Amanda E. Jetzt, Ph.D.
Department of Animal Sciences
Rutgers, The State University of New Jersey
84 Lipman Drive
New Brunswick, New Jersey 08901
Phone: (848) 932-6258
jetzt@sebs.rutgers.edu

Education

Ph.D. Microbiology and Molecular Genetics, 2001
Rutgers University & University of Medicine and Dentistry of New Jersey

B.A. with High Honors, Biological Sciences, 1991
Rutgers College, Rutgers University
- Henry Rutgers Scholar, Phi Beta Kappa

Professional Experience

2009-present: Research Associate
Department of Animal Sciences, Rutgers University, New Brunswick, NJ
- Researching the role of IGFBP-3 in the unfolded protein response in mammary epithelial cells
- Studying the effects of alcohol on murine mammary tumorigenesis
- Teaching the undergraduate course "*Methods and Applications in Molecular Biology*" (11:126:427; 4 credits)
- Supervising graduate and undergraduate students
- Managing research laboratory
- Continuing studies on the role of nuclear IGFBP-3 in anisomycin-induced apoptosis in bovine mammary epithelial cells
- Analyzing patterns of glycosylation and intracellular trafficking of IGFBP-3
- Investigating the role of IGFBP-3 on ribosomal toxin-induced apoptosis in mammalian cells
- Studied the molecular mechanisms of ricin-induced apoptosis in mammalian cells
- Analyzed the effects of mutations on the function of ricin A chain

2004-2009: Research Scientist (Part time)
Department of Animal Sciences, Rutgers University, New Brunswick, NJ
- Studied the molecular mechanisms of ricin-induced apoptosis in mammalian cells
- Managed research laboratory

2001-2004: Postdoctoral Fellow, Biological Research-Oncology
Schering-Plough Research Institute, Kenilworth, NJ
- Independently planned and executed a target validation study of Akt using adenoviral-mediated expression of a kinase dead mutant
- Coordinated efforts of an interdepartmental collaboration
- Published results in a peer-refereed journal
- Presented work at international meetings
- Established cell lines expressing Akt under control of an inducible promoter
- Studied the effects of Akt expression in a cell line using microarray analysis
- Utilized apoptosis assays, western blotting and confocal imaging to analyze signal transduction pathways
- Participated in the drug discovery process at a large pharmaceutical company

1995-2001: Graduate Research Assistant
UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ
- Ph.D. Thesis: Study of human immunodeficiency virus type 1 (HIV-1) strand transfers and

recombination
- Created a cell culture system suitable for studying the strand transfer events of HIV-1 reverse transcription
- Utilized this system, in conjunction with PCR, heteroduplex mobility assay and sequence analysis, to calculate the number of cross-over events in a single cycle of retroviral replication
- Co-authored papers in peer-reviewed journals
- Presented research findings at international meetings
- Learned molecular biology techniques
- Obtained independent outside funding

1993-1995: Graduate Research Assistant

UMDNJ-Robert Wood Johnson Medical School (Cancer Institute of New Jersey), Piscataway, NJ

- Studied the molecular genetics of cisplatin resistance in cAMP-dependent protein kinase (PKA) mutants
- Mastered the techniques of mammalian cell culture, cell transfection, CAT/luciferase assays and gel shift assay

1991-1993: Senior Laboratory Technician

UMDNJ-Robert Wood Johnson Medical School, New Brunswick, NJ

- Studied the pathogenesis of chronic graft-versus-host disease, a murine model of systemic lupus erythromatosus
- Acquired small animal handling and primary cell culture experience
- Managed research laboratory

1990-1991: Undergraduate Research Assistant

Rutgers College, New Brunswick, NJ

- Henry Rutgers Thesis: Detection of a P-element insertional hot-spot by *in situ* hybridization.
- Maintained *Drosophila* colonies

Grant Support

Key personnel on the following grants:

2013-2017 NIH-2R01AI072425-06A1 1/4 "What makes ricin toxic"; PI Tumer, Co-PI Cohick: $1,919,550 (total costs)

2009-2012 USDA-CSREES-2009-35206-5210: "Role of nuclear IGFBP-3 in stress-induced apoptosis in bovine mammary epithelial cells"; PI, Cohick; $349,981(total costs)

2007-2013 NIH R01-A1072425-01A1 1/5: "Mechanism of cytotoxicity of ricin"; PI Tumer; Co-PI Cohick; $1,894,875 (total costs)

Publications

Saboya M, **Jetzt AE**. Datar K, Cohick WS. 2020. Fetal alcohol exposure alters mammary epithelial cell subpopulations and promotes tumorigenesis. *Alcohol Clin Exp Res* Apr **44**(4): 831-843. doi: 10.1111/acer. 14308. [Epub 2020 Mar 4].

Agostini-Dreyer A, **Jetzt AE**, Skorupa J, Hanke J, Cohick WS. 2018. IGFBP-3 induced by ribotoxic stress traffics from the endoplasmic reticulum to the nucleus in mammary epithelial cells. *J Endo Soc* **3**(3): 517-36.

Jetzt AE, Li XP, Tumer NE, Cohick WS. 2016. Toxicity of ricin A chain is reduced in mammalian cells by inhibiting its interaction with the ribosome. *Toxicol Appl Pharmacol* **310**: 120-128.

Agostini-Dreyer A, **Jetzt AE**, Stires H, Cohick WS. 2015. Endogenous IGFBP-3 mediates intrinsic apoptosis through modulation of Nur77 phosphorylation and nuclear export. *Endocrinology* **156**(11):4141-51.

Duncan CA, **Jetzt AE**, Cohick WS, John-Alder HB. 2015. Nutritional modulation of IGF-1 in relation to growth and body condition in Sceloporus lizards. *Gen Comp Endocrinol.* **216**: 116-24.

Leibowitz BJ, Agostini-Dreyer A, **Jetzt AE**, Krumm CS, Cohick WS. 2013. IGF binding protein-3 mediates stress-induced apoptosis in non-transformed mammary epithelial cells. *J Cell Physiol.* **228**: 734-42.

Jetzt AE, Cheng JS, Li XP, Tumer NE, Cohick WS. 2012. A relatively low level of ribosome depurination by mutant forms of ricin toxin A chain can trigger protein synthesis inhibition, cell signaling and apoptosis in mammalian cells. *Int J Biochem Cell Biol*. **44**: 2204-11.

Wang CT, **Jetzt AE**, Cheng JS, Cohick WS. 2011. Inhibition of the unfolded protein response by ricin A-chain enhances its cytotoxicity in mammalian cells. *Toxins.* **3**: 453-68.

Jetzt AE, Cheng JS, Tumer NE, Cohick WS. 2009. Ricin A-chain requires c-Jun N-terminal kinase to induce apoptosis in nontransformed epithelial cells. *Int J Biochem Cell Biol*. **41**: 2503-10.

Jetzt A, Howe JA, Horn MT, Maxwell E, Yin Z, Johnson D, Kumar CC. 2003. Adenoviral-mediated expression of a kinase-dead mutant of Akt induces apoptosis selectively in tumor cells and suppresses tumor growth in mice. *Cancer Res*. **63**: 6697-706.

Zhuang J*, **Jetzt AE***, Sun G, Yu H, Klarmann G, Ron Y, Preston BD, Dougherty JP. 2002. Human immunodeficiency virus type 1 recombination: rate, fidelity, and putative hot spots. *J. Virol*. **76**: 11273-82. * equal contribution

Jetzt AE, Yu H, Klarmann GJ, Ron Y, Preston BD, Dougherty JP. 2000. High rate of recombination throughout the human immunodeficiency virus type 1 genome. *J. Virol.* **74**: 1234-40.

Yu H, **Jetzt AE**, Ron Y, Preston BD, Dougherty JP. 1998. The nature of human immunodeficiency virus type 1 strand transfers. *J. Biol. Chem*. **273**: 28384-91.

Mann RA, Schiff D, **Jetzt AE**, Ron Y, Singh M, Singh AB. 1998. CD8(+), radiosensitive T cells of parental origin, oppose cells capable of down-regulating cytotoxicity in murine acute lethal graft-versus-host disease. *Clin Immunol Immunopathol*. **89**: 260-70.

Yu H, **Jetzt AE**, Dougherty JP. 1997. Use of single-cycle analysis to study rates and mechanisms of retroviral mutations. *Methods*. **12**: 325-36.

Liu B, Cvijic ME, **Jetzt A**, Chin KV. 1996. Cisplatin resistance and regulation of DNA repair in cAMP-dependent protein kinase mutants. *Cell Growth Differ.* **7**: 1105-12.

Mann RA, **Jetzt AE**, Singh M, Singh AB. 1996. The effect of erythropoietin administration on murine bone marrow chimeras. *Immunol. Lett.* **49**: 15-20.

Mann RA, **Jetzt AE**, Singh AB, Singh M, Cao H. 1995. *In vitro* generation of soluble suppressor factor in murine chronic graft versus host (GVH) disease. *J. Clin. Lab. Immunol.* **46**: 163-180.

Mann RA, Singh AB, **Jetzt AE**, Singh M. 1995. The host response in graft versus host disease: III. The *in vitro* induction of regulatory cells in chronic murine graft versus host disease. *Cell. Immunol*. **164**: 1-10.

Mann RA, Singh AB, Singh M, **Jetzt AE**. 1993. The host response in graft versus host disease: II. The emergence of host protective cells is in part determined by background genomic compatibility. *Cell. Immunol.* **151**: 39-51.

Singh AB, Hiehle K, Singh M, **Jetzt AE**, O'Connell SM, Mann RA. 1993. The host response in graft

versus host disease: I. Radiosensitive T cells of host origin inhibit parental anti-F1 cytotoxicity in murine chronic graft versus host disease. *Cell. Immunol*. **151**: 24-38.

Presentations

High rate of recombination during HIV-1 replication.
Retroviruses Meeting, Cold Spring Harbor Laboratory. 1998.

Abstracts

Fetal Alcohol Exposure Differentially Affects Mammary Epithelial Cell Composition in Normal and Hyperplastic Mammary Glands. Saboya, M; Datar, K; Jetzt, A.E.; Cohick, W.S. NEFS Graduate Student Conference. Rutgers University – New Brunswick, NJ. April 2019.

The Effect of Fetal Alcohol Exposure on the Mammary Epithelial Cell Lineage. Saboya, M; Datar, K; Jetzt, A; Cohick, W.S. The 2018 Annual Retreat on Cancer Research in New Jersey. Poster. Rutgers University – New Brunswick, NJ. May 2018.

The Effect of Fetal Alcohol Exposure on the Mammary Epithelial Cell Lineage. Saboya, M; Datar, K; Jetzt, A; Cohick, W.S. NEFS Graduate Student Conference. Oral Presentation. Rutgers University – New Brunswick, NJ. April 2018.

Regulation of nuclear IGFBP-3 in response to intrinsic apoptotic stress in mammary epithelial cells, A. Agostini-Dreyer, A. Jetzt, and W. Cohick.
ADSA/ASAS JAM (American Dairy Sci Assn/American Society for Animal Science joint annual meeting) Kansas City, MO; July 20-24, 2014

IGFBP-3 Mediates Intrinsic Apoptosis through Phosphorylation and Nuclear Export of Nur77, A. Agostini-Dreyer, A. Jetzt, and W. Cohick.
Endo 2014 Annual Meeting, Chicago, Illinois, June 21-24, 2014

Regulation of nuclear IGFBP-3 in response to intrinsic apoptotic stress in mammary epithelial cells, A. Agostini-Dreyer, A. Jetzt, and W. Cohick.
NFHAS Conference (Nutrition, Food, Health, and Animal Science Annual Graduate Student Conference), Rutgers University, New Brunswick, NJ April 15, 2014

Regulation of nuclear IGFBP-3 in response to intrinsic apoptotic stress in mammary epithelial cells, A. Agostini-Dreyer, A. Jetzt, and W. Cohick.
NJAES Poster Competition (New Jersey Agriculture Experiment Station) April 8-10, 2014

Nuclear Localization of IGFBP-3 in Response to Intrinsic Apoptotic Stress. A. Agostini-Dreyer, A. Jetzt, and W. Cohick.
Nutrition, Endocrinology, and Animal Biosciences Graduate Student Conference, New Brunswick, NJ. April 17, 2013

Nuclear Localization of IGFBP-3 in Response to Intrinsic Apoptotic Stress. A. Agostini-Dreyer, A. Jetzt, and W. Cohick.
Gordon Research Conferences: Insulin-like Growth Factors in Physiology and Disease, Ventura, CA. March 17-22, 2013.

Expression of ricin A-chain (RTA) in mammalian cells differentially affects ribosome depurination and apoptosis. A. Jetzt, XP. Li, N. Tumer, and W. Cohick.
Seventh Annual Northeast Biodefense Center Conference, New York, New York. Nov. 2-3, 2011, Poster 1.

Molecular mechanisms of ricin induced apoptosis in mammalian cells. W. Cohick, A. Jetzt, J. Cheng, B. Leibovitz, M. Baricevic and N. Tumer.
Northeast Biodefense Center Retreat on Lake George, New York. Oct. 29-31, 2006, Abstract P7.

Inhibition of Akt signaling in tumor cells leads to induction of apoptosis: studies using adenovirus-mediated delivery of an Akt dominant negative mutant.
Keystone Conference: Molecular Targets for Cancer Therapy, Banff, Alberta, Canada. 2003.

Inhibition of Akt signaling in tumor cells leads to induction of apoptosis: studies using adenovirus – mediated delivery of an Akt dominant negative mutant.
AACR Apoptosis and Cancer, Waikoloa, HI. 2002.

A high rate of HIV-1 recombination in the absence of a recombination hot spot.
Retroviruses Meeting, Cold Spring Harbor Laboratory. 2000.

The high rate of HIV-1 recombination indicates that both viral RNAs are utilized during HIV-1 reverse transcription.
6th Conference on Retroviruses and Opportunistic Infections, Chicago. (Scholarship recipient) 1999.

The nature of HIV-1 strand transfers.
5th Conference on Retroviruses and Opportunistic Infections, Chicago. (Scholarship recipient) 1998.

Study of HIV-1 recombination and primer strand transfers in a single cycle of replication.
Retroviruses Meeting, Cold Spring Harbor Laboratory. 1997.