



# Life After Level 1

**Biochemistry Info Night**

Presented by McMaster BBSS



# About Us (VP Academics)



**Michelle**

Honours Biochemistry Level II



**Jenny**

Honours Biochemistry Co-op Level III



**Shiyani**

Honours Research Spec Level IV

Submit questions anonymously throughout the presentation!

Join at [menti.com](https://menti.com) | Use code

**2339 4552**



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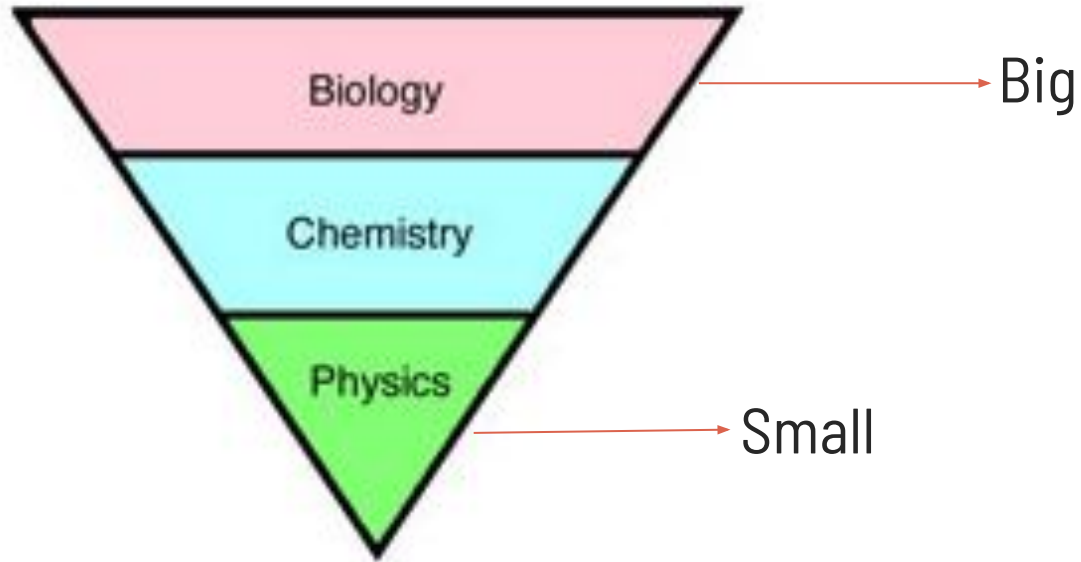




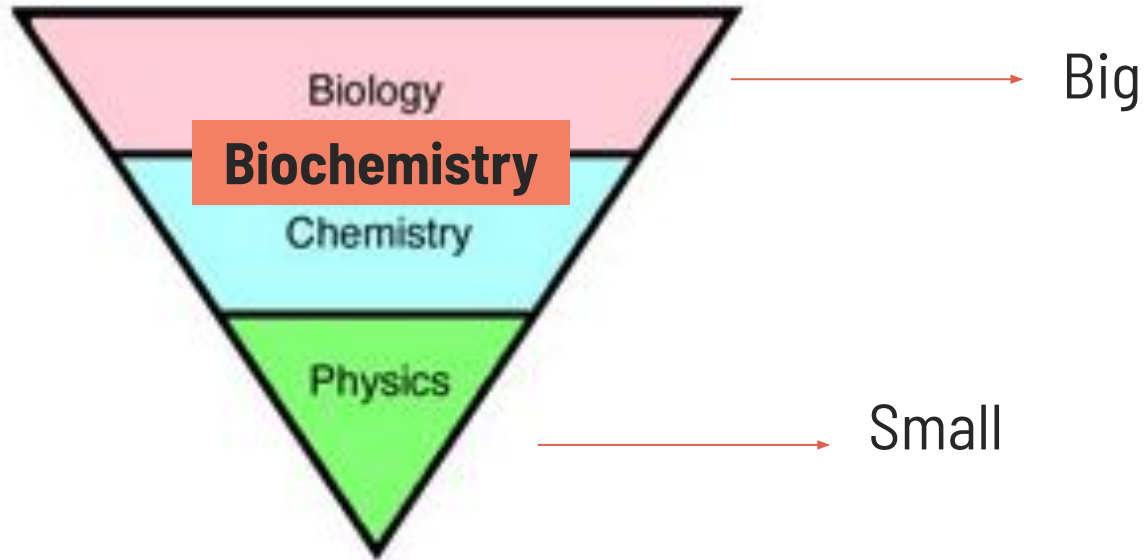
# **What is Biochemistry?**

The Chemistry OF Biology

# Where does Biochemistry fit in?



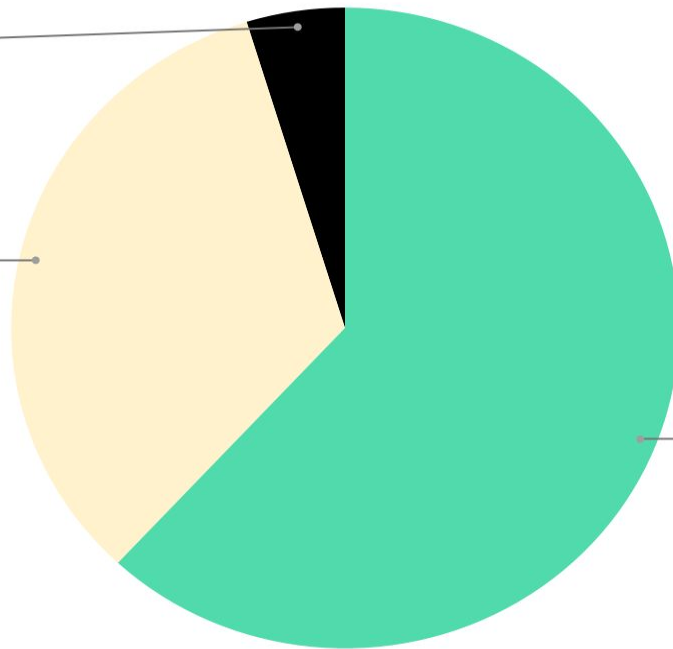
# Where does Biochemistry fit in?



**PHYSICS**  
4.8%

**CHEMISTRY**  
33.3%

**BIOLOGY**  
61.9%





# Biochemistry Subtopics

Proteins, Nucleic Acids,  
Lipids, Vitamins, Hormones

Bacteria & Antibiotic  
Resistance

Cellular Reproduction &  
Differentiation

Chemical Basis of  
Inheritance & Disease

Metabolism & Regulation

Immunological Therapies

# Program Areas of Focus

## Science

- Metabolism & Regulation
- Genetics
- Organic Chemistry
- Microbial Interactions
- Proteins & Enzymes

## Research

- How is Research Conducted?
- Scientific Writing
- Laboratory skills
- Careers in Biochemistry

# What Will the Upcoming Years Look Like?

Level II	Level III	Level IV
Nucleic Acids	Metabolism	1 4th year biochem course
Proteins	Statistics	2-5 courses (worth) of thesis or specified courses
Genetics	Scientific Writing	<b>4 course list</b>
Orgo 1	<b>3 Course List</b>	<b>1-4 electives</b>
Orgo 2	<b>4 Electives</b>	
Biochemical Techniques		
<b>1 Course List</b>		
<b>2 Electives</b>		

# What will the next years look like?

Level II	Level III	Level IV
Nucleic Acids	Metabolism	1 4th year biochem

Check out the McMaster Academic Calendar for more Info:

[https://academiccalendars.romcmaster.ca/preview\\_program.php?catoid=53&poid=27198](https://academiccalendars.romcmaster.ca/preview_program.php?catoid=53&poid=27198)

2 Electives

# Level II Course List

- **ANTHROP 2U03** - Plagues and People
- **BIOLOGY 2B03** - Cell Biology
- **BIOLOGY 2EE3** - Introduction to Microbiology and Biotechnology
- **BIOMEDDC 2C03** - Exploring Careers in Biomedical Sciences
- **BIOMEDDC 2W03** - Write Right for Your Science: Scientific Writing for the Biomedical Sciences
- **CHEM 2A03** - Quantitative Chemical Analysis
- **CHEM 2P03** - Applications of Physical Chemistry
- **CHEMBIO 2A03** - Introduction to Bio-Analytical Chemistry
- **CHEMBIO 2P03** - Physical Chemistry Tools for Chemical Biology

# Level III Course List

- **ANTHROP 3BD3** - The Black Death
- **BIOCHEM 3AB3** - Antibiotics are the Cornerstone of Medicine
- **BIOCHEM 3BP3** - Practical Bioinformatics in the Genomics Era
- **BIOCHEM 3CB3** - Emerging Discovery in Cell Biology
- **BIOCHEM 3H03** - Clinical Biochemistry
- **BIOCHEM 3MI3** - Microbial Interactions
- **BIOCHEM 3R03** - Clinical Research Project
- **BIOCHEM 3Z03** - Structural Determination and Analysis of Macromolecules
- **CHEMBIO 30A3** - Organic Mechanistic Tools for Chemical Biology
- **HTHSCI 3I03** - Introductory Immunology
- **HTHSCI 3K03** - Principles of Virology
- **MOLBIOL 3003** - Microbial Genetics

# Level IV Course List

- **BIOCHEM 4E03** - Gene Regulation in Stem Cells and Development
- **BIOCHEM 4H03** - Biotechnology and Drug Discovery
- **BIOCHEM 4J03** - Immunological Principles in Practice
- **BIOCHEM 4M03** - Cellular and Integrated Metabolism
- **BIOCHEM 4N03** - Molecular Membrane Biology
- **BIOCHEM 4Q03** - Biochemical Pharmacology
- **BIOCHEM 4S03** - Introduction to Molecular Biophysics

# Why Biochemistry?

```
graph TD; A[Why Biochemistry?] --> B[Ready for post-undergrad]; A --> C[Research Opportunities]; A --> D[Engaging Community]; A --> E[Organization and Support];
```

Ready for post-undergrad

Research Opportunities

Engaging Community

Organization and Support



# Why Biochemistry? - Post-Undergrad

- **Professional School** (Med, Grad, Dental, Pharm etc.)
- **Research**
- **Academia**
- **Industry**



# Why Biochemistry? - Research Opportunities

- Full-year lab courses
- Project courses
- Thesis courses



**Dr. Lindsay Kalan**

Skin Microbiome and  
Infectious Disease



**Dr. Gerard Wright**

Antibiotics Discovery



**Dr. Ray Truant**

Mechanisms of age-onset  
neurodegeneration related  
to HD, SCA1 and SCA7

# Why Biochemistry? - Community!



Social Events



Intramurals



Fundraisers

# Why Biochemistry? - Amazing Support

- **AMAZING, brilliant AND understanding staff**
- **Mentorship program → Broteins!**
- **Academic resources**
  - **Test reviews**
  - **Peer editing session**
  - **Research events**
  - **Thesis info events and more!**



# **Biochemistry Pathways**

# Biochemistry Core

- **Why the Biochemistry Core Program?**
  - Continue your undergraduate pathway by **only taking the required 3rd and 4th year core courses**
  - **More elective space** to take courses that align with your goals and interests
- **What are the prerequisites?**
  - BIOCHEM 2B03
  - BIOCHEM 2BB3
  - BIOCHEM 2L06 A/B
  - BIOLOGY 2C03
  - CHEM 20A3/20B3
  - + 3 units from the Biochemistry Course List



# Biochemistry Co-op

- **Why the Biochemistry - Biomedical Science Research Specialization?**
  - Get relevant **job experience** in different biochemical areas before entering the workforce
  - Apply your **knowledge and gain practical experience** with the opportunity to work two 8 month co-ops.
  - Opportunities to get involved in a 4th year **thesis**
- **What are the prerequisites?**
  - BIOCHEM 2B03
  - BIOCHEM 2BB3
  - BIOCHEM 2L06 A/B
  - BIOLOGY 2C03
  - CHEM 20A3/ 20B3
  - SCIENCE 2D00/2C00
  - + 3 units from the Biochemistry Course List



# Biochemistry - Biomedical Research Spec

- **Why the Biochemistry - Biomedical Science Research Specialization?**
  - **Research-intensive** program
  - Gain **hands-on experience** with the opportunity to gain cutting edge research conducted in our department, beyond the undergraduate laboratory courses
  - Opportunities to get involved in 3rd year **research projects** and 4th year **thesis**
- **What are the prerequisites?**
  - BIOCHEM 2B03
  - BIOCHEM 2BB3
  - BIOCHEM 2L06 A/B
  - BIOLOGY 2C03
  - CHEM 20A3/ 20B3
  - + 3 units from the Biochemistry Course List





# Biomedical Discovery & Commercialization

## - Why the Biomedical Discovery & Commercialization specialization?

- Learn about **the field of biomedical commercialization**
- Interested in joining the **pharmaceutical industry, having your own startup or gaining business skills?** BDC is the program that combines commercial experience with biochemistry.
- Unique **accelerated 1-year Masters degree** that consists of a 4-12 month internship with a major pharmaceutical/biotechnology company!
- Small cohort of ~50-60 students

## - What are the prerequisites?

- BIOLOGY 1A03
- BIOLOGY 1M03
- CHEM 1A03
- CHEM 1AA3
- CHEM 20A3/20B3 strongly recommended!





# **Admission into Biochemistry**

# Admission to Biochemistry

## Course Requirements:

- 6 units of BIOLOGY 1A03 and BIOLOGY 1M03
- 6 units of CHEM 1A03 and CHEM 1AA3
- 3 units of MATH 1A03 or MATH 1LS3
- 3 units of PHYSICS 1A03 or PHYSICS 1C03
- 6 units from the Science I Course List

Competitive GPA roughly  
between 9-11

Note: A grade of at least C+ in four of BIOLOGY 1A03, 1M03, CHEM 1A03, 1AA3 and either MATH 1A03 or 1LS3 is required.

There is no supplementary application to complete for admission into Honours Biochemistry (B.H.Sc.).



# **Transitioning to Faculty of Health Science**

# Transitioning to Health Sciences

- **BHSc NOT BSc**
- **Award eligibility**
- **Access to Courses**
- **Program and Advising Resources**

# Question time!

Join at [menti.com](https://menti.com) | Use code

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# Additional Resources!

- Program: <https://biochem.healthsci.mcmaster.ca/>
- Courses: [https://academiccalendars.romcmaster.ca/preview\\_program.php?catoid=53&pooid=27198](https://academiccalendars.romcmaster.ca/preview_program.php?catoid=53&pooid=27198)
- Faculty and Research: <https://biochem.healthsci.mcmaster.ca/about-us/people/>
- BBSS Website: <https://www.macbiochemsociety.com/>
- Insta: **@macbbss**



**Thank You**