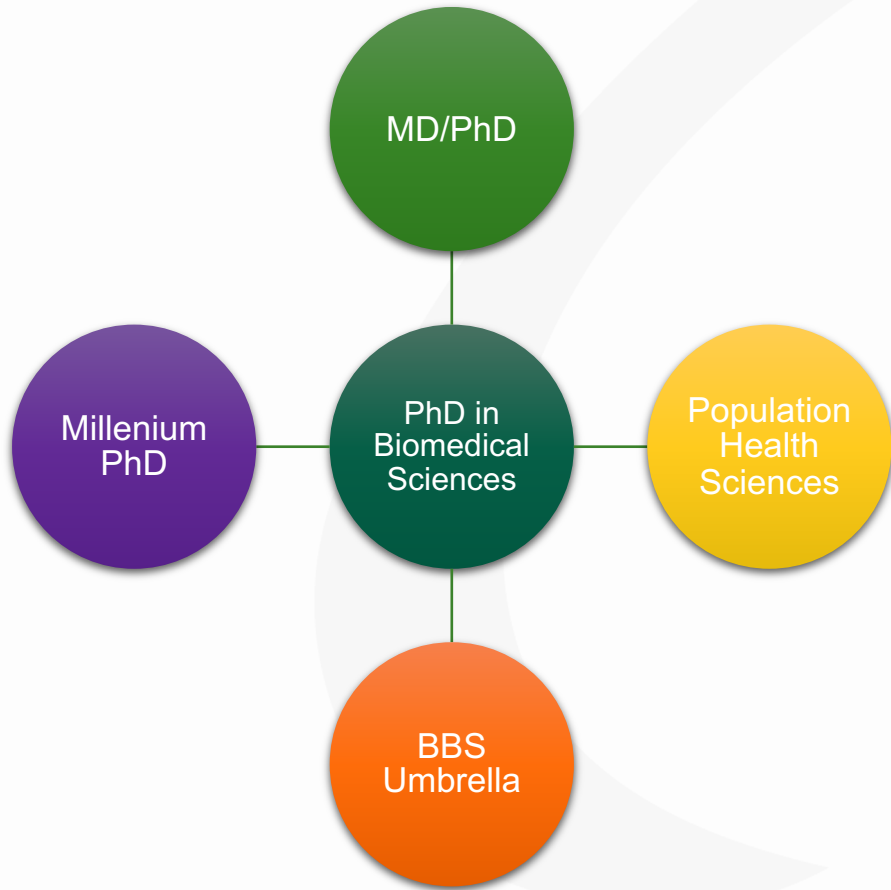


# Two new Programs of Study for the PhD in Biomedical Sciences



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Morningside  
Graduate School of  
Biomedical Sciences



Distinct preparation (UG major, graduate degree, research experience)

Targeted outreach and marketing pre-application

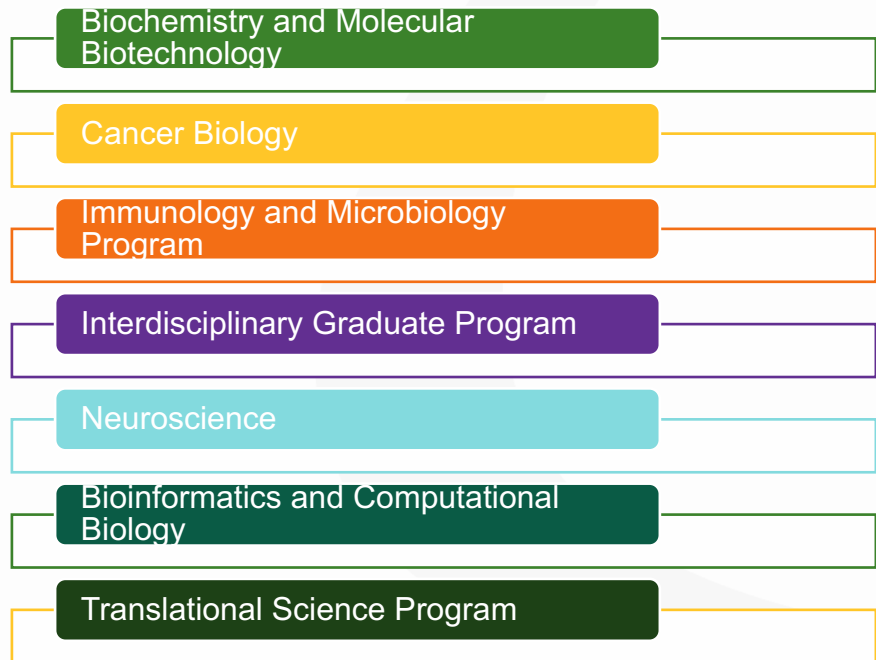
Separate admissions committee

Curriculum tailored to specific preparation and objectives

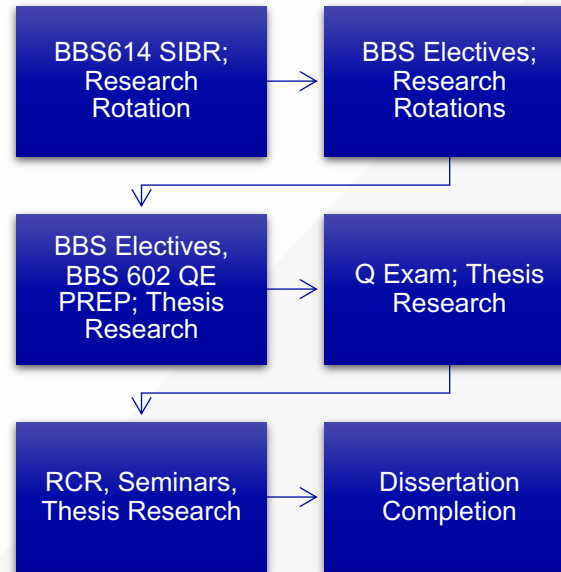
Some requirements common to all (QE, RCR, TRAC, Dissertation Exam)

# Basic Biomedical Sciences Umbrella Programs

Currently Seven Programs, mostly thematic

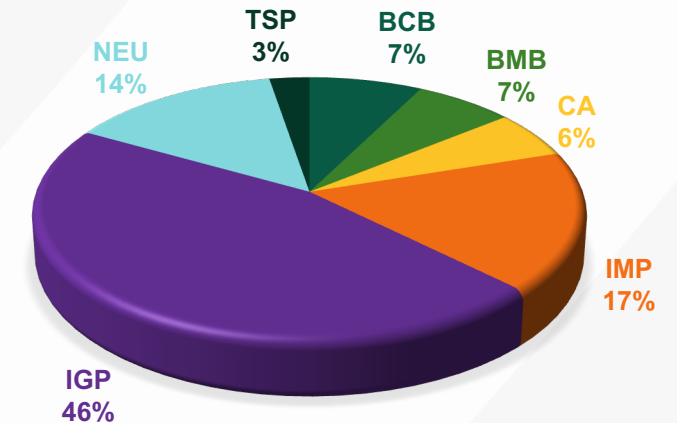


Common requirements & timeline, Program electives



Spring Yr 1 BBS Students affiliate with one program

UMBRELLA STUDENT PROGRAM DISTRIBUTION



# New BBS Umbrella Program: Systems, Computational, and Quantitative Biology (SCQB)

Training in quantitative and systems level approaches for student with undergraduate preparation in life sciences, little exposure to quantitative sciences

Meet high enthusiasm, demand in student community demonstrated by exposure in core course, **high enrollment in existing Systems Biology course (BBS746)**, joining DSB for thesis research

Develop proficiency in computer programming in the context of biological systems

Focus on mathematical analyses and modeling of biological processes

Current BCB Program will be absorbed by SCQB

## Leadership

- *Hyun Youk DSB*
- *Robert Brewster DSB*
- *Manuel Garber GCB*

## Membership

- *DSB Faculty*
- *GCB Faculty*
- *Others by Approval of SCQB Executive Committee*

# SCQB Academic Plan

	Fall	Spring	Summer
Year 1	BBS614 SIBR Research Rotation	BBS746 Any BBS Elective Research Rotations	Thesis Research
Year 2	<b>BBS ### Quantitative Modeling and Analysis*</b> BBS706/741 or any other BBS elective BBS602 QE Prep	Q Exam Thesis Research	Thesis Research
Year 3	RCR, Seminars Thesis Research	Thesis Research, Seminars	Thesis Research
Year 4-6	Seminars, Research, and Completion		

SCQB  
Courses

BBS706 An  
Emperical  
Introduction to  
Statistical  
Modeling  
(Existing)

BBS741 Advanced  
Topics in  
Bioinformatics  
(Existing)

BBS###  
Quantitative  
Modeling and  
Analysis (New)

## Other Elements of the training program

All program faculty must teach in courses, serve on advisory and exam committees

Students attend and present in weekly trainee research seminar

Students attend quarterly meeting with Program Directors

Student attend quarterly meeting with program faculty

## Morningside Graduate School of Biomedical Sciences Process to Date

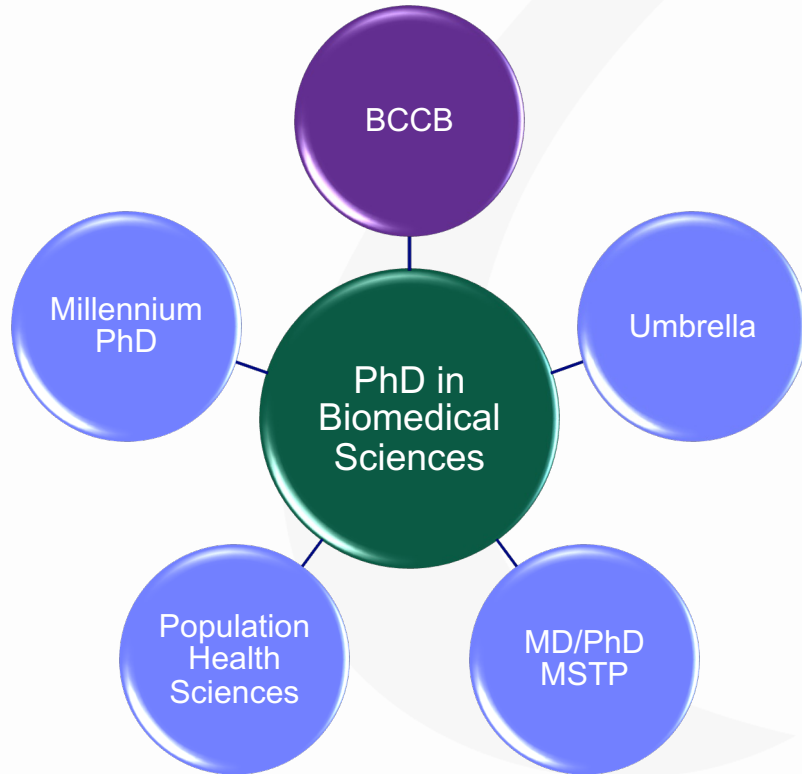
Proposal presented to GSBS Assembly  
May 2023

New Course **Quantitative Modeling and Analysis** provisionally approved by GSBS Curriculum Committee October 2023

Program Approved by GSBS Assembly  
October 2023

Pending final approval, Program can accept new students in June of 2024

# Biophysical, Chemical, and Computational Biology (BCCB) Pathway



Training future scientists for working at the interfaces between life science and physical sciences, computer science, and engineering

Enhance visibility of Morningside Graduate School of Biomedical Sciences to prospective applicants whose undergraduate preparation is in physical sciences, mathematics, computer science, engineering

Tailor applicant evaluation criteria to non-biology STEM majors

Build curriculum to develop proficiency with biological concepts, and applications of physical and computational sciences to biomedical questions

# BCCB Program Leadership

## Executive/Admissions Committee

<u>Faculty</u>	<u>Specialty</u>	<u>Department</u>
• Robert Brewster	(physics)	DSB
• Niko Grigorieff	(physics)	RTI
• David Grundwald	(physics)	RTI
• Song Jie	(chemist)	Orthopedics
• Elinor Karlsson	(bioinformatics)	BIB / PMM
• Francesca Massi	(chemist)	BMB
• Stephen Miller	(chemist)	BMB
• James Munro	(physics)	MAPS
• Manojkumar Saranathan	(physics)	Radiology
• Zhiping Weng	(bioinformatics)	GCB

## Director

***Celia Schiffer BMB***

## Co-Director

***James Munro MAPS***



# BCCB Academic Plan

	Fall	Spring	Summer
Year 1	BCCB ### Biophysical, Chemical, Computational Strategies in Biological Research* BBS 706/741 Research Rotation(s)	BCCB ### Biophysical, Chemical, Computational Strategies in Biological Research Approved BBS Elective	Thesis Research
Year 2	Elective: BBS 706/741, Other Approved BBS Elective	Qualifying Exam Thesis Research	Thesis Research
Year 3	Common Yr 3 Requirements BCCB Seminars, Thesis Research	BCCB Seminars, Thesis Research	Thesis Research
Years 4-6	Seminars, Research, and Completion		

Approved  
BBS  
Electives

BBS706 An Empirical Introduction to Statistical Modeling

BBS715 Chemical Biology

BBS716 Molecular Biophysics

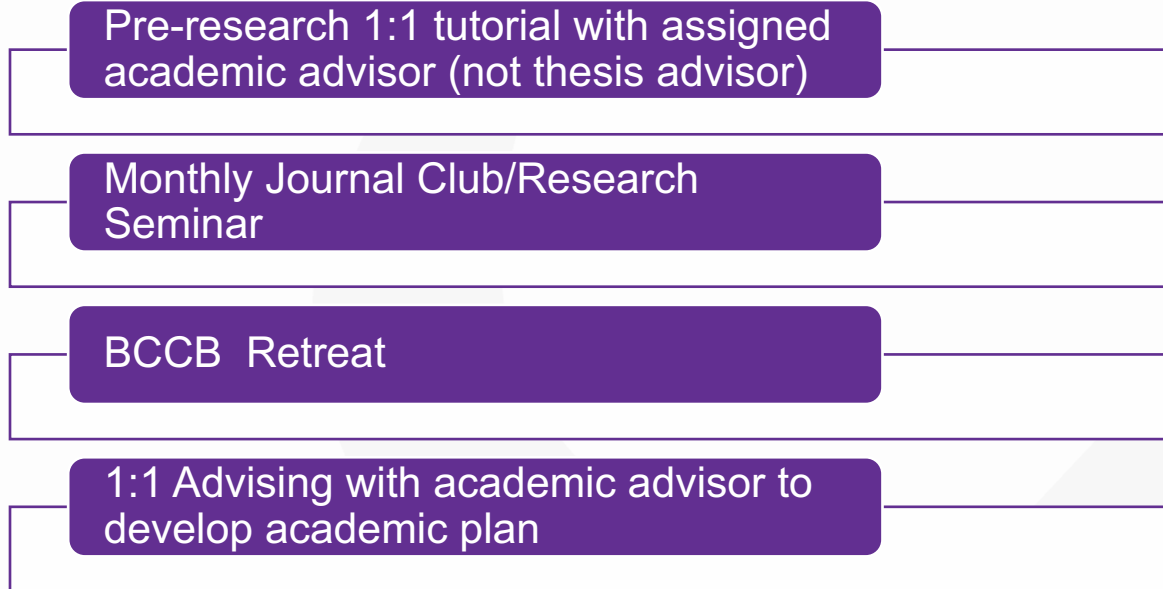
BBS717 Structural Biology

BBS719 Cellular Biochemistry

BBS741 Advanced Topics in Bioinformatics

Others TBD

## Other Elements of the training program



## Morningside Graduate School of Biomedical Sciences Process to Date

