

STEPHANIE FISCHER DAUGHERTY

SKILLS AND QUALIFICATIONS

Ph.D. Biomedical Sciences (Molecular Neuroscience)

Teaching College Students, Medical Professionals and Medical Students: Experience teaching college students, graduate students, MDs, PhDs, and medical students in areas of laboratory methods, scientific planning, scientific writing and grant writing, and coursework including neurobiology, signal transduction, metabolism, and microbiology. I have experience and skill at learning new subjects and developing curriculum to make the topic understandable for students, teachers, professionals and non-professionals. I have also presented at faculty staff development conferences on the methods of successfully designing curriculum and training courses for physicians and medical students.

AP and Pre-AP Biology Teacher, Booker T Washington High School for the Performing and Visual Arts, DISD: Experience teaching high school students in regular, pre-ap, and AP Biology, including college level curriculum. My philosophy is to share my love of the field with the students, keeping curriculum relevant and challenging.

Teaching High School Students about Scientific Research: Experience teaching middle school and high school students, as well as their teachers, in current scientific projects and breaking down complicated topics into easily-understood metaphors. I have worked giving 12 lectures a year for the DISD STARS program, making science available and interesting to high school students and their teachers.

10 years Laboratory Experience: in experimental design, protocol design, troubleshooting, data collection and analysis, molecular and cellular methods, dissection and primary neuronal and adult stem cell culture. Experience preparing and running laboratory experiments for up to 150 students, twice a week, during microbiology courses at University of Denver Medical School.

Team Management: I have worked in the laboratory setting as a team leader, in the laboratory classroom as the manager and instructor, and in the editing office as assistant manager of a scientific editing team. In addition, I have managed classrooms of high school students, up to 32 students, during lectures, activities, labwork, and dissections.

Scientific and medical writing: free-lance and professional scientific/medical grant writing, lay public and peer-reviewed journal

articles

Editing: free-lance and professional editing for technical, scientific, and educational journals, essays, theses, reports, articles, curriculum, syllabi, and texts.

Computer skills: extensive experience with Microsoft Office, word processing programs, Quark, Adobe Photoshop, EndNote, presentation and imaging programs, digital microscopy and analysis, and using computers for internet/database research.

EDUCATION

9/1996 – 5/2002 Mayo Clinic Graduate School Rochester, MN

Ph.D. Biomedical Sciences, Neuroscience

- Molecular and Cellular Biology Research
- Animal Model of Cisplatin Neurotoxicity
- Primary and Cancer Cell Culture
- DNA and RNA isolation and analysis
- Protein isolation and analysis
- Transfection, transformation, genetic design and study
- Microbiology work
- Translational/Clinical Design
- Drug Kinetic work, NMR, Mass Spectrometry

9/1992 – 12/1995 Calif State Univ at Sonoma Rohnert Park, CA

Graduated *cum laude*

B.A. Biology

- Including intense courses in Microbiology, Human Anatomy, Virology

B.A. English Literature

- Including training in composition, editing, creative writing, analysis.

1988 – 1992 Red Bluff High School Red Bluff, CA

- National Merit Scholar

PROFESSIONAL EXPERIENCE

8/2010 -- current University of Texas at Tyler

Department of Biology

Lecturer

Tyler, TX

- Teaching duties have included Anatomy & Physiology and Introduction to Microbiology
- Responsible for developing curriculum for Introduction to Microbiology course following departure of previous instructor
- Trained 2 graduate students in teaching of Introduction to Microbiology course
- Mentored undergraduate students in seminar presentations

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8/2007 -- 6/2010 Booker T Washington High School for the Performing and Visual Arts, Dallas ISD

Pre-AP and AP Biology teacher

Dallas, TX

- Responsible for teaching rosters of 135 freshmen and 40 AP Biology students.
- Responsible for conducting after school labwork for AP Biology students and writing curriculum for schoolwide TAKS review
- Member of the Student Support Team (2009-2010)
- Faculty Advisor for SADD (Students Against Destructive Decisions)
- Nominated by principal for TI-STEM grant

6/2005 – 6/2007 University of Texas at Southwestern

Department of Psychiatry

Post-doctoral fellow

Dallas, TX

- Responsible for training graduate students and summer students in lab techniques and scientific study.
- I give 12 lectures a year for the DISD STARS program, where high school students visit our campus, tour laboratories, and listen to scientists talk about science and our experiences.
- Perform research on morphine addiction including behavioral studies with mice, tissue studies, IHC, Western Blot, and PCR.
- Taught Psychiatry Residents in Basic Neuroscience Course as guest lecturer, approximately 3 lectures per term (Spring 2006 through Spring 2007).

12/2003 – 2/2005 University of Colorado Health Sciences Center
Pediatrics Dept, Center for Human Nutrition

Senior Research Associate

Denver, CO

- Responsible for training and educating pediatric research fellows, MDs, and medical students in laboratory technique, signal transduction analysis, and protein analysis.
- Collaborated on pediatric fellows research projects on growth restricted fetal sheep
- Collaborated on human tissue biopsy and analysis in diabetic and non-diabetic patients
- Responsible for developing primary muscle culture from human gestational diabetic patients
- Collaborated on characterizing knockout mouse models
- Collaborated on developing proteomics system with mass spectrometry core.

7/2003 – 9/2003 Physicians' Education Resource

Dallas, TX

Assistant Publishing Manager

- Manager of editing team, scheduling, prioritizing, tracking progress, supporting editor morale and performance
- Acquisitions, invitations, correspondence with authors, consultants, clients
- Management of newsletter deadlines, updates, tracking, scheduling
- Composed and Updated tracking databases
- Scientific editing, data checking, internet research
- Transcribing scientific material from conferences
- Preparing and composing scientific slides, booklets, summaries
- Served on morale improvement committee

6/2002 – 6/2003 University of Colorado
Health Sciences Center
School of Medicine
Microbiology Department

Denver, CO

Instructor

- Lab coordinator and one of team of instructors, for 150 medical students, setting up laboratory experiments for each student, preparing lab materials
- Editing and writing lab textbook and syllabus, troubleshooting lab protocols
- Editing classroom syllabus
- Management of laboratory and classroom deadlines, tracking, scheduling
- Maintaining classroom webpage (Blackboard)

- Composing study outlines from course syllabus
- Editing and writing grant proposals, scientific articles for peer-reviewed journals for departmental faculty
- Preparing and composing scientific slides, booklets, summaries
- Presented at faculty conference on the methods for preparing curriculum and teaching physicians and medical students
- Virology research: Herpes, HPV, Varicella-Zoster; viral entry experiments, viral receptor blocking

6/1992 – 9/2003 Free-lance

Technical/Educational Writer and Editor

- Writing and Editing technical materials, articles, theses, legal and technical reports, grant proposals, articles for lay public and professionals
- Fiber-optic technical studies, Neuroscience Conference Reviews, Reading Special Education Theses and Grant Proposals, Curriculum for reading, composition, science, adult training, medical information, hormonal research, virology research, business and legal documents, transcription.
- Portfolio available upon request.

1/1990 – 5/2002 Free-lance Educator

Tutor

- Writing and Composition tutor for adults and college students
- Writing and Composition tutor for dyslexic children and students
- Using breakdown and step-by-step program I developed:
 - ¾ dyslexic high school students passed high school qualification test after tutoring
- Program available in portfolio upon request

ADDITIONAL PROFESSIONAL ACTIVITIES AND HONORS

2011 – current Editor/Reviewer, Journal of Student Research

2010 – current Consultant in Science Education, Booker T Washington High School for the Performing and Visual Arts, Dallas, TX

2008 – 2010 NABT member and presenter

2005 – 2006 NIH Postdoctoral Fellow Training Grant

1998 – 2001 Neuroscience Graduate Student Representative,
Mayo Grad School Association

1998 – 1999 President, Society for Neuroscience

Southern Minnesota Chapter

1996 – 2006 Member, Society for Neuroscience

1997 – NIH Neuroscience Training Grant

1996 – Mayo Graduate School Tuition Waiver and Student Stipend

1995 – 1996 President, Women In Science
Sonoma State University Chapter

1995 – Graduation *cum laude*, Sonoma State University

1994 – Dean's Honor Scholarship, Sonoma State University

1992 – National Merit Scholar Award

PUBLICATIONS

S.J. Fischer, E.M. McDonald, L.A. Gross, and A.J. Windebank. Alterations in Cell Cycle Regulation Underlie Cisplatin Induced Apoptosis of Dorsal Root Ganglion Neurons In Vivo. *Neurobiology of Disease* 8(6): 1027-1035. 2001

S.J. Fischer, J.L. Podratz, A.J. Windebank. Nerve Growth Factor Rescue of Cisplatin Neurotoxicity is Mediated Through the High Affinity Receptor: studies in PC12 cells and p75 null mouse dorsal root ganglia. *Neuroscience Letters* 308: 1-4. 2001

A.M. Conti, **S.J. Fischer**, A.J. Windebank. Rapid Specific and Reversible Inhibition of Axonal Growth from Sensory Neurons by Excess Nerve Growth Factor. *Annals of Neurology* 42: 838-846.

S.J. Fischer, A.J. Windebank. Cisplatin Reacts Immediately with DMSO to Form a Novel DNA-binding Compound. Date of submission: July 14, 2003.

S.J. Fischer, L.M. Benson, A. Fauq, S.Naylor, A.J. Windebank. Cisplatin and dimethyl sulfoxide react to form an adducted compound with reduced cytotoxicity and neurotoxicity. *Neurotoxicology*. 2008 March 4; 29:444-452.

L.A. Barbour, S. Mizanoor Rahman, I. Gurevich, J.W. Leitner, **S.J. Fischer**, M.D. Roper, T.A. Knotts, Y. Vo, C.E. McCurdy, S. Yakar, D. Leroith, C.R. Kahn, L.C. Cantley, J.E. Friedman, B. Draznin. Increased P85alpha is a potent negative regulator of skeletal muscle insulin signaling and induces in vivo insulin resistance associated with growth hormone excess. *J Biol Chem*. 2005 Nov 11; 280(45):37489-94. Epub 2005 Sep 8.

D.C. Lagace, **S.J. Fischer**, A.J. Eisch. Gender and endogenous levels of estradiol do not influence adult hippocampal neurogenesis in mice. *Hippocampus*. 2007 Jan 27; 17(3):175-180.

D.C. Lagace, M.C. Whitman, M.A. Noonan, J.L.Ables, N.A. DeCarolis, A.A. Arguello, M.H. Donovan, **S.J. Fischer**, L.A. Farnbauch, R.D. Beech, R.J. DiLeone, C.A. Greer, C.D. Mandyam, A.J. Eisch. Dynamic contribution of nestin-expressing stem cells to adult neurogenesis. *J Neuroscience*. 2007 Nov 14; 27(46):12623-12629.

S.J. Fischer, A. A. Arguello, J.J. Charlton, D.C. Fuller, V. Zachariou, and A.J. Eisch. Morphine blood levels, dependence, and regulation of hippocampal subgranular zone proliferation rely on administration paradigm. *Neuroscience*. 2008 Feb 19; 151(4): 1217-1224.

A.A. Arguello, **S.J. Fischer**, J.R. Schonborn, R.W. Markus, R.A. Brekken, A.J. Eisch. Effect of chronic morphine on the dentate gyrus neurogenic microenvironment. *Neuroscience*. 2009 Mar 31; 159(3): 1003-10.

Free-lance writing and editing portfolio available upon request

CONFERENCE PRESENTATIONS

October 2006 – Society for Neuroscience, Atlanta, GA
Impact of chronic morphine on hippocampal-dependent learning and memory in mice

May 2003 – Faculty Retreat, Denver, CO.
Methods and Modalities in Adult Education, geared for medical students

October 2000 – Society for Neuroscience, New Orleans, LA.
Cyclin D1 upregulation following cisplatin administration in PC12 cells

November 1999 – Society for Neuroscience, Miami, FL.
An in vivo model of cisplatin neurotoxicity demonstrating apoptosis in Dorsal Root Ganglia Neurons

July 1999 – Peripheral Nerve Society, LaJolla, CA.
Cisplatin-induced neuronal apoptosis prevented by Nerve Growth Factor through the high-affinity receptor

April 1999 – American Association of Neurology, Toronto, Canada.
Rescue from cisplatin-induced neuronal apoptosis through the high-affinity NGF receptor

February 1999 – Society for Neuroscience MN Chapter, Rochester, MN
Cisplatin forms reaction produce with DMSO, changing drug activity.

PROFESSIONAL MEMBERSHIPS

2002 – current Member, Mayo Alumni Association

2008 – 2010 Member, National Association of Biology Teachers

1996 – current Member, Society for Neuroscience

1992 – 1995 Member, Women In Science

1991 – 1998 California Readers' Association

COMMUNITY ACTIVITIES

2009 – 2012 Volunteer, Turn Tyler Pink T shirt sales

2005 – current Guest Educator, Children's Medical Center Dallas

2008 -- 2009 Judge, Dallas ISD Science Fair

2005 – 2007 STARS Science Lecturer

1996 – 2002 Judge, Rochester Public School Districts Science Fair

1988 – 1994 Red Bluff School District Reading and Math Tutor

1992 – 1993 Volunteer Coordinator, Tehama County Literary Festival

1991 – 1992 Volunteer Coordinator, Tehama County Library
Children's Summer Reading Program