

Michael McConnell - Curriculum Vitae

EDUCATION AND SABBATICAL EXPERIENCES:

2001 Visiting Scholar, Department of Medicine, U.C. San Diego, CA. Laboratory of Dr. Donald Guiney, O-Polysaccharide Polymerase Enzymes in Group E Salmonella enterica bacteria

1994 Visiting Scholar, Department of Molecular Biology, The Scripps Research Institute, La Jolla, CA, Laboratory of Dr. Gerald Joyce, Molecular evolution of ribozymes

1994 Visiting Scholar, Department of Microbiology, The University of Sydney, New South Wales, Australia. Laboratory of Dr. Peter Reeves, Evolutionary relationships between lipopolysaccharide biosynthesis gene clusters found in enteric bacteria and their phages

1985-86 Visiting Scholar, Laboratory of Dr. Masaki Hayashi, U.C. San Diego, CA. Factors determining messenger RNA stability

1983 Visiting Scholar, Laboratory of Dr. Ivor Royston (co-founder of Hybritech), U.C. San Diego Medical Center, San Diego, CA. Monoclonal antibodies to immunoglobulin idiotypic antigens

1976-78 Postdoctoral Fellow, Department of Pharmacology, Harvard Medical School, Boston, MA. Laboratory of Dr. Peter M. Blumberg, Effects of transformation by Rous sarcoma virus on cell surface structure in chick embryo fibroblasts

1971-76 Ph.D., Department of Molecular Biology and Microbiology, Tufts University, Boston, MA. Laboratory of Dr. Andrew Wright, Initial Interactions between Bacteriophage E15 and its Host Cell, Salmonella anatum

1967-71 B.A., Department of Chemistry, (cum laude), Pasadena/Point Loma Nazarene College

PROFESSIONAL EMPLOYMENT EXPERIENCES:

2003-present Faculty Representative to the Board of Research Associates of PLNU (a ~300 member, alumni support group)

1987-present Professor of Biology, Point Loma Nazarene University, San Diego, CA

1987-92 Chair, Department of Biology, Point Loma Nazarene University, San Diego, CA

1981-86 Associate Professor of Biology and Chemistry, Point Loma Nazarene University, San Diego, CA

1978-81 Assistant Professor of Biology and Chemistry, Point Loma Nazarene University, San Diego, CA.

1975-76 Instructor in genetics and cell physiology, Eastern Nazarene College, Quincy, MA

PROFESSIONAL MEMBERSHIPS:

American Society for Microbiology, 1973-present

RESEARCH PUBLICATIONS

A. Doctoral Dissertation McConnell, M.R., (1976), "Multiple steps are involved in the irreversible attachment of bacteriophage E15 to its host cell, Salmonella anatum," Ph.D. Thesis, Tufts University, Boston, MA

B. Published Journal Articles (asterisks denote PLNU undergraduate coauthors)

1. Heasley, V., G. Heasley, M. McConnell, K. Martin, D. Ingel, and P. Davis (1971), "The reactions of hypochlorites with olefins in nitromethane", Tetrahedron Letters 50:4819-4822

2. Heasley, V., G. Heasley, R. Loghry and M. McConnell (1972), "Comparisons of the reactions of butadiene with chlorine, bromine, acetyl hypochlorite and acetyl hypobromite", Journal of Organic Chemistry 37:2228-2231

3. McConnell M., and A. Wright (1975), "An anaerobic technique for increasing bacteriophage plaque size", Virology 65:588-590

4. McConnell, M. R., and P.M. Blumberg (1978), "Subunit structure of surface and shed large, external, transformation-sensitive protein of chick embryo fibroblasts", Annals of the New York Academy of Sciences 312:418-419

5. McConnell, M.R., P.M. Blumberg and P.W. Rossow (1978), "The oligomeric structure of the large external transformation-sensitive protein (LETS) of chick embryo fibroblasts", Journal of Biological Chemistry 253:7522-7530

6. McConnell, M.R., A. Reznik and A. Wright, (1979), "Studies on the initial interaction of bacteriophage E15 with its host cell, Salmonella anatum", Virology 94:10-29

7. McConnell, M.R., and A. Wright, (1979), 'Changes in the phage-inactivating capacity of Salmonella anatum lipopolysaccharide due to growth temperature and mutation". Journal of Bacteriology 137:746-751
8. Wright, A., M. McConnell and S. Kanegasaki (1980), "Lipopolysaccharide as phage receptor", in Virus Receptors (L. Randall and L. Phillipson, ads.), London: Chapman and Hall, Ltd., pp. 27-58
9. McConnell, M.R., D.D. McAbee*, L.E. Heasley* J.E. Schoelz*, D. Reel Harlow* and D.R. Starn* (1982), "Bacteriophage E15 is released intact from the surface of its host cell, Salmonella anatum, at acidic pH". Virology, 116:650-653
10. McConnell, M.R. and P.M. Blumberg (1982) "Transformation of chick embryo fibroblasts by Rous Sarcoma Virus does not inhibit the assembly of fibronectin into reduction-sensitive dimer and high molecular weight complex". Cytobios 33:89-102
11. McConnell, M.R. and J.E. Schoelz* (1983). "Evidence for shorter average O-polysaccharide chainlength in the lipopolysaccharide of a bacteriophage Felix Ol-sensitive variant of Salmonella anatum AI." J. Gen. Microbiol. 129:3177-3184.
12. McConnell, M.R., B.D. Foster*, D.P. Davis*, B. Kat*, J.G. Blair*, R.A. Long* and M.M. Steed* (1986). "A spontaneously-produced lipopolysaccharide biosynthetic defect that causes both pleiotropic phage resistance and mucoid colony morphology in Salmonella anatum, Microbios 48:135-158
13. Hayashi, Marie N., Reza Yaghami, Michael McConnell and Masaki Hayashi (1989). "mRNA stabilizing signals encoded in the genome of the bacteriophage PhiX174," Molec. and Gen. Genetics 216:364-371
14. McConnell, M.R., B. Walker*, P. Middleton*, J. Chase*, J. Owen*, D. Hyatt*, H. Gutierrez*, M. Williams*, D. Hambright*, M. Barry, Jr.*, S. Sage*, G. Fuller*, M. Birdwell*, M. Rydelski*, S. Risley* and B. Kat* (1992). "Restriction Endonuclease and Genetic Mapping Studies Indicate that the Vegetative Genome of the Temperate Salmonella-Specific Bacteriophage, Epsilon 15, is Circularly-Permuted", Archives of Virology 123:215-221
15. McConnell, M.R., Oakes, K.R., Patrick, A. N. and Mills, D.M. (2001). "Two functional O-polysaccharide polymerase wzy (rfc) genes are present in the rfb gene cluster of Group E1 Salmonella enterica serovar Anatum". FEMS Microbiology Letters 199(2), 235-240

C. Journal articles in preparation

1. McConnell, M.R., M.D. Burns*, T.P. Gary*, B. Kat*, D.A. DeRiemer*, M. Quinn*, L. E. Heasley*, M.J. Rydelski*, P. C. Middleton*, B. Waters*, W.W. Sanford*, D.R. Hyatt* and G.A. Fuller*. "Intragenic suppression of a DNA ejection defect in bacteriophage E15", ms in preparation.
2. McConnell, Michael R., Stephen Billington#, Matthew Hobbs@, Brent Butts*, Suzanne Norton*, Kristin Abell Johnson*, Michael Williams*, Brent Whitehead*, David Mills*, Kenneth Day*, Vitruc Tran*, David Brock*, Jeanette Eastis*, Francesca Conte*, Allison Ericson* and Suzanne Kerns*. "Characterization of the Two Bacteriophage Epsilon 15 Genes Responsible for Blocking Acetylation of Group E1 Salmonellae O-Polysaccharide", ms in preparation
3. Andrew M. Kropinski, Irina V. Kovalyova, Stephen J. Billington, Brent D. Butts, Aaron N. Patrick, Jared A. Guichard, Trevor Pitcher, Anya D. Sydlaske, Kyle A. Havens, Kenneth R. Day, Darrel R. Falk and Michael R. McConnell. "The Genome of ϵ 15, a Serotype-Converting, Group E1 *Salmonella enterica*-Specific Bacteriophage" (ms in preparation).
4. McConnell, Michael R., Aaron N. Patrick, Carlie C. Guthrie and Joshua T. Haleen, "Identification of the two bacteriophage Epsilon 15 genes responsible for the O10 to O15 serotype conversion in Group E1 *Salmonella enterica*", ms in preparation
5. Michael Barry, Barry Walker, Kay Jacobs-Navarette, Anya Sydlaske, Stacie Seelig, Shandee Hutson, Kyle Havens, Josh Haleen, and Michael R. McConnell. "The Genome of the *Salmonella enterica* serovar Anatum Serotype Converting Phage, g341" (ms in preparation)

PUBLISHED MEETING ABSTRACTS (asterisks denote PLNU undergraduate coauthors)

1. McConnell, M., and A. Wright (1975). "Multiple steps in the absorption of bacteriophage E15 to its host cell, Salmonella anatum", Abstract, Phage Meetings, Cold Spring Harbor, N.Y.
2. Rossow, P.W., M.R. pcCennell, and P.M. Blumberg (1977), "The subunit structure of LETS protein on the surface of chick embryo fibroblasts", Federation Proceedings 36:358, A472
3. McConnell, M.R., and J.E. Schoelz* (1981), "Laboratory strains of Salmonella anatum that are sensitive to bacteriophages Felix 01 and E15". Ann. Meeting of the Amer. Soc. for Microbial. (Dallas, Texas), Abstract H99, p. 130

4. McAbee*, D., M. McConnell, L. Heasley*, D. Starn*, D. Reel*, and J. Schoelz* (1981), "Bacteriophage E15 binds reversibly to its host cell, Salmonella anatum, at acidic pH". Fifth International Congress of Virology (Strasbourg, France) p.274, Abstract pp. 28/10
5. Burns*, M.D., T.P. Gary*, D.A. DeRiemer*, and M.R. McConnell (1983). "Mutational suppression of a DNA ejection defect in bacteriophage E15", Abstract, Eighth Annual Biological Sciences Undergraduate Research Conference, University of Santa Clara, CA
6. Guthrie*, J.E., R.A. Long*, and M.R. McConnell (1983). "Transformation of Salmonella anatum AI by plasmid pBR322 DNA", Abstract, Eighth Annual Biological Sciences Undergraduate Research Conference, University of Santa Clara, CA
7. Jensen*, R.A., N.D. Bravo*, D.A. Brown*, D.D. Brown, S.H. Gilkey*, S.B. Oliver* and M.R. McConnell (1983), "Isolation and preliminary characterization of a Pseudomonas aeruginosa-specific bacteriophage", Eighth Annual Biological Sciences Undergraduate Research Conference, University of Santa Clara, CA
8. Gary*, T., M. Burns*, B. Waters*, L. Heasley*, and M. McConnell (1984), "Intragenic suppression of a DNA ejection defect caused by a mutation in the tail gene of bacteriophage E15", Abstract, Ninth Annual Biological Sciences Undergraduate Research Conference, University of Santa Clara, CA
9. Birdwell*, M., D. Pospisil*, N. Kemalyan*, B. Foster*, and M. McConnell (1984), "Properties of a transformable strain of Salmonella anatum". Abstract, Ninth Annual Biological Sciences Undergraduate Research Conference, University of Santa Clara, CA
10. Steed*, M., R. Jensen*, K. Heaney*, T. Lithgow* and M. McConnell (1985), "Characterization of the cell surface receptor recognized by NB4, a Pseudomonas aeruginosa-specific bacteriophage", Abstract, Tenth Annual Biological Sciences Undergraduate Research Conference, University of Santa Clara, CA
11. Pospisil-Davis*, D. and M. McConnell (1985), "Characterization of the restriction/modification phenotypes of Group E1 Salmonellae stains", Abstract, Tenth Annual Biological Sciences Undergraduate Research Conference, University of Santa Clara, CA
12. Gutierrez*, H. and M. McConnell (1986), "Linear ordering of the fragments generated by digestion of the Bacteriophage E15 chromosome with restriction endonucleases Bam HI and Pst I", Abstract, Eleventh Annual Biological Sciences Undergraduate Research Conference, Occidental College, CA
13. Steed*, M.M. and M.R. McConnell (1986), "Bacteriophage NB4 interacts with both cell surface proteins and carbohydrate antigens during adsorption to Pseudomonas aeruginosa", Abstract, Eleventh Annual Biological Sciences Undergraduate Research Conference, Occidental College, CA
14. McConnell, M.R., M.D. Burns*, D.A. DeRiemer*, T.P. Gary*, L.E. Heasley* and B. Kat* (1986), "The role of the tail protein in the DNA ejection mechanism of bacteriophage E15", Abstract, Tenth Biennial Meeting on Bacteriophage Assembly, MacDonald College of McGill University, Montreal, Quebec
15. McConnell, M.R., D.P. Davis* and H.G. Gutierrez* (1986), "Cloning of the cell surface conversion genes of bacteriophage E15 - A preliminary report", Abstract, Tenth Biennial Meeting on Bacteriophage Assembly, MacDonald College of McGill University, Montreal, Quebec
16. Middleton*, P.C., M.J. Rydelski* and M.R. McConnell (1987), "Characterization of the cell surface conversion genes of E15, a Salmonella-specific bacteriophage", Abstract, Tenth Annual West Coast Biological Sciences Undergraduate Research Conference, University of Santa Clara, CA
17. McConnell, M.R., P.C. Middleton*, M.J. Rydelski*, H.G. Gutierrez* J.D. Owens*, S.L. Risley* and W.W. Sanford* (1987), "Screening of cloned E15 DNA fragments for the genes that govern cell surface conversion upon infection of Salmonella anatum, A126, **1987 Meeting on Molecular Genetics of Bacteria and Phage**, Cold Spring Harbor laboratory, N.Y.
18. Owens*, J.D., P.C. Middleton*, W.W. Sanford*, G.A. Fuller* and M.R. McConnell (1988) "Identification of the chromosomal location of the cell surface conversion genes of E15, a Salmonella anatum-specific bacteriophage" Abstract, Thirteenth Annual Biological Sciences Undergraduate Research Conference, Occidental College, CA
19. McConnell, M.R. and P.C. Middleton* (1988), "Characterization of the DNA Ejection Mechanism of Bacteriophage E15: Evidence Implicating the 109,000, the 93,000, and the 85,000 Dalton Virion Polypeptides as Components of the E15 DNA Ejection Apparatus". Eleventh Biennial Meeting on Bacteriophage Assembly Asilomar, CA
20. Walker*, B., J. Chase*, J. Fuller*, W. Sanford* and M. McConnell (1989), "Chromosomal Endonuclease Restriction Mapping and DNA Packaging Mechanism for the Salmonella anatum-specific Bacteriophage, E15" **Abstract, Fourteenth** Annual Biological Sciences Undergraduate Research Conference, University of Santa Clara, CA

21. McConnell, M.R., B. Walker*, P. Middleton*, J. Chase*, J. Fuller* and D. Hyatt* (1989), "Organizational and Functional Aspects of the Genome of the Salmonella Bacteriophage E15, as Revealed by Restriction Endonuclease Mapping and Marker Rescue Assays", Abstract, **1989 Annual Meeting on the Molecular Genetics of Bacteria and Phages**, Cold Spring Harbor Laboratory, NY
22. McConnell, M.R., W. Sanford* and P. Middleton* (1990), "Cloning the Lipopolysaccharide Conversion Genes of Bacteriophage E15 - A Preliminary Report", Abstract I-P-6, **First Annual Congress of the International Endotoxin Society**, San Diego, CA (May, 1990)
23. McConnell, M.R., D. Falk, M. Williams*, B. Walker*, D. Hambright*, J. Chase*, D. Hyatt*, P. Middleton*, M. Barry, Jr.* and S. Sage*, "The Lipopolysaccharide Conversion Genes are Adjacent to the Integration Site in the Genome of the Temperate Salmonella Phage E15", Abstract A-138, **1990 Annual Meeting on the Molecular Genetics of bacteria and Phages** Cold Spring Harbor Laboratory, N. Y.
24. Marvin*, M. and M.R. McConnell (1991), "Use of Transposon Tn5SupF as a tool for locating the conversion Genes in the Genome of Bacteriophage E15 - A preliminary report, Abstract, Sixteenth Annual West Coast Biological Sciences Undergraduate Research Conference, University of Santa Clara, CA
25. Sage*, S., M. Barry, Jr.*, M. Williams*, M. Marvin* and M.R. McConnell (1991), "Evidence for Close Proximity of Lipopolysaccharide conversion Genes and the Integration Site in the Genome of the Temperate Salmonella Bacteriophage E15, Abstract, **Sixteenth Annual West Coast Biological Sciences Undergraduate Research Conference**, University of Santa Clara, CA
26. McConnell, M.R., D. Falk, M. Williams*, M. Marvin*, M. Barry, Jr.* and S. Sage* (1991), "Alternative approaches to mapping the Lipopolysaccharide conversion genes in the genome of the temperate Salmonella bacteriophage, E15", Abstract, Twelfth International Bacteriophage Assembly Meeting, Cable, WI (June, 1991)
27. Barry, Jr.* M, and M. McConnell (1992), "Development of a transposon system suitable for mapping the cell surface conversion genes of Salmonella bacteriophage, E15, by insertion mutagenesis", Abstract, Seventeenth Annual West Coast Biological Sciences Undergraduate Research Conference, Point Loma Nazarene College, San Diego, CA
28. Kerns*, S., A. Miller* and M. McConnell (1994), "Cloning of the transacetylase repressor gene of Epsilon 15, a Group E1 Salmonellae-converting bacteriophage...a progress report", Abstract, Nineteenth Annual West Coast Biological Sciences Undergraduate Research Conference, Occidental College, Los Angeles, CA
29. McConnell, M.R., B. Butts*, F. Conte*, D. Brock* and V. Tran* (1995) "Initial characterization of genes from the Group E1 Salmonellae-specific, lipopolysaccharide converting phages, Epsilon 15 and c341, the protein products of which are believed to inhibit production of host cell O-polysaccharide transacetylase enzyme, Abstract 164, 49th Annual Meeting on Molecular Genetics of Bacteria and Phages, Cold Spring Harbor Laboratory, NY
30. Butts*, Brent, and Michael McConnell (1995) "Initial characterization of the transacetylase repressor genes of the Group E1 Salmonellae-converting phages, Epsilon 15 and c341", Abstract, Twentieth Annual West Coast Biological Sciences Undergraduate Research Conference, University of San Francisco, CA
31. Brock, David, Vitruc Tran and M. McConnell (1996), "A cloned copy of the Epsilon 15 transacetylase repressor gene alters the in vitro phage receptor activity of Group E1 Salmonellae lipopolysaccharide", Abstract, Twenty-First Annual West Coast Biological Sciences Undergraduate Research Conference, Point Loma Nazarene College, San Diego, CA
32. Butts*, Brent, and M. McConnell (1996), "Detection of the beta polymerase gene of bacteriophage Epsilon 15 by PCR, using primers based upon the O-polysaccharide alpha polymerase gene sequence of Salmonella anatum", Abstract, Twenty-First Annual West Coast Biological Sciences Undergraduate Research Conference, Point Loma Nazarene College, San Diego, CA
33. Eastis*, J., B. Whitehead* and M. McConnell (1997), "Probable primary structure of the transacetylase repressor protein of bacteriophage Epsilon 15", Abstract, Twenty-Second Annual West Coast Biological Sciences Undergraduate Research Conference, Loyola Marymount University, Los Angeles, CA
34. McConnell, Michael (1997), "Characterization of a gene in bacteriophage Epsilon 15 whose expression blocks acetylation of Salmonella O-polysaccharide", First Annual Meeting of the San Diego Microbiology Group (May 17, 1997)
35. McConnell, M., B. Butts*, K.A. Johnson*, B. Whitehead*, J. Eastis*, D. Mills*, S. Norton*, F. Conte*, D. Brock* and V. Tran* (1997), "Control of acetylation of Group E1 Salmonellae endotoxin by

bacteriophages”, Annual Meeting on Microbial Pathogenesis and Host Response, Cold Spring Harbor Laboratory, NY

36. Norton*, Suzanne, Kenneth Day* and Michael McConnell (1998), “A new model for the mechanism of inhibition of O-polysaccharide transacetylase by bacteriophage Epsilon 15”, Abstract, Twenty-third Annual West Coast Biological Sciences Undergraduate Research Conference, University of San Francisco, CA

37. Day*, Kenneth, Suzanne Norton* and Michael McConnell (1999) “Establishment of the correct ORF for the bacteriophage Epsilon 15 transacetylase repressor gene by in vitro mutagenesis, using altered PCR primers”, Abstract, Twenty-Fourth Annual West Coast Biological Sciences Undergraduate Research Conference, University of California at Irvine

38. Mills*, David, Michael McConnell and Stephen Billington (1999) “A “Genomics” approach to the search for beta polymerase, a hypothesized cell surface conversion gene of bacteriophage Epsilon 15”, Abstract , Twenty-Fourth Annual West Coast Biological Sciences Undergraduate Research Conference, University of California at Irvine

39. Patrick*, Aaron, Kenneth Oakes* and Michael McConnell (2001) “Two functional O-polysaccharide polymerase genes are present in the rfb gene cluster of Group E1 Salmonella enterica”, Abstract, Twenty-sixth Annual West Coast Biological Sciences Undergraduate Research Conference, Santa Clara University.

40. Sydlaske*, Anya and Michael McConnell (2002) “Identification of the gene coding for the tail fiber protein of the Salmonella-specific bacteriophage, Epsilon 15”, Abstract, Twenty-seventh Annual West Coast Biological Sciences Undergraduate Research Conference, Loyola Marymount University

41. Hutson*, Shandee M. and Michael McConnell (2003) “The use of chimera protein constructs to examine structure/function relationships in Group E1 Salmonella enterica O-polysaccharide polymerase enzymes” Abstract, Twenty-Eighth Annual West Coast Biological Sciences Undergraduate Research Conference, Colorado College, Colorado Springs.

HONORS AND AWARDS

2003 Co-Recipient (with Darrel Falk) of the award for “University Service to the San Diego K-12 Educational Community”, presented by San Diego Science Educators’ Association, June 4th, 2003

1983 Voted “Most Inspirational Professor” by Point Loma College graduating seniors (Class of '83)

1976 Recipient of Alumnus of Point Loma (APL) Award (June 5, 1976)

INVITED RESEARCH SEMINARS AND PROFESSIONAL MEETING SEMINAR PRESENTATIONS

2005 Annual Conference of the San Diego Microbiology Group, 10th Annual Meeting, May 28, 2005

2005 Departments of Biology and Chemistry, Azusa Pacific University (April 21, 2005)

2001 Department of Medicine, U.C. San Diego, CA (July 5, 2001)

1999 Annual Conference of the San Diego Microbiology Group (May 22, 1999)

1997 Annual Conference of the San Diego Microbiology Group (May 17, 1997)

1994 Department of Microbiology, University of Sydney, Sydney, Australia

1992 Department of Microbiology, Montana State University, Bozeman, MT

1991 Twelfth International Meeting on Bacteriophage Assembly, Cable, WI

1988 Eleventh Biennial Meeting on Bacteriophage Assembly, Asilomar, CA

1988 25th Anniversary Symposium of the Department of Molecular Biology and Microbiology, Tufts University School of Medicine, Boston, MA

1986 Tenth Biennial Meeting on Bacteriophage Assembly MacDonal College of McGill University, Montreal, Quebec (two seminars),

1985 Department of Molecular Biology, Vanderbilt University, Nashville, TN

1984 Department of Biology, Biola University, La Mirada, CA

1984 Department of Microbiology and Immunology, University of Arizona, Tucson, AZ

1984 Basic Sciences Seminar, Loma Linda University, Loma Linda, CA

1975 Cold Spring Harbor Phage Meetings, Cold Spring Harbor, New York

FOREIGN TRAVEL EXPERIENCES

England and Scotland.....(2 weeks) 2005

British Columbia	(2 weeks) 2004
Central Mexico	(2 weeks) 1998
Australia	(4 weeks) 1994
Spain and Portugal	(3 weeks) 1994
Spain and Portugal	(2 weeks) 1987
Central Mexico	(2 weeks) 1989
Spain and Portugal	(5 weeks) 1986
Western Europe (5 countries) and Israel	(5 weeks) 1981
Central Mexico	(5 weeks) 1980
Central Mexico	(2 weeks) 1979
England and Spain	(5 weeks) 1978
Spain	(2 weeks) 1977
Western Europe (5 countries)	(5 weeks) 1976
France and Spain	(5 weeks) 1975
Western Europe (14 countries)	(9 weeks) 1969