

Exploring Careers in Biology

50:120:199, 1 credit

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co-Instructors:
Cheryl Hallman
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Placement coordinators;
Thomas Dahan
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Program Coordinator
Room 006, Campus Center
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Meeting hours;

Regular class meeting: Mondays 12:30 pm – 1:20 pm

There are class meetings other than regular class meetings. Check out the class schedule for more information. Pizza lunch will be provided for all in-class training.

Meeting location: TBA

Overview

The purpose of this course is for students to identify or confirm their career goals in biological sciences through service learning at diverse work places.

Expected Learning Outcomes

1. Students will identify the need of the society, and their vocational calling in the biological sciences discipline.
2. Students will have experiential learning opportunities by participating a community service for the city of Camden.
3. Students will evaluate the service-learning experiences through critical reflections.

How can we achieve the expected learning outcomes?

1. Lectures.

There are training classes for students to learn the career opportunities with the Biology degree and to prepare themselves as a competitive candidate for the work places.

2. Guest lectures

Experts in five different career tracks will give a lecture for different career paths.

There are five different career paths the class will cover;

- a. Teaching.
- b. Research.
- c. Medicine/Public Health.
- d. Environmental/non-profit organization.
- e. Entrepreneurship/for-profit companies.

3. Field trips

There two field trips scheduled during the semester. Check the schedule for more information.

4. Community Service

Students will plan trees for the city of Camden in one of the weekends during the semester. Scheduling for planting trees will be discussed more detail in class.

5. Critical reflection report.

Students are required to write briefly what they have learned from class activities. The critical reflection report should be submitted to Assignment folder (SAKAI).

Grading

Attendance and participation (50%)

Missing one class will cost 10/100 points in this category. When a student has a legitimate reason for missing a class, the student should contact the instructor beforehand or the same day and arrange a make-up assignment. Only those who get permission from the instructor can submit the make up project. The make up project is writing a maximum one-page summary of the class material after watching the recorded class.

Attending two field trips and the community service project will give students extra points (10 points for each activity)

Critical reflection (50%)

Rubric;

(25 points) What did I learn? How, specifically, did I learn it?

(25 points) Why does this learning matter?

(50 points) In what ways will I use this learning, what goals shall I set I accordance with what I have learned in order to improve myself and / or the quality of my learning and/ or the Quality of my future?

SAKAI

All the course material including lecture note will be available through the SAKAI web site, <https://sakai.rutgers.edu/portal>

Tentative class schedule

	Date	Agenda	Instructors
Week 1	September 8	Organization	Lee
Week 2	September 15	Careers for Biology Majors	Jim Marino / Cheryl Hallman
Week 3	September 22	Career Plan	Jim Marino / Cheryl Hallman
Week 4	September 29 (regular class hour)	Medical/Public Health	Red Cross, National Testing Laboratories
Week 4	September 29 (7 pm)	Medicine/Public Health	Mark T. DiMarcangelo, DO, MS, FACR, FAOCR
Week 5	October 10 (Fri) 1-3 pm	Medical/Public Health	Visiting Med School. Shuttle bus from campus to the Med School
Week 6	October 13	Non-profit / Community service	Jessica Franzini, Tree Foundation
Week 7	October 20	Research	Dr. Dighton
Week 8	October 27	Research	Biology lab tour at the Waterfront Technology Building
Week 9	November 3	Teaching	Staff in New Jersey Academy of Aquatic Sciences
Week 10	November 5	Teaching	Angela Wenger, Director of the Woodrow Wilson Science Teaching Fellowship
Week 11	November 10	Non-profit	Daniel Hart, Director, Institute for Effective Education
Week 12	November 17	Non-profit	Frank McLaughlin, NJ Department of Environmental Protection
Week 13	November 24	For-profit	Vicki Gaddy, BioNJ
Week 14	December 5 (Fri) 1-3 pm	Field Trip	Coriell Institute For Medical Research
Week 15	December 8	Summary	Lee

Frank McLaughlin

Brownfield Project Manager, Greater Camden County
Office of Brownfield Reuse, NJ Department of Environmental Protection
Trenton, NJ

Frank McLaughlin, MS, PG, CHMM, has worked in the environmental and geological sciences fields for over 25 years in the public, private, and academic sectors. Frank began working for the NJDEP in 1988 as a Hydrogeologist, providing technical and regulatory assistance for federal and state environmental programs. For the last 10 years, Frank has worked in NJDEP's Office of Brownfield Reuse as a Brownfield Project Manager on several large brownfield development area (BDA) projects in Camden (Cramer Hill, North Camden), Pennsauken Township and Palmyra Borough. Frank's work has included numerous innovative techniques in the reclamation of brownfields and landfills including green remediation, green infrastructure, living shorelines, and habitat restorations.

Frank received his Bachelor of Science degree in Chemistry and Geology from Fairleigh Dickinson University in 1985 and Master of Science degrees from Rutgers University in Geological Sciences in 1988 and Environmental Sciences in 2006. Frank is an Adjunct Professor for Environmental Sciences and Geology at Ramapo College. He is also an active volunteer on in his local community and on urban environmental issues and frequently speaks in city of Camden schools. Frank became a licensed Professional Geologist in Pennsylvania in 1995 and a Certified Hazardous Materials Manager in 2004.

Andrew H. Kricun

Executive Director/ Chief Engineer
Camden County Municipal Utilities Authority
Camden, NJ

Andy Kricun is the Executive Director and Chief Engineer of the Camden County (NJ) Municipal Utilities Authority, which operates an 80 million gallon per day wastewater treatment plant and a large regional sewer system that services over 500,000 customers in southern New Jersey.

Mr. Kricun graduated with honors from Princeton University with a bachelor's degree in Chemical Engineering. He also has a professional engineer's license in civil engineering and over 25 years of experience in environmental engineering. He has also been selected as a Board Certified Environmental Engineer by the American Academy of Environmental Engineers.

Mr. Kricun recently received an Environmental Quality Award from the U.S. Environmental Protection Agency (EPA) and was also the 2012 recipient of the Praxis Award for Professional Ethics.

Jessica Franzini

Program Director, Camden Urban Airshed Reforestation Program
NJ Tree Foundation

Jessica Franzini directs the NJ Tree Foundation's Urban Airshed Reforestation Program (UARP) in Camden City, NJ. She strives to both engage residents and volunteers in environmental and social issues, where "going green" directly improves the lives of people. Through the UARP she organizes the planting of 250 trees in Camden annually, keeping to NJTF's motto of "the right tree in the right place, planted in the right way." UARP trees are hand-planted with residents and volunteers. The work UARP does

unites communities and empowers residents to become active in revitalizing their own neighborhoods. Street trees improve air and water quality, combat the Urban Heat Island Effect, beautify streets, and absorb heat-trapping CO₂.

She graduated from Stockton College in December 2008 with a BA in Environmental Studies and a concentration in Sustainability and Environmental Policy. She was recognized by the Mayor of Camden in 2011 as a Woman of Purpose, by Campbell Soup Foundation as a Camden Hometown Hero in 2012, and received the American Society of Civil Engineers' Distinguished Citizen Award in 2013. She is also a Eastern Regional Fellow with the Environmental Leadership Program.

Daniel Hart

Professor, Psychology and Childhood Studies
Director, Institute for Effective Education
Rutgers University, Camden

The Institute of Effective Education, Rutgers University-Camden, now offers the Master of Science Teaching (MST) graduate degree program. The MST program develops highly-skilled professionals to teach biology, chemistry, physics, and mathematics in New Jersey schools. Its focus is on preparing teachers through teaching and coaching. Students in the program teach students, and have their teaching evaluated by experts, from their very first month in the program through graduation. All coursework supplements these clinical experiences. Beginning in the Fall of 2014, Dr. Hart will teach classes in this new Master of Science Teaching program for science professionals who seek to become dynamic teachers in urban schools.

He has written or edited six books, including Hart, Atkins, & Fegley, *Personality and development in childhood: A person-centered approach*, Colby & Hart, *Character and Competence: Developmental Pathways* and Killen & Hart, *Morality in everyday life: Developmental Perspectives*.

Dr. Hart received his B.A. from Bates College and his Ed.D. from Harvard. He has numerous awards and honors for his teaching, research and service.

Angela Wenger

Executive Vice President & COO
New Jersey Academy of Aquatic Sciences

Angela Wenger is Executive Vice President & Chief Operating Officer at the NJ Academy for Aquatic Sciences. Her professional experience includes 20 years of supporting scientific research, teaching, and family learning in museums. She has been an active member of the Philadelphia-Camden Informal Science Education Collaborative, a longstanding multi-museum and community partnership that has explored family learning and community participation. A particular area of interest lies in facilitating access to science education by underserved audiences. Currently, Angela chairs the Mid-Atlantic YouthALIVE! Network.

Mrs. Wenger holds a MS in Marine Science from Florida Institute of Technology and a BS in Biology from Rutgers University. She is currently pursuing a doctorate in educational leadership and innovation from Wilmington University.

Mark Thomas DiMarcangelo, DO, MS, FACR, FAOCR

Education: Cherry Hill High School West, 1970-1974

H.S. Diploma, Magna Cum Laude, National Honor Society

Ursinus College, 1974-1978

B.S. in Biology, Cum Laude, Brownback-Anders Pre-Med Society

Philadelphia College of Osteopathic Medicine, 1978-1982

Doctor of Osteopathic Medicine (D.O.), Wheeler Award in Radiology

Rotating Internship & Diagnostic Radiology Residency, 1982-1986

Hospital of Philadelphia College of Osteopathic Medicine, Chief Resident

Philadelphia College of Osteopathic Medicine, 1985-1986

M.S. in Radiological Sciences, Thesis: CT Volumetrics of the Sella Turcica

Professional: 1986-1987, Instructor in Radiology, Hospital of Phila. Coll. Ost. Med.

1987-2003, Professor of Radiology, Cooper University Medical Center,
UMDNJ, Robert Wood Johnson School of Medicine

2004-2005, Chief of Radiology, St. Agnes Medical Center, Nazareth Hosp.

2005-2012, Professor of Radiology, Kennedy University Hospital System,
UMDNJ, School of Osteopathic Medicine

2013-present, Medical Radiology Group, Professor of Radiology,
Rowan University, School of Osteopathic Medicine

Licensed to practice medicine in New Jersey, Pennsylvania & Delaware
Board Certified in Radiology, AOBR; Board Certified in Nuclear Medicine,
AOBNM; Trained in Radiography, Fluoroscopy, Mammography, DEXA,
Computed Tomography; Magnetic Resonance; Ultrasound; PET-CT.

Fellow, Academy of Medicine of New Jersey; Fellow, American College of
Radiology; Fellow, American College of Osteopathic Medicine; PCOM
Outstanding Alumnus; Top Doctor, Delaware Valley; Top Physician, South
Jersey; President, Radiology Society of New Jersey; Councilor, American
College of Radiology; RSO, Kennedy Health System; Author of 23
Professional Journal Articles and Book Chapters, 6 Scientific Exhibits, and
32 Visiting Lectures.

Personal: Married 36 years; 4 children, 3 grandchildren. Interests: Music (Piano; Song
Composition/Arranging); Teaching High School Science; Biblical Theology;
Serving in Local Church; Reading; Travel.

JOHN DIGHTON

Rutgers University Pinelands Field Station, PO Box 206, New Lisbon, NJ 08064
Tel: 609-894-8864; Fax: 609-894-0472; E-mail dighton@camden.rutgers.edu

Professional Preparation:

1969-72 B.Sc. General (External London) 2(i), North East London Polytechnic (Botany & Zoology)

1972-73 M.Sc. Ecology, University of Durham

1973-76 Ph.D. Queen Elizabeth College, University of London (Soil Ecology)

Appointments:

1994 - Director, Division of Pinelands Research, Professor, Institute of Marine & Coastal Sciences (Cook) Department of Biology (Camden), Rutgers University.

1980 - 1993 Research Scientist, Institute of Terrestrial Ecology, Merlewood Research Station

1977 - 1979 Teacher of Biology, St. Olave's Grammar School, Orpington Kent, UK.

1987 - 1994 Honorary Lecturer, University of Lancaster

1985 - 1994 Honorary Lecturer, University of Leeds.

Awards: Rutgers University New Brunswick Graduate Teaching Award, 2005.

Synergistic Activities:

Committees:

2011 – 2013 *President Soil Ecology Society*

2007 – Soil Ecology Society Board member

1982- Editorial Board: Soil Biology and Biochemistry, Fungal Biology, Fungal Ecology, Journal of Mycology, *Bartonia*,

2000- Pinelands Preservation Alliance Board of Trustees and Education Committee (member).

2000 - Pinelands Commission Research Advisory Committee

1999- Board of Trustees, Executive Board and Education Committee New Jersey Academy of Aquatic Sciences

1995 - NJ Department of Fish, Game & Wildlife Endangered and Non-Game Species Program: Critical Areas Committee.

Peer Review: Research grants for NERC, NSF, USDA, Israel Department of Science, NERC, CERC. Journals: *New Phytol.*, *Mycol. Res.*, *Mycologia*, *Mycorrhiza*, *J. Appl. Ecol.*, *Can. J. For. Res.*, *Scan. J. For. Res.*, *Environ. Pol.*, *Soil Biol. Biochem.*, *Plant & Soil*, *Appl. Spectr.*, *Castanea*, *Austr. J. Bot.*, *For. Ecol. Mange.*, *Applied Soil Ecol.*

Grants:

Dr. Dighton received numerous research grants from the National Funding agents including USDA and NSF.

Papers and Books:

Many scientific research articles and books.

Most Recent paper:

Dighton, J, Gordon, T, Mejia, R., Sobel, M. (2013) Mycorrhizal status of *Knieskern's* beaked sedge (*Rhynchospora knieskernii*) in the New Jersey pine barrens. *Bartonia* 66:24-27.

Most Recent book:

Dighton, J & Krumins, J. (in press) *Interactions in Soil: Sustaining Plant Growth*, Springer-Verlag (11 chapter edited book)