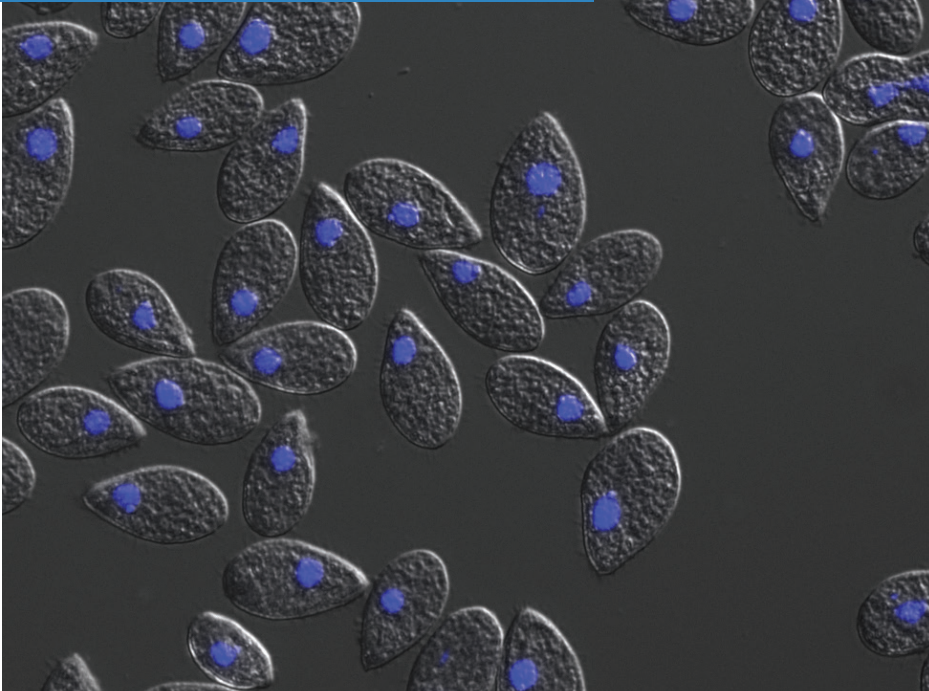


# BS BIOLOGY –

# MOLECULAR & CELL

# EMPHASIS



Nuclear stain (blue) of wildtype *Tetrahymena thermophila* overlaid on differential interference contrast imaging (grey) at 200x magnification.

*Image provided by Megan Kelly, an undergraduate researcher in the Lee Lab.*

The MCB Emphasis major is part of an interdisciplinary program between the Biology and Chemistry departments. Cell biology is the study of cells at the biochemical or molecular level. Molecular Biology investigates the interactions among DNA, RNA, and protein synthesis to understand how these interactions are regulated using the tools and

principles of genetics and bioinformatics — it is among the most rapidly growing fields, and is making strides

with recent accomplishments such as the sequencing of the entire human genome. This program places emphasis on the molecular biology and biochemistry that control cell functions. Students take courses in math, physics, and chemistry, along with the core biology curriculum.



## HOT TOPICS

How are biological molecules organized in space and over time?

How do these processes go awry in diseases like cancer and neurodegeneration?

To learn more about this major, visit the university catalog – [catalog.wvu.edu](http://catalog.wvu.edu)

For a complete overview of course requirements for this program, access Degree Works via Web4u

Join the conversation: [facebook.com/groups/wwubiology](https://www.facebook.com/groups/wwubiology)



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To request this document in an alternate format, please contact [biologyadvising@wwu.edu](mailto:biologyadvising@wwu.edu).

## STUDENT SPOTLIGHT

"I have really enjoyed doing research in Dr. Suzanne Lee's lab and I love all the lab classes that the Molecular and Cell emphasis offers. One course that I'm taking is giving me the opportunity to study the model organism that I work with in Dr. Lee's lab through microscopy. The collaboration is great for scientific advancement."

- Kerry Roberts-Nygren



## SAMPLE CAREER PATHWAYS

Biomedical Research  
Pharmaceutical Research  
Bioinformatics  
Forensic Scientist  
Genetic Counselor  
Geneticist  
Medical Doctor



## FACULTY ADVISORS

<u>Marion Brodhagen</u>	<u>Dan Pollard</u>
<u>Lina Dahlberg</u>	<u>Sandra Schulze</u>
<u>Nick Galati</u>	<u>José Serrano-Moreno</u>
<u>David Leaf</u>	<u>Anu Singh-Cundy</u>
<u>Suzanne Lee</u>	<u>Adrienne Wang</u>
<u>Lynn Pillitteri</u>	<u>Jeffrey Young</u>



## CURRICULUM HIGHLIGHTS

BIOL 324  
Methods in Molecular Biology  
BIOL 470  
Functional Genomics  
CHEM 471  
Biochemistry  
BIOL 476  
Membrane Transport Proteins  
BIOL 487  
Advanced Molecular and Cell Lab  
BIOL 484  
Advanced Cell Lab

## SAMPLE FIRST YEAR SCHEDULE

ALEKS Score:	FALL	WINTER	SPRING
Prior completion of Calc. 1	BIOL 204 CHEM 161 3-5 cr. non-science GURs	BIOL 205 CHEM 162 3-5 cr. non-science GURs	BIOL 206 CHEM 163 3-5 cr. non-science GURs
80	MATH 124 CHEM 161 3-5 cr. non-science GURs	BIOL 204 CHEM 162 3-5 cr. non-science GURs	BIOL 205 CHEM 163 3-5 cr. non-science GURs
70	MATH 118 CHEM 161 3-5 cr. non-science GURs	MATH 124 CHEM 162 3-5 cr. non-science GURs	BIOL 204 CHEM 163 3-5 cr. non-science GURs
55	MATH 114 7-10 cr. non-science GURs	MATH 115 CHEM 161 3-5 cr. non-science GURs	MATH 124 CHEM 162 3-5 cr. non-science GURs
35	MATH 112 7-10 credits of non-science GURs	MATH 114 7-10 credits of non-science GURs	MATH 115 CHEM 161 3-5 cr. non-science GURs

### COURSE LOAD

Due to the heavy workload associated with lab-based courses, students are advised to take no more than two science courses per quarter (including math) during their first year. Course load will increase as students move through their program requirements.

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Students who have applied to be a Biology pre-major will be able to access the application via Canvas. The application deadline is the first Friday of the quarter prior to the quarter you plan to start your major. To be eligible to apply, students must have completed BIOL 204, BIOL 205, CHEM 161, and CHEM 162 (or equivalent courses) with a C- or greater.

## COURSE PLANNING WORKSHEET

	FALL	WINTER	SPRING	SUMMER
Year 1				
Year 2				
Year 3				
Year 4				