

## Robert JC McLean

### I. ACADEMIC/PROFESSIONAL BACKGROUND

**NAME: ROBERT J.C. McLEAN**                      **TITLE** Regents' Professor

#### EDUCATION

<b>Degree</b>	<b>Year</b>	<b>University</b>	<b>Major</b>	<b>Thesis/Dissertation</b>
B.Sc.	1978	Guelph	Microbiology	Control of Coliforms in Ice Cream Food Colour
Ph.D.	1986	Calgary	Microbiology	The Role of Ureolytic Bacteria in Infectious Urinary Stone Production

#### EXPERIENCE

<b>University</b>	<b>Position</b>	<b>Dates</b>
University of Guelph, Canada	Postdoctoral Fellow	1986 – 1988
Queen's University, Canada	Assistant Professor	1988 – 1993
Queen's University, Canada	Adjunct Professor	1993 – 1994
Southwest Texas State University (now Texas State University)	Assistant Professor	1993 – 1998
Texas State University	Tenure received	1999
Texas State University	Associate Professor	1998 – 2004
Texas State University	Professor	2004 – present
Texas State University	University Distinguished Professor	2012 – present
Texas State University	Homer E Prince Microbiology Professor	2013 – present
Texas State University System	Regents' Professor	2012 – present

#### OTHER EXPERIENCE

Texas A&M University	Visiting Scholar	Fall 2000
Midwestern State University	Adjunct Graduate Faculty	2002 – 2003
University of Texas	Visiting Scholar	Spring 2008, 2010-13
University of Texas – San Antonio	Adjunct Graduate Faculty	2011-2013

#### TEACHING HONORS AND AWARDS

**1996 - 1997:** Citation: Educator stimulating student interest in medical career, University of Texas Medical Center, Houston, TX

**2002:** Biographee: Who's Who Among America's Teachers, 7<sup>th</sup> Edition, Educational Communications, Inc., Lake Forest IL

**2002:** Favorite Professor, Alpha Chi Honors Society, Southwest Texas State University

**2005:** Biographee: Who's Who Among America's Teachers, 9<sup>th</sup> Edition, Educational Communications, Inc., Lake Forest IL

**2006:** Biographee: Who's Who in American Education, 7<sup>th</sup> Edition, Marquis Publishing, New Providence NJ

**2006:** College of Science Nominee: Presidential Award for Teaching

**2007:** Biographee: Who's Who in American Education, 8<sup>th</sup> Edition, Marquis Publishing

**2010:** College of Science Nominee: Presidential Award for Teaching

**2010:** Texas ASM Branch Nominee: Carski Award for Microbiology Teaching

**2012:** Texas ASM Branch Nominee: Carski Award for Microbiology Teaching

**COURSES TAUGHT**

<b>University</b>	<b>Course Taught (Number)</b>	<b>Dates</b>
University of Lethbridge, Lethbridge, AB, Canada	Microbiology (guest lecturer)	1984-1985
University of Guelph, Guelph, ON, Canada	Microbial Ecology (65-320)	1987
Queen's University, Kingston, ON, Canada	Introductory Microbiology (Micr 120)	1988-1993
	Graduate Bacteriology (Micr 930/931)	1988-1993
	Microbial Diversity (Micr 433)	1993
Texas State University	Microbiology (Bio 3440)	1993-1999
	Pathogenic Fungi (Bio 4440/5440)	1995-1996
	Pathogenic Microbiology (Bio 4445/5445)	1994-2013
	Medical Microbiology (Bio 4350G/5350G)	2011-2013
	Medical Microbiology (Bio 4366/5366)	2014
	Microbiology Seminar (Bio 5110M, 7102)	1996, 2001-present
	Topics in Physiology (Bio 5350)	1997
	Functional Biology (Bio 1430)	2005
	Topics in Biology (Bio 4350/5350)	2006
	Microbial Ecology (Bio 4446/5446)	1997-2004
	Microbial Physiology/Genetics (Bio4447)	2007-2015
	Microbial Physiology (Bio 4447/7447)	2015-present
	Microbiology (Bio 2400)	2000-2010, 2015

**COURSES PREPARED (Southwest Texas State University/Texas State University)**

<b>Course</b>	<b>Details of Preparation</b>	<b>Dates</b>
Microbiology (Bio 3440, now 2400)	Updated 20 yr. old laboratory and course Published course notes with McGraw-Hill Assigned royalties to microbiology scholarships	1993-2010 1996-2010
Pathogenic Microbiology (Bio 4445/5445)	Updated 20 yr. old laboratory and course Published course notes with bookstore Assigned royalties to microbiology scholarships	1994-2014 1997-2014
Medical Microbiology Bio 4350G/5350G	Developed lecture-only course due to enrollment pressures on Bio 4445/5445	2011
Microbial Ecology (Bio 4446/5446)	Developed new course Introduced research training as course component	1995-1997
Topics in Physiology (Bio 5350)	Developed and taught course in microbial physiology and genetics	1997, 2006
Microbial Physiology and Genetics (Bio 4447/7447)	Developed senior/graduate course in microbial physiology and genetics	2007-present

**STUDENTS AND THESES SUPERVISED (\*R.J.C. McLean - major professor; otherwise major professor listed in parentheses)**

(students listed where R.J.C. McLean played an active, major role in thesis research)

<b>University</b>	<b>Student Name - Degree</b>	<b>Thesis Title</b>	<b>Year</b>
Queen's	*A.J. Dumanski M.Sc.	Isolation and Characterization of the Capsule of <i>Proteus mirabilis</i> and its Role in Kidney Stone Formation	1992
Queen's (D Beauchemin)	A.T. Persaud M.Sc.	Development of Inductively-Coupled Plasma-Mass Spectrometry for Soil Analysis	1994
Queen's (M. Sayer)	P.J. Vincent M.Sc. (Eng.)	Silver-platinum Multilayer Thin Films as Antimicrobial Coatings for Catheters	1995
TX State	*M.K. Koenig M.S.	Parameters Affecting the Conformation of N-acetylneuraminic acid, <i>Escherichia coli</i> K1 Capsular Polysaccharide	1996
TX State	*M. Whiteley M.S.	Effects of Nutrient Limitation and Species Composition on Biofilm Development and Susceptibility to Iodine Disinfection	1997
University of Texas (G. Georgiou)	A. Razatos Ph.D.	Factors and forces involved in the initial events of bacterial adhesion as monitored by atomic force microscopy.	1999
University of Texas (B. Kirkland)	M Rahnis Ph.D.	Nannobacteria and mineral formation (student withdrew from program)	1997 - 1998
Queen's (WT Yen)	P.T. Khu M.Sc. (Eng.)	Bacterial Precious Metal Recovery	1998
<b>(Below students at Texas State unless otherwise indicated)</b>			
*J.L. Adams	MS	Role of <i>rpoS</i> in the Formation and Physiology of <i>Escherichia coli</i> Biofilms	1998
*H.C. Knowles	MS	Isolation, Culturing and Characterization of Nannobacteria	1998
*S. Prabhakaran	MS	Investigation of Bacterial Fragmentation as a Possible Origin of Nanobacteria	1999
*G.J. Balzer	MS	Effect of <i>relA</i> and <i>spoT</i> Deletions on <i>Escherichia coli</i> Biofilm Formation	2000
*M.K. Windham	MS	Acyl Homoserine Lactone Recruitment of Bacteria	2001

into Biofilms.

*K.L. Fuson MS	Biofilm-induced Gene Expression in Chemostat-Grown <i>Escherichia coli</i> as Determined by a Gene Array	2002
R. Sink MS Midwestern State University (P. Hathorn)	Microbial Diversity in Desert Springs	2003
*C.L. Bates MS	Differential Gene Expression and Colanic Acid Gene Effects on Biofilm Formation	2004
*M. Merchant MS	Identification and Characterization of Bacterial Isolates from Spring Lake, Texas	2005
*A.K. Welsh MS	Detection of an Introduced Bacterial Culture in Greywater Treatment Reactors	2005
*W. Boswell MS	Effects of N-Acyl-L- Homoserine Lactone Lactonase on Disruption of Preformed Biofilms, Bacterial Recruitment, and Prevention of Biofilms	2007
*M. Weber MS	Role of <i>yjfO</i> , <i>agaB</i> and <i>atoS</i> in <i>Escherichia coli</i> Biofilm Formation and Stress Response	2007
*M. Jiminez MS	Chemotaxis Response to Cell Signals (student withdrew)	2007-2008
*S. Nath	Potential of Biofilms to Harbor Largemouth Bass Virus	2009
*A.A. Taylor MS	Carbon and Clay Nanoparticles Provoke Numerous Responses in <i>Salmonella enterica</i> var. typhimurium and <i>Escherichia coli</i>	2010
*N Deb Adhikary MS	Long-term Evolution of <i>E. coli</i> and <i>P. aeruginosa</i> Mixed Cultures	2011
*W Chu Postdoc	Mixed culture genes for <i>E. coli</i> growth with <i>P. aeruginosa</i>	2009-2010
*TR Zere MS	Indole promotes <i>E. coli</i> growth in mixed population growth	2011
*E Valenzuela MS	Indole effects on <i>P. aeruginosa</i> biofilm structure (withdrew from program)	2011 – 2014
LM Vega PhD Rice (P Alvarez, advisor)	Inhibitory Effect of Ni and Cd on Quorum Signaling in Gram Negative Bacteria	2013
*B Hidalgo-Romano MS	Indole inhibition of AHL-mediated quorum signaling is widespread in gram-negative bacilli	2013
*M Al Tameemi MS (with V Maitin and D Vattem)	Protective effect of <i>Lactobacillus</i> sp	2013

*S Pringle MS	The effect of indole production on the growth of <i>Escherichia coli</i> when co-cultured with <i>Enterococcus faecalis</i>	2014
*C Longoria MS (in progress)	<i>E. coli</i> mixed culture growth with <i>Vibrio</i>	2014-present
*A Stoltzman MS (in progress)	<i>E. coli</i> mixed culture growth with <i>Enterococcus</i>	2014-present
*S Thornhill MS (in progress)	Metal ion inhibition of quorum signaling	2014-present
*P Pham PhD (in progress)	Probiotic regulation of fat-storage via Angiopoietin-like 4 (ANGPTL4)	2014-present
*S Robertson	Effect of biofilm dispersing agent on aquatic biofilms	2014-present
*K White MS (in progress)	<i>E. coli</i> mixed culture with <i>Clostridium difficile</i>	2015-present
*K Garcia	Quorum signal control of biofilm succession	2015-present

#### Masters - Non Thesis

TX State	*P.A. White - M.S. (withdrew)	1994 - 1997
TX State	*T.M. Schoeneweis - M.S. (completed)	1996
TX State	*L.A. Harper - M.S. (completed)	1998
TX State	*L.J. Smith - M.S. (completed)	1999
TX State	*J.E. Jankowski - M.S. (completed)	2000
TX State	*M. Arias-Cantu - M.S. (completed)	2000
TX State	*P. Afshar - M.S. (completed)	2006
TX State	*S. Larroca – M.S. (completed)	2010
TX State	*S. Dolino – M.S. (completed)	2011
TX State	*J Priebe – M.S. (withdrew)	2013-2014
TX State	*A Priebe – M.S. (withdrew)	2013-2014
TX State	*K Braddock – MS (in progress)	2016-present

#### Undergraduate Honors Theses (Texas State unless otherwise noted)

Queen's	*P.T. Khu B.Sc. (Eng)	Bacterial Enhancement of Gold Recovery	1992
*M.E. Delgado		Precautions in Dentistry against HIV Spread	1994
K.A. Dunn		Role of Bacterial Biofilms in Leaf Fossilization	1995
*E.J. Hughes		Efficiency of Latex Gloves as Barriers to Infection	1996
*H.L. Bates		Bacterial Biofilm-Associated Infection in Indwelling Medical Devices	1996

*A. Primmer	Using Transposon Mutagenesis to Analyze Antibiotic Resistance in <i>Pseudomonas aeruginosa</i> Biofilms	1999
*V. Pearson	The Viral Cure: Bacteriophage as a Treatment Against Biofilm Infection	2004

**Independent Study (graduate level)**

*T.M. Schoeneweis	Role of Biofilms as Reservoirs for Coliform Populations in Streams	1996
L.K. Marengo	In Vitro Culture and Preparation of Antigen for Serodiagnosis of <i>Ehrlichia chaffeensis</i> infection	1997
*L.A. Harper	Leaf Decomposition by Edward's Aquifer Fungi	1998
*J. Padgett	Microbial Resistance to Sodium Azide	1998
*G Balzer	Use of <i>gfp</i> to mark Biofilm Populations	1998
*L.J. Smith	Undergraduate Microbiology Lab Manual	1999
*S Prabhakaran	Nanobacteria in Kidney Stones	1999
*J.E. Jankowski	The Effects of Ultraviolet Radiation on Cryptobiotic Soil Crusts	1999
*M. Arias-Cantu	Technique for Identifying Naturally Occurring Occurring Quorum-Sensing Signal Antagonists	2000
*G. Southard	Generation of antibiotic sensitive mutants in <i>Pseudomonas aeruginosa</i>	2000
*B.D. Corbin	Growth of T4 Phage in <i>E. coli</i> Biofilms	2000
*K.L. Fuson	RNA Purification from <i>E. coli</i> Biofilms	2002
*P. Afshar	Lab Manual in Pathogenic Microbiology	2006
*S. Larocca	qPCR Optimization In Mixed Cultures	2009
*S. Dolino	Molecular Diagnosis of Tuberculosis (literature review)	2011

**Independent Study (undergraduate level) Texas State unless otherwise indicated**

*A.J. Dumanski (Queen's)	Media for the Characterization and Isolation of <i>Proteus mirabilis</i> capsule	1990
*P.T. Khu (Queen's)	Use of <i>Bacillus subtilis</i> cell walls to selectively Bind Copper from Sea Water	1990

*L.E. Bickerton (Queen's)	Use of <i>Bacillus subtilis</i> Cell Walls for Copper Removal from Sea Water	1991
*A.M. Campbell (Queen's)	Repeated Use of <i>Bacillus subtilis</i> Cell Walls to Immobilize Copper Ions	1992
*D. McCarty	Colonization Behavior of Urinary and Gastrointestinal <i>Escherichia coli</i> isolates	1994
*R. Routh	Production of Acapsular mutants of <i>Proteus mirabilis</i>	1994
*P.A. White	Influence of Metal ions on Bacterial Capsule Structure	1994
*D. Andrewartha	Isolation of Biofilm Forming Bacteria from the Edwards Aquifer	1995
*E. Brown	Stationary Phase Genes and <i>Escherichia coli</i> Biofilms	1996
*H. Larson	Diversity of Acyl Homoserine Lactone, Quorum Signaling Molecules in Mixed Population Biofilms	1997 – 1998
*M. Garner	Screening Compounds For Their Ability to Inhibit Biofilms	1999 - 2000
*A. Roth	Acyl Homoserine Lactone Recruitment of Bacteria into Biofilms	2000
*A. Czermerys	Mutagenesis of a Cryptic Gene Downregulated in <i>E. coli</i> Biofilms	2002
*C. Potts	Quorum Sensing in <i>Nitrosomonas</i>	2003
*M. Leal	Endolithic Biofilms in Italian Travertine	2003
*T. Sanger	Endolithic Biofilms in Italian Travertine	2003
*S Bryant	Microgravity Enrichment of Planktonic and Biofilm Bacteria From Aquatic Environments	2004-5
*O Gamez	Biofilm Community Structure and its Impact On Leaf Fossilization	2004
*A Mamidi	Characterization of a Bacterial Quorum Sensing Inhibitor from an Aquifer Microorganism	2005
*P Zenker	Influence of Cryptic Gene, <i>yjfO</i> , on <i>E. coli</i> Biofilms	2005
*M Gomez	Quorum Signal Inhibiting Bacteria in Big Bend National Park	2006
*V Huerta	Influence of Teas on Bacterial Quorum Signaling and Biofilms	2006-7
*A Khamis	Quorum Signal Inhibiting Plants in Austin	2007
*A Zayed	Quorum Signal Inhibiting Plant Identification	2007

*M Banning	Use of Resazurin Dye as a Biofilm Indicator	2007-8
*L Wiggins	Phenotype Characterization of <i>nanK</i> Mutant Biofilms	2007-8
*H Keel	Quorum Signal Inhibition Research (literature review)	2007
*K Mallet	Evaluation of Synthesized Quorum Signal Inhibitors	2007
*G Ortiz	Biomining by <i>Pseudomonas aeruginosa</i> Vesicles	2008
*A Duran	AHLase Effect on <i>E. coli</i> Competition	2009-11
*C Perez	Cross-hybridization of <i>E. coli</i> and <i>P. aeruginosa</i> Gene Chips	2009-10
*S Bradley	<i>E. coli</i> Mixed Culture Growth	2010
*C Muñoz	<i>E. coli</i> Metabolism Genes ( <i>atoS</i> , <i>agaB</i> ) and Biofilm Growth	2010-12
*A Orr	<i>E. coli</i> Metabolism Genes ( <i>atoS</i> , <i>agaB</i> ) and Biofilm Growth	2010-12
*K Applegate	<i>E. coli</i> competitiveness in absence of indole with cloned lactonase	2011
*J Gollihar	<i>P. aeruginosa</i> Indole Degradation Genetic Screen (with S Brown)	2011-12
*J Korn	<i>P. aeruginosa</i> Mutant Screen for Antibacterial Activity	2011-12
*ML Warren	Degradation of pyocyanin by <i>Bacillus pumilus</i>	2012-13
*B Gonzales	Bacterial biofilms as nutrients for riffle beetles	2013-14
*S Thornhill	Antimicrobial effect of plasma gas	2013
*L Maberry	Antimicrobial plasma gas	2014
*A Gibbs	Antimicrobial plasma gas effects on <i>E. coli</i> oxyR	2015
*L Clayton	Effect of dispersing agent on <i>P. aeruginosa</i> biofilms	2015

**Other Student Supervisory Committees:** (TX State unless noted otherwise)

<b>Student</b>	<b>Major Professor</b>	<b>Degree</b>	<b>Years</b>
K. McFarlane	G.M. Aron	M.S.	1993 – 1994
J. Leuzinger	G.M. Aron	M.S.	1993 – 1995
K. Quinonez	T. Arsuffi	B.S.	1994
D. Zamora	D. Garcia	M.S.	1994 – 1997
L. Nunn	F. Horne	M.S.	1995
J. Kemp	J. Baccus	M.S.	1995
H.Y. Li	R.B. Walter	M.S.	1995 – 1996
E.A. Weaver	G.M. Aron	M.S.	1995 – 1997
H.M. Sung	R.B. Walter	M.S.	1997
J. Rappe	D.W. Tuff	M.S.	1997 – 1998
D. Murphy	G.M. Aron	M.S.	1997 – 1998



K. Lord	R.B. Walter	M.S.	1998
G. Southard	G.M. Aron	M.S.	2000
J.N. Needham	D.M. Garcia	M.S.	2001
T. Allemand	A. Groeger	M.S.	2001
P.A. White	J.R. Koke	M.S.	2001
B. Scott	G.M. Aron	M.S.	2003
G. Lobban	M.R.J. Forstner	M.S.	2003
J. Meador	D.L. Mitchell (UT Houston)	Ph.D.	2003 – 2004
S. Craig	S.M. Payne (U Texas)	Ph.D.	2005 – 2008
M.A. Wallace	A. Groeger	Ph.D.	2006 – 2011
S. Schwarloze	G.M. Aron	M.S.	2006
A.K. Welsh	D Hahn	Ph.D.	2007 – 2009
B Mirza	D Hahn	Ph.D.	2007 – 2009
L Vega	PJJ Alvarez (Rice)	PhD.	2007 – 2014
A Pokharel	D Hahn	M.S.	2007 – 2009
SA Brown	M Whiteley (U Texas)	PhD	2009 – 2010
M Kay	GM Aron	MS	2008 – 2010
T Erwin	GM Aron	MS	2008 – 2009
L Sieber	TR Simpson	MS	2008 – 2009
A Korgaonkar	M Whiteley (U Texas)	PhD	2010 – 2012
L Coulter	GM Aron	MS	2010 – 2012
Q Sha	D Hahn	PhD	2010 – 2012
J Riggs	GM Aron	MS	2012 – 2014
S Samant	D Hahn	PhD	2012 – 2015
F Sanjar	M Eppinger (UTSA)	PhD	2012 – 2015

## ORGANIZATIONS

### PROFESSIONAL:

<b>American Society for Microbiology (ASM)</b>	1983 – present
- nominated for <b>alternate councillor</b> , Division J	1994
(Morphology and Structure) - election unsuccessful	
- <b>President-elect</b> , Texas Branch ASM	2001 – 2003
- <b>President</b> , Texas Branch ASM	2003 – 2005
- <b>Secretary</b> , Texas Branch ASM	2005 – 2007
- <b>Region VI Planning Coordinator</b>	2007 – 2016
(ASM Branches in TX, NM, CO, WY, OK, KS, and NE)	
- <b>International Committee</b> , Member	2008 – 2012
- <b>National Postdoctoral Award Selection Committee</b>	2011 – present
- <b>Goldschmidt Graduate Student Award (Texas) Committee</b>	2011 – present
(chair)	
<b>Canadian Society of Microbiologists (CSM)</b>	1985 – 1996
- <b>CSM Council</b>	1992 – 1996
- <b>Vice Chairman</b> , Morphology and Structure Section	1992 – 1994
- <b>Chairman</b> , Morphology and Structure Section	1994 – 1996
<b>Microscopical Society of Canada</b>	1984 – 1995
<b>Sigma Xi</b>	1999 – present
<b>International Society for Microbial Ecology</b>	2000 – 2006

## SERVICE

### UNIVERSITY:

<b>Academic Program Review (Geography Department)</b> - appointed as Texas State University representative	2013
<b>Committee of Inquiry</b>	2002
<b>Institutional Biosafety Committee</b> - appointed as chair - committee developed university policy for dealing with biosafety issues - review and approve all recombinant DNA and biosafety proposals for university	2008 - present
<b>Nomination Committees for Presidential Awards</b> - Scholarly/Creative Activity - Service - Presidential Lecture (chaired committee in 2007)	2001-2003, 2005-7 2003-2005 2005-2009
<b>Operations Board</b> , TX State Institute for Environmental and Industrial Science (IEIS)	1995 – 2000
<b>Presidential Fellow</b> , Appointed by President J.H. Supple - member of President's Cabinet - met with all TX State Deans and Chairs, act as resource person for promoting scholarship - appointed as observer on TX State strategic planning committee by President D.M. Trauth - ad hoc member of Sponsored Projects and Undergraduate Research Advisory committees	2001 - 2003
<b>Research Planning Committee</b> - appointed as co-chair (along with B. Covington) by President D.M. Trauth - develop University research policy recommendations for Provost and President's cabinet	2003
COLLEGE OF SCIENCE:	
<b>Homecoming Committee</b> <b>College Review Group</b> - Biology representative on College tenure and promotion committee	1996 2005-2007, 2011-2013
<b>College Promotion and Tenure Task Force</b> - rewrite College promotion and tenure document	2007-2008
DEPARTMENTAL:	
<b>Safety Committee</b>	1993 – 1994, 1998
<b>Curriculum Committee</b>	1994 - 1995
<b>Schultze Award Committee</b>	1994 - 1996
<b>Graduate Committee</b>	1995 - 1998
<b>Faculty Search Committees:</b> Marine Biologist, Freshman Biology Coordinator, Microbial Ecologist, Groundwater Hydrologist, Microbiology Lecturer (committee chair), Microbiologist (committee chair)	1996 - present

<b>Long term Planning Committee</b>	2002
<b>Budget Committee</b> (Committee chair Spring 2001, 2007-13)	2001 - present
<b>Personnel Committee</b> (Committee chair 2006-12)	1998 - present
<b>CEC Scholarship Committee</b> (Committee and overall CEC chair 2002)	2000 - 2002
<b>Departmental Senate Liason</b>	2007 - 2008

CONFERENCES AND SESSION ORGANIZATION:

**Canadian Society of Microbiologists / Society for Industrial Microbiology** 1994  
- organized and chaired half day symposium on Biofilms at Annual Meeting in Toronto

**Canadian Society of Microbiologists** 1995  
- organized and chaired symposium on Microbiology of Nuclear Waste Disposal at Annual Meeting in Kingston, ON, Canada  
- arranged and edited a special edition of the *Canadian Journal of Microbiology* (April 1996) with symposium review articles

**Scanning Microscopy International** 1995  
- organized and chaired day-long symposium on Biomedical Device Infections at meeting in Houston, Texas  
- edited published presentations in *Cells and Materials*

**BioSci - Internet Discussion Group on Biofilms** 1997 - 1999  
- co-moderator with C. Sternberg (Denmark), and R.J. Palmer (University of Tennessee)

**International Congress on Microbial Ecology** 1998  
- organized and chaired Microbial Biofilm session in Halifax NS Canada  
- edited manuscripts for publication in conference proceedings

**American Society for Microbiology**

Co-chair / speaker in Cell-Cell Signaling in Bacterial Biofilms symposium, Chicago	1999
Invited speaker on biofilms at Texas Branch Spring and Fall meetings	1999
Round table discussion group leader at ASM Biofilm Meeting, Big Sky, MT	2000
Invited Workshop Participant, Biofilms 2003 meeting, Victoria BC Canada	2003
Invited Speaker, Mixed Infections Conference, Lake Tahoe, NV	2003
Invited Speaker on Graduate Education, Texas Branch Fall Meeting, Houston	2004
Invited Speaker on Biofilms and Discussion Host, Texas Branch Fall Meeting	2005
Invited Speaker on Microbiology Academic Careers, National Meeting Orlando	2006
Invited Speaker on Biofilm Education in Microbiology, National Meeting Philadelphia	2009
Co-chair: Cell-cell signaling ASM Biofilm Conference, Cancun MX	2009
Invited Speaker, Rocky Mountain ASM branch, Boulder CO	2011
Invited Speaker, Texas Branch ASM, fall meetings	2012, 2015
Invited Speaker, Rio Grande Branch ASM, annual meetings	2013, 2014
Invited Speaker, Missouri Valley Branch, spring meeting	2015

**Editorial Board**

Bioresource Technology	1997 – 2002
Geomicrobiology Journal	1999 – present
Applied and Environmental Microbiology	1999 – 2007, 2010 – 2018
Frontiers in Microbiology	2011 – 2015

### Manuscripts Reviewed (ad hoc)

Advances in Space Research, American Journal of Botany, American Journal of Reproductive Immunology, Analytical and Bioanalytical Chemistry, Antimicrobial Agents and Chemotherapy, Antonie van Leeuwenhoek, Applied and Environmental Microbiology, Applied Biochemistry and Biotechnology, Applied Microbiology and Biotechnology, Aquatic Microbial Ecology, Archives of Microbiology, Biodegradation, Biofouling, Biomaterials, Bioorganic and Medicinal Chemistry Letters, Bioresource Technology, Biotechnology Progress, BMC Microbiology, Canadian Journal of Microbiology, Cells and Materials, Chemical Geology, Current Microbiology, Environmental Microbiology, Environmental Science and Technology, FEMS Immunology and Medical Microbiology, FEMS Microbiology Ecology, FEMS Microbiology Letters, Food Microbiology, Frontiers in Microbiology, Gene, Geomicrobiology Journal, Human Genomics, Infection and Immunity, International Journal of Systematic and Evolutionary Microbiology, ISME Journal, Journal of Applied Microbiology, Journal of Bacteriology, Journal of Clinical Microbiology, Journal of College Science Teaching, Journal of Food Safety, Journal of Food Science, Journal of Medical Microbiology, Journal of Microbiological Methods, Journal of Photochemistry and Photobiology B: Biology, Journal of Proteome Research, Journal of the North American Benthological Society, Journal of Urology, Journal of Water and Health, Lancet, Langmuir, Letters in Applied Microbiology, Microbial Biotechnology, Microbial Ecology, Microbiology, Microgravity Science and Technology, Molecular Microbiology, PloS One, PloS Pathogens, Proceedings of the National Academy of Sciences, Science, Southeastern Naturalist, Texas Journal of Science, Trends in Food Science and Technology

### Guest Editor

Cells and Materials	1994 - 1996
Canadian Journal of Microbiology	1995
Proceedings of the 8th International Symposium for Microbial Ecology	1998

### Grant Reviewer and Panelist (\*)

Canada Foundation for Innovation	2012
Swiss National Science Foundation	2010, 2012
Canadian Institutes of Health Research	2009
US-Israel Binational Science Foundation	2009, 2011
Wellcome Trust, UK	2005
Louisiana Board of Regents	2010, 2011
NASA ILSRA Microbial Biology Review Panel*	2014
NIH - ZRG1 IDM-A Microbial Pathogenesis Panel*	2004, 2005 (3X), 2006 (3X), 2007, 2008 (2X), 2009, 2010 (2X), 2011 (3X), 2012
NIH - ZRG1 IDM-L (02) S*	2013
NIH - ZRG1 IDM-B (80) S*	2013
NIH - ZRG1 MOSS-S (02) Oral Biology*	2009, 2010, 2011(2X), 2012
NIH - ZRG1 BCMB-A (51) Transformative R01 Roadmap Review*	2011, 2012, 2015
NIH - ZRG1 F13-C (20) L Microbiology Fellowships Panel*	2011, 2013, 2014 (2X), 2015 (2X)
NIH - ZRG F14-C Biotechnology Fellowship Panel*	2009
NSERC, Canada	2004, 2005, 2009
American Chemical Society, Petroleum Research Fund	2003
South Dakota State University, EPSCoR grant	2003
Sam Houston State University, internal grant	2003, 2014
NIH - OBM-1 study section* ad hoc	2002
National Research Foundation, South Africa	2002
NIH - GRM Study Section ad hoc teleconference*	2002 (panel chair)
National Science Foundation grant reviewer	1994-2001, 2003, 2004

American Society for Microbiology	
Undergraduate Research Fellowships Panel*	2000-2002
NIH - Bacteriology and Mycology Study Section BM-1* ad hoc	2001, 2002, 2004
NIH - NIDCR Special Emphasis Panels*	1999, 2000 (2X), 2001 (3X - once as panel chair), 2002 (2X, once as panel chair), 2004
NIH - NIAID Special Emphasis Panel*	1999
USDA	1999, 2001, 2004, 2005
National Environment Research Council, UK	1999
Food and Drug Administration	1998
FIPSE, US Dept. Education*	1997
Kidney Foundation of Canada	1991, 1994
Medical Research Council of Canada	1992-1993
National Sea Grant College Program	1991

#### OTHER COMMUNITY SERVICE

Wimberley Presbyterian Church – Session Nominating Committee	1999-2001
First Presbyterian Church, San Marcos, TX – Session	1994-1996
Cub Scouts Wimberley – Pack leader	1997-2001
Assistant Soccer Coach, for sons' soccer teams	2000-2005
Wimberley Library – Long Range Planning Committee	2005

#### II. SCHOLARLY/CREATIVE PUBLICATIONS (\*\*- denotes TX State student author)

##### BOOKS

##### SCHOLARLY MONOGRAPHS:

1. **McLean, R.J.C.**, J.R. Lawrence, D.R. Korber, and D.E. Caldwell. 1992. *Proteus mirabilis* biofilm protection against struvite crystal dissolution and its implications in struvite urolithiasis. *Urology/Nephrology Digest* **4**: 28 - 29. (highlights of *Journal of Urology* **146**: 1138-1142)

##### TEXTBOOKS (Written at TX State)

1. E.C.S. Chan, M.J. Pelczar, Jr., N.R. Krieg, and **R.J.C. McLean**. 1997. *Laboratory exercises in microbiology, abridged sixth edition with biology 3440 lecture notes*. McGraw-Hill, New York, 327 pp.

2. *Microbiology Course Notes and Laboratory Exercises*, 1999. **R.J.C. McLean**, LJ Smith and K Smith - McGraw-Hill, New York (now in 4th edition, publication date 2008)

3. *Microbial Ecology*, 2015. LL Barton and **RJC McLean** – John Wiley and Sons (submission date 12/15)

##### EDITED BOOKS: (Written at TX State)

1. Veliky, I.A. and **R.J.C. McLean** (eds). 1994. *Immobilized biosystems theory and practical applications*, Blackie Academic and Professional, Glasgow, Scotland, 342 pp.

2. **McLean, R.J.C.** and AW Decho. 2002. *Molecular ecology of biofilms*. Horizon Scientific Press, Wymondham, UK, 123 pp.

##### CHAPTERS IN BOOKS:

1. **McLean, R.J.C.** and T.J. Beveridge. 1990. Metal binding capacity of bacterial surfaces and their ability to form mineralized aggregates, p.185-222. In H.L. Ehrlich and C.L.

Brierley (ed.), Microbial mineral recovery, McGraw-Hill, New York.

2. **McLean, R.J.C.**, D.E. Caldwell, and J.W. Costerton. 1994. Biofilms, naturally occurring communities of immobilized cells, p.289-335. In I.A. Veliky and **R.J.C. McLean** (ed.), Immobilized biosystems theory and practical applications, Blackie Academic and Professional, Glasgow, Scotland.

3. **McLean, R.J.C.**, J.C. Nickel, and M.E. Olson. 1995. Biofilm associated urinary tract infections, p.261-273. In H.M. Lappin-Scott and J.W. Costerton (ed.), Microbial biofilms, Cambridge University Press, Cambridge, UK.

4. **McLean, R.J.C.** 2002. An overview of biofilm molecular ecology, In: RJC McLean and AW Decho (eds.), Molecular ecology of biofilms. Horizon Scientific Press, Wymondham, UK, pp 1-21.

5. Morris, CE, MB Barnes, and **R.J.C. McLean**. 2002. Biofilms on Leaf Surfaces: Implications for the Biology, Ecology and Management of Populations of Epiphytic Bacteria, In: SE Lindow, EI Hecht-Poinar, and VJ Elliott (eds.), Phyllosphere Microbiology. American Phytopathological Society, St. Paul, MN. Chapter 10 pp 139-155.

6. **McLean, R.J.C.**, CL Bates\*\*, CL McGowin\*\*, MB Barnes, and GM Aron. 2003. Methods for studying biofilms, In: M Ghannoum and GA O'Toole (eds.), Microbial Biofilms, American Society for Microbiology, Washington DC, Chapter 20, pp 379-413.

7. **McLean RJC**, SA Bryant\*\*, DA Vattem, M Givskov, TB Rasmussen, and N Balaban. 2008. Detection In Vitro of Quorum-Sensing Molecules and Their Inhibitors, In: N Balaban (ed), The Control of Biofilm Infections by Signal Manipulation, Springer-Verlag, Heidelberg, chapter 3, pp 39-50.

8. Welsh A.K.\*\* and **R.J.C. McLean**. 2007. Characterization of bacteria in mixed biofilm communities using denaturing gradient gel electrophoresis. Current Protocols in Microbiology, Unit 1.E.1.

9. **McLean R.J.C.** and T.R. Simpson. 2008. Preparing for biofilm studies in the field. Current Protocols in Microbiology, Unit 1B.4.1-1B.1.14

10. Chu W, DA Vattem, V Maitin, MB Barnes, and **RJC McLean**. 2010. Bioassay of quorum sensing compounds using *Chromobacterium violaceum* and *Agrobacterium tumefaciens*. In: K Rumbaugh (ed) Methods in Molecular Biology- Quorum Sensing Edition, Humana Press, chapter 1, pp 3-19.

11. **McLean RJC** and BL Kirkland. Nanostructures and nanobacteria. 2014. In LL Barton, DA Bazylinski, and H. Xu (eds), Nanomicrobiology: Physiological and Environmental Characteristics, Springer, Berlin, chapter 1, pp 1-10.

#### ARTICLES (peer reviewed)

1. **McLean RJC**, KJ Cheng, and JW Costerton. 1984. Localization of rumen wall adherent ureolytic bacteria. Can. J. Anim. Sci. 64(Suppl.): 60-61.

2. **McLean RJC**, JC Nickel, VC Noakes, and JW Costerton. 1985. An in vitro study of infectious kidney stone genesis. Infect. Immun. 49: 805-811.

3. Casis, R, N Fuller, LG Hepler, **RJC McLean**, A Skauge, NS Srinivasan, and H Yan. 1985. Specific heat capacities of bitumens and heavy oils, reservoir minerals, clays, dehydrated clays, asphaltenes, and cokes. *AOSTRA J. Res.* 1: 163 - 173.
4. **McLean RJC**, KJ Cheng, WD Gould, and JW Costerton. 1985. Cytochemical localization of urease in a rumen *Staphylococcus* sp by electron microscopy. *Appl. Environ. Microbiol.* 49: 253-255.
5. **McLean RJC**, KJ Cheng, WD Gould, JC Nickel, and JW Costerton. 1986. Histochemical and biochemical urease localization in the periplasm and outer membrane of two *Proteus mirabilis* strains. *Can. J. Microbiol.* 32: 772-778.
6. Nickel, JC, ME Olson, **RJC McLean**, SK Grant, and JW Costerton. 1987. An ecologic study of infected urinary stone genesis in an animal model. *Br. J. Urol.* 59: 21-30.
7. **McLean RJC**, JC Nickel, KJ Cheng, and JW Costerton. 1988. The ecology and pathogenicity of urease producing bacteria in the urinary tract. *Crit. Rev. Microbiol.* 16: 37-79.
8. Cheng, KJ, RC Phillippe, **RJC McLean**, and JW Costerton. 1989. The characterization and ultrastructure of two new strains of *Butyrivibrio*. *Can. J. Microbiol.* 35: 274-282.
9. **McLean RJC**, JC Nickel, TJ Beveridge, and JW Costerton. 1989. Observations of the ultrastructure of infected kidney stones. *J. Med. Microbiol.* 29: 1-7.
10. **McLean RJC**, D Beauchemin, L. Clapham, and TJ Beveridge. 1990. Metal binding characteristics of the gamma glutamyl capsule polymer of *Bacillus licheniformis* ATCC 9945. *Appl. Environ. Microbiol.* 56: 3671-3677.
11. **McLean RJC**, J. Downey, L. Clapham, and JC Nickel. 1990. Influence of chondroitin sulfate, heparin sulfate, and citrate on *Proteus mirabilis* induced struvite crystallization in vitro. *J. Urol.* 144: 1267-1271.
12. Reid, G, MAS Jewett, JC Nickel, **RJC McLean**, and AW Bruce. 1990. Effect of extra corporeal shock wave lithotripsy on bacterial viability: relationship to the treatment of struvite stones. *Urol. Res.* 18: 425-427.
13. **McLean RJC**, J. Downey, L Clapham, and JC Nickel. 1990. A simple technique for studying struvite crystal growth in vitro. *Urol. Res.* 18: 39-43.
14. Clapham, L., **RJC McLean**, JC Nickel, J. Downey, and JW Costerton. 1990. The influence of bacteria on struvite crystal habit and its importance in urinary stone formation. *J. Crystal Growth* 104: 475-484.
15. **McLean RJC**, JR Lawrence, DR Korber, and DE Caldwell. 1991. *Proteus mirabilis* biofilm protection against struvite crystal dissolution and its implications in struvite urolithiasis. *J. Urol.* 146:1138-1142. (paper highlighted by Urology/Nephrology Digest as "outstanding in its field")
16. **McLean RJC**, J Downey, L Clapham, JWL Wilson, and JC Nickel. 1991. Pyrophosphate inhibition of *Proteus mirabilis* induced struvite crystallization in vitro. *Clin. Chim. Acta* 200: 107-118.
17. **McLean RJC** and JC Nickel. 1991. Bacterial colonization behaviour: a new virulence strategy in urinary infections? *Med. Hypotheses* 36: 269-272.

18. Beynon, LM, AJ Dumanski, **RJC McLean**, LL MacLean, JC Richards, and MB Perry. 1992. Capsule structure of *Proteus mirabilis* (ATCC 49565). *J. Bacteriol.* 174: 2172 - 2177.
19. **McLean RJC**, JA Downey, AL Lablans, JM Clark, AJ Dumanski, and JC Nickel. 1992. Modelling biofilm-associated urinary tract infections in animals. *Int. Biodeterior. Biodegrad.* 30: 201 - 216
20. Downey, JA, JC Nickel, L Clapham, and **RJC McLean**. 1992. In vitro inhibition of struvite crystal growth by acetohydroxamic acid. *Br. J. Urol.* 70: 355 - 359.
21. **McLean RJC**, D Beauchemin, and TJ Beveridge. 1992. Influence of oxidation state on iron binding by *Bacillus licheniformis* capsule. *Appl. Environ. Microbiol.* 58: 405 - 408.
22. **McLean RJC**, AA Hussain, M Sayer, PJ Vincent, DJ Hughes, and TJN Smith. 1993. Antibacterial activity of multilayer silver-copper surface films on catheter material. *Can. J. Microbiol.* 39: 895 - 899.
23. Wang, YH, L Grenabo, H Hedelin, **RJC McLean**, JC Nickel, and S Pettersson. 1993. Citrate and urease-induced crystallization in synthetic and human urine. *Urol. Res.* 21: 109 - 115.
24. Dumanski, AJ, H Hedelin, A Edin-Liljegren, D Beauchemin, and **RJC McLean**. 1994. Unique ability of *Proteus mirabilis* capsule to enhance mineral growth in urinary calculi. *Infect. Immun.* 62: 2998 - 3003 (Highlighted in survey section of the *Journal of Urology*, May 1995).
25. **McLean RJC**, AM Campbell, PT Khu, AT Persaud, LE Bickerton, and D Beauchemin. 1994. Repeated use of *Bacillus subtilis* cell walls for copper binding. *World J. Microbiol. Biotechnol.* 10: 472 - 474.
26. **McLean RJC** and JC Nickel. 1994. Glycosaminoglycans and struvite calculi. *World J. Urol.* 12: 49 - 51.
27. Nickel, JC, JW Costerton, **RJC McLean**, and ME Olson. 1994. Bacterial biofilms: influence on the pathogenesis, diagnosis and treatment of urinary tract infections. *J. Antimicrob. Chemother.* 33(Suppl.A): 31 - 41.
28. Hussain, AA, M Sayer, **RJC McLean**, DJ Hughes, and TJN Smith. 1994. Surface texturing of multilayer Ag-Cu films by sputter etching. *Vacuum* 45: 121 - 125.
29. Stickler, DJ and **RJC McLean**. 1995. Biomaterials associated infections: the scale of the problem. *Cells Mater.* 5: 167 - 182.
30. Tolson, DL, DL Barrigar, **RJC McLean**, and E Altman. 1995. Expression of a non-agglutinating fimbria by *Proteus mirabilis*. *Infect. Immun.* 63: 1127 - 1129.
31. **McLean RJC**, DJ Stickler, and JC Nickel. 1996. Biofilm mediated calculus formation in the urinary tract. *Cells Mater.* 6: 165-174.
32. **McLean RJC**, D Fortin, and DA Brown. 1996. Microbial metal binding mechanisms and their relation to nuclear waste disposal. *Can. J. Microbiol.* 42: 392 - 400.



33. Dunn, KA, **RJC McLean**, GR Upchurch, Jr., and RL Folk. 1997. Enhancement of leaf fossilization potential by bacterial biofilms, *Geology* 25: 1119-1122.
34. **McLean RJC**, M Whiteley, DJ Stickler, and WC Fuqua. 1997. Evidence of autoinducer activity in naturally-occurring biofilms. *FEMS Microbiol. Lett.* 154: 259-263.
35. Whiteley M, E Brown, and **RJC McLean**. 1997. An inexpensive chemostat apparatus for the study of microbial biofilms. *J. Microbiol. Methods* 30: 125-132.
36. **McLean RJC**, HE Jamieson, and DR Cullimore. 1997. Formation of nesquehonite and other minerals in vitro as a consequence of biofilm dehydration. *World J. Microbiol. Biotechnol.* 13: 25-28.
37. Stickler DJ, NS Morris, **RJC McLean**, and C Fuqua. 1998. Biofilms on indwelling urinary catheters produce quorum-sensing signal molecules *in situ* and *in vitro*. *Appl. Environ. Microbiol.* 64: 3486–3490.
38. Koenig MK and **RJC McLean**. 1999. Influence of metal ions, temperature, and polymer concentration on the conformation of *Escherichia coli* K1 capsular polysaccharide. *BioMetals* 12: 53–62.
39. Kirkland BL, FL Lynch, MA Rahnis, RL Folk, IJ Molineux, and **RJC McLean**. 1999. Alternative origins for nannobacteria-like objects in calcite. *Geology* 27: 347–350. (editors chose this paper to be highlighted as a press release)
40. **McLean RJC**, M Whiteley, BC Hoskins, PD Majors, and MM Sharma. 1999. Laboratory Techniques for Studying Biofilm Growth, Physiology, and Gene Expression in Flowing Systems and Porous Media. *Meth. Enzymol.* 310: 248–264.
41. Hughes EJ, and **RJC McLean**. 1999. A safe undergraduate laboratory exercise to illustrate the role of latex gloves as barriers to bacterial and viral pathogens. *J. Coll. Sci. Teaching* 28: 259–260.
42. **McLean RJC** 1999. Original research projects as a major component of an undergraduate microbiology course. *J. Coll. Sci. Teaching* 29: 38 – 40.
43. Persaud AT, D Beauchemin, HE Jamieson and **RJC McLean**. 1999. Partial leaching as an aid to slurry nebulization for the analysis of soils by ICP-MS with flow injection and mixed-gas plasmas. *Can. J. Chem.* 77: 409–415.
44. Adams JL and **RJC McLean**. 1999. The impact of *rpoS* deletion on *Escherichia coli* biofilms. *Appl. Environ. Microbiol.* 65: 4285–4287.
45. Prabhakaran S, JMH Teichman, SS Spore, E Sabanegh, RD Glickman, and **RJC McLean**. 1999. *Proteus mirabilis* viability after lithotripsy of struvite calculi. *J. Urol.* 162: 1666–1669.
46. Morris NS, D Stickler, and **RJC McLean**. 1999. The development of bacterial biofilms on indwelling urethral catheters. *World J. Urol.* 17: 345-350.
47. **McLean RJC**, BD Corbin, GJ Balzer, and GM Aron. 2001. Phenotype characterization of genetically defined microorganisms and growth of bacteriophage in biofilms. *Meth. Enzymol.* 336: 163-174.

48. Whiteley M, JR Ott, EA Weaver, and **RJC McLean**. 2001. Effects of community composition and growth rate on aquifer biofilm bacteria and their susceptibility to betadine disinfection. *Environ. Microbiol.* 3: 43–52.
49. **McLean RJC**, JM Cassanto, MB Barnes, and JH Koo. 2001. Bacterial biofilm formation under microgravity conditions. *FEMS Microbiol. Lett.* 195: 115-119.
50. Corbin BD, **RJC McLean**, and GM Aron. 2001. Bacteriophage T4 multiplication in a glucose-limited *Escherichia coli* biofilm. *Can. J. Microbiol.* 47: 680-684.
51. Balzer GJ and **RJC McLean**. 2002. The stringent response genes *relA* and *spoT* are important for *Escherichia coli* biofilms under slow-growth conditions. *Can. J. Microbiol.* 48: 675-680.
52. **McLean RJC**, LS Pierson III, and C. Fuqua. 2004. A simple screening protocol for the identification of quorum signal antagonists. *J. Microbiol. Methods* 58: 351-360.
53. **McLean RJC**, MB Barnes, MK Windham, M Merchant, MRJ Forstner, and C Fuqua. 2005. Cell-cell influences on bacterial communities in aquatic biofilms. *Appl. Environ. Microbiol.* 71: 8987-8990.
54. Bates CL, MRJ Forstner, MB Barnes, M Whiteley, and **RJC McLean**. 2006. Identification of heterotrophic limestone-adherent biofilm isolates from the Edward's aquifer, Texas USA. *Southwestern Naturalist* 51: 299-309.
55. **McLean RJC**, AK Welsh, and VA Casasanto. 2006. Microbial survival in space shuttle crash. *Icarus* 181: 323-325.
56. Vattem DA, K Mihalik, SH Crixell, and **RJC McLean**. 2007. Dietary phytochemicals as quorum sensing inhibitors. *Fitoterapia* 78: 302-310.
57. Merchant MM, AK Welsh, and **RJC McLean**. 2007. *Rheinheimera texasensis* sp. nov., a halointolerant freshwater oligotroph. *Int. J. Syst. Evol. Microbiol.* 57: 2376-2380.
58. Kim C, J Kim, HY Park, **RJC McLean**, CK Kim, J Jeon, SS Yi, YG Kim, YS Lee, and J Yoon. 2007. Molecular modeling, synthesis, and screening of new bacterial quorum-sensing antagonists. *J Microbiol. Biotechnol.* 1598–1606.
59. Mashburn-Warren L, **RJC McLean**, and M Whiteley. 2008. Gram negative outer membrane vesicles: Beyond the cell surface. *Geobiology* 6: 214-219.
60. Zhang X., L. Sun, F. Qiu, **RJC McLean**, R Jiang, and W Song. 2008. *Rheinheimera tangshanensis* sp. nov., a novel rice root-associated bacterium. *Int. J. Syst. Evol. Microbiol.* 58: 2420-2424.
61. Graham LL and **RJC McLean**. 2008. Training the next scientific generation – A Tribute to Terrance J. Beveridge. *Geobiology* 6: 190-195.
62. Mihalik K, DW Chung, SH Crixell, **RJC McLean**, DA Vattem. 2008. Quorum sensing modulators of *Pseudomonas aeruginosa* characterized in *Camellia sinensis*. *Asian J. Trad. Med.* 3: e23.
63. Weber MM, CL French, MB Barnes, DA Siegele, and **RJC McLean**. 2010. A previously uncharacterized gene, *yjfO* (*bsmA*) influences *Escherichia coli* biofilm formation and stress response. *Microbiology* 156: 139-147.

64. Nath S., GM Aron, GM Southard, and **RJC McLean**. 2010. Potential for largemouth bass virus to associate within and gain protection from bacterial biofilms. *J. Aquat. Anim. Health* 22: 95-101.
65. **McLean RJC** and MAC McLean. 2010. Microbial survival mechanisms of relevance to panspermia. *J. Cosmology* 7: 1802-1820.
66. **McLean RJC** 2010. Planetary protection and missions between Earth and Mars. *J. Cosmology* 12: 3842-3845.
67. Dusane DH, SS Zinjarde, VP Venugopalan, **RJC McLean**, MM Weber, PKSM Rahman 2010. Quorum sensing: implications on rhamnolipid biosurfactant production. *Biotechnol. Genetic Eng. Rev.* 27: 159-184.
68. Kay MK, TC Erwin, **RJC McLean**, and GM Aron. 2011. Bacteriophage ecology in *Escherichia coli* and *Pseudomonas aeruginosa* mixed biofilm communities. *Appl. Environ. Microbiol.* 77: 821-829.
69. Chu, W, TR Zere, MM Weber, TK Wood, M Whiteley, B Hidalgo-Romano, E. Valenzuela, and **RJC McLean**. 2012. Indole production promotes *Escherichia coli* mixed culture growth with *Pseudomonas aeruginosa* by inhibiting quorum signaling. *Appl. Environ. Microbiol.* 78: 411-419.
70. **McLean RJC**, JS Lam, and LL Graham. 2012. Training the biofilm generation – a tribute to JW Costerton. *Journal of Bacteriology* 194: 6706-6711. (featured on the cover of JB)
71. Lam JS, LL Graham, and **RJC McLean**. 2012. JW Costerton (1934-2012) obituary. *Canadian Journal of Microbiology* 58: III-IV.
72. Taylor AA, SA Bryant, and **RJC McLean**. 2013. Overcoming the challenges associated with laboratory preparation with the help of students. *Journal of College Science Teaching* 43: 10-11.
73. **McLean RJC**, JS Lam, and LL Graham. 2013. Authors' Correction: Training the biofilm generation – a tribute to JW Costerton. *Journal of Bacteriology* 195: 2705.
74. **McLean RJC** and SL Pringle. 2013. Identifying bacterial menu choices from the host buffet during infections. *Journal of Bacteriology* 195: 4989-4990.
75. **McLean RJC** and KS Kakirde. 2013. Enhancing metagenomics investigations of microbial interactions with biofilm technology. *Int. J. Mol. Sci.* 14: 22246-22257
76. **Taylor AA**, GM Aron, GW Beall, N Dharmasiri, Y Zhang, and RJC McLean. 2014. Carbon and clay nanoparticles induce minimal stress responses in Gram negative bacteria and eukaryotic fish cells. *Environ. Toxicol.* 29: 961-968.
77. Vega LM, PJ Alvarez, and **RJC McLean**. 2014 Bacterial signaling ecology and potential applications during biofilm construction. *Microb. Ecol.* 68: 24-34.
78. **McLean RJC**. 2014. Normal bacterial flora may inhibit *Candida albicans* biofilm formation by autoinducer-2. *Front. Cell. Infect. Microbiol.* 4:117. doi: 10.3389/fcimb.2014.00117

79. Vega LM, J Mathieu, Y Yang, BH Pyle, **RJC McLean**, and PJ Alvarez. 2014 Nickel and cadmium, ions inhibit quorum sensing and biofilm formation without affecting viability in *Burkholderia multivorans*. Intern. Biodeterior. Biodegrad. 91: 82-87.
80. Hidalgo-Romano B, J Gollihar, SA Brown, M Whiteley, E Valenzuela Jr, HB Kaplan, TK Wood, and **RJC McLean**. 2014. Indole inhibition of AHL-mediated quorum signaling is widespread in gram-negative bacteria. Microbiology 160: 2464-2473.
81. LB Coulter, **RJC McLean**, RE Rohde, and GM Aron. 2014. Effect of bacteriophage infection in combination with tobramycin on the emergence of resistance in *Escherichia coli* and *Pseudomonas aeruginosa* biofilms. Viruses 6: 3778-3786.
82. Shay M, M Al-Tameemi, S Wright, **RJC McLean**, DA Vattem, and V Maitin. 2014. Method development for investigating probiotic effects on fat storage in a *Caenorhabditis elegans* model. FASEB J 1 (Suppl): 829-833.
83. Robertson SR and **RJC McLean**. 2015. Beneficial Biofilms. AIMS Bioengineering 2: 437-448.

ABSTRACTS and PRESENTATIONS since first academic appointment in 1988  
Over 100

#### COMMERCIAL REPORTS (Non-Refereed)

1. **R.J.C. McLean** and M.B. Barnes. 1995. *Pseudomonas aeruginosa* colonization of catheter material. Report prepared for ICET Inc., Norwood, MA
2. **R.J.C. McLean**. 2000. Effect of microhydrin on bacterial growth. Report prepared for Royal Body Care, Irving, TX.
3. **R.J.C. McLean**. 2008. Effect of urinary catheter formulations in preventing biofilms. Report prepared for ICET Inc., Norwood, MA

#### AWARDS

##### 1995

Excellence in Scholarship, Tri Beta Biological Honors Society, TX State

##### 1996

Biographee: Who's Who in Science and Engineering, 3rd edition, Marquis Publishing, New Providence, NJ

##### 2000

Presidential Award for Scholarly and Creative Activity, Southwest Texas State University  
College of Science Nominee, Presidential Award for Scholarly and Creative Activity  
Biographee: Who's Who in Medicine and Healthcare, 3rd Edition, Marquis Publishing, New Providence, NJ

##### 2001

Biographee: Who's Who in the World, 18th Edition, Marquis Publishing, New Providence, NJ

##### 2002

Biographee: Who's Who Among America's Teachers, 7th Edition, Educational Communications, Inc., Lake Forest IL

Biographee: Who's Who in Science and Engineering, 6th Edition, Marquis Publishing, New Providence, NJ

Biographee: 2000 Outstanding Intellectuals of the 21st Century - 1st Edition, International Biographical Centre, Cambridge CB2 3QP UK

Biographee: 2000 Eminent Scientists of Today - 1st Edition, International Biographical Centre, Cambridge CB2 3QP UK

Biographee: Who's Who in America, 57th Edition, Marquis Publishing, New Providence NJ

### **2003**

Biographee: Who's Who in Science and Engineering, 7th Edition, Marquis Publishing, New Providence, NJ

**2004** Biographee: Who's Who in America, 58th Edition, Marquis Publishing, New Providence NJ

### **2005**

Presidential Lecturer, Texas State University-San Marcos, San Marcos, TX

Biographee: Who's Who Among America's Teachers, 9th Edition, Educational, Austin TX

Biographee: Who's Who in America, 59th Edition, Marquis Publishing, New Providence NJ

### **2006**

Biographee: Who's Who in America, 60th Edition, Marquis Publishing, New Providence NJ

Biographee: Who's Who in American Education, 7th Edition, Marquis Publishing, New Providence NJ

### **2007**

Biographee: Who's Who in America 61st Edition, Marquis Publishing New Providence NJ

Biographee: Who's Who in American Education, 8<sup>th</sup> Edition, Marquis Publishing

### **2009**

Texas Branch ASM: Distinguished Service Award

### **2010**

College of Science Nominee, Presidential Award for Teaching, Texas State University

Nominee: Carski Award (National Teaching Award), American Society for Microbiology

### **2012**

University Distinguished Professor, Texas State University-San Marcos

Regents' Professor, Texas State University System

Nominee: Carski Award (National Teaching Award), American Society for Microbiology

### **2014**

Honorary membership, Phi Mu Alpha Sinfonia, Gamma Phi Chapter, Texas State University

### **CONTRACTS and GRANTS (only external grants shown since beginning at TX State)**

1. USDA - "Scanning UV/Vis Spectrophotometer" 1994 (\$7,500) (collaborator with P. Barnes)
2. ICET, Inc. "Biofilm resistance of catheter coatings" 1994-1995 (\$1,500)
3. NASA-AMES - "Biofilm Formation on Modified Polymers" 1995-1996 (\$35,000)
4. Texas Higher Education Coordinating Board ARP - 1998-1999 "Investigation of the Role of Nannobacteria in Mineral Formation" (\$110,096)

5. EPA “Waste minimization in the petrochemical industry” 1999-2001 (\$1.2 M) (Project 4 leader, P. Cassidy - PI) (RJCM Portion \$116,617)
6. NIH “Research Oriented Bridges to Baccalaureate Program” 1999-2002 (\$514,773) (co-PI with D.M. Garcia)
7. NIH “Transcriptional Profiles of *Escherichia coli* Biofilms” 2002-2004 (\$145,328)
8. US Air Force (subcontract) “Wastewater Treatment” 2003-2005 (\$210,000)
9. NASA Johnson Space Center “Identification of Space-grown microorganisms” 2003-2004 (\$10,000)
10. ICET Inc. “Evaluation of biofilm resistant urinary catheters” 2007-2008 (\$10,500)
11. Texas Higher Education Coordinating Board ARP “Profiling Bacterial Species’ Interactions in Mixed Cultures” \$150K (Texas State portion \$100K) (role PI)
12. NSF NanoTRA- “Texas Regional Alliance to Foster Nanotechnology Environment, Health, and Safety Awareness in Tomorrow’s Engineering and Technology Leaders” 2013 – 2014 (\$199,917) PI-J Tate (role senior personnel)

### III. OTHER SCHOLARLY/CREATIVE ACTIVITIES

INVITED TALKS, LECTURES (Since appointment to TX State faculty in 1993)

**1993** Environment Canada, Toronto, ON, Canada, Invited tutorial participant, "Effects of Microorganisms on Long-term Nuclear Waste Disposal"

**1994** Texas A&M University, Faculty of Nutrition, College Station, TX

**1995** Advanced Sterilization Products, Irvine, CA

**1997** Trinity University, Department of Biology, San Antonio, TX

#### **1998**

Arizona State University, Departments of Microbiology and Plant Science, Tempe, AZ

Montana State University, Center for Biofilm Engineering and Department of Microbiology, Bozeman, MT

NASA Johnson Space Center – Life Support Division, Houston TX

Eighth International Symposium on Microbial Ecology, Halifax NS, Canada. Biofilm Symposium Convenor and participant, “Biofilm growth and mineral formation”

#### **1999**

University of Manitoba, Department of Microbiology, Winnipeg, MB, Canada

University of Texas - Houston, Department of Microbiology, Houston, TX

Tulane University, Department of Microbiology, New Orleans, LA

American Chemical Society, Branch Meeting, Ontario CA, Invited speaker

Texas Branch, American Society for Microbiology, Junction TX, Invited speaker “Bacterial biofilms and their growth on earth and in space”

99th Annual Meeting, American Society for Microbiology, Chicago IL, Symposium Convenor and speaker, “Cell-cell signaling in bacterial biofilms”

Texas Branch, American Society for Microbiology, Fort Worth TX, Invited speaker and symposium organizer, “Bacterial biofilms in earth and space”

#### **2000**

Phyllosphere 2000, International Conference on Leaf Surface Microbiology, Berkeley CA, Invited Speaker “The adaptive significance of microbial biofilms”

Texas A&M University, Department of Biology, Molecular Biology Journal Club  
University of Guelph, Department of Environmental Biology, Guelph ON Canada  
University of Guelph, Dept. Environmental Biology, Ph.D. external examiner  
Texas Branch, American Society for Microbiology fall meeting, Corpus Christi, TX "Biofilm Research in Texas" symposium organizer and speaker

### **2001**

Florida International University, Department of Biological Sciences, Miami, FL  
San Antonio College, Department of Chemistry, San Antonio, TX  
Brock University, Department of Biological Sciences, St. Catharines, ON  
University of Texas at El Paso, Department of Biological Sciences, El Paso, TX  
KTEP (National Public Radio) El Paso, TX (Radio interview on biofilm research)  
Cornell University, Section of Microbiology, Ithaca, NY  
Queen's University, Department of Microbiology and Immunology, Kingston, ON  
Southwest Texas State University, Department of Biology, San Marcos, TX  
St. Philip's College, Department of Natural Science, San Antonio, TX

### **2002**

Palo Alto College, San Antonio, TX  
San Marcos High School, San Marcos, TX  
University of Pretoria, Pretoria, South Africa MS thesis external examiner, Department of Microbiology and Plant Pathology, (thesis review done electronically)  
Texas A&M University, Department of Medical Microbiology, College Station, TX  
Oklahoma State University, Department of Microbiology, Stillwater, OK  
University of Oklahoma, Department of Botany and Microbiology, Norman, OK  
Baylor University, Department of Biology, Waco, TX

### **2003**

University of Houston, Department of Biology and Biochemistry, Houston, TX  
University of Texas, School of Integrative Biology, Austin, TX  
Agriculture Canada, Lethbridge Research Centre, Lethbridge, AB Canada  
Prairie Lea High School, Science classes, Prairie Lea, TX  
American Society for Microbiology Conference on Polymicrobial Infections, invited speaker, Lake Tahoe, NV  
Midwestern State University, Department of Biology, Wichita Falls, TX

### **2004**

Wimberly Junior High, 6th and 8th grade science classes  
Texas Woman's University, Department of Biology  
Texas Branch, American Society for Microbiology, invited speaker, Houston, TX  
PhD external examiner, Richard Kwasi Amankwah, Dept. Mining Engineering, Queen's University, Kingston, Ontario

### **2005**

Texas Branch - American Society for Microbiology, Denton, TX invited speaker "Biofilms in the Environment"  
Texas Branch - American Society for Microbiology, Denton, TX invited round table host "Balancing Microbiology Careers and Family"  
State University of New York at Buffalo, Dept. Oral Biology, Buffalo, NY  
Texas State University-San Marcos, Presidential Lecture

**2006**

106th Annual Meeting, American Society for Microbiology, Orlando FL invited speaker “Academic Careers at a Masters’ Institution”

NPR (National Public Radio), Radio interview and feature on panspermia in relation to Icarus publication  
Ivanhoe Broadcast News, Television interview and feature on panspermia

Baltimore Sun, Houston Chronicle, Austin American-Statesman, and San Antonio Express-News,

Newspaper interviews resulting in articles on panspermia in relation to Icarus publication  
Science and Theology News, Magazine interview resulting in article on panspermia in relation to Icarus publication

New Scientist (UK), Interview resulting in article on panspermia in relation to Icarus publication

Baylor College of Medicine, Department of Virology and Microbiology, Houston, TX

Trinity University, Department of Biology, San Antonio, TX

Centro Milstein, Ciudad de Buenos Aires, Argentina

**2007**

University of Houston-Downtown, Dept. Natural Sciences, Houston, TX

107th Annual Meeting, American Society for Microbiology, Toronto ON invited speaker

"Educational aspects of space flight microbiology"

Texas Branch American Society for Microbiology, fall meeting, Huntsville TX invited speaker "Chemical Ecology of Biofilms"

New Scientist (UK), Interview related to Wilson et al., PNAS article on microgravity-enhanced virulence

**2008**

Biofilm Workshop, DFW Airport, US Military Research invited workshop September 2008.

Geological Society of America, annual meeting, Houston TX (invited speaker), September 2008

American Society for Microbiology, Branch Organization Committee retreat Washington DC, October 2008

**2009**

American Society for Microbiology, invited speaker “Educational aspects of biofilms and quorum signals” at May 2009 general meeting in Philadelphia

American Society for Microbiology, symposium co-chair “Cell Signaling and Biofilms”, 5<sup>th</sup> ASM Biofilm meeting, Cancun, MX

Texas Branch, American Society for Microbiology, invited speaker, “Genes involved in *E. coli* and *P. aeruginosa* mixed culture growth”, fall 2009 meeting, Tyler TX

**2010**

Sam Houston State University, Department of Biology, invited seminar speaker

**2011**

University of Texas at San Antonio, Department of Biology.

Rocky Mountain Branch, American Society for Microbiology, Annual Meeting, Boulder CO

University of North Texas, Dept. Biological Sciences, Denton, TX

Binghamton University, Dept. Biological Sciences, Binghamton, NY

Texas Lutheran University, Dept. Biology, Seguin, TX

Our Lady of the Lake University, Dept. Biology, San Antonio, TX

Texas Commission on Environmental Quality, Sewage Facility Training, New Braunfels, TX

Keynote Speaker, Undergraduate Research Conference, Texas State University-San Marcos

**2012**

University of Texas at San Antonio, Dept. Civil and Environmental Engineering



Concordia University, Dept. Biology  
Texas State University Graduate Conference  
Texas Branch, American Society for Microbiology, fall meeting, Baylor University, Waco TX

**2013**

University of Texas at Tyler, Dept. Biology  
Sul Ross State University, Alpine TX, Cottle Lecturer, Dept. Biology  
Rio Grande Branch, American Society for Microbiology, Socorro NM

**2014**

Binghamton University, Dept. Biology (external PhD committee member and examiner)

**2015**

University of Texas at San Antonio, Dept. Civil and Environmental Engineering  
Missouri Valley Branch, American Society for Microbiology, University of Nebraska, Lincoln NE

**CONSULTING (while at TX State):**

ICET Inc., Norwood, MA 1995, 2007-8  
Sulzer-Carbomedics, Inc., Austin, TX 1999