

## **Jeremy J Traas, Ph.D.**

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Experienced educator with a passion for teaching and biomedical research. A versatile lifelong learner with proven ability to build and teach science curriculums. Managed research staff, labs, and experiments. Strong communicator and primary instructor with experience in anatomy, physiology, pharmacology, pathophysiology, and cell biology, microbiology. Primary lab instructor in anatomy, physiology, microbiology, and general chemistry. Continuously receive the highest score from staff and students on instructional materials and evaluations. Contributor to faculty organization and community services.

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### **PROFESSIONAL EXPERIENCE**

**Faculty: Missouri Western State University** (2018-present) Primary instructor for undergraduate classes in general biology (on ground and online) and developmental biology. Supervised developmental biology literature review and laboratory experiments.

Results: General biology: students completed a dynamic learning class that combined lecture (in person and video recorded) with dynamic online learning assignments. Developmental biology: students completed lecture and gained laboratory skills using a zebrafish model for body pattern formation and molecular gene expression analysis

**Adjunct Faculty: Rockhurst University** (2017-present) Primary instructor for class of 20 undergraduate chemistry majors. Supervised chemistry and literature review and laboratory experiments.

Results: Students completed class learning laboratory skills in sublimation, kinetics, equilibrium, pH, and Hess's Law

**Adjunct Faculty: Johnson County Community College** (2017-present) Instructor for continuing education biotechnology. Developed curriculum and labs covering basic concepts of biology, chemistry, microbiology, safe operating procedures, and biomanufacturing.

Results: Students completed 40 hour course on basic concepts of biology, chemistry, microbiology, safe operating procedures, and biomanufacturing.

**Adjunct Faculty: North Central Missouri College** (2010-present) Primary instructor for class of 20-40 undergraduate allied health sciences majors. Instructed students in human anatomy, physiology, pathophysiology, pharmacology, and microbiology. Supervised current literature reviews and laboratory experiments in physiology and microbiology classes.

Results: Students completed class learning laboratory skills in: organ dissections, EKGs, respiratory physiology, osmosis, tissue histology,

**Hillyard Technical Center** Site of distant learning classes taught in conjunction with North Central Missouri College

**Children's Hospital of Philadelphia; Philadelphia, PA** (2005 – 2010)

**Consultant: Biomedical Engineering** (2010) Led the below laboratory as interim PI in a period of crisis. Provided expertise, leadership, training for 10 lab scientists.

**Children's Hospital of Philadelphia, Division of Surgery Post-Doctoral Associate** (2006-2010) Basic Science research on stem cells and muscle regeneration. Developed new techniques for studying stem cells gene expression profiles derived from a single cell. Improved qPCR gene sensitivity and specificity. Developed methodology for confocal microscopy, FACS Aria Sorting, FACSCalibur. Applied these techniques to xerograph animal model studying incorporation of human stem cells to mouse models for muscle regeneration, cardiac regeneration, and neuronal regeneration. Trained and lead a project group of 6 scientists.

**Children's Hospital of Philadelphia, Division of Genetics and Orthopedic Surgery** (2006) Basic science research on oscillatory gene expression in early embryogenesis and Mesenchymal Stem Cell Models. Applied microarray and qPCR techniques to study oscillatory gene expression. Validated assays with in-situ hybridization staining.

#### **Graduate School:**

**Kansas State University and University of Kansas** (2001-2006) Graduate Student research on mesenchymal cells. Improved techniques to create new cells lines from tissue explants. Characterized cells lines by gene expression and western analysis. Demonstrated pluripotency in cellular differentiation assays.

**University of Minnesota, Department of Pharmacology** (1998-2001) Graduate research assistant for the production, purification, of fusion antiangiogenic proteins using bacterial and yeast culture lines. Created and optimized fusion clones by PCR. Tested efficacy of fusion proteins on mouse models.

**Abbott Laboratories** (1997) Summer research internship. Developed protein purification and analytical techniques for novel anti-angiogenic proteins. Collaborated with interdisciplinary investigators on research and scale up production of novel proteins

#### **EDUCATION**

##### **Post-Doctoral, Children's Hospital of Philadelphia – 2010**

Children's Hospital of Philadelphia, PA

Research Focus: Skeletal Muscle Signaling and Regeneration, *In Utero* Fetal Therapies

##### **Ph.D., Pharmacology and Toxicology - 2006**

University of Kansas, Lawrence, KS

Dissertation: "Human Umbilical Cord Matrix (HUCM): A Reservoir of Multipotent Stem Cells"

##### **B.S., Biochemistry** (American Chemical Society standard) – 1998

University of Wisconsin – River Falls, River Falls, WI

Senior Thesis Title: "Anti-Tumorigenic Properties of Kringle 5 in Angiostatin"

#### **Skills and Experience**

PCR, 7500Fast qPCR, bacterial and viral cloning, cell culturing (stem cells, bacterial, mammalian, viral, yeast), ELISA, western blot, microscopy (brightfield, inverted, phase contrast, confocal) small scale fermentation (bacterial and yeast), FACSaria Sorting, FACSCalibur, gene expression microarrays, animal models (terminal and survival), protein expression and purification,

#### **TEACHING EXPERIENCE**

Rockhurst University

General Chemistry Lab

Biochemistry Lab

Johnson County Community College

Biotechnology (40 hour continuing education course)

Dual appointments at North Central Community College and Hillyard Technical Center

Pharmacology

Microbiology

Anatomy and Physiology

Human Pathophysiology

Embryology and Histology

Cell biology

Children's Hospital of Philadelphia, Division of Surgery Post-Doctoral Associate

Literature review class

University of Kansas (2004-2006) Graduate Student  
Toxicology teaching assistant

### **AWARDS AND HONORS**

Hematology Postdoctoral Training Fellow (2007)  
AOSpine North America Postdoctoral Fellow (2006)  
Goetsch Fellowship Award, University of Kansas (2003 - 2004)  
American Society of Cell Biology Travel Award, Kansas State University (2003)  
Terry C. Johnson Graduate Student Travel Award, Kansas State University (2003)  
Terry C. Johnson Center for Basic Cancer Research Award, Kansas State University (2003)  
Center for Biomedical Research Excellence, poster award of excellence, University of Kansas (2003)

### **PROFESSIONAL REFERENCES**

Lorinda Ross, B.A., RT(R)(MR)(ARRT)  
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