training (BGS)

*Electives: A minimum of 2 electives is required. Any 500 level or above science course across campus, subject to approval of BBCB advising committee.

Year 1 (PhD): Lab Rotations/Selection of Thesis Advisor

- Three laboratory rotations (BBCB 6990)

  Optional June matriculation - 12 week rotation before first year
  Academic year rotations – minimum 10 weeks, flexible

Fall	Sept-Nov/Dec
Winter	Jan-March/April
Spring	April-June
Summer (4th rotation if needed)	June-August

- At the end of each rotation students report in one each of: Written, Oral, and Poster formats.

- By Fall 2nd Year: All students doing pre-dissertation work in their thesis lab

Curriculum: Combined Degree

Medical School

Year 1

Fall

Top. Molc. Med. (Grad Class)

Spring

Lab Rotation 1

Summer

Lab Rotation 2

Year 2

Fall

Case Studies Trans. Res. (Grad Class)

Spring

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Late Summer

Lab Rotation 3*

Graduate School

Year 3 (8 Credits)

Fall

BBCB5080 Biophysics

Oct: End Rotation 3

Spring

BBCB5090 Biochemistry

BBCB5100 Data Analysis Sc. Inf.

BBCB7050 Candidacy Prep

Candidacy Exam

Years 4, 5, & 6

BBCB5100 (alt.)

Dissertation

* If necessary

Candidacy Examination

- Transition from formal classroom instruction to guided but independent research
- Helps you formulate your dissertation topic
- An important “legal” requirement for admission
- to candidacy for the Ph.D. degree
- Completed in spring of second year

The format of the Candidacy Exam.

- Either dissertation-related topic, or student choice
- Formed around the preparation of an NIH-style grant proposal. Many students use this as the basis for successful F32 fellowship applications
- Supported by a mini-course focusing on grant writing

Dissertation Research

- The main focus of the PhD degree
- Target of 3-4 years post-candidacy exam
- Guided by a committee of three faculty, meet every 6 months.
- Many opportunities to present and discuss your research – FRD, Annual Retreat, Lab Meetings, National Meetings
- Often multi-disciplinary and collaborative – Co-advisors common.
- 30% of student-authored papers have BBCB faculty other than their advisor on them

Other Training Opportunities/Career Development

Required Attendance:

Biochemistry & Biophysics Department weekly Seminar (Thursday Noon)
Friday Research Discussions
Annual Retreat (3+ years: present poster)
2nd years: Structural Biology Training Grant weekly meetings

Training grants – Penn has 70+, most in US. Typically apply may/june year 2

Two most relevant to BMB:

Structural Biology Molecular Biophysics: Black/Rhoades
Weekly meetings with varied topics: student presentation,
guest speakers on careers, ethics, funding, tech transfer etc.
Requirement to present at a national meeting

Chemistry Biology Interface: Marmostein/Peterssen
Three-times yearly thematic Minisymposia organized by CBI students
Monthly CBI Luncheons CBI students present their research
Yearly Chemistry-Biology Interface Retreat

TA'ing: You are fully funded, so this is optional, and can be done twice

Outreach – Includes:

Upward Bound Math Science program, Biosize, Mentoring in local high schools,
SPARX Program, Science Policy Group....