

# **Biology Student Handbook**

**2011-2012**



**Department of Biology  
School of Science**

The College of New Jersey

# Table of Contents

INTRODUCTION .....	3
<b><u>THE CURRICULUM IN BIOLOGY</u></b> .....	<b>3</b>
BIOLOGY CORE COURSES .....	3
BIOLOGY OPTIONS .....	3
BIOLOGY- REQUIRED CORRELATE COURSES.....	3
LIBERAL LEARNING .....	3
<b><u>UNDERGRADUATE RESEARCH</u></b> .....	<b>4</b>
INDEPENDENT RESEARCH IN BIOLOGY (BIO 493 OR 494) .....	4
BIOLOGY RESEARCH INTERNSHIP (BIO 399) .....	4
DEPARTMENTAL HONORS.....	4
<b><u>ACADEMIC OPPORTUNITIES AND SERVICES</u></b> .....	<b>5</b>
AREAS OF INTEREST IN MATHEMATICS AND COMPUTER SCIENCE .....	5
AREAS OF INTEREST IN BUSINESS .....	5
AREAS OF INTEREST IN THE ARTS .....	5
MARINE SCIENCE CONSORTIUM.....	5
STUDY ABROAD .....	5
TUTORING .....	5
<b><u>ADVISEMENT FOR FUTURE SCHOOLING AND CAREER SELECTION</u></b> .....	<b>6</b>
FACULTY ADVISEMENT .....	6
PREPARATION TO TEACH BIOLOGY: TRADITIONAL UNDERGRADUATE TRACK (BIOLOGY 2 <sup>o</sup> ED MAJOR) .....	6
GRADUATE SCHOOL ADVISEMENT .....	6
MEDICAL CAREERS ADVISORY COMMITTEE: PRE-MEDICAL AND ALLIED HEALTH PREPARATION.....	6
SEVEN YEAR BS/OD PROGRAM IN OPTOMETRY .....	7
SCHOLARSHIPS AND FELLOWSHIPS.....	7
CAREER ADVISEMENT AND JOB ACQUISITION .....	7
<b><u>DEPARTMENTAL ORGANIZATIONS</u></b> .....	<b>8</b>
BIOLOGICAL HONOR SOCIETY, BETA BETA BETA (“TRI-BETA”) .....	8
GRADUATE STUDIES CLUB .....	8
AMERICAN MEDICAL STUDENTS ASSOCIATION (AMSA) .....	8
MINORITY ASSOCIATION OF PRE-HEALTH STUDENTS (MAPS).....	8
AZ/BS-MD CLUB .....	8
ADDITIONAL ORGANIZATIONS (PRE-SOMA AND PRE-DENTAL) .....	8
<b>APPENDIX I</b> .....	<b>9</b>
ROSTER OF FACULTY, 2011 – 2012 .....	9
<b>APPENDIX II</b> .....	<b>13</b>
PROFESSIONAL EDUCATION UNIT STATEMENT OF POLICY .....	13
<b>APPENDIX III</b> .....	<b>14</b>
BUILDING ABBREVIATIONS AS FOUND ON YOUR SCHEDULE.....	14
<b>APPENDIX IV</b> .....	<b>14</b>
CONCERNING TRANSFER CREDIT .....	14
<b>APPENDIX V</b> .....	<b>15</b>
GUIDELINES FOR BIOLOGY INDEPENDENT RESEARCH.....	15

## INTRODUCTION

This handbook is designed to help you 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 Biology Department. 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](http://www.tcnj.edu/~biology/index.html).

### **The Curriculum in Biology**

(please also refer to the Undergraduate Bulletin (<http://www.tcnj.edu/~bulletin/current/Biology.pdf>), and the Plan Summary Charts (<http://www.tcnj.edu/~biology/programs/index.html>) for biology)

#### ***Biology Core Courses***

BIO 099 (non-credit)	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	Biology Seminar

#### ***Biology Options***

In addition to the Biology Core Courses, each BIOA major must complete **5 units of Biology option courses** (generally 300 and 400 level courses), at least one of which must be an “organismal course,” or a course whose focus is primarily at the level of the organism. Each semester’s options can be found on the biology webpage and in the Biology Registration Newsletter. The New Jersey Marine Consortium offers a course in Marine Biology each summer that can also be used as a biology option. Finally, one biology option can be met by pursuing Independent Research in Biology, (BIO 493 or 494), or Biology Research Internship (BIO 399).

#### ***Biology - Required Correlate Courses***

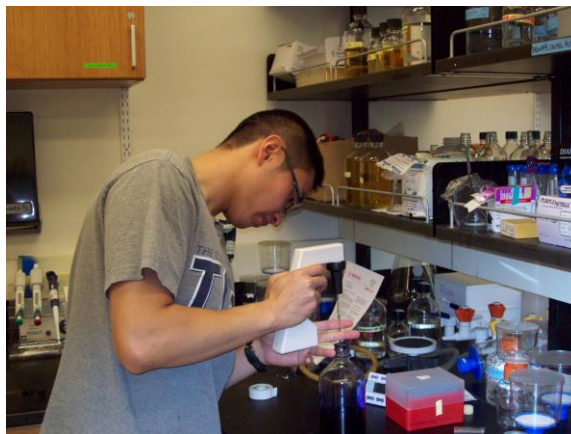
CHE 201, 202	General Chemistry I and II
CHE 331, 332	Organic Chemistry I and II
PHY 201	General Physics I (note: many post-bacc programs require Physics II)
MAT 127	Calculus A
MAT	A second math course (MAT 128, MAT 200, or STA 215)

#### ***Liberal Learning ([www.tcnj.edu/~liberal](http://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 (Biology Seminar)
  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 members. 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 Biology Research Internship in (BIO 399). *Appendix I* lists faculty research interests and academic services.



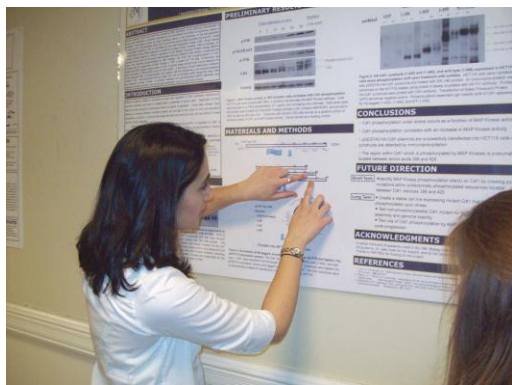
### **Independent Research in Biology (BIO 493 or 494)**

- 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 one course unit of independent research or internship as biology option credit.

### **Biology Research Internship (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. Erickson *before engaging in the research* to discuss whether the experience would qualify for credit. 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](http://www.tcnj.edu/~bulletin/current/Biology_courses.pdf).

### **Departmental Honors**



Departmental Honors in Biology provides advanced research experience and recognition of outstanding achievement.

- To be eligible to graduate with Departmental Honors in Biology, the biology major 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 Departmental Honors in Biology, the student must first meet with the Departmental Honors Advisor, then form a committee consisting of the faculty research advisor, another faculty member of the student's choice, the Departmental Honors Advisor, and the Departmental Chairperson.
- To graduate with Departmental Honors in Biology, 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.

Additional information may be obtained from Dr. Morrison, Biology Departmental Honors Advisor.

## **Academic Opportunities and Services**

### ***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.

### ***Marine Science Consortium***

The College of New Jersey is a member of the New Jersey Marine Sciences Consortium. The Consortium offers courses 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 staff of the consortium is engaged in extensive research on the various bays and estuaries in New Jersey. Students can gain valuable research experience by participating in one of the many research programs the Consortium offers. For further information, contact Dr. Dennis Shevlin, ext. 2246, or shevlin@tcnj.edu.

### ***Study Abroad***

Biology majors can greatly enrich their education by studying abroad for a full academic year, a semester, or a summer. The biology curriculum is flexible enough that graduation requirements can be met even if a student studies abroad; however it is wise to plan ahead and discuss this with your advisor as early in your college career as possible. Visit The Center for Global Engagement's website at <http://www.tcnj.edu/~goglobal/undergraduate/index.html> for more information. Students may also enroll in BIO 365/366, *The Natural History of the Galapagos Islands and Ecuador* (offered during the spring in odd-numbered years), which concludes with a 2-week short-term abroad experience.

### ***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 Roscoe West Hall, Suite 101 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, Roscoe West Hall Suite 101, 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 academic advisor in Biology who will remain your advisor throughout your college experience at The College of New Jersey (you can locate your advisor on PAWS). Your advisor will help you to plan your academic future based on your aims and goals. He or she will help plan courses, solve many of your academic problems, guide you through the procedures, make helpful referrals and attempt 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 Biology Department Chairperson and the Department of Secondary Science Education Student Teacher Coordinator, Dr. Thornton ([thornton@tcnj.edu](mailto: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, and Drs. Butler and Kress additionally serve as advisors for the department's Graduate Studies Club (see pg 8). Students interested in graduate work should consult their advisor and join the club 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 varies from field to field, 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 department 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.*

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

Medical Careers Advisory Committee: Dr. Marcia O'Connell, Chair ([moconnel@tcnj.edu](mailto:moconnel@tcnj.edu)), and Drs. Erickson, Kress, Nayak, Norvell and Shevlin in Biology, and Dr. Hunt in Chemistry; and staff assistance from Ms. Helen Kull, Program Assistant ([hakull@tcnj.edu](mailto:hakull@tcnj.edu))

The Medical Careers Advisory Committee provides information, guidance, assistance and recommendations to qualified students interested in professional schools. Students are encouraged to visit the Medical Careers web site [www.tcnj.edu/~biology/career/medadvisory.html](http://www.tcnj.edu/~biology/career/medadvisory.html) in addition to speaking with members of the committee for guidance in preparing for medical careers.

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*, *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](mailto:shevlin@tcnj.edu), x2246) for further information about this prep course.

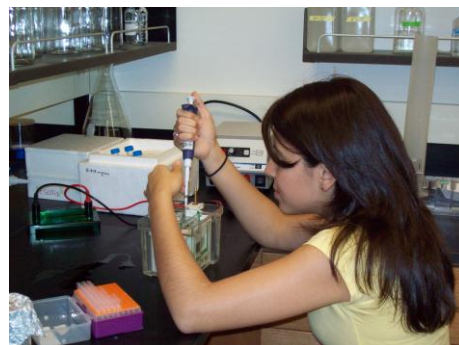
In preparation for application to Medical, Dental, Pharmacy, Veterinary, Physician Assistant, Podiatry, Optometry, Chiropractic, Physical Therapy, Occupational Therapy, Public Health, etc. programs, the student should consult as soon as possible with members of the Medical Careers Advisory Committee 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 New York 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 3.3 GPA overall and in the required pre-optometry coursework; interview with SUNY; and achieve a 320 or better on all sections of 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 the Optometry Program web page, <http://www.tcnj.edu/~biology/7med/optometry.html>, or from Optometry Advisor Dr. Sudhir Nayak, x2659 or [nayak@tcnj.edu](mailto:nayak@tcnj.edu).

### ***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 web page ([www.tcnj.edu/~biology/opportunities/index.html](http://www.tcnj.edu/~biology/opportunities/index.html)).



### ***Career Advisement and Job Acquisition***

The Office of Career Services ([www.tcnj.edu/~www.tcnj.edu/~careers](http://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](http://www.tcnj.edu/~biology/opportunities/index.html)) has links to some job listings. Some career counseling services are also provided, in coordination with Career Services, by the Counseling and Psychological Services (CAPS) Office, located in Eickhoff Hall, Room 107, <http://www.tcnj.edu/~sa/counseling/services.html>. The CAPS staff provide 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 Organizations**

### ***Biological Honor Society, Beta Beta Beta (Tri-Beta)***

Advisor: Dr. Leeann Thornton (x2875, thornton@tcnj.edu)

“Tri Beta” is the casual name of the national biology honor society, and our chapter functions both as an honor society and a service organization for students in the biological sciences. Its main objectives are to promote scholarship in the biological sciences, promote dissemination of biological knowledge, facilitate faculty /student interaction, and encourage research. All activities hosted by Tri-Beta are open to all majors, and include trips, picnics and parties. Tri-Beta also hosts the annual “Meet the Professors” event.

### ***Graduate Studies Club (GradS)***

Advisors: Dr. Tracy Kress (x2462, kress@tcnj.edu) and Dr. Luke Butler (x2531, lbutler@tcnj.edu)

The Graduate Studies (GradS) Club is a recently formed group of students interested in or considering graduate study. Meetings address such issues as choosing between research and non-research-based programs, finding a graduate school, navigating the application and interview process, preparing for the GREs (standardized test), and choosing a mentor.

### ***American Medical Students Association (AMSA)***

Advisor: Dr. Dennis Shevlin (x2246, shevlin@tcnj.edu)

AMSA provides information to pre-medical students about preparation for and the nature of allopathic medical training, including 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.

### ***Minority Association of Pre-Health Students (MAPS)***

Advisor: Dr. Amanda Norvell, (x3439, norvell@tcnj.edu)

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.

### ***AZ/BS-MD Club***

Advisor: Dr. Dennis Shevlin, (x2246, shevlin@tcnj.edu)

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.

### ***Additional Organizations***

Information and advisement for students interested in dentistry, optometry, and other health fields are offered by the Medical Careers Advisory Committee faculty, and these **other student groups**:

**Pre-SOMA Club** – information and education about osteopathic medical schools

Advisor: Dr. Sudhir Nayak, x2659; <http://www.tcnjpre-soma.weebly.com>

**Pre-Dental Club** – information and education about dental schools

Advisor: Dr. Jeffery Erickson, x2673; contact [dental@tcnj.edu](mailto:dental@tcnj.edu)

# APPENDIX I

## Roster of Faculty, 2011 - 2012

- James Bricker**      [bricker@tcnj.edu](mailto:bricker@tcnj.edu)      Office, BIO 116, x2457      Lab, BIO 112 x2676  
*Assistant Professor; earned Ph.D. at S.U.N.Y. at Buffalo*  
Teaching responsibilities: Laboratory Techniques in Biotechnology, Microbiology, Advances of Molecular Biology, and 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 the 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 for the TCNJ Fencing Club
- Luke K. Butler**      [lbutler@tcnj.edu](mailto:lbutler@tcnj.edu)      Office, BIO 240, x2531      Lab, BIO 236, x2898  
*Assistant Professor; earned Ph.D. at University of Washington*  
Teaching responsibilities: Themes in Biology, Avian Biology  
Research interests and Academic Services:  
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
- Curt Elderkin**      [elderkin@tcnj.edu](mailto:elderkin@tcnj.edu)      Office, BIO 241, x2819      Lab, BIO 249, x2874  
*Associate Professor; earned Ph.D. at 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
- Jeffery T. Erickson**      [erickson@tcnj.edu](mailto:erickson@tcnj.edu)      Office, BIO 238, x2673      Lab, BIO 253, x3380  
*Associate Professor; earned Ph.D. at University of North Carolina at Chapel Hill*  
Teaching responsibilities: Biology of the Eukaryotic Cell, Neurobiology, and 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. Pre-Dental Club advisor  
5. Coordinator, Biology Research Internship
- Stacey L. Fanning**      [fannings@tcnj.edu](mailto:fannings@tcnj.edu)      Office, BIO 117, x2672  
*Visiting Assistant Professor; earned Ph.D. at University of Medicine and Dentistry of NJ, Newark*  
Teaching Responsibilities: Genetics  
Research Interests and Academic Services: Molecular pathology and immunology
- Mark J. Hickman**      [hickmanm@tcnj.edu](mailto:hickmanm@tcnj.edu)      Office, BIO 131, x 2456  
*Visiting Assistant Professor; earned Ph.D. at Harvard University*  
Teaching Responsibilities: Themes in Biology, Biology of the Eukaryotic Cell  
Research Interests: Genetics, molecular biology, metabolism and genomics in yeast, *S. cerevisiae*

**Hans Peter Klein**      [kleinh@tcnj.edu](mailto:kleinh@tcnj.edu)      Office, BIO 120, x2044  
*Visiting Full Professor; earned Ph.D. at Universität Bonn, Germany*  
Teaching Responsibilities: Topics in Biology - Protozoology  
Research Interests: public understanding of science and research, protozoology, bioscience education

**Tracy Kress**      [kress@tcnj.edu](mailto:kress@tcnj.edu)      Office, BIO 229, x2462      Lab, BIO 221, x3335  
*Assistant Professor; earned Ph.D. at Brown University*  
Teaching responsibilities: Themes in Biology, Biology of the Eukaryotic Cell, Molecular Biology of Gene Expression, and Biology Seminar  
Research Interests and Academic Services:

1. Regulation of gene expression in the yeast *Saccharomyces cerevisiae*
2. Understanding how cells alter their gene expression to respond to different environments
3. Mechanism and regulation of the steps in RNA processing
4. Coordination of RNA processing with transcription and chromatic remodeling
5. Advisor for GradS, the Graduate Studies Club

**Meg M. Laakso**      [laaksokm@tcnj.edu](mailto:laaksokm@tcnj.edu)      Office, BIO 118, x3128  
*Visiting Assistant Professor; earned Ph.D. at Baylor College of Medicine*  
Teaching Responsibilities: Genetics  
Research Interests: Virology, microbiology, cell biology and molecular biology

**Ellen Lake**      [lakee@tcnj.edu](mailto:lakee@tcnj.edu)      Office, BIO 128, x2671  
*Visiting Assistant Professor; earned Ph.D. at University of Delaware*  
Teaching Responsibilities: Ecology and Field Biology  
Research Interests: Entomology and wildlife ecology

**Donald Lovett**      [lovett@tcnj.edu](mailto:lovett@tcnj.edu)      Office, BIO 203, x2876      Lab, BIO 134, x2675  
*Professor; earned Ph.D. at University of Louisiana, Lafayette*  
Teaching responsibilities: Biology Freshman Seminar, Themes in Biology, Microscopic Anatomy and Techniques, Electron Microscopy for Biologists, and Natural History of the Galapagos Islands.  
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. Director of PERSIST Scholars Program
5. Departmental Chair

**Janet Morrison**      [morrisja@tcnj.edu](mailto:morrisja@tcnj.edu)      Office, BIO 227, x3091      Lab, BIO 219, x3362  
*Professor; earned Ph.D. at 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
6. Director of Gateway to Graduate School and MUSE programs

**Sudhir Nayak**                      [nayak@tcnj.edu](mailto:nayak@tcnj.edu)                      Office, BIO 126, x2659                      Lab, BIO 243, x3436

*Associate Professor; earned Ph.D. at University of Pennsylvania*

Teaching responsibilities: Biology Freshman Seminar, Genetics, Genomics and Bioinformatics, and Senior Biology Seminar

Research Interests and Academic Services:

1. Genetics analysis of cell fate specification and execution in the nematode (*Caenorhabditis elegans*)
2. Post-translational control of proteins involved in nematode oogenesis
3. Software development for sequence analysis
4. Director of Seven-year Baccalaureate/Optomety Degree (BS/OD) program

**Amanda Norvell**                      [norvell@tcnj.edu](mailto:norvell@tcnj.edu)                      Office, BIO 239, x3439                      Lab, BIO 235, x3275

*Associate Professor; earned Ph.D. at University of Pennsylvania*

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

**Marcia O'Connell**                      [moconnel@tcnj.edu](mailto:moconnel@tcnj.edu)                      Office, BIO 228, x2879                      Lab, BIO 248, x3446

*Associate Professor; earned Ph.D. at S.U.N.Y. at Stony Brook*

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

Research Interests and Academic Services:

1. Determination and formation of the embryonic axes in vertebrates
2. Regulation of tissue specific genes in zebra fish embryos
3. Maternal regulation of polyadenylation
4. Chair of Medical Careers Advisory Committee

**Keith Pecor**                      [pecor@tcnj.edu](mailto:pecor@tcnj.edu)                      Office, BIO 127, x2460                      Lab, BIO 111, x3020

*Assistant Professor; earned Ph.D. at University of Michigan*

Teaching responsibilities: Ecology and Field Biology, Aquatic Biology, Community Ecology, and Invertebrate Zoology

Research Interests and Academic Services:

1. Ecology and natural history of crayfish
2. Invasive species ecology
3. Academic Integrity Officer for the School of Science

**Howard Reinert**                      [hreinert@tcnj.edu](mailto:hreinert@tcnj.edu)                      Office, BIO 226, x2474                      Lab, BIO 114, x2154

*Professor; earned Ph.D. at 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

**Dennis Shevlin**                      [shevlin@tcnj.edu](mailto:shevlin@tcnj.edu)                      Office, BIO 130, x2246                      Lab, BIO 109, x2788

*Associate Professor; earned Ph.D. at University of California at Berkeley*

Teaching responsibilities: Themes in Biology, Biology of the Eukaryotic Cell, Oceanography, Biology of Fungi, and 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
3. Director of the Seven-year Baccalaureate/Medical Degree (BS/MD) Program
4. Advisor to A-Z and to BIOM (BS/MD) students
5. Representative to NJ Marine Science Consortium
6. Advisor to AMSA

**Leeann Thornton**                      [thornton@tcnj.edu](mailto:thornton@tcnj.edu)                      Office, BIO 119, x2875                      Lab, BIO 220, x3065

*Assistant Professor; earned Ph.D. at 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. Plant steroid hormone inactivation
2. Relationship between structure and function in metabolic proteins
3. Molecular genetics of multi-gene protein families
4. Advisor for Beta Beta Beta Biological Honor Society
5. Advisor to the BioT majors

**Anthony Uzwiak**                      [uzwiak@tcnj.edu](mailto:uzwiak@tcnj.edu)                      Office, BIO 120, x2044

*Assistant Professor; earned Ph.D. at*

Teaching responsibilities: Principles of Human Anatomy and Physiology I and II; Endocrinology

Research Interests and Academic Services:

**Matthew Wund**                      [wundm@tcnj.edu](mailto:wundm@tcnj.edu)                      Office, BIO 121, x2897                      Lab, BIO 110, x2936

*Assistant Professor; earned Ph.D. at University of Michigan*

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

Research Interests and Academic Services:

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:*

ARMS	Armstrong
AIMM	Art and Interactive Multi Media Bldg
ATHL	Athletic Recreation Center
BUSI	Business Building
BIOL	Biology Building
BLIS	Bliss Hall
BROW	Brower Student Center
FORC	Forcina Hall
HOLM	Holman Hall
KEND	Kendall Hall
LOSE	Paul Loser Hall
MUSI	Music Building
PACK	Packer Hall
SOCI	Social Sciences Building
SCIE	Science Complex
SCP	Science Complex - Physics
SCC	Science Complex - Chemistry
TRAV	Travers Hall
WLIB	Roscoe West Library
WOLF	Wolfe Hall

## APPENDIX IV

### *Concerning Transfer Credit:*

#### **On-line/Distance Learning Courses:**

Transfer credit will **NOT** be given for any laboratory course which is taught on-line, even if NJ Transfer.org may indicate that a course with that number qualifies for transfer credit.

#### **Courses not listed on NJ TRansfer.org:**

For a course to count as a biology option, it must, at a minimum, require the biology major introductory course as its prerequisite, and be eligible for biology major credit at the home institution. In addition, for the course to be approved for credit at TCNJ, students must provide documentation of the formal course description, the course's prerequisites, the number of meetings, whether the course has a lab, and the nature of the lab. Documentation may be provided to the Biology Department Chair as print-outs of the institution's information, or electronically in pdf form, or as the URL where the information can be found.

## **APPENDIX V**

### **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, a plus or a minus 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