

Welcome to the Department of Biological Sciences

YOUNGSTOWN STATE UNIVERSITY



stem

*College of
Science, Technology,
Engineering & Mathematics*

Main Office Location
Ward Beecher Hall
Room 4037
(330) 941-3601

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Tips for Success!

Choosing the proper undergraduate major and devoting the needed time to your academic career are part of your responsibilities as an adult. Biology is a rigorous major that can provide you with many future career options. Like many endeavors in life, your journey as biology major requires dedication and hard work. Your undergraduate performance and postgraduate career will be products of the quality time that you invest in your academics. To help you get started, here are some tips for success that can be applied throughout your undergraduate degree program.

- Time management
 - Note examinations, quizzes, assignments and due dates on your calendar
 - Keep up with your studies on a daily basis
 - Science courses require at least two hours of study time for every hour of lecture
 - Start reviewing for examinations at least one week in advance
 - Do not review the text and/or lecture notes just before walking into the examination
 - Studying information right before the exam is more likely to hurt your performance
 - This last bit of studied content will be drifting around in your short term memory and may interfere with recall of information that you studied days, weeks or even months before
 - Get enough sleep the night before your exam
- Utilize your support network on campus
 - Visit your professor and/or graduate teaching assistant, during office hours, to clarify questions as soon as they arise
 - Do not wait until just before the examination
 - Review your performance on assignments, quizzes and exams with your professor
 - Even if you did not need it in high school, take advantage of free tutoring available on campus through the Center for Student Progress (330-941-3538), information regarding the Center is provided at the end of this packet
- Learn how you learn!
 - Consider taking a learning style test such as the VARK to determine your optimal learning mode (visual, aural, read/write, kinetic or multimodal) <http://www.vark-learn.com>

Academic Resources

CENTER for STUDENT PROGRESS (CSP) 330.941.3538
Kilcawley Center West <http://cc.yzu.edu/csp/>
Coordinators provide one-on-one peer mentoring assistance to help you set and accomplish goals. You will regularly meet with a CSP Coordinator to review your progress. Tutors are available for specific content areas. Call to make an appointment.

MATH ASSISTANCE CENTER 330.941.3274
Lincoln Bldg., Room 408 www.as.yzu.edu/~math/student%20_services_mac.htm
You must be enrolled in a mathematics course to use this service. Provides assistance with mathematical concepts and provides answers for homework problems, on a walk-in basis.

READING & STUDY SKILLS CENTER 330.941.3099
Maag Library, Lower Level www.yzu.edu/rdg-studyskills
Provides one-on-one tutoring in study skills (goal setting, time management, note-taking, textbook reading, etc.). Provides computer assisted instruction in reading comprehension and increased reading speed. Appointment basis or walk-in hours available.

WRITING CENTER 330.941.3055
Maag Library, Lower Level www.as.yzu.edu/~english/wc/Writing_Center_Homepage.htm
Provides assistance with developing competence in writing fundamentals and writing styles. Call to make an appointment.

PLACEMENT TESTING OFFICE 330.941.1343
Meshel Hall, Room 242 www.yzu.edu/cbpt
All students are required to take the English, Math, and Reading placement exams before they can take a course in those areas. Call to schedule an exam date.

OTHER RESOURCES

Career and Counseling Services, Jones Hall, Room 1034	www.yzu.edu/career-services	330.941.3515
Center for International Studies, Jones Hall, Room 1005	www.yzu.edu/cisp/	330.941-2336
Disability Services, 275 Fifth Avenue	www.yzu.edu/services/disabilityservices	330. 941.1372
Financial Aid, Meshel Hall, 2nd Floor	www.yzu.edu/finaid	330.941.3505
Maag Library	www.maag.yzu.edu/	330.941.3678
Mental Health Counseling, Jones Hall, Room 3009	web.yzu.edu/counselingservices	330.941.3737

College of Science, Technology, Engineering & Mathematics (STEM) Information

STEM ADVISEMENT DEPARTMENT

web.yсу.edu/gen/stem/Advisement_m599.html

Denise Walters Dobson ~ Academic Administrator

(Email: dwdobson@ysu.edu)

Sylvia J. Rupert	330.941.2512	Administrative Assistant, Moser Hall Room 2325
Mary Lou Puskar	330.941.3753	Administrative Assistant, Moser Hall Room 2280
Brett Rovynak	330.941.1531	Academic Advisor: BS/MD (Email: barovnyak@ysu.edu)
Debbie Kucharski	330.941.2254	Academic Advisor: Pre-Engineering & Pre-Engineering Technology and First Year Engineering (Email: dlkucharski@ysu.edu)
Jim Stipetich	330.941.7243	Academic Advisor: Computer Sciences, Mathematics, Sciences and STEM Undetermined (Email: jmstipetich@ysu.edu)

ACADEMIC DEPARTMENTS

DEPARTMENT	BUILDING	PHONE	WEBSITE
Biological Sciences	Ward Beecher 4037	330.941.3601	web.yсу.edu/stem/biology
BSMD Program	Moser Hall 2290	330.941.2292	www.yсу.edu/admissions/bsmd.shtml
Chemistry	Ward Beecher 5053	330.941.3663	web.yсу.edu/stem/chemistry
Civil/Environmental & Chemical Engineering	Moser Hall 2460	330.941.3027	web.yсу.edu/stem/civileng
Computer Science & Information Systems	Meshel Hall 339B	330.941.3134	csis.yсу.edu
STEM Dean's Office	Moser Hall 2200	330.941.3009	web.yсу.edu/stem
Electrical & Computer Engineering	Moser Hall 2046	330.941.3012	web.yсу.edu/stem/eleccompeng
Geological & Environmental Science	Moser Hall 2120	330.941.3612	web.yсу.edu/stem/ges
Individualized Curriculum Program	DeBartolo Hall 104	330.941.3408	web.yсу.edu/class/icp
Mathematics & Statistics	Lincoln Bldg. 501	330.941.3302	web.yсу.edu/stem/math
Mechanical & Industrial Systems Engineering	Moser Hall 2510	330.941.3016	web.yсу.edu/stem/mecheng web.yсу.edu/stem/indsyseng
Physics & Astronomy	Ward Beecher 2014	330.941.3616	web.yсу.edu/stem/physics
Power Plant Technology	Moser Hall 4120	330.941.1743	dpcoyne@ysu.edu
School of Engineering Technology	Moser Hall 4120	330.941.3287	web.yсу.edu/stem/engtech

Suggested Undergraduate Timeline

Freshman Year

- Before meeting with an advisor, review course requirements for the undergraduate degree
- Meet with your advisor from the Department of Biological Sciences (DBS) and plan a tentative course timetable for your undergraduate degree program
 - The DBS does not assign an advisor to you
 - Select an advisor based upon your intended career goals
 - This is one of the most important things to do your first year
 - Please refer to “Tips for Working with your Faculty Advisor” section below
- If you are planning to enter a graduate or professional degree program after graduation, determine the admission requirements for your intended program
 - This information can be found by searching the program’s web site
 - See the attached chart, “Prerequisite Course for Various Graduate & Professional Schools” section below
 - Examine the prerequisite course work, required as well as recommended
 - Determine the type of admissions examination required
 - Dental Admission Test (DAT)
 - Graduate Record Examination (GRE)
 - Medical College Admission Test (MCAT)
 - Optometry Admission Test (OAT)
 - Pharmacy College Admission Test (PCAT)
 - All graduate and professional programs require letters of recommendation
 - Develop genuine relationships with your professors and the professionals practicing in your area of interest during your undergraduate years
 - Letters of recommendation are crucial to your admissions package and you want someone to write a thoughtful and thorough letter on your behalf
- Start a curriculum vitae, also known as your CV
 - This is your résumé, a document that summarizes your education, employment history and experiences that are relevant to your qualifications for the particular graduate program for which you are applying
- Join a student organization to meet students with similar goals
 - Biology Club
 - Premedical Chapter of the American Medical School Association (AMSA)

Sophomore Year

- Meet with your advisor in the DBS to discuss class scheduling and career goals
- Gain exposure and experience in your field of interest
 - Consider volunteer work or community service
 - Contact professionals regarding internships or “shadowing” opportunities
- Participate in authentic research projects
 - Most YSU faculty conduct research and may offer undergraduate students the chance to join their laboratory for the summer, fall, or spring semesters
 - BIOL 4850 *Problems in Biology* serves as an independent study course (1 to 3 semester hours) which can be taken for up to three total semester hours of credit toward your degree
 - Apply to research positions hosted by external agencies or programs

Junior Year

- Meet with your advisor in the DBS to discuss class scheduling and career goals
- Gain exposure and experience in your field of interest
 - Consider volunteer work or community service
 - Contact professionals regarding internships or “shadowing” opportunities
- Participate in authentic research projects
 - Most YSU faculty conduct research and may offer undergraduate students the chance to join their laboratory for the summer, fall, or spring semesters
 - BIOL 4850 *Problems in Biology* serves as an independent study course (1 to 3 semester hours) which can be taken for up to three total semester hours of credit toward your degree
 - Apply to research positions hosted by external agencies or programs
- Register to take the required admissions examination
 - Register for an optional test preparation course: Princeton or Kaplan
- Begin the application process during the spring semester
 - Many programs utilize a single, online application site
 - American Medical College Application Service <https://www.aamc.org>
 - American Association of Colleges of Osteopathic Medicine <http://www.aacom.org>
 - Pharmacy College Application Service <http://www.pharmacas.org/>
 - Physical Therapist Centralized Application Service <http://www.ptcas.org/home.aspx>
 - Veterinary Medical College Application Service <http://www.aavmc.org/>
 - Begin work on your personal statement/essay
 - Remember this statement while preparing your essay, *it's not what you do, it's what you learn from what you do that makes the difference*
 - This statement means you should focus on what you gained intellectually, morally and emotionally from an experience rather than simply listing all the things you have accomplished
 - Begin requesting letters of recommendation
 - It is suggested that you choose the option to *waive your rights* to read the letters of recommendation

Summer before the Senior Year

- Finish your personal essay for the primary application and have multiple people edit and comment on the content of this document
- Finish the online application process
- Stay active in volunteering, leadership roles, research projects, “shadowing” experiences

Senior Year

- Meet with your advisor in the DBS to discuss class scheduling, career goals and verify that all graduation requirements will be met
- Continue to take challenging courses and a full course load
- Stay active in volunteering, leadership roles, research projects, “shadowing” experiences
- Meet all deadlines for the primary applications
- Complete the secondary applications you receive
- Prepare for the interview
- Offers of acceptance into a graduate program or professional school begin as early as November and as late as the first day of classes

Working with your Faculty Advisor

When should you meet with your faculty advisor?

- You need to plan your courses for the upcoming semester
- You need some direction in considering career interests
- You want to learn about research opportunities
- You are having trouble in a course, a personal issue is affecting your academic performance, or in need of a confidant

Faculty are organized into three divisions based on their area of expertise

- Division of Anatomy & Physiology
 - Dr. Deborah Benyo, 330-941-3606, dfbenyo@ysu.edu
 - Dr. Michael T. Butcher, 330-941-2195, mtbutcher@ysu.edu
 - Dr. Johanna Krontiris-Litowitz, 330-941-3572, jkrontirislitowitz@ysu.edu
 - Dr. Jill M. Tall, Certificate in Biomedical Research Coordinator, Certificate in Anatomy & Physiology Coordinator 330-941-1387, jmtall@ysu.edu
 - Dr. Mark D. Womble, Graduate Coordinator, 330-941-4727, mdwomble@ysu.edu
- Division of Evolution & Ecology
 - Dr. Thomas Diggins, 330-941-3605, tpdiggins@ysu.edu
 - Dr. Ian J. Renne, 330-941-1943, ijrenne@ysu.edu
- Division of Molecular Biology & Microbiology
 - Dr. David K. Asch, 330-941-3187, dkasch@ysu.edu
 - Dr. Jonathan Caguiat, 330-941-2063, jjcaguiat@ysu.edu
 - Dr. Chester R. Cooper, Jr., 330-941-1361, crcooper01@ysu.edu
 - Dr. Diana Fagan, 330-941-1554, dlfagan@ysu.edu
 - Dr. Carl Johnston, 330-941-7151, cgjohnston@ysu.edu
 - Dr. Heather Lorimer, 330-941-7179, helorimer@ysu.edu
 - Dr. Xiangjia "Jack" Min, 330-941-1945, xmin@ysu.edu
 - Dr. Gary Walker, Chair of Biological Sciences, 330-941-7177, grwalker@ysu.edu

Make an appointment

- By phone, e-mail, or come to scheduled office hours
 - Each faculty member is required to maintain at least five office hours each week
 - During these hours, they are available to meet with students outside of the classroom
 - Office hours change each semester, the current listing of Biology Faculty office hours is posted on the bulletin board outside of the Biology Office in Ward Beecher Hall, room 4037

Be courteous and considerate

- If you made an appointment, then be on time
- Please remember to cancel or change the appointment if you have to change your schedule

Be prepared and organized for meetings

- Before meeting with your advisor, review the course requirements for your degree program, your progress toward graduation and course offerings for the upcoming semester
- Make sure you can clearly articulate your questions and concerns

Be sure you understand all rules and requirements

- It is the student's responsibility to understand the course requirements for your major, the graduation requirements for the College of Science, Technology, Engineering, and Mathematics and for Youngstown State University
- Rules and requirements can vary by semester/year of enrollment, so do not assume that your friend knows the rules that apply to you!

HELP, I cannot get in touch with my faculty advisor

- Another place to gain helpful insight and advising assistance is the STEM Advising Center in Moser Hall, room 2325 (330-941-7272), http://stem.yzu.edu/gen/stem/Advising_m2035.html

Academic Schedule Planning Sheet

SCHEDULE PLANNER

SEMESTER:

Name:

BANNER

ID:

Dept & Course Number	Course Title	CRN	S.H.	Time	Days

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8 - 9 am						
9 - 10 am						
10 - 11 am						
11 - 12 pm						
12 - 1pm						
1 - 2 pm						
2 - 3 pm						
3 - 4 pm						
4 - 5 pm						
5 - 6 pm						
6 - 7 pm						
7 - 8 pm						

Important Information about Grades

Grade Options

The University uses the traditional grading system when assigning a final grade for a complete course: A, B, C, D, or F. Assignment of course grades is the responsibility of the course instructor. The grading policy for the course can be found on the course syllabus distributed at the beginning of the semester. All courses required for the major must be completed with a final grade of “C” or better. Students may also elect the following options but only through the last day to add a class for the semester.

Audit (AU)

AU signifies that a student has registered for a class on an audit basis and has met the attendance requirement. No credit is given for AU courses – the course does not count in the academic load except for fee purposes. You may change an audited course to a credit class only during the period to add a class.

Credit/No Credit (CR/NC)

Students may elect to take a course outside their major or minor as CR/NC. Students electing the CR/NC option are not identified as such on the class roster. The following conditions apply:

- Current students must have completed at least 15 SH and have a GPA of 2.0 or better
- Transfer students must have at least 30 SH of transfer credit and be unconditionally admitted
- Students must receive a grade of A, B, or C to receive credit
- A grade of D will result in no credit
- The CR/NC option may be elected for 12 SH toward the bachelor degree
- Students may register for only one course CR/NC per semester or summer session
- Students must indicate the CR/NC option at the time they register or within the official drop/add period

Incomplete Grade

A grade of Incomplete (I) may be assigned under the following conditions:

- The student requests the grade of incomplete
- Both faculty and student sign the “Request for Incomplete Grade” form
- Previous work in the class has been satisfactory
- The circumstances leading to the request are beyond the student’s control
- The course instructor considers the incomplete grade justified
- The option may never be used to allow extra time to avoid a failing grade
- If no formal change occurs within one year the “I” becomes an “F”
- After completed, the instructor submits a “Change of Grade” form

Repeating a Course

Students may repeat any class in which they earned a grade of “D” or “F”. If the course is a prerequisite for another course, the repetition must be successfully completed before the subsequent course is taken. Once the student has completed the course for the second time, a “Repetition Form” must be filed (available from the STEM advising staff in Moser Hall or from the office of the student’s major department). Any further repetitions of the same course must be approved by the Academic Administrator. Courses taken out of sequence do not qualify for this option.

The following conditions apply to course repetition:

- The grade from the first completion remains on the permanent transcript
- The grade point average (GPA) is adjusted to reflect only the last grade
- Credit hours for the course are only counted once
- All YSU grades enter into the determination of graduation honors
- When applying to a graduate school or professional degree program, *both grades* will be used to calculate the student’s final, undergraduate GPA for admission to the program
- Only currently enrolled undergraduates at YSU may petition for recalculation of GPA

Requirements for the Bachelor of Science (B.S.) Degree in Biological Sciences with a Minor in Chemistry

The B.S. degree requires 124 semester hours (s.h.) of which 48 s.h. must be at the 3700 or above level.

Biology – A minimum of 37 s.h. in Biology is required

Required BIOL 2601/2601L & 2602/2602L – General Biology 1 and 2 with Laboratories
BIOL 3721 – Genetics
BIOL 4861 – Senior Biology Capstone Experience

Core courses – One course from two different groups for a total of two courses is required

Group 1: BIOL 3702 – Microbiology (prerequisite: General Biology 1)
BIOL 3711 – Cell Biology: Fine Structure (prerequisite: General Biology 1)

Group 2: BIOL 3730/3730L – Human Physiology & Laboratory (prerequisite: General Biology 2)
BIOL 3725 – Mammalogy (prerequisite: General Biology 2)

Group 3: BIOL 3740-3740L Plant Diversity & Laboratory (prerequisite: General Biology 2)
BIOL 3759 – Evolution (prerequisite: General Biology 2)

Lecture/Laboratory course at the 4800-5800 level – At least one is required

BIOL 4800/4800L – Bioinformatics (prerequisite: Genetics)
BIOL 4801/4801L – Environmental Microbiology (prerequisite: Microbiology)
BIOL 4805/4805L – Ichthyology (prerequisite: Animal Diversity)
BIOL 4811/4811L – Comparative Biomechanics (prerequisites: General Biology 2 and Fundamentals of Physics 1)
BIOL 4819/4819L – Taxonomy of Flowering Plants (prerequisite: Plant Diversity or consent)
BIOL 4890/4890L – Molecular Genetics & Laboratory (prerequisite: Genetics)
BIOL 4830/4830L – Functional Neuroanatomy (prerequisite: Human Physiology)
BIOL 4834/4834L – Advanced Physiology Integrative Mechanisms (prerequisite: Human Physiology)
BIOL 4835/4835L – Advanced Physiology Regulatory Mechanisms (prerequisite: Human Physiology)
BIOL 4836/4836L – Cell Biology: Molecular Mechanisms (prerequisite: Cell Biology or consent)
BIOL 4841/4841L – Animal Parasitology (prerequisite: Microbiology)
BIOL 4866/4866L – Dendrology (prerequisite: Plant Diversity or Field Botany)
BIOL 5813/5813L – Vertebrate Histology (prerequisite: Cell Biology or Human Physiology)
BIOL 5824/5824L – Behavioral Neuroscience (prerequisite: Human Physiology)

Chemistry – A minimum of 18 s.h. in Chemistry is required

Required CHEM 1515/1515L and 1516/1516L – General Chemistry 1 and 2 with Laboratories
(prerequisite: high school chemistry or CHEM 1501 and MATH 1513 or equivalent)

Recommended CHEM1515R and 1516R – General Chemistry 1 and 2 Recitations

Required CHEM 3719/3719L and 3720/3720L – Organic Chemistry 1 and 2 with Laboratories
CHEM 3719R and 3720R – Organic Chemistry 1 and 2 Recitations

Physics

Required PHYS 1501/1501L and 1502/1502L – Fundamentals of Physics 1 and 2 with Laboratories
or PHYS 2610/2610L and 2611/2611L – General Physics with Laboratories

Mathematics

Required MATH 1570 – Applied Calculus 1 or MATH 1571 – Calculus 1

Required STAT 3717 – Statistical Methods or BIOL 5853 – Biometry

Additional Degree Requirements

English ENGL 1550 and 1551 – Writing 1 and 2 or ENGL 1550H and 1551H

Speech COMST 1545 – Communication Foundations or COMST 1545H

General Education Requirements (GERs)

Arts and Humanities (AH) – Two courses

Social Science (SS) – Two courses

Social and Personal Awareness (SPA) – Two courses

Some GER courses are listed in multiple domains and students can use the course in either domain; however, the course cannot be used to fulfill both domains. A listing of all AH, SS, and SPA courses for the 2012 General Education model may be found online.

Department of Biological Sciences – Undergraduate Course Schedule

BIOL Course Number	Course Name	Semester Hour(s)	*Fall Semester	*Spring Semester	*Summer Semester
2601/2061L	General Biology: Molecules and Cells	4	X	X	X
2602/2062L	General Biology: Organisms and Ecology	4	X	X	X
3702/3702L	Microbiology	4	X	X	X
3703	Clinical Immunology	3	X	X	
3703L	Clinical Immunology Laboratory	1	X	X	
3705/3705L	Introduction to Human Gross Anatomy	4	X	X	
3711	Cell Biology: Fine Structure	3	X Odd Years		
3721	Genetics	3	X	X	X
3725	Mammology	3	X		
3730	Human Physiology	4	X	X	X
3730L	Human Physiology Laboratory	1	X	X	
3740/3740L	Plant Diversity	4	X		
3741/3741L	Animal Diversity	4		X	
3745	Plant Physiology	3	X		
3759	Evolution	3	X		
3762/3762L	Field Botany	4	X		
3780/3780L	General Ecology	5	X		
4800/4800L	Bioinformatics	4		X	
4801/4801L	Environmental Microbiology	4	X	X	
4805/4805L	Ichthyology	3	X		
4822	Principles of Pharmacology	3		X	
4823	Cancer Biology	2		X	
4829	Microbial Physiology	3		X	
4830/4830L	Functional Neuroanatomy	4		X	
4834/4834L	Advanced Physiology Integrative Mechanisms	4		X Even Years	
4835/4835L	Advanced Physiology Regulatory Mechanisms	4		X Odd Years	
4836	Cell Biology: Molecular Mechanisms	3	X Even Years		
4837	Cell Biology: Protein Biology Laboratory	1	X		
4839	Selected Topics in Physiology	1		X	
4841/4841L	Animal Parasitology	3	X		
4848	Biology of Fungi	3		X	
4849	Medical Mycology	3			X
4861	Senior Biology Capstone Experience	2	X	X	
4878	Conservation Biology	3		X Even Years	
4890	Molecular Genetics	3		X	X
4890L	Molecular Genetics Laboratory	1		X	X
4896	Introduction to Biomedical Research	2	X	X	
4897	Internship in Biomedical Research	3	X	X	
4898	Research in Physiology	3	X	X	
5804	Aquatic Biology	3		X	
5806	Field Ecology	4		X	
5811/5811L	Ornithology	4		X Odd Years	
5813/5813L	Vertebrate Histology	3		X	
5824/5824L	Behavioral Neuroscience	4	X		
5827	Gene Manipulation	2	X		
5832	Principles of Neurobiology	4	X		
5840	Advanced Microbiology	3	X		
5853	Biometry	3	X		

*The information listed in this table represents the standard schedule; however, course offerings are subject to change. Please refer to the YSU registration site for the full listing of courses offered each semester.

Prerequisite Courses for Various Graduate & Professional Schools

The following chart provides general recommendations for prerequisite courses. For the specific courses required for a particular program, it is strongly recommend to visit the school's web site.

YSU Course	Medical	Dental	Veterinary	Pharmacy	Physical Therapy
BIOL 3702 <i>Microbiology</i>	Recommended	Required	Required	Recommended	Recommended
BIOL 3703 <i>Clinical Immunology</i>	Recommended	Recommended	Recommended		
BIOL 3705 <i>Introduction to Human Gross Anatomy</i>	Recommended and required by some programs	Required	Recommended		Required
BIOL 3711 <i>Cell Biology</i>		Recommended			
BIOL 3730/3730L <i>Human Physiology</i>	Recommended	Required	Recommended	Recommended	Required
BIOL 4822 <i>Principles of Pharmacology</i>	Recommended			Recommended	
BIOL 4890/4890L <i>Molecular Genetics</i>	Recommended				
BIOL 5813 <i>Vertebrate Histology</i>		Recommended			Recommended
CHEM 3785 <i>Biochemistry 1</i>	Recommended	Required	Required	Required	
CHEM 3786 <i>Biochemistry 2</i>				Required	
MATH 1572 <i>Calculus 2</i>	Required by some programs	Required by some programs	Required by some programs	Required by some programs	
ECON 2610 <i>Principles of Microeconomics</i>				Required	
PSYC 1560 <i>General Psychology</i>	Recommended	Recommended		Required	Required
SOC 1500 <i>Sociology</i>	Recommended				
PSYC 3758 <i>Life Span Development</i>					Required
PHIL 3725 <i>Biomedical Ethics</i>	Recommended				

Faculty Research Profiles

- David K. Asch**, Ph.D., University of Kansas Medical Center, 1991. Dr. Asch uses molecular genetic techniques to study the functioning of normal and altered genes in a fungus model system. dkasch@ysu.edu
- Michael T. Butcher**, Ph.D., University of Calgary, 2006. Dr. Butcher studies the biomechanics of the musculoskeletal system in animal locomotion. He uses muscle fiber typing, electromyography, sonomicrometry, strain gauges, and high-speed videography to analyze the structure and function of muscle, bone, and tendon during locomotion. mtbutcher@ysu.edu
- Jonathan J. Caguiat**, Ph.D., Michigan State University, 1995. Dr. Caguiat uses genetic and molecular biology techniques to characterize selenite resistant bacteria. jjcaguiat@ysu.edu
- Chester R. Cooper**, Ph.D., University of Texas, Austin, 1989. Dr. Cooper utilizes molecular biology techniques to examine the morphogenesis and virulence of pathogenic fungi with the goal of identifying novel anti-fungal targets. crcooper01@ysu.edu
- Thomas P. Diggins**, Ph.D., State University of New York at Buffalo, 1997. Dr. Diggins studies various aspects of aquatic and riparian (river corridor) ecology, including spatially and environmentally driven community assembly, successional processes, and the influence of invasive species. tpdiggins@ysu.edu
- Diana L. Fagan**, Ph.D., University of Texas Southwestern Medical Center, Dallas, 1985. Dr. Fagan uses monoclonal antibodies and genetically engineered proteins to develop treatments for *Staphylococcus aureus* infections, including the use of carbohydrate mimetics as alternatives to antibiotic treatment and investigates the use of mesenchymal stromal cells in the treatment of hernias. dlfagan@ysu.edu
- Carl G. Johnston**, Ph.D., University of Cincinnati, 1992. Dr. Johnston is an environmental microbiologist. He studies microbial communities and their interactions with the environment in natural and contaminated systems. He is also interested in tropical field ecology. cjohnston@ysu.edu
- Johanna K. Krontiris-Litowitz**, Ph.D., Cleveland State University, 1984. Dr. Krontiris-Litowitz is studying the nervous system's role in long-term changes in cardiovascular functions such as high blood pressure or irregular heartbeats. jkrontirislitowitz@ysu.edu
- Heather E. Lorimer**, Ph.D., Columbia University, 1992. Dr. Lorimer studies the mechanisms by which DNA makes copies of itself using mitochondrial DNA in yeast as a model system. helorimer@ysu.edu
- Xiangjia Min**, Ph.D., University of Hawaii, 1995. Dr. Min is a bioinformatician with interests in DNA and protein sequence analysis and development of bioinformatics software tools and databases for genomic studies. xmin@ysu.edu
- Ian J. Renne**, Ph.D., Clemson University, 2001. Dr. Renne studies plant community ecology and the factors that drive diversity and community invasibility patterns. He also has interests in plant population biology, avian ecology and evolutionary dynamics of plant community development. ijrenne@ysu.edu
- Jill M. Tall**, Ph.D., Kent State University, 2001. Dr. Tall is a neurobiologist and pharmacologist who examines the effects of environmental factors on behaviors. jmtall@ysu.edu
- Gary R. Walker**, Ph.D., Wayne State University, 1984. Dr. Walker is a molecular cell biologist who uses proteomics and protein analysis to study myogenesis. He is also involved with bio-fuels research. grwalker@ysu.edu
- Mark D. Womble**, Ph.D., University of Michigan, 1983. Dr. Womble uses electrophysiological methods to study the cellular and molecular mechanisms by which neurotransmitters and drugs regulate neuronal activity. mdwomble@ysu.edu

Certificate in Biomedical Research (CBR) Program

The CBR is designed to better prepare undergraduate students interested in pursuing advanced degrees in biomedical research (e.g., MS and PhD programs) as well as professional degrees in medicine, dentistry or physical therapy. The Certificate will not only ensure that students focus their education toward disciplines related to biomedicine, but also gain comprehensive clinical research experience.

CBR Admission and Program Requirements

Minimum grade-point average of 3.4 (on a 4.0 scale) in the prerequisite courses

Submission of the CBR Application and two CBR recommendation forms

Interview with the CBR Program Coordinator

Complete 26-29 semester hours and maintain a grade point average of 3.0 or better in the required and elective courses

CBR Prerequisite Courses

Course Name	Course Number	Semester Hours
General Biology: Molecules and Cells and Laboratory	BIOL 2601/2601L	4
General Biology: Organisms and Ecology and Laboratory	BIOL 2602/2602L	4
Human Physiology	BIOL 3730	4
Human Physiology Laboratory	BIOL 3730L	1

CBR Required Courses

Course Name	Course Number	Semester Hours
Introduction to Human Gross Anatomy and Laboratory	BIOL 3705/3705L	4
Introduction to Biomedical Research	BIOL 4896	2
Advanced Physiology: Integrative Mechanisms and Laboratory <i>or</i> Advanced Physiology: Regulatory Mechanisms and Laboratory	BIOL 4834/4834L BIOL 4835/4835L	4
Selected Topics in Physiology	BIOL 4839	1
Internship in Biomedical Research*	BIOL 4897	6 total 3 + 3

*Students must enroll for BIOL 4897 Internship in Biomedical Research for two, consecutive semesters.

CBR Elective Courses (9-12 semester hours)

Course Name	Course Number	Semester Hours
Clinical Immunology	BIOL 3703	3
Mammology	BIOL 3725	3
Principles of Pharmacology	BIOL 4822	3
Cancer Biology	BIOL 4823	2
Microbial Physiology	BIOL 4829	3
Functional Neuroanatomy and Laboratory	BIOL 4830/4830L	4
Advanced Physiology: Integrative Mechanisms and Laboratory <i>or</i> Advanced Physiology: Regulatory Mechanisms and Laboratory**	BIOL 4834/4834L BIOL 4835/4835L	4
Vertebrate Histology and Laboratory	BIOL 5813/5813L	4
Behavioral Neuroscience and Laboratory	BIOL 5824/5824L	4
Principles of Neurobiology	BIOL 5832	4
Gross Anatomy 1 and Laboratory	BIOL 5868/5868L	4
Gross Anatomy 2 and Laboratory	BIOL 5869/5869L	4

**Students are *required* to take either BIOL 4834/4834L or BIOL 4835/4835L in fulfillment of the CBR program; however, students who *take both* courses will be given elective credit for the second course.

Certificate in Anatomy & Physiology (CAP) Program

The CAP program includes an education founded in courses related to anatomy and physiology, as well as provides a student with the opportunity to gain a comprehensive laboratory experience. The curriculum is designed for undergraduate students interested in pursuing advanced degrees in anatomy and physiology (MS or PhD), professional degrees (medicine, dentistry, physical therapy or veterinary medicine) or employment in industry.

CAP Admission and Program Requirements

- Minimum grade-point average of 2.7 (on a 4.0 scale) in the prerequisite courses
- Submission of the CAP Application and two CAP recommendation forms
- Interview with the CAP Program Coordinator
- Complete 26-29 semester hours and maintain a grade point average of 3.0 or better in the required and elective courses

CAP Prerequisite Courses

Course Name	Course Number	Semester Hours
General Biology: Molecules and Cells	BIOL 2601/2601L	4
General Biology: Organisms and Ecology	BIOL 2602/2602L	4
Human Physiology	BIOL 3730	4
Human Physiology Laboratory	BIOL 3730L	1
Introduction to Human Gross Anatomy	BIOL 3705/3705L	4

CAP Required Courses

Course Name	Course Number	Semester Hours
Selected Topics in Physiology	BIOL 4839	1
Problems in Biology <i>or</i> Research in Physiology*	BIOL 4850 <i>or</i> BIOL 4898	6
Advanced Physiology Integrative Mechanisms	BIOL 4834/4834L	4
Vertebrate Histology	BIOL 5813/5813L	3
Biochemistry 1	CHEM 3785	3

*Students must enroll for either BIOL 4850 or 4898 for two, consecutive semesters.

CAP Elective Courses (9-12 semester hours are mandatory)

Course Name	Course Number	Semester Hours
Clinical Immunology	BIOL 3703	3
Mammology	BIOL 3725	3
Principles of Pharmacology	BIOL 4822	3
Cancer Biology	BIOL 4823	2
Microbial Physiology	BIOL 4829	3
Advanced Physiology Regulatory Mechanisms	BIOL 4835	3
Advanced Physiology Regulatory Mechanisms Laboratory	BIOL 4835L	1
Cell Biology: Molecular Mechanisms	BIOL 4836	3
Behavioral Neuroscience	BIOL 5824/5824L	4
Functional Neuroanatomy	BIOL 5829/5829L	4
Principles of Neurobiology	BIOL 5832	4
Gross Anatomy 1	BIOL 5868/5868L	4
Gross Anatomy 2	BIOL 5869/5869L	4

YSU - Center for Student Progress (CSP)

Frequently Asked Questions about the CSP Student Tutorial Services

When should I seek assistance from a tutor?

As early as possible in the semester! Appointments are scheduled on a first-come, first-serve basis, so **DON'T WAIT!** The following are other good reasons to seek a tutor:

- If you want to maintain good grades
- If you want help with study skills or preparing for tests
- If you are having difficulty with homework assignments or understanding lectures
- If you are performing poorly on tests
- If you are falling behind in class

How do I make an appointment with a tutor?

Appointments are scheduled online through TutorTrac. You are encouraged to come to the CSP for assistance in making an appointment; however, for convenience, you can access this website from any campus computer that has Internet capability. The web address is <http://150.134.190.167/TutorTrac/>. Follow the steps for creating an account if it's the first time you have used the system.

What if a tutor is not available at the times I am available?

You can complete a "Request for Tutoring" application, available in the Tutorial Center in the CSP. Every effort will be made to accommodate your request, whether by adjusting current tutors' schedules or by hiring new tutors. Beginning fall 2012, online tutoring is also available in select subjects. For details, inquire with CSP Student Tutorial Services staff.

How frequently will I meet with my tutor?

You will meet with the same tutor at the same time and day every week for the remainder of the semester.

How long are the appointments?

Appointments are generally 50 minutes in length. This allows you and/or your tutor to have a few minutes to get to class after the session is over. If you need additional time, you can make arrangements through TutorTrac to schedule more time with the same tutor if they are available, or with a different tutor.

What if I have to cancel my appointment?

You must call the secretary in the CSP as soon as possible at 330-941-7253.

What's the policy regarding missed appointments?

Because there is such high demand for our services, our policy is that if you miss two consecutive appointments, you will forfeit the appointment time with the tutor and be removed from the tutor's schedule. This allows the tutor to accommodate another student. Also, you will be removed from the tutor's schedule if you miss your first appointment.

What if I only need the tutor one time?

We encourage you to continue to see your tutor every week. However, if you feel that the tutor has helped you to clarify the concepts with which you are struggling, thank the tutor and let them know that you will no longer be attending. This is important because the tutor can then serve another student.

Is there a limit to the number of appointments I can schedule?

Yes. Our policy is that you can schedule three appointments per week. Further, you can schedule a maximum of two appointments per week in the same subject.

Are group tutoring sessions offered?

Yes. Tutors are trained to facilitate the learning of individual students as well as small groups of students. If multiple requests are received for tutoring in the same class with the same professor, a small group will be established and tutoring for that class will be offered at the same day and time every week.

What should I bring to the tutoring session?

- Your syllabus, notebook, textbook, past tests and in-class assignments
- Questions
- A good attitude
- A willingness to actively participate in the tutoring session

What should I do when I arrive for my appointment?

Arrive on time (or a few minutes early so that you can mentally prepare yourself for tutoring) and LOG IN to TutorTrac at one of the computer terminals.

What can I expect from my tutor?

- Confidentiality, respect and patience
- Concerted effort to aid in your understanding of difficult material
- Help with study skills
- Knowledge about the subject area being tutored
- Ability to help identify learning obstacles and ways to overcome them
- Ability to model effective student behaviors
- Ability to make referrals to other places on campus that may provide you with assistance

Are there things my tutor will NOT do?

Yes. Tutors will **NOT** do the following:

- **Your homework.**
You will need to have attempted your homework assignment before coming to tutoring. Make a note of the concepts with which you are struggling. Then, you and your tutor can review these concepts and work through similar problems.
- **Rescue you.**
Nothing takes the place of consistent hard work throughout the semester. If you fail to do this, showing up for tutoring a week before final exams will not help. Tutors cannot help you recover from a semester of poor time management. You should come to tutoring early in the semester and often thereafter.
- **Take responsibility for your learning.**
The tutor is not here to do the work FOR you. The tutor is here to help you study your subject successfully. You will have to attend class regularly, participate in class, do your homework assignments, read your textbook, and develop a relationship with your instructor.
- **Have all the answers to every question.**
CSP tutors are well trained and knowledgeable about the subject they tutor, but they cannot be expected to know everything. However, you CAN expect your tutor to model the steps a successful student would use to find the solutions.

For any questions regarding the CSP Student Tutorial Services please contact: Robin Sakonyi White, Assistant Director, Student Tutorial Services, Center for Student Progress, Kilcawley Center West, rlsakonyi@ysu.edu or call 330-941-2956.

Hours of Operation: Mondays 8:00 A.M. – 7:00 P.M. and Tuesdays – Fridays 8:00 A.M. – 5:00 P.M.

Frequently Asked Questions about the CSP Supplemental Instruction (SI) Services

What is SI?

Supplemental Instruction (SI) offers a series of weekly review sessions associated with a historically difficult course. SI is provided for *all students* who want to improve their understanding of the course material and improve their grades.

Attendance at sessions is voluntary and free. For you the student, it's a chance to get together with people in your class to compare notes, to discuss important concepts, develop strategies for studying the subject, and to test yourselves before your professor does, so that when he/she does, you'll be ready. At each session you will be guided through this material by your SI leader, a student who has previously taken the course and has demonstrated competency in this area.

What's a SI Leader?

Have you ever wished you could do something over, knowing what you do now? SI leaders are students themselves and are prepared to share with you what they have learned over the years about how to study. They know the course content and are anxious to help guide you through it. They'll be in class with you every day, hearing what you hear and reading what you read. What they don't do is lecture; their job is to help you think about the lectures you hear and the books you read, and then put it all together during the SI review sessions. SI can help you learn the course material more efficiently.

When do SI review sessions start?

On the first day of class you will fill out a short survey to let the SI leader know your class schedule. Your SI leader will set up three sessions each week at times that are best for a majority of the students taking this class. You can attend one, two, or all three every week (the choice is yours) and each one will be different because there is new material to discuss. SI review sessions are informal. Bring your notes; bring your textbook; bring your questions. You will receive a bookmark and email with the days and times of the sessions.

What's in it for me?

If you attend SI sessions regularly, chances are you'll earn a higher grade than if you studied alone. You'll have developed a better understanding of course content as well as more effective ways of studying. Odds are that attending SI for this class will help you in other classes too.

Here's what SI participants say:

"I love the worksheets, games and practice tests!", "People really work together in SI", "I would have never gotten through this course if I hadn't gone to SI.", "Some of my closest friends I met in SI.", "I should have started coming to the sessions earlier!", "_____, my SI Leader was great!", "SI helps me keep up and think about how things work", "I didn't know I would sing for A&P," "Helped to explain things at the board" ... *So, come join the fun and review in SI!*

For any questions regarding the CSP SI program, please contact: Sue Mark-Sracic, Assistant Director, Supplemental Instruction Services, Center for Student Progress, Kilcawley Center West, symarksracic@ysu.edu or call 330-941-2375.

Office of STEM Professional Services

Office of STEM Professional Services

One University Plaza
Youngstown, Ohio 44555

YOUNGSTOWN STATE UNIVERSITY



Professional Services

Walk in hours

Moser Hall Rm. 2095

Fall Semester
Tue 11:30 - 1:00
Wed 11:30 - 1:00

Spring Semester
Wed 11:30 - 1:00
Thu 11:30 - 1:00

Lincoln Building Rm. 510
Mondays, 1:00pm-4:00pm

September 7, 2015	February 1, 2016
October 5, 2015	February 29, 2016
November 2, 2015	April 4, 2016
December 7, 2015	May 2, 2016

Ward Beecher Rm. 2009
Wednesdays, 1:00pm-4:00pm

September 9, 2015	January 13, 2016
October 14, 2015	February 10, 2016
November 18, 2015	March 9, 2016
December 9, 2015	April 13, 2016

Office of STEM

Professional Services

Fall 2015 – Spring 2016
Information & Events Schedule
Moser Hall 2055, 2095
330-941-2151
stem.jobs@ysu.edu
<http://stem.yzu.edu/stem/intern>

YOUNGSTOWN STATE UNIVERSITY



EVENT DESCRIPTIONS

On the Road

Learn what Professional Services offer. Bring your resume for a quick review as we visit different areas of campus.

How to Be Successful at an Expo

These one-hour workshops are a great way to learn networking skills and how to best present yourself as you meet employers at the expos.

Internship/Co-op Presentations (Tentative)

Students participating in an internship or co-op describe and reflect on their experiences. Open to everyone! Presentations by faculty request.

Resume Review Walk-Ins

Just need some quick resume tips? Stop by for a 5-10 minute review.

Internship/Co-op Expos

Last year, over 30 employers networked with 250+ students to discuss co-op and internship opportunities. Whether you are a freshman trying to learn more about what's available or a junior looking for experiential learning opportunities, join STEM Professional Services for this event. Bring your resume. Business attire highly recommended.

August

On the Road Wednesday, August 26th 2015 11:30am – 1:00pm Moser Hall Lobby	Open House Wednesday, August 26th 2015 10:30am – 1:30pm Moser Hall Lobby & Room 2095
Monday, August 31st 2015 11:30am – 1:00pm Meshel Hall 3rd Floor	

September

On the Road Tuesday, September 1st 2015 11:30am – 1:00pm 1st Floor Kilcawley Center (By the Arcade)	How to Be Successful at an Expo Workshop Monday, September 28th 2015 12:00pm – 1:00pm Lincoln Building Cafaro Suite Room 510
Wednesday, September 2nd 2015 11:30am – 1:00pm Moser Hall Lobby	Tuesday, September 29th 2015 3:30pm – 4:30pm Moser Hall Room 2400
Wednesday, September 9th 2015 11:30am – 1:00pm Moser Hall Outside Fish Bowl	
Wednesday, September 16th 2015 11:30am – 1:00pm Meshel Hall 3rd Floor	
Wednesday, September 23rd 2015 11:30am – 1:00pm Moser Hall Lobby	
Wednesday, September 30th 2015 11:30am – 1:00pm Moser Hall Lobby	

October

Goodyear Information Session

Thursday, October 1st 2015
11:30am – 1:00pm
Moser Hall Room 2400

How to be Successful at an Expo Workshop

Thursday, October 1st 2015
12:00pm – 1:00pm Lincoln Building
Cafaro Suite Room 510

Monday, October 5th 2015
12:00pm – 1:00pm
Moser Hall Room 2400

STEM Internship & Co-op Expo

Thursday, October 8th 2015
12:00pm – 4:00pm Kilcawley Center
Chestnut Room

November

On the Road

Wednesday, November 4th 2015
11:30am – 1:00pm
Moser Hall Lobby

Tuesday, November 10th 2015
11:30am – 1:00pm
Meshel Hall 3rd Floor

Wednesday, November 18th 2015
11:30am – 1:00pm
Moser Hall Lobby

December

Internship/Co-op Presentations (Tentative)

Tuesday, December 1st 2015
2:00pm – 6:00pm
Moser Hall Room 2400

Wednesday, December 2nd 2015
3:00pm – 7:00pm
Moser Hall Room 2400

Thursday, December 3rd 2015
3:00pm – 7:00pm
Moser Hall Room 2400

January

On the Road

Wednesday, January 20th 2016
11:30am – 1:00pm
Meshel Hall 3rd Floor

Wednesday, January 27th 2016
11:30am – 1:00pm
Moser Hall Lobby

How to be Successful at an Expo Workshop

Monday, January 25th 2016
12:00pm – 1:00pm
Lincoln Building Cafaro Suite Room 510

Tuesday, January 26th 2016
3:30pm – 4:30pm
Moser Hall Room 2400

Open House

Wednesday, January 20th 2016
10:30am – 1:30pm
Moser Hall Lobby & Room 2095



February

On the Road

Wednesday, February 3rd 2016
11:30am – 1:00pm
Moser Hall Outside Fish Bowl

Tuesday, February 9th 2016
11:30am – 1:00pm
Moser Hall Lobby

Tuesday, February 16th 2016
11:30am – 1:00pm
Meshel Hall 3rd floor

How to be Successful at an Expo Workshop

Wednesday, February 17th 2016
3:30pm – 4:30pm
Moser Hall Room 2400

Thursday, February 18th 2016
12:00pm – 1:00pm
Lincoln Building Cafaro Suite Room 510

STEM Internship & Co-op Expo

Thursday, February 25th 2016
12:00pm – 4:00pm Kilcawley Center
Chestnut Room



March

On the Road

Wednesday, March 16th 2016
11:30am – 1:00pm
Moser Hall Lobby

Thursday, March 24th 2016
11:30am – 1:00pm
Moser Hall Lobby

Wednesday, March 30th 2016
11:30am – 1:00pm
Meshel Hall 3rd floor



April

Internship/Co-op Presentations (Tentative)

Tuesday, April 26th 2016
2:00pm – 6:00pm
Moser Hall Room 2400

Wednesday, April 27th 2016
2:00pm – 6:00pm
Moser Hall Room 2400

Thursday, April 28th 2016
2:00pm – 6:00pm
Moser Hall Room 2400

We offer the following services

Career Planning & Search Guidance

Not sure what to do with your major? Let us help you explore your options. We'll also help you conduct a successful job search.

Resume & Cover Letter Assistance

Resume/cover letter writing is a lifelong skill. We'll help you prepare both for your internship/co-op search.

Workshops

We can visit your class, student org, or other venue to present on resumes, job searches, or other applicable topics.

STEM Clearinghouse

Internship/Co-op Database

Our Clearinghouse Database allows employers to view resume books and post positions, and allows students to apply for openings.

On-Campus Interviews (OCI)

Employers have the opportunity to screen prospective candidates on campus and learn more about the university.

Internship/Co-op Grants

PICAM II
OH-PENN (Fall 2015 only)

Information Sessions

We welcome employers to schedule information sessions with our students to foster relationships and bring awareness of their organizations.