

Biology Student Handbook

2009-2010



**Department of Biology
School of Science**

The College of New Jersey

Table of Contents

INTRODUCTION	3
THE CURRICULUM IN BIOLOGY	3
BIOLOGY CORE COURSES	3
BIOLOGY OPTIONS	3
BIOLOGY- REQUIRED CORRELATE COURSES.....	3
LIBERAL LEARNING (WWW.TCNJ.EDU/~LIBERAL)	3
UNDERGRADUATE RESEARCH	4
INDEPENDENT RESEARCH IN BIOLOGY (BIO 493 OR 494)	4
a. Advisement.....	4
b. Application and Proposal	4
INTERNSHIP IN BIOLOGY (BIO 399)	4
DEPARTMENTAL HONORS.....	4
ACADEMIC OPPORTUNITIES AND SERVICES	5
MARINE SCIENCE CONSORTIUM.....	5
AREAS OF INTEREST IN MATHEMATICS AND COMPUTER SCIENCE	5
AREAS OF INTEREST IN BUSINESS.....	5
AREAS OF INTEREST IN THE ARTS	5
STUDY ABROAD	5
TUTORING	5
ADVISEMENT FOR FUTURE SCHOOLING AND CAREER SELECTION	6
FACULTY ADVISEMENT	6
PREPARATION TO TEACH BIOLOGY: TRADITIONAL UNDERGRADUATE TRACK (BIOLOGY 2 ^o ED MAJOR)	6
GRADUATE SCHOOL ADVISEMENT	6
MEDICAL CAREERS ADVISORY COMMITTEE: PRE-MEDICAL AND ALLIED HEALTH PREPARATION.....	6
SCHOLARSHIPS AND FELLOWSHIPS.....	7
CAREER ADVISEMENT AND JOB ACQUISITION	7
DEPARTMENTAL SOCIETIES	8
AMERICAN MEDICAL STUDENTS ASSOCIATION (AMSA)	8
MINORITY ASSOCIATION OF PRE-HEALTH STUDENTS (MAPS).....	8
AZ/BS-MD CLUB	8
BIOLOGICAL HONOR SOCIETY, BETA BETA BETA (“TRI-BETA”)	8
GRADUATE STUDIES CLUB	8
APPENDIX I	9
ROSTER OF FACULTY, 2009 – 2010	9
APPENDIX II	13
PROFESSIONAL EDUCATION UNIT STATEMENT OF POLICY	13
APPENDIX III	14
BUILDING ABBREVIATIONS AS FOUND ON YOUR SCHEDULE.....	14
APPENDIX IV	15
GUIDELINES FOR BIOLOGY INDEPENDENT RESEARCH.....	15

INTRODUCTION

This handbook is designed to help you to gain the most from your experience at The College of New Jersey (TCNJ). It will acquaint you with procedures, opportunities and services that exist at TCNJ and within the Department of Biology. The Biology Handbook supplements, but does not replace *The College of New Jersey Undergraduate Bulletin* and the Biology Web Page www.tcnj.edu/~biology/index.html.

The Curriculum in Biology

(please also refer to the Undergraduate Bulletin, and the Plan Summary Charts for biology)

Biology Core Courses

BIO 099	Biology Freshman Seminar
BIO 185	Themes in Biology
BIO 211	Biology of the Eukaryotic Cell
BIO 221	Ecology and Field Biology
BIO 231	Genetics
BIO 498 (half course)	Biology Seminar

Biology Options

Each BIOA major must complete **5** units of Biology **option courses**, at least one of which must be an “organismal course” (see bulletin). The New Jersey Marine Consortium offers a course in Marine Biology each summer that can also be used as a biology option. Finally, up to two units of biology option courses can be met by pursuing Independent Research in Biology, (BIO 493 or 494), or Internship in Biology (BIO 399). See section B for details.

Biology- Required Correlate Courses

CHE 201, 202	General Chemistry I and II (satisfies Option C – Natural Science)
CHE 331, 332	Organic Chemistry I and II
PHY 201	General Physics I (note: many post-bacc programs require Physics II)
MAT 127	Calculus A
MAT	A second math course (MAT 128, MAT 200, or STA 215)

Liberal Learning (www.tcnj.edu/~liberal)

A. Intellectual and Scholarly Growth

1. First-year Seminar Program (FSP) course
2. WRI 102 (if required) plus a second writing intensive course (Ecology and Field Biology) and a fourth year writing intensive course in the major
3. Second language, intermediate competency, met by starting a new language and completing through the third introductory second language course(103), or by continuing with a language through the 103 level based on placement testing
4. Information literacy met by showing proficiency through an on-line process

B. Civic Responsibilities

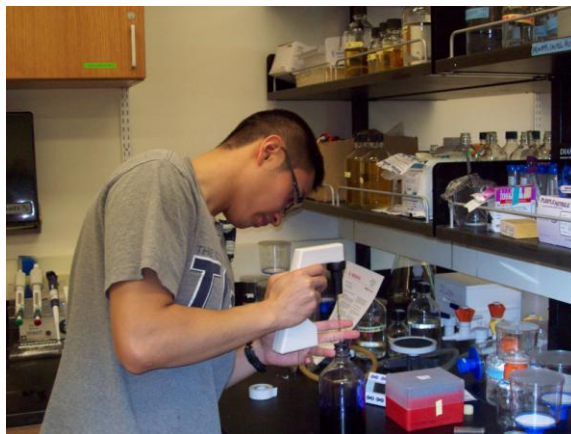
1. Met by completing a course in the major or liberal learning or through an approved program or equivalent sustained experience.

C. Broad Sectors of Human Inquiry

1. See the Liberal Learning home page for a description of the options

Undergraduate Research

Independent research is highly recommended as a way to acquire a foundation in biology by pursuing original research under the direction of experienced faculty. This can be pursued either on campus with a faculty member, as Independent Research (BIO 493, or BIO 494 if you are in the college-wide honors program), or off-campus through Internship in Biology (BIO 399). *Appendix I* lists faculty research interests and academic services. Inquire directly with the Instructor whose research area is of interest to you.



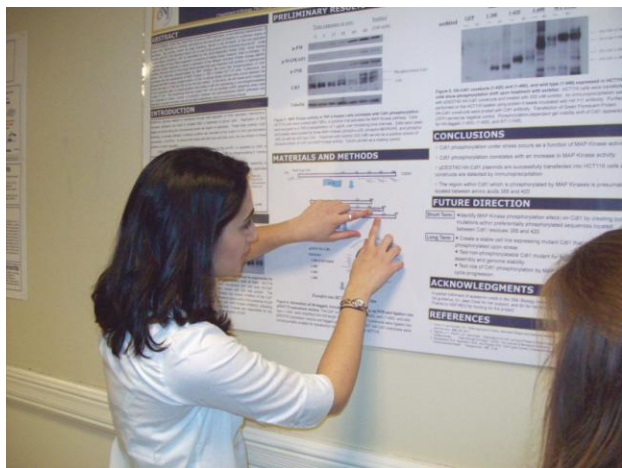
Independent Research in Biology (BIO 493 or 494)

- a. **Advisement:** After reviewing the list of the research interests of the faculty, students should discuss sponsorship with the appropriate faculty member at least one semester prior to when he or she plans to register for independent research. Acceptance of the student by a faculty member (mentor) will be based on the availability of the mentor's time, resources and facilities.
- b. **Application and Proposal:** An Independent Research Enrollment Form (obtained from either Records and Registration or the Biology office) should be completed by the student, signed appropriately and submitted to the Registrar. The student can register for up to 2 courses of research or independent study as biology option credit.

Internship in Biology (BIO 399)

A number of local pharmaceutical and biotech companies, as well as universities and ecological field stations throughout the country offer undergraduate summer research opportunities that qualify for academic internship credit. In most cases students must apply to and be accepted into these programs. An extensive list of opportunities is linked to the Biology home page. Students interested in obtaining academic credit (BIO 399) for internship experiences should contact Dr. Klug and discuss this possibility. The criteria for engaging in research can be found online in the Course Descriptions in the Undergraduate Bulletin, at http://www.tcnj.edu/~bulletin/current/Biology_courses.pdf.

Departmental Honors



Departmental Honors in Biology is research based. To be eligible to graduate with Honors in Biology the student must conduct a minimum of three semesters of research at TCNJ (BIO 493 or BIO 494), write a thesis, and defend the thesis orally in front of a committee. To apply to graduate with Honors in Biology the student must prepare a proposal and form a committee consisting of two faculty chosen by the applicant, the Honors Advisor and the Departmental Chairperson. To graduate with honors the student must complete the research and defend the thesis, have a minimum overall GPA of 3.3, and a minimum science GPA of 3.5, and have completed at least 4 units in biology courses at The College of New Jersey.

Academic Opportunities and Services

Marine Science Consortium

The College of New Jersey is one of 24 academic institutions taking part in the New Jersey Marine Sciences Consortium. The Consortium offers courses at its headquarters located at Sandy Hook in Monmouth County. This affiliation provides our students with an excellent opportunity to take a course in Marine Biology during the summer months for biology option credit. There are also courses in marine science and scuba diving. These can expand a liberal learning education and lead to a life-long avocation. Furthermore, the members of the consortium are engaged in extensive research studies on the various bays and estuaries in New Jersey. Students can gain valuable research experience by participating in one of the many research programs. For further information, contact Dr. Dennis Shevlin, Biology Building, Room 130, ext. 2246.

Areas of Interest in Mathematics and Computer Science

Two minors, one in *Statistics* and the other in *Computer Science*, offer the Biology major an opportunity to delve into the areas of mathematical modeling and bioinformatics.

Areas of Interest in Business

A minor in one of the departments in the school of business can prepare students for careers in scientific administration, sales, personnel, marketing or management.

Areas of Interest in the Arts

An *Art* minor can also be of value if the student has an interest in science illustration and advertising. Graphics and advertising art techniques combined with the biology major would be of value in pharmaceutical supply house sales, basic research publications, and grant development.

Study Abroad

Biology majors can greatly enrich their education by studying abroad for either a semester or a summer. The biology curriculum is flexible enough that it is extremely straightforward to meet requirements even if a student studies abroad; however it is wise to think ahead and discuss this with your advisor as early in your college career as possible.

Tutoring

a. Obtaining the Services of a Tutor

The transition from high school to college presents many new challenges to first-year students. Sometimes, the difficulty can be resolved by consulting the instructor, but other times the problem may need regular, on-going assistance provided by the Tutoring Center. Through a variety of programs, the Center's administrators and peer tutors help students appraise areas of difficulty and develop appropriate learning strategies to master needed content and skills. These programs include:

- Supplemental Assistance groups in selected courses
- Study Groups facilitated by tutors
- Single-session Writing Conferences at any stage of an assignment
- Online Writing Lab (OWL) for internet writing resources and email assistance with specific writing questions: <http://owl.department.tcnj.edu>
- Tutoring, by-appointment, for course content
- Drop-in tutoring in the Center for some math or science courses

The Tutoring Center is located in 145 Forcina Hall and is open Monday-Friday during the daytime and on selected evenings as posted early in the semester. Information about services and schedules is available on the Tutoring Center web site: <http://www.tcnj.edu/~tutoring>

b. Becoming a Tutor

If you enjoy sharing your knowledge of biology or any other area of study with others, consider becoming a tutor for the Tutoring Center. Working as a tutor carries several benefits. For further information, contact the Tutoring Center, 145 Forcina Hall, ext. 3325, or go to the web site at <http://www.tcnj.edu/~tutoring>

Advisement for Future Schooling and Career Selection

Faculty Advisement

You have been assigned an advisor in Biology who will remain your advisor through the rest of your college experience at The College of New Jersey (you can locate your advisor on PAWS). Your advisor will aid you in planning your academic future based on your aims and goals. He or she will aid in your course planning and with many of your academic problems, helping you to find your way through the procedures, making helpful referrals and attempting to personalize your academic endeavors.

Preparation to Teach Biology: Traditional Undergraduate Track (Biology 2° Ed Major)

The Biology Secondary Education major follows a program with a science/math component very similar to that of the Liberal Arts major. The professional education courses will require that you plan your schedule carefully to avoid conflicts with science courses. Student Teaching is a full-time commitment occurring during the fall or spring semester of your senior year, at which time you should not take other courses in liberal studies, math or science. Permission to student-teach as a biology major must be obtained from the Department of Biology Chairperson and the Department of Secondary Science Education Student Teacher Coordinator, Dr. Thornton (thornton@tcnj.edu, x 2875) after meeting the requirements outlined in the undergraduate bulletin.

Graduate School Advisement

All faculty in the department can provide information and guidance to students interested in attending graduate school at both the Masters and Ph.D. levels. Students interested in graduate work should consult their advisor for advice on topics such as taking standardized tests (e.g., GREs), fulfilling requirements, and the like. However, since the application process for graduate studies is very different for different fields, students should consult not only their advisor, but also any and all faculty in their specific area of interest (ecology, developmental biology, molecular biology, etc.). In addition, each fall the Biological Society hosts a session called "How to Get involved in Research" and in the spring faculty host an informational session on graduate school. *It is critical that students interested in pursuing graduate work become involved in undergraduate research while at TCNJ.* A webpage and club are being developed to provide students with basic information regarding graduate study.

Medical Careers Advisory Committee: Pre-Medical and Allied Health preparation

Medical Careers Committee: Dr. Marcia O'Connell, Chair (moconnel@tcnj.edu);

Ms. Helen Kull, Program Assistant (hakull@tcnj.edu)

Optometry advisor: Dr. Sudhir Nayak (nayak@tcnj.edu)

The Medical Careers Advisory Committee provides information and guidance, as well as recommendations for those who qualify, to students interested in professional schools. To obtain the best preparation for medical careers, students are advised to visit the Medical Careers web site: www.tcnj.edu/~biology/career/medadvisory.html.

Keep in mind that your entry into a health professional school is dependent on a number of factors. These include *entry examination test scores* (DAT, MCAT, etc.), *undergraduate science and overall science/math grade point averages*, and extensive *hospital volunteer experience*, and strong *letters of recommendation*. Note that the department offers a **Junior Level MCAT preparatory course**

scheduled each year that runs for approximately twenty-one weeks in the fall and spring. Please contact Dr. Shevlin (shevlin@tcnj.edu, x2246) for further information about this prep course.

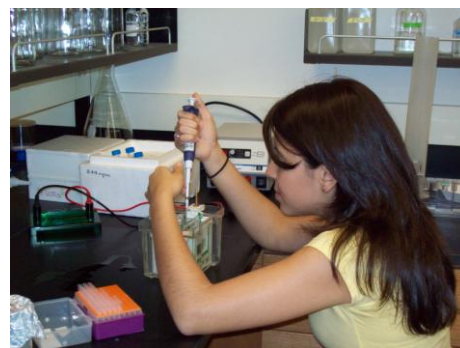
In preparation for application to Medical, Dental, Pharmacy, Veterinary, Physician Assistant, Podiatry, Optometry, Chiropractic, Physical Therapy, Occupational Therapy, Public Health, etc. programs, the student should consult as soon as possible with members of the Medical Careers Advisory Committee for current information and advisement. The student should also consult individual professional school catalogs and web pages to learn the entrance requirements as well as the specialties of the professional programs.

Seven Year BS/OD (Optometry) Program

The State College of Optometry (SUNY) in Manhattan and TCNJ have a formal articulation program. Enrolled Biology freshmen and sophomores may be considered for admission to the program if they can finish the program within three years of entering TCNJ. They must have a 3.2 GPA overall, and in the required pre-optometry coursework, interview with SUNY, and achieve a 320 or better on the Optometry Aptitude Test (OAT). The first year at SUNY double counts as the last year of TCNJ's undergraduate education. The BS degree is awarded by TCNJ after the first year at SUNY is successfully completed. More information on the program is available from Dr. Sudhir Nayak, nayak@tcnj.edu, x2659.

Scholarships and Fellowships

Students can obtain financial support for their undergraduate, graduate, or professional school studies through a variety of scholarships and fellowships. Some awards also provide opportunities for research, or clinical experience. See the departmental scholarship and fellowship webpage (www.tcnj.edu/~biology/opportunities/index.html).



Career Advisement and Job Acquisition

The Office of Career Services (www.tcnj.edu/~www.tcnj.edu/~careers) provides a variety of programs and resources to assist students planning for graduate and professional school, such as:

1. Assistance in identifying career options
2. Resume writing and interviewing skill development
3. Small group workshops on topics including "Interview Skills", "Effective Resume and Cover Letter Writing", "Job Search Strategies" and "Internship Opportunities" throughout the academic year.
4. Graduate School advisement and related testing information (e.g. GRE, GMAT, LSAT, MCAT)
5. Meetings with counselors to discuss your plans.

In addition, the Biology Opportunities page (www.tcnj.edu/~biology/opportunities/index.html) links to some job listings. Some career counseling services are also provided by the Psychological Counseling Services Office at the Wellness Center, located in Eickhoff Hall, Rm 107, www.tcnj.edu/~wellness/psych. The Psychological Counseling Services staff provides other counseling options along with career counseling, including individual and group counseling, with the opportunity to address personal and emotional problems that may interfere with your academic work. All services are free and confidential.

Departmental Societies

American Medical Students Association (AMSA)

Advisor: Dr. Dennis Shevlin, BI 130, x2246

TCNJ has a chapter of this national organization, the goals of which are to provide information to pre-medical students about the preparation for and the nature of medical training. AMSA provides a national data base and a set of contacts for pre-medical students. Our local chapter sponsors premedical advisement workshops, admissions seminars, financial aid presentations, and lectures by physicians in training and practice, and visits to local medical schools. Information and advisement for students interested in dentistry, optometry, physical therapy and other health fields are offered by AMSA and the Biological Society as well as by the Medical Careers Advisory Committee faculty.

Minority Association of Pre-Health Students (MAPS)

Advisor: Dr. Amanda Norvell, BI 131, x3439

TCNJ's Chapter of MAPS (also a national organization) provides under-represented students interested in the medical field with adequate knowledge, skills, and experiences that are both prerequisite and affiliated with the requirements necessary for admission into medical schools, with particular attention paid to issues relating to students from under-represented groups. The organization offers to its members the following activities: panels of medical students and doctors, access to regional and/or national conferences, medical school trips, mentorship through medical students, shadowing with doctors, facilitating access to community service and more. TCNJ MAPS endeavors to educate our members, the campus community, and when possible the surrounding community on issues related to the medical field and health care in minority communities and elsewhere through Health Fairs and Conferences, such as, Health Disparities Outreach Fairs, Pre-health conferences, and Health Professional School Admissions Fairs.

AZ/BS-MD Club

Advisor: Dr. Dennis Shevlin, BI 130, x2246

AZ (formerly "Alpha Zeta," but not a Greek organization) is a student organization consisting of the participants in the Seven-Year Articulation Program with UMDNJ- New Jersey Medical School. It is designed to help with the transition to medical school, and provides support, information and social networking opportunities for its members.

Biological Honor Society, Beta Beta Beta ("Tri-Beta")

Advisor: Dr. Donald Lovett BI 129, x2876

"Tri Beta" is the local chapter of the national biology honor society, and an active service organization making a major contribution to the campus and the Ewing community.

Graduate Studies Club

Advisor: Dr. Tracy Kress, BI117, x2462

The Graduate Studies Club is a newly formed group of students interested in pursuing graduate study. Meetings will address such issues as the application process, research and non-research based programs, testing, and finding a mentor and a school.

APPENDIX I

Roster of Faculty, 2009 – 2010

Dr. James Bricker, Ph.D. S.U.N.Y. at Buffalo

Teaching responsibilities: Laboratory Techniques in Biotechnology, Microbiology, Advances of Molecular Biology, and Senior Biology Seminar.

Research Interests and Academic Services:

1. Isolating DNA from shed snake skins to develop a genetic and molecular picture of the corn snake (*Elaphe gutata*) population.
2. Tracing the molecular genetic history of white tailed deer in New Jersey area.
3. Using the above data to manage the corn snake, an endangered species.
4. Obtaining and analyzing DNA from museum specimens for use in research.
5. Advisor TCNJ Fencing Club
6. Computing liaison for Information Management

Dr. Luke K. Butler, Ph.D., University of Washington

Teaching responsibilities: Themes in Biology

Research interests:

1. Causes and consequences of variation in the molt dynamics of birds.
2. Adaptations and life-history trade-offs in the structure of body feathers.
3. Physiological and behavioral responses to stress in vertebrates.

Dr. Curt Elderkin, Ph.D. University of Louisiana, Lafayette

Teaching responsibilities: Themes in Biology, Ecology and Field Biology, and Evolution.

Research Interests and Academic Services:

1. Population genetics and biogeography of freshwater invertebrates
2. Ecology and conservation of freshwater mussels
3. Evolutionary ecology of freshwater invertebrates
4. Invasive species ecology

Dr. Jeffery T. Erickson, Ph.D. University of North Carolina at Chapel Hill

Teaching responsibilities: Themes in Biology, Biology of the Eukaryotic Cell, Neurobiology, and Senior Biology Seminar.

Research Interests and Academic Services:

1. Developmental respiratory neurobiology
2. Growth factors and sensory neuron development.
3. Genetic determinants of vertebrate breathing behavior.
4. Advisor for Graduate School Advisory Committee

Dr. Darrell J. Killian, Ph.D. New York University

Teaching Responsibilities: Genetics, Advanced Genetics, Senior Biology Seminar

Research interests and Academic Service:

1. Genetic regulation of the programmed cell death pathway in response to developmental cues
2. Sex determination and sex-specific cell death in the model organism *Caenorhabditis elegans*
3. Pattern formation of the *C. elegans* germ line and regulation of germline stem cells

Dr. Steve Klug, Ph.D. Northwestern University

Teaching responsibilities: Genetics, and Biological Internship and Senior Biology Seminar

Research Interests and Academic Services:

1. The study of the genetic control of development using *Drosophila* oogenesis as a model system.
2. Author of eight editions of *Concepts of Genetics*, used in genetics courses nationally and internationally
3. Author of five editions of *Essentials of Genetics*, used in genetics courses nationally and internationally
4. Author of 1st edition of *Genetics – A Molecular Perspective*, a college-university level textbook
5. Coordinator of the Biology Internship Program
6. Coordinator of the Bristol-Myers Squibb Research Trainee Committee
7. Premedical Advisor
8. Advisor to ECBI and ELBI students

Dr. Tracy Kress, Ph.D. Brown University

Teaching responsibilities: *Themes in Biology, Biology of the Eukaryotic Cell, and Biology Senior Seminar*

Research Interests and Academic Services:

1. Utilizing multiple approaches including genetics, biochemistry, and molecular and cell biology to study:
 - a. Mechanisms and regulation of RNA processing in the yeast *Saccharomyces cerevisiae*.
 - b. Coordination of RNA processing with chromatin remodeling and transcription.
2. Advisor for the Graduate School Club

Dr. Gary Lipton, Ph.D. Rutgers University

Teaching responsibilities: Biology Freshman Seminar, Themes in Biology, Introduction to Invertebrates, General Entomology, and Student Teaching supervision.

Research Interests and Academic Services:

1. Biological rhythms of activity and feeding in insects.
2. Morphology of insect nervous systems.
3. Secondary Student Teacher Coordinator
4. Advisor for the BIOT majors
5. Independent Study Coordinator

Dr. Donald Lovett, Ph.D. University of Louisiana, Lafayette

Teaching responsibilities: Biology Freshman Seminar, Themes in Biology, Microscopic Anatomy and Techniques, and Electron Microscopy for Biologists.

Research Interests and Academic Services:

1. Anatomy and ultrastructure of the crustacean gill.
2. Mechanisms of osmoregulatory response in the blue crab.
3. Gene expression in crabs
4. Advisor of Beta Beta Beta Honor Society.

Dr. Janet Morrison, Ph.D. S.U.N.Y. at Stony Brook

Teaching responsibilities: Biology Freshman Seminar, Ecology and Field Biology, Biology of Seed Plants, and Plants and People

Research Interests and Academic Services:

1. Ecology and evolution of plant pathogen interactions in natural communities.
2. Ecological mechanisms and community effects of non-native plant invasions.
3. Ecology, conservation, and biodiversity of urban/suburban forests.
4. Botanical evolutionary ecology.
5. Experimental approaches in field ecology.

Dr. Sudhir Nayak, Ph.D. University of Pennsylvania

Teaching responsibilities: Genetics, Genomics and Bioinformatics

Research Interests and Academic Services:

1. Cell fate specification and execution in the nematode (*Caenorhabditis elegans*)
2. Elucidating steps in the evolution of self-fertile hermaphroditism
3. Post-translational control of proteins involved in nematode oogenesis
4. Member of the Genetics Society of America
5. Advisor to MAPS and the Biological Society

Dr. Amanda Norvell, Ph.D. University of Pennsylvania

Teaching responsibilities: Themes in Biology, Biology of the Eukaryotic Cell, Molecular Immunology and Human Disease, Advanced Eukaryotic Cell Biology, Senior Biology Seminar

Research Interests and Academic Services:

1. Pattern formation during *Drosophila melanogaster* oogenesis.
2. mRNA localization during oogenesis.
3. Transcription and nuclear export of mRNA
4. Advisor for the Graduate School Advisory Committee, Advisor to MAPS

Dr. Marcia O'Connell, Ph.D. S.U.N.Y. at Stony Brook

Teaching responsibilities: Biology of the Eukaryotic Cell, Genetics, Developmental Biology, and Senior Biology Seminar

Research Interests and Academic Services:

1. Determination and formation of the embryonic axes in vertebrates.
2. Regulations of tissue specific genes in zebra fish embryos.
3. Maternal regulation of polyadenylation.
4. Advisor for the Graduate School Advisory Committee, Advisor to the Biological Society, Chair of Medical Careers Advisory Committee
5. Departmental Chair

Dr. Howard Reinert, Ph.D. Lehigh University

Teaching responsibilities: Ecology and Field Biology, Biometry and Physiological and Behavior Ecology.

Research Interests and Academic Services:

1. Ecology, behavior and physiology of reptiles and amphibians.
2. Habitat selection in snakes.
3. Predator/prey relationships and the foraging behavior of vertebrates.
4. Conservation and management of endangered animal species.
5. Application of molecular biological techniques to ecology and conservation biology.

Dr. Dennis Shevlin, Ph.D. University of California at Berkeley

Teaching responsibilities: Themes in Biology, Biology of the Eukaryotic Cell, Oceanography and Biology of Fungi, Senior Biology Seminar

Research Interests and Academic Services:

1. The biology of Ustilaginalean Fungi – systemic assessment and plant host/parasite interactions
2. Coordinator of MCAT preparation course, advisor to Alpha Zeta, advisor to BIOM students and Representative to NJ Marine Science Consortium.
3. Medical Careers Advisor, Advisor to AMSA.

Dr. Keith Pecor, Ph.D. University of Michigan

Teaching responsibilities: Ecology and Field Biology, and Aquatic Biology

Research Interests and Academic Services:

1. Context-dependent behavioral strategies in aquatic systems
2. Reproductive biology of North American crayfish
3. Invasive species biology

Dr. Leeann Thornton, Ph.D. Washington University in St. Louis

Teaching responsibilities: Themes in Biology, Biology of Seed Plants, Plant Biotechnology and Genetic Engineering, Biology Seminar

Research Interests and Academic Services:

1. Cytochrome P450 regulation of plant development
2. Plant steroid hormone inactivation
3. Relationship between structure and function in metabolic proteins
4. Molecular genetics of multi-gene protein families

Dr. Matthew Wund, Ph.D., University of Michigan

Teaching responsibilities: Ecology; Genes, the Environment and Human Health; Vertebrate Evolution

Research interests:

1. The interplay between individual plasticity and evolutionary processes
2. The evolution of animal behavior
3. The evolution of adaptive radiations

APPENDIX II

The College of New Jersey's
Professional Education Unit Statement of Policy
for Undergraduate Exit Requirements in Teacher Education Programs

As a result of New Jersey State Department of Education code revisions (Section 6.11-5.1), a cumulative grade point average (GPA) of at least 2.75 is required for students to successfully complete their teacher education program and be recommended for certification and licensure. The requirement becomes effective September 2000 for all candidates entering their junior year.

To help assure that students at The College of New Jersey meet this requirement by graduation ...

1. Admission to **candidacy** in all teacher education programs will require a 2.5 minimum GPA following completion of 60 credits, and
2. Admission to **student teaching** in all teacher education programs will require a 2.75 minimum GPA, also effective as of September 2000.

Exceptions involving admissions will be considered on an individual basis, and granted upon approval of the Chair of the Department offering the program and the Dean of Education.

~Adopted on February 16, 2000 by the Teacher Education Advisory Council.

APPENDIX III

Building abbreviations as found on your schedule:

AH	Armstrong
BB	Business Building
BI	Biology Building
BL	Bliss Hall
FH	Forcina Hall
HH	Holman Hall
KH	Kendall Hall
LH	Paul Loser Hall
MB	Music Building
SB	Social Sciences Building
SCP	Science Complex - Physics
SCC	Science Complex - Chemistry
TH	Travers Hall
WH	Wolfe Hall

APPENDIX IV

Guidelines for Biology Independent Research

Basic Requirements:

- 1) attendance at laboratory meetings
- 2) maintenance of a laboratory notebook
- 3) attendance at all departmental seminars
- 4) engagement in an average of 15 hours per week of work related to the project
- 5) presentation of a research poster to the department
- 6) submission of a final research paper written in a style suitable for a scientific journal and the final version archived with the department for review.

Performance Rubric

Students will be given a grade of IP until the project is completed. For the final grade, pluses and minuses may be given based upon the level of accomplishment within a grade level. A student that fails to meet the basic requirements and/or does not produce a research paper or poster will not pass.

A Excellent Performance

- Engages in persistent, hard work
- Displays independent intellectual and technical involvement in work
- Has an excellent grasp of technical and theoretical aspects of research
- Makes project his or her own; makes creative contribution to design and analysis of experiments
- Maintains an excellent lab notebook with up-to-date recording, tabulating, and analysis of data
- Displays critical thinking in lab meetings
- Final poster presentation and written research paper are of excellent to outstanding quality

B Good performance

- Engages in persistent, hard work
- Exhibits ability to work independently and demonstrates technical independence
- Delivers a very solid performance and completely reliable and reproducible experimental work
- Gives competent presentations in lab meetings
- Maintains a clear, organized lab notebook
- Final poster presentation and written research paper are of good to very good quality

C Average performance

- Engages in persistent, hard work
- Performance in experimental work is fair to poor
- Demonstrates an ability to work with limited supervision
- Lab notebook is inadequately maintained
- Participation in lab and lab meetings is of low quality
- Final poster presentation and written research paper are of fair quality

D Poor performance

- Performance is inadequate or sloppy
- Displays inability to work without direct supervision
- Has an inadequate grasp of the technical aspects of the work
- Does not maintain an organized research notebook
- Poster and paper are unclear and poorly organized and presented