JAMESON ALLEN MCCANN

PERSONAL INFORMATION

Business Address:
Guilford Technical Community College
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ACADEMIC PREPARATION

Ph.D., Biology, Saint Louis University, 1999
Dissertation: "Environmental pH-Induced Structural Changes Within the Cholera Toxin B Subunit and GM1-Containing Membranes"
Honors: Qualifying Exam passed with distinction (GPA 4.00)

B.S., Biology, Saint Louis University, 1993
Honors: magna cum laude (GPA 3.60), University Scholarship, *Dean's List*

PROFESSIONAL EXPERIENCE

2005- **Assistant Professor, Biology** Guilford Technical Community College
2005- **Program Coordinator, Biotechnology,** Guilford Technical Community College
2004-2005 **Instructor, Biology**, Guilford Technical Community College
2003-2004, 1999-2000 **Postdoctoral Fellow**, Penn State Milton S. Hershey Medical Center
2001-2003 **Peace Corps Volunteer**, Peace Corps Ecuador
1993-1995 **Research Assistant,** Saint Louis University Health Sciences Center

TEACHING EXPERIENCE

Introduction to Biology Lecture and Laboratory (BIO 100)

This course is a survey of general biological principles and introduces basic biological laboratory skills. Topics include the molecular and cellular basis of life, bioenergetics, homeostasis, reproduction, genetics, ecology, and evolution. Upon completion, students should be able to articulate an understanding of the general principles of biology and to demonstrate basic laboratory skills. **2005SP**

Principles of Biology Lecture and Laboratory (BIO 110)

This course provides a survey of fundamental biological principles for non-science majors. Emphasis is placed on basic chemistry, cell biology, metabolism, genetics, taxonomy, evolution, ecology, diversity, and other related topics. Upon completion, students should be able to demonstrate increased knowledge and better understanding of biology as it applies to everyday life. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics. **2004FA, 2005FA**

Anatomy and Physiology I Lecture and Laboratory (BIO 165)

The first in a two-course sequence that provides a comprehensive study of the anatomy and physiology of the human body. Topics include the structure, function, and interrelationship of organ systems with emphasis on the processes that maintain homeostasis. Upon completion students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement. **2004FA, 2005SP, 2005SU, 2005FA, 2006SP**

Anatomy and Physiology II Lecture and Laboratory (BIO 166)

The second in a two-course sequence that provides a comprehensive study of the anatomy and physiology of the human body. Topics include the structure, function, and interrelationship of organ systems with emphasis on the processes that maintain homeostasis. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and the interrelationships of all body systems. This course

has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement. **2005FA, 2006SP, 2006SU, 2006FA, 2007SP, 2007SU, 2007FA, 2008SP, 2008SU, 2008FA, 2009SP, 2009SU, 2009FA, 2010SP, 2010SU, 2010FA, 2011SP**

General Microbiology Lecture and Laboratory (BIO 175)

This course covers principles of microbiology with emphasis on microorganisms and human disease. Topics include an overview of microbiology and aspects of medical microbiology, identification and control of pathogens, disease transmission, host resistance, and immunity. Upon completion, students should be able to demonstrate knowledge of microorganisms and the disease process as well as aseptic and sterile techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement. **2006SP**

Microbiology Lecture and Laboratory (BIO 275)

This course covers principles of microbiology and the impact these organisms have on man and the environment. Topics include the various groups of microorganisms, their structure, physiology, genetics, microbial pathogenicity, infectious diseases, immunology, and selected practical applications. Upon completion, students should be able to demonstrate knowledge and skills including microscopy, aseptic technique, staining, culture methods, and identification of microorganisms. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement. **2006FA, 2007FA, 2008FA, 2009FA, 2010FA**

Biotechnology Lecture and Laboratory (BIO 280)

This course provides experience in selected laboratory procedures. Topics include proper laboratory techniques in biology and chemistry. Upon completion, students should be able to identify laboratory techniques and instrumentation in basic biotechnology. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement. **2006FA, 2008SP, 2009SP**

Cell Biology (BIO 265)

This course provides an in-depth study of cellular organization and communication, biochemical cell processes, and cellular growth, replication and death. Topics include organelle structure and function, nucleic acid and protein synthesis, gene organization and regulation, cell signaling mechanisms, bioenergetics, cell motility and apoptosis. Upon completion, students should be able to demonstrate knowledge of cell structure and function and lab skills including microscopy, cell culture, and molecular biology techniques. **2010SP**

OTHER TEACHING & MENTORING EXPERIENCE

2010 Tissue Culture Summer Seminar Series I (NSF)
2009 Research Experience for Teachers Summer Program (North Carolina A & T University)
2008 Biotechnology Seminar Series II (NC Biotech Center)
2007 Biotechnology Seminar Series I (BioNetwork)
2001 Clases de Experimentos de Ciencias, Escuela José Mejia Lequerica
1996 General Microbiology Lab, Saint Louis University
1996 Cell Structure and Function Lab, Saint Louis University
1995 Introduction to Biology Lab, Saint Louis University
1996 Directed Undergraduate Research Projects of Heather Felton (1996), Josh Lanter (1997), and Patrick Finnegan (1998)

COLLEGE COMMITTEES

2010 Biotechnology Advisory Committee at Alamance CC
2010 Teaching Excellence Committee
2008 Health Technologies Architectural Committee
2005 Curriculum Development Committee
2005 Leadership and Development Committee
2005 Workforce Development Committee

ACADEMIC RECOGNITION

2005 GTCC Presidential Leadership Seminar (*invited participant*)
2004 Philip Morris External Research Program Postdoctoral Fellowship
2003 NIH Postdoctoral Fellowship, "Gap Junction Communication in Alveolar Epithelium" #SR01HL6468205 [Dr. D. Eugene Rannels, *principal investigator*]
2002 *Paul D. Coverdell* World Wise Schools Cultural Exchange Program
1999 NIH Postdoctoral Fellowship, "Cytosol-Vesicle Vacuolar Protein Degradation Pathway" #SR01GM59480 [Dr. Hui-Ling Chiang, *principal investigator*]
1998 President, Biology Graduate Student Association *(Member 95-99)*
1998 Cora M. Downs Student Lecture Award, ASM-Missouri Branch
1997 Poster Presentation Award, NAGPS Symposium
1992 Treasurer, Beta Beta Beta, *(Member 91-93)*

CERTIFICATION

2005 Large Scale Biopharmaceutical Production, Center of Excellence for Biomanufacturing, New Hampshire CC
1998 Certificate in University Teaching Skills, Reinert Center for Teaching Excellence, Saint Louis University

GRANT FUNDING

2008 **North Carolina Biotechnology Center Grant**
Title: "Biotechnology Institute at GTCC (BIG) Program"
Funding Sponsors: NCBC, $7383.00
2006 **BioNetwork Biotechnology Innovation Grant**
Title: "Biotechnology Seminar Series I"
Funding Sponsors: BioNetwork, $14592.00
2006 **US DOL Employment Training Administration Subgrant (Administrated only)**
Title: "Expansion of Biotech Presence at GTCC"
Funding Sponsors: GTTC Foundation, $20000.00
2006 **Guilford Technical Community College Foundation Grant**
Title: "Biotechnology Laboratory Enrichment Program"
Funding Sponsors: GTTC Foundation, $1362.00
2005 **Guilford Technical Community College Foundation Grant**
Title: "Biology Laboratory Curriculum Enhancement Program"
Funding Sponsors: GTTC Foundation, $1065.00
2002 **Peace Corps Partnership Program (PCPP) Grant**
Title: "The Restoration of the Community House in Pueblo Viejo"
Funding Sponsors: Global Fund, Private Benefactors, $510.00
2001 **Peace Corps Small Project Assistantship (SPA) Grant**
Title: "Sustainable Integrated Farm Project in Pueblo Viejo"
Funding Sponsor: United States Agency for International Development, $388.00
1997 **Sustaining Member Student Travel Grant**
Abstract Title: "Interactions Between Membranes of Defined Composition and the A1 Polypeptide of Cholera Toxin"
Funding Sponsor: American Society for Microbiology, $400.00

PUBLICATIONS (PEER-REVIEWED)

1. Brown, C.R., **J.A. McCann**, G.-C. Hung, C. Elco, and H.-L. Chiang. (2002) Vid22p, a Novel Protein is Required for the Fructose-1,6-bisphosphatase Degradation Pathway. *J. Cell Sci. 115:655-666. (first and second authors contributed equally to this publication)*
2. Hatic II, S.O., **J.A. McCann**, and W.D. Picking. (2001) *In Vitro* Assembly of Novel Cholera Toxin-like Complexes. *Analyt. Biochem. 292:171-177.*
3. Brown, C.R., **J.A. McCann**, and H.-L. Chiang. (2000) The Heat Shock Protein Ssa2p is Required for Import of Fructose-1,6-bisphosphatase into VID Vesicles. *J. Cell Biol. 150:65-76.*
4. **McCann, J.A.** and W.D. Picking. (2000) Cholera Toxin Conformational Changes are Associated with Changes in Membrane Structure. Membrane Structure in Disease and Drug Therapy, Marcel Dekker, Inc.
5. Picking, W.D., **J.A. McCann**, A. Nutikka, and C.A. Lingwood. (1999) Localization of the Gb3 Binding Site of Verotoxin 1 by Fluorescence Analysis. *Biochemistry 38:7177-7184.*
6. **McCann, J.A.**, J.A. Mertz, J. Czworkowski, and W.D. Picking. (1997) Structural Changes in the Cholera Toxin B Subunit and GM1-Containing Membranes are Elicited by Environmental pH. *Biochemistry 30:9169-9178.*
7. **McCann, J.A.** and W.D. Picking. (1996) Purification of Recombinant Cholera Toxin Polypeptide A2 and Reconstitution with the Cholera Toxin B Subunit. *Prot. Pept. Lett. 4, 39-46.*
8. Mertz, J.A., **J.A. McCann**, and W.D. Picking. (1996) Fluorescence Analysis of Galactose, Lactose, and Fucose Interaction with the Cholera Toxin B Subunit. *Biochem. Biophys. Res. Commun. 226:140-144.*

PAPERS PRESENTED AT NATIONAL AND INTERNATIONAL MEETINGS

1. **McCann, J.A.**, C. Martinez-Williams, and D.E. Rannels. (2004) Synthetic Peptides Homologous to Connexin 43 (Cx43) Domains Inhibit Gap Junction (GJ) Intercellular Communication (GJIC) in Rat Alveolar Type II Epithelial Cells. Experimental Biology, Washington, D.C. *(abstract printed)*
2. **McCann, J.A.**, C. Ghose, and W.D. Picking. (1999) *In Vitro* Reconstitution of Cholera Toxin Analogues Composed of B Subunits and Recombinant Protein Fused with Polypeptide A2. 98th General Meeting of the American Society for Microbiology, Chicago, Illinois. *(abstract printed)*
3. **McCann, J.A.** and W.D. Picking. (1999) *In Vitro* Reconstitution of Cholera Toxin Homologues for the Delivery of Macromolecules into Mammalian Cells. Midwest Microbial Pathogenics Meeting, Washington University, Clayton, Missouri.
4. **McCann, J.A.** and W.D. Picking. (1997) Preparation of a Novel CTB-CTA2 Complex for Extending Analyses of the pH-Dependent Structural Changes in Cholera Toxin B Subunit-Membrane Complexes. Southcentral Region National Association for Graduate and Professional Students Conference, Washington University, St. Louis, Missouri. *(received award for this abstract presentation)*
5. **McCann, J.A.**, J.A. Mertz, and W.D. Picking. (1997) Interactions Between Membranes of Defined Composition and the A1 Polypeptide of Cholera Toxin. 97th General Meeting of the American Society for Microbiology, Miami Beach, Florida. *(received grant for this abstract presentation, abstract printed)*
6. Picking, W.D., **J.A. McCann**, A. Nutikka, and C.A. Lingwood. (1997) Localization of the Binding Site for a Fluorescent Analogue of Globotriasyl Ceramide in Verotoxin 1 Using Fluorescence Spectroscopy. Symposium on Shiga Toxin (Verocytotoxin)-Producing *E. coli* Infections, 3rd International VTEC, Baltimore, Maryland. *(abstract printed)*

7. **McCann, J.A.** and W.D. Picking (1996) Influence of the Cholera Toxin B Subunit on the Structure of GM1-Containing Membranes is a Function of pH. 96th General Meeting of the American Society for Microbiology, New Orleans, Louisiana. *(abstract printed)*

CONFERENCE PRESENTATIONS AND OTHER PUBLICATIONS

1. **McCann, J.A.** (2008) Biotechnology Plays Important Role in Daily Lives. *The High Point Enterprise 6B.*
2. **McCann, J.A.** (2002) Tropical Pathogens of the Enteric System. Peace Corps Annual Health Conference, Conocoto, Ecuador.
3. **McCann, J.A.** (2001) Small Grants Writing Workshop. Invited Lecture for the Peace Corps Volunteer Conference, Cotacachi, Ecuador.
4. **McCann, J.A.** (1999) pH-Induced Structural Changes in the Cholera Toxin B Subunit and Associated Changes in Membrane Structure. Department of Cellular and Molecular Physiology Seminar Series, Penn State Milton S. Hershey Medical Center, Hershey, Pennsylvania.
5. **McCann, J.A.** and W.D. Picking. (1998) Foodborne Bacterial Pathogens. Invited Lecture for Safety Week at BioMerieux Vitek, Incorporated, Hazelwood, Missouri.
6. **McCann, J.A.** and W.D. Picking (1998) Construction of a Novel Fusion Protein Consisting of Green Fluorescent Protein (GFP) and the A2 Subunit of Cholera Toxin (CT) to Examine Interactions with CTB. Joint Annual Meeting of the Missouri Valley and Missouri Branches of the American Society for Microbiology. University of Kansas, Lawrence, Kansas. *(received award for this presentation)*
7. **McCann, J.A.** and W.D. Picking. (1998) Generation of a Fusion Protein Consisting of Cholera Toxin CTA2 Peptide and Green Fluorescent Protein for Reconstitution with Cholera Toxin CTB Pentamer. Biology Graduate Student Association Symposium, Saint Louis University, St. Louis, Missouri.
8. **McCann, J.A.** and W.D. Picking. (1997) pH-Dependent Conformational Changes in Cholera Toxin B Subunit-Ganglioside GM1 Complexes Evoke Changes in Membrane Structure. Joint Annual Meeting of the Missouri Valley and Missouri Branches of the American Society for Microbiology. University of Kansas, Lawrence, Kansas.
9. **McCann, J.A.** and W.D. Picking (1996) Fluorescence Analysis of Membrane Bound Cholera Toxin B Subunit. Biology Graduate Student Association Symposium, Saint Louis University, St. Louis, Missouri.

LANGUAGES

Spanish: Intermediate-High Level in Speaking, Reading, and Writing *(tested February, 2003, Peace Corps Ecuador Language Department)*.