

# Kimberly Jean Newsom, Ph.D, MB(ASCP)<sup>CM</sup>

## *Curriculum Vitae*

### **Education**

- 2001-2006    Doctorate of Philosophy  
University of Florida, College of Medicine  
Medical Sciences - Biochemistry and Molecular Biology
- 1995-1999    Bachelor of Science  
University of Florida  
Microbiology/ Cell Science

### **Licensure/Certification**

- American Society for Clinical Pathology (ASCP) -- Molecular Biology (MB) (10/10/2013)  
Clinical Laboratory Supervisor (Molecular Pathology) FL license number SU45991.

### **Research / Work Experience**

- January 2013-  
Current        UF Health Pathology Laboratories | University of Florida  
Senior Biological Scientist  
Primary roles: Assay development, validation and Molecular diagnostic testing in a CAP/CLIA clinical laboratory.
- 2010-2013        Banyan Biomarkers, Inc., Research Scientist, Alachua, FL  
Primary roles: Assay development of medical diagnostic tests to detect the presence of mild and moderate brain trauma in a GLP-compliant facility.
- 2006-2010        Research Post-Doctoral Associate  
University of Florida, Department of Neuroscience  
Advisor: Harry S. Nick, Ph.D.  
Research: Characterization of FOXO3a gene regulation by nutrient deprivation. Molecular regulation of cPLA2 $\alpha$  by IL1- $\beta$ .
- 2008-2011        Instructor  
Santa Fe College, Department of Biological Science  
MCB 2000 Microbiology and Microbiology Laboratory
- 2010-2011        Instructor  
Santa Fe College, Clinical Laboratory Sciences  
PCB 4233 Immunology
- 2009                Course curriculum design  
Santa Fe College, Clinical Laboratory Sciences  
Molecular biology PCB 3134 and Immunology PCB 4233
- 2001-2006        Graduate Research Assistant  
University of Florida, Department of Biochemistry and Molecular Biology

Advisor: Harry S. Nick, Ph.D.

Research: Regulation of manganese superoxide dismutase by amino acid deprivation.

- 2003-2004 Teaching Assistant University of Florida, Department of Biochemistry and Molecular Biology  
Introduction to Biochemistry and Molecular Biology BCH 4024
- 1999-2001 Laboratory Technician  
University of Florida, Department of Pathology, Immunology & Laboratory Medicine  
Advisor: Laurence Morel, Ph.D.  
Research: Genetic analysis of systemic lupus erythematosus (SLE) susceptibility in mouse models of autoimmunity.
- 1997-1999 Undergraduate Research  
University of Florida, Department of Pathology, Immunology & Laboratory Medicine  
Advisor: Laurence Morel, Ph.D.  
Research: Genotyping of mouse models of systemic lupus erythematosus (SLE).

### Publications and Abstracts

1. **Aiken\***, K. J., Bickford, J. S., Kilberg, M. S., and Nick, H. S. (2008). Metabolic regulation of manganese superoxide dismutase expression via essential amino acid deprivation. *J. Biol. Chem.* 283, 10252-10263. PMID: PMC2447627
2. Qiu, X., **Aiken\***, K.J., Chokas, A.L., Beachy, D.B., Nick, H.S. (2008) Distinct Functions of C/EBP isoforms in the regulation of Manganese Superoxide Dismutase during IL-1 $\beta$  Stimulation. *J. Biol. Chem.* 283(38):25774-85. PMID: PMC2533776
3. **Kimberly J. Aiken\***, Xiaolei Qiu, Dawn E. Beachy, Justin S. Bickford, Jewell N. Walters, Ning Li, John-David H. Herlihy, Harry S. Nick. Identification and Characterization of a Cytokine Inducible Enhancer Element Regulating cPLA2 $\alpha$  Gene Expression. *American Society for Biochemistry and Molecular Biology, special symposia: transcriptional regulation by chromatin and RNA polymerase II. Granlibakken Resort and Conference Center, Tahoe City, CA, October 2009.*
4. **Aiken\***, K.J., Bickford, J.S., Pan, Y., Kilberg, M.S., Nick, H.S. Evidence for a Novel Amino Acid Response Pathway that Induces Manganese Superoxide Dismutase Expression. *American Society for Biochemistry and Molecular Biology, Boston MA, June 2004.*
5. Walters, J.N., Bickford, J.S., Beachy, D.E., **Newsom, K.J.**, Herlihy, J.D., Peck, M.V., Qiu, X., and Nick, H.S. (2011). cPLA(2) $\alpha$  gene activation by IL-1 $\beta$  is dependent on an upstream kinase pathway, enzymatic activation and downstream 15-lipoxygenase activity: a positive feedback loop. *Cell Signal*, 23, 1944-1951.
6. Bickford, J. S., **Newsom, K. J.**, Herlihy, J. D., Mueller, C., Keeler, B., Qiu, X., Walters, J. N., Su, N., Wallet, S. M., Flotte, T. R. & Nick, H. S. 2012. Induction of

group IVC phospholipase A2 in allergic asthma: transcriptional regulation by TNFalpha in bronchoepithelial cells. **Biochem J**, 442, 127-37.

7. Walters, J. N., Bickford, J. S., **Newsom, K. J.**, Beachy, D. E., Barilovits, S. J., Herlihy, J. D. & Nick, H. S. 2012. Regulation of human microsomal prostaglandin E synthase-1 by IL-1beta requires a distal enhancer element with a unique role for C/EBPbeta. **Biochem J**, 443, 561-71.
8. Bickford, J. S., Mueller, C., **Newsom, K. J.**, Barilovits, S. J., Beachy, D. E., Herlihy, J. D., Keeler, B., Flotte, T. R. & Nick, H. S. 2012a. Effect of allergy and inflammation on eicosanoid gene expression in CFTR deficiency. **J Cyst Fibros**.
9. Zoltewicz, J. S., Scharf, D., Yang, B., Chawla, A., **Newsom, K. J.** & Fang, L. 2012. Characterization of Antibodies that Detect Human GFAP after Traumatic Brain Injury. **Biomark Insights**, 7, 71-79.
10. Guingab-Cagmat JD, **Newsom K**, Vakulenko A, Cagmat EB, Kobeissy FH, Zoltewicz S, Wang KK, Anagli J. In vitro MS-based proteomic analysis and absolute quantification of neuronal-glia injury biomarkers in cell culture system. **Electrophoresis**. 2012 Dec;33(24):3786-97. doi: 10.1002/elps.201200326. PubMed PMID: 23161537.
11. Zoltewicz JS, Mondello S, Yang B, **Newsom KJ**, Kobeissy FH, Yao C, Lu XC, Dave JR, Shear DA, Schmid K, Rivera V, Cram T, Seaney J, Zhang Z, Wang KK, Hayes RL, Tortella FC. Biomarkers Track Damage Following Graded Injury Severity in a Rat Model of Penetrating Brain Injury. **J Neurotrauma**. 2013 Feb 14. [Epub ahead of print] PubMed PMID: 23409698.
12. Bickford JS, Beachy DE, **Newsom KJ**, Barilovits SJ, Herlihy JD, Qiu X, Walters JN, Li N, Nick HS. A distal enhancer controls cytokine-dependent human cPLA2 $\alpha$  gene expression. **J Lipid Res**. 2013 Jul;54(7):1915-26. doi: 10.1194/jlr.M037382. Epub 2013 Apr 2 PMID:23549331
13. Universal 16 S RNA-based RT PCR for Direct Detection of Bacteria in Patient Specimens <sup>1</sup>Kenneth H. Rand, M.D. , <sup>1</sup>Herbert Houck, <sup>1</sup>Jane Dong, <sup>1</sup>**Kim Newsom**, <sup>2</sup>Eric Li, <sup>3</sup>Matthew Hickenbotham and <sup>2</sup>Gary Wang . *Departments of <sup>1</sup>Pathology, and <sup>2</sup>Medicine, University of Florida, Gainesville , FL and <sup>3</sup>Life Technologies, Carlsbad, CA.*
14. Barilovits SJ, **Newsom KJ**, Bickford JS, Beachy DE, Rhoton-Vlasak A, Nick HS. Characterization of a mechanism to inhibit ovarian follicle activation. **Fertil Steril**. 2014 May;101(5):1450-7. doi: 10.1016/j.fertnstert.2014.01.025. Epub 2014 Feb 19. PMID:24559722
15. Chokas AL, Bickford JS, Barilovits SJ, Rogers RJ, Qiu X, **Newsom KJ**, Beachy DE, Nick HS. A TEAD1/p65 complex regulates the eutherian-conserved MnSOD intronic enhancer, eRNA transcription and the innate immune response. **Biochim Biophys Acta**. 2014 Jun 19. pii: S1874-9399(14)00164-3. doi:10.1016/j.bbagr.2014.06.012. [Epub ahead of print]PMID: 24953189

\*Maiden Name Published Under: Aiken, Kimberly J

**Patents: US2011/058369** non-hormonal female contraceptive

**Technical abilities in Molecular Biology including:**

- Next generation sequencing- Ion Torrent with accompanying bioinformatics.
- Sanger sequencing
- Molecular oncology testing
- ViiA 7 real time PCR
- Genetic testing (Genotyping) for drug metabolism using Quantstudios open array platform, ViiA7 and GenMark platforms
- Real-time PCR (and primer design)
- PCR
- RT-PCR
- Chromosomal Immunoprecipitation (ChIP),
- site-directed mutagenesis,
- Southern blot
- northern blot
- Extensive transient transfection experience for the purposes of evaluation cis-acting elements involved in regulating both basal and stimulus-specific gene transcription and mRNA stability.
- Protein, DNA and RNA isolation from a variety of prokaryotic and eukaryotic cell types and tissues.
- Enzyme linked immunoabsorbent assay (ELISA)
- Flow cytometry
- Immunohistochemistry (IHC)
- Immunocytochemistry (ICC)
- SDS-PAGE
- Immunoblotting
- Affinity chromatography-isolation of His and GST tagged proteins
- Liquid chromatography-operation and maintenance of duo-flow system for size exclusion chromatography
- Standard microbial techniques including the use of a variety of host strains for molecular cloning and protein expression.
- Tissue culture including isolation of primary glia and neuronal cultures as well as culturing of several types of eukaryotic cell lines including rat, mouse and human.

**Computer skills:**

- NGS data interpretation and analysis
- Extensive experience with Microsoft excel, PowerPoint, and Word.
- Extensive experience with a variety of internet-based and stand-alone bioinformatic tools including Genbank, BLAST, Vector NTI, CLC sequence viewer, and applied biosystems sequence scanner.
- Statistical analysis using Graph pad and Sigma Plot

- Familiarity with thermodynamic-based algorithms and databases for the determination of RNA secondary structure.
- Experience using image analysis, spreadsheet, and word processing software.

**Other Related Skills and Abilities:**

- Development and clinical validation of FDA approved and Laboratory developed tests in the laboratory.
- Knowledge of the compliance regulations for CAP/CLIA laboratories.
- Knowledge of supervisory practices and principles.
- Knowledge of the principles, practices, and techniques of advanced laboratory work.
- Skill in both verbal and written communication.
- Friendly and outgoing.
- Ability to teach a wide variety of techniques to individuals of different scientific backgrounds and experience. I have taught several classes for over 10 semesters at Santa Fe College and mentored numerous high school, undergraduate and graduate students in the lab.
- Developing and/or modifying existing procedures and policies for the operation of the laboratory.
- Development and implementation of systems for testing and ensuring continued compliance.
- Help to maintain laboratory inventory and ordering of supplies.
- Report and assist other laboratory personnel in interpretation of results in a timely manner to supervisor.
- Assist in the preparation and management of the laboratory budget.
- To maintain, adjust, and make minor repairs to laboratory instruments and equipment.
- Design and execution of new protocols/lab techniques.
- Training of personnel in operation of systems and protocols in use.
- Maintenance of project objectives by data analysis using various techniques including Real-Time PCR along with comparative/ correlation of data.
- Manuscript preparation and Grant preparation.
- Active participant in the hiring, training supervision of and when necessary, termination personnel.