

Nancy E. Toffolo

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EDUCATION

- **University of Florida**
Master of Science, College of Veterinary Medicine, Veterinary Medical Sciences,
concentration Forensic Toxicology
Class of 2005, 4.0 GPA
- **University of Florida**
Bachelor of Science, College of Agriculture, Animal Sciences
Class of 1996

EXPERIENCE

Senior Lecturer, July 2016 – Present

Senior Lecturer for distance education programs in Forensic Sciences. Currently plan and instruct the following courses: Metabolic Biochemistry, Mammalian Molecular Biology, Forensic Immunology, Principles of Nucleotide Activity, and Laboratory QA/QC. Assist in the teaching of Special Topics in Forensic DNA and Serology, Forensic Science, Forensic Toxicology and Forensic Drug Chemistry. Develop and write new courses as needed, deliver course materials; assist students in comprehension of course modules; grading of assignments in a timely manner. Experienced in the E-learning and Sakai formats for online education; works as a liaison for potential forensic science students by handling email inquires through the department's website. Attends conferences and represents the University of Florida Forensic Science program via a booth, to discuss and promote program with prospective students. Assist director with reviewing applications and administrative duties.

Lecturer, March 2009 – June 2016

Lecturer for distance education programs in Forensic Sciences. Currently plan and instruct the following courses for the MS Forensic DNA and Serology program: Metabolic Biochemistry, Mammalian Molecular Biology, Forensic Immunology, and Principles of Nucleotide Activity. Assist in the teaching of Special Topics in Forensic DNA and Serology and Forensic Science. Develop and write new courses as needed, deliver course materials; assist students in comprehension of course modules; grading of assignments in a timely manner. Experienced in the E-learning and Sakai formats for online education; works as a liaison for potential forensic science students by handling email inquires through the department's website. Attends conferences and represents the University of Florida Forensic Science program via a booth, to discuss and promote program with prospective students.

University of Florida, Forensic Science Program

Teaching Assistant, April 2004 – February, 2009

Teaching assistant for distance education programs in Forensic Sciences. Currently assist in the planning and instruction of courses in the Master's programs for Forensic Toxicology, Forensic DNA and Serology and Forensic Science; courses include: Metabolic Biochemistry, Mammalian Molecular Biology, Xenobiotic Biotransformation, Forensic Immunology, Structure and Function of Nucleotides, and Principles of Forensic Science. Work with professors in developing and delivering course materials; assist students in comprehension of course modules; grading of assignments in a timely manner. Experienced in the WebCT/Vista E-learning format for online education. Additionally, work as a program assistant/liaison for potential forensic science students by handling email inquires through the department's website.

Nancy E. Toffolo

Ithaca College, Chemistry Department

Laboratory Coordinator, May 2003 – September 2004

Manager for chemistry teaching laboratories for undergraduate chemistry courses; set-up of laboratories and instruction of laboratory students; responsible for all environmental health and safety policies for department; responsible for managing budget for the department as well as the ordering of all laboratory supplies. Supervisor of undergraduate students.

Cornell University, James A. Baker Institute for Animal Health

Research Support Specialist I, February 2003 – May 2003

Manager for the cellular and molecular biology sections of the equine immunology research laboratory. Responsible for organizing and conducting research in the disciplines of molecular biology, biochemistry and immunology, and required to prepare and analyze data for publication. Supervisor of undergraduate students.

Substitute Teacher, December 2002 – February 2003

Substitute teacher in all disciplines for Ithaca City School District and Trumansburg Central Schools.

University of Florida, College of Veterinary Medicine, Racing Laboratory

Scientific Research Manager, Screening/Receiving Sections, October 2001 – July 2002

Managed, coordinated and directed activities of the Receiving and Screening (Thin Layer Chromatography and Immunoassay) sections, including the direct supervision of 15 employees.

For each section: provided direct supervision of workflow, set goals, provided guidance in the selection of methodology, depth and extent of analyses; provided interpretation of test results; performed experimental work; fulfilled administrative duties; coordination of training for all staff members; designed, planned and implemented quality control/assurance procedures; developed, operated and maintained methods for instrumental analysis; directed and coordinated the analytical validation of new or existing sample testing methods; responsible for writing new and updating existing Standard Operating Procedures for all sections, which are written and executed with the intent that they will be admissible in administrative or criminal hearings. Continued to act in the capacity of the Senior Chemist for the Immunoassay section (see description below); directly responsible for developing, implementing and maintaining methodologies for a newly acquired robotics system (Beckman Core System); managed the accreditation standard of operation necessary to maintain accreditation certification.

University of Florida, College of Veterinary Medicine, Racing Laboratory

Senior Chemist, Immunoassay Section, June 1999 – September 2001

Section head of the Immunoassay section of the laboratory; primary goal of the section is the detection of drugs in biological samples by ELISA. Provided direct supervision to Immunoassay laboratory staff; managed, planned, coordinated and supervised the daily workflow; integration of special assignments; evaluated test results, performed experimental work, performed sample analysis; designed, planned and prepared the quality control samples and records, implemented quality assurance and quality control procedures; ensured that all testing and experimental records were suitable to be used in a criminal proceeding; performed administrative duties such as writing job descriptions, performance planning and review, coordination of training for laboratory staff; operated, maintained and developed methods for instrumentation; generation and presentation of monthly reports, as well as special project reports. Special projects include: assistance in moving of the laboratory from Tallahassee, FL to Gainesville, FL; development and

Nancy E. Toffolo

restructuring of section which included development and implementation of new testing procedures and policies; increased utilization of automation within the laboratory, including the upgrade of a robotics system to increase sample analyses. Certified to conduct laboratory audits by the National Forensic Science Technology Center (NFSTC). Presented written and oral reports on findings to internal audit team. Implementation of corrective actions for compliance with NFSTC accreditation standards. Key involvement in work needed to obtain accreditation for the laboratory.

CuraGen Corporation

Research Associate I, May 1998 – May 1999

Reported to Senior Research Scientist in the department of Full Length Cloning. As primary research associate, responsibilities included analyzing DNA sequence data, utilization of bioinformatics tools including but not limited to BLASTN, ORF analysis, and PSORT; compilation of genetic DNA sequence information into usable format, for inter-office workflow; presentation of compiled data in oral and report formats; extensive knowledge of the tracking for samples in workflow. Previously reported to Senior Research Scientist in the department of GeneDiscovery/Pharmacogenomics. As primary assistant to the information officer, responsibilities included providing drug information, researching models of disease, researching dosing regimens for animal models in the Pharmacogenomics program; determination of drug solubilities, chemistry and pharmacological action; responsible for preparation of drug formulations, species conversions and calculations for in vivo drug administration; responsible for drug acquisitions, price comparisons, compilation and maintenance of drug and chemical inventories, DEA regulatory paperwork, and maintenance of MSDS information. Other previous responsibilities included administration of drugs to animals by oral gavages, subcutaneous and intramuscular injections, euthanasia, necropsies, and tissue collection.

Previously reported to Research Scientist in the department of PathCalling (group responsible for the elucidation of interactions between proteins, for the identification and validation of biological pathways and targets). As primary assistant to the scientist, responsibilities included DNA cloning, RT-PCR, microarray techniques, yeast 2-hybrid system applications, bacterial plasmid preparations, and restriction endonuclease digests; preparation of reagents and media, maintenance of laboratory inventory and supply ordering. Further responsibilities included data management and training of new employees.

The Bionetics Corporation, N.A.S.A.

Animal Caretaker, April 1998 – May 1998

Participated in research with laboratory animals dedicated to the STS-90 Neurolab Mission; worked in a class 100,000 barrier facility, handled animals for examination and relocation; administration of medications, performed daily observations and collected data for principal investigators on research animals. This was a time-restricted position, limited to the length of the mission.

Emergency Pet Hospital

Veterinary Technician, July 1997 – March 1998

Assisted in the treatment of emergency patients upon admittance to the hospital; responsible for oral, intravenous, intramuscular, and subcutaneous drug administrations and intravenous catheters; assisted in surgeries, responsible for anesthesiology of patients; assisted in euthanasia and necropsy procedures; conducted diagnostic tests such as blood panels, ELISA, urinalysis, cytology, x-rays. Further responsibilities included care of in-patients, receptionist and bookkeeping duties.

Nancy E. Toffolo

Diagnostic Services, Inc.

Laboratory Assistant, October 1997 – March 1998

Prepared and processed biological specimens such as blood and urine in hospital for laboratory analysis; extensive knowledge of the tracking of large quantities of samples; data management and input.

Bouckaert Farm

Groom, November 1996 – May 1997

Responsible for the care and management of Olympic 3-day event horses; daily duties included exercising the horses, maintenance and standard first aid; facility upkeep; widespread travel to competitions to groom, including the 1997 Rolex Kentucky Three-Day Event; extensive knowledge of how to prepare, groom and manage multiple horses at events.

University of Florida, Food Safety Laboratory

Laboratory Technician, August 1996 – November 1996

Assigned as primary technician to confidential research project for Kimberly-Clark Corporation; responsibilities included water quality testing, various microbiology techniques such as serial dilutions, plating, and colony counting; responsible for analysis, compilation and presentation of data to scientists in an out-of-state facility. Required to travel to company to train employees in the methods utilized; also responsible for media and solution preparation, supply ordering, inventory, and general laboratory duties.

University of Florida, Molecular Genetics, Horticultural Sciences

Laboratory Technician, May 1995 – August 1996

Technician for scientist involved in molecular genetics and space biology program (affiliated with NASA); responsibilities included plant tissue culture work (*Arabidopsis*), DNA purification, manipulation and cloning, gel electrophoresis, bacterial plasmid preparation, restriction endonuclease digests; plant maintenance, media and solution preparation; compilation and entry of data; supply ordering and inventory, general laboratory duties.

United States Department of Agriculture, Entomology

Laboratory Technician, September 1994 – May 1995

Technician for scientist involved in biological control of insects; insect propagation and maintenance, compilation and entry of data, general laboratory duties.

United States Department of Agriculture, Plant and Insect Interactions

Laboratory Technician, May 1993 – August 1994

Technician for scientist involved in plant insect interactions; insects researched included sweet potato whitefly, citrus root weevil and citrus leaf-miner; responsibilities included protein extraction, 2-D gel electrophoresis, gas chromatography of plant tissues, HPLC of proteins, liquid-liquid extractions, mass spectrometry; responsible for maintenance and troubleshooting problems of the gas chromatograph; field research and sample collection; insect and plant propagation and maintenance; analysis, compilation and presentation of data.

Nancy E. Toffolo

CERTIFICATIONS

- Supervisory Challenge Certificate through the University of Florida
- Laboratory Auditing Certificate through the National Forensic Science Technology Center

PAPERS

Educational Collaboration for a global Forensic Science Initiative, O. Grundmann, D. Wielbo, N. Toffolo, I. Tebbett, *Forensic Technology Review*, 2011, 210-214.

Specialization and multidiscipline approaches in Forensic Science Education – new frontiers, O. Grundmann, D. Wielbo, N. Toffolo, I. Tebbett, *Forensic Technology Review*, 2011, 216-218.

Forensic Foundations, O. Grundmann, D. Wielbo, N. Toffolo, I. Tebbett, *Forensic Technology Review*, 2010, 186-189.

PRESENTATIONS AND OTHER

- Presentation: Time of Death Indicators, Ithaca College Chemistry Department, April 2012
- Presentation: Forensic Toxicology, Ithaca College Chemistry Department, Spring 2004
- Presentation: Forensic Applications in Chemistry, Sidney High School, Spring 2004
- Science Olympiad, Coach, Spring 2013, 2014, 2015, 2016 and 2017 (6 week program each year); this program is to introduce students in grades 3-5 to competing in a Science Olympiad; at the end of the session their scientific knowledge and teamwork skills are tested.
- Pfizer Corporation, Education Awareness Seminar, 2010 and 2011
- Representative for the University of Florida at the International Symposium of Human Identification, 2009, 2010, 2011, 2012, 2013, 2014 and 2015.