GREGORY D. FREDERICK, Ph.D.

CONTACT INFORMATION

LeTourneau University
Department of Biology and Kinesiology
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Longview, TX 75602

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EDUCATION

Ph.D.; Department of Microbiology, Immunology and Molecular Genetics
Kansas University Medical Center, Kansas City, KS 1990

Dissertation topics: Gene Regulation, Eukaryotic Cell Transformation, Targeted DNA Sequence Replacement, *In vitro* mutagenesis, Molecular Analysis of Transcriptional Regulatory Sequences, Nuclear Protein Purification, DNA-Protein Interaction Assays

Doctoral Dissertation – Regulation of NADP-Specific Glutamate Dehydrogenase; Molecular Analysis of Transcriptional Regulatory Sequences

B.A.; Microbiology
University of Kansas, Lawrence, KS 1983

B.A.; Biology
University of Kansas, Lawrence, KS 1980

PROFESSIONAL SOCIETY MEMBERSHIPS

Genetic Society of America
American Society for Microbiology – National
American Society for Microbiology – Texas Branch
American Association for the Advancement of Science
Beta Beta Beta National Biological Honor Society
European Federation of Biotechnology
International Society for Computational Biology
Sigma Xi – The Scientific Research Society
Southwestern Association of Clinical Microbiology
Texas Academy of Science
Texas Association of Advisors for the Health Professions
National Association of Advisors for the Health Professions
Medical Science Liaison Society

GRANT AWARDS, RECOGNITION, AND HONOR AWARDS

May 2019 LeTourneau Selby Award for Excellence In Teaching Nominee, received two of five nominations. Award went to a career 30-year retiring faculty member.

Dec. 2017 W.M. Keck Foundation Grant, $250,000 for the purchase of a Hitachi SU3500 Scanning Electron Microscope including 7nm SE Image Resolution at 3kV, 10nm BSE Image resolution at 5kV and point and click for seamless, real-time “3D” image observation.

Oct. 2015 Recipient of the LeTourneau University Excellence in Teaching Award.

Dec. 2013 UMHB Excellence in Teaching Award - Runner-up

June 2010 Recipient of the UMHB Faculty Summer Development Grant; $10,000

May 2009 Recipient of the UMHB Summer Development Leave Award; $10,000 Research on Human Parthenogenesis with faculty at Scott and White Hospital, Texas A&M University Health Science Center and the Temple Veterans’ Administration Hospital.

April 2007 Recipient of a UMHB Faculty Development Award; $15,675 BATTLING FIRE WITH FIRE: Using microorganisms to extinguish the burn. (Bio-control of fire ants)

Nov. 2000 Honored by the Liaoning China Provincial Governor as the “Province’s Most Valued Foreign Expert.” Selected from the Province’s 10,000+ foreign experts for excellence in education, community health training, and community development.

COURSES TAUGHT

Immunology	Genetics
Genomics & Bioinformatics	Microbiology
Bacteriology	Anatomy and Physiology I and II
Biochemistry I and II	Life Science
Ecology	General Biology I and II Labs
Invertebrate Zoology	Freshman Seminar

UNIVERSITY COMMITTEE EXPERIENCE

- LeTourneau University General Education Committee 2014 – present
- LeTourneau Univ. Institutional Review Board – Chair 2016 – present
- LeTourneau Univ. Institutional Review Board – member 2014 – 2016
- LeTourneau University Institutional Effectiveness Committee 2014 – present
- LeTourneau University Committee for Assessment and Continual Improvement 2014 – 2018
- UMHB Institutional Review Board Member 2013 – 2014
- UMHB Faculty Assembly Executive Committee, President-elect and President (Faculty Senate) 2012 – 2014

UNIVERSITY COMMITTEE EXPERIENCE - Continued

- UMHB Educational Technology Committee – Chair 2009 – 2012
- UMHB Scholars Day Committee 2009 – 2014
- UMHB Committee for Institutional Effectiveness 2008 – 2010
- UMHB Committee for Student Development 2007 – 2009
- UMHB Health Professions Advisory Committee 2006 – 2014

PROFESSIONAL EXPERIENCE

Faculty – Professor, Tenured **2020 – Present**
LeTourneau University, Department of Biology and Kinesiology, Longview, TX, U.S.A.

Faculty – Professor and Department Chair **2014 – 2020**
LeTourneau University, Department of Biology and Kinesiology, Longview, TX, U.S.A.
Tenured 2018

Research Scientist – Department of Molecular Pathology **2011 – 2014**
Baylor, Scott and White Hospital, Pro bono, Temple, TX, U.S.A.

Faculty – Tenured, Associate Professor **2011 – 2014**
University of Mary Hardin-Baylor, Department of Biology, Belton, TX, U.S.A.

Faculty – Assistant Professor **2005 – 2011**
University of Mary Hardin-Baylor, Department of Biology, Belton, TX, U.S.A.

Owner and C.E.O. **2001 – 2005**
Open Door Information Resource Company, Fengcheng, CHINA
Founded and directed corporation to facilitate cooperation between Chinese governmental, industrial, educational, and individual concerns with their counterparts in other countries.

Director and Chief Representative **1998 – 2001**
Global Partners (U.K.) Ltd., N.E. China Representative Office, Shenyang, CHINA
Established and directed representative office for a British humanitarian aid organization in N.E. China.

Director and Chief Representative **1994 – 1998**
BioChem Ventures Ltd. (Singapore), N.E. China Office, Shenyang, CHINA
Registered and directed a representative office for a Singaporean pharmaceutical company in N.E. China.

Faculty – Instructor, Department of Pathology **1991 – 1994**
U.T. Southwestern Medical Center at Dallas, Dallas, TX, U.S.A.
Research Focus: DNA repair and transcription control in human cells affected by xeroderma pigmentosum (XP-D). Trained medical students and residents in Molecular Pathology techniques.

Research Scientist – Biotechnology Postdoctoral Scientist **1989 – 1991**
Ciba-Geigy (now Novartis Intl. AG) Biotechnology Division, Basel, Switzerland
Developed vectors and host strains, characterized and synthesized genes encoding human proteins and introduced them into cells using transformation for use in pharmaceutical production of human proteins.

PROFESSIONAL EXPERIENCE – Continued

Graduate Teaching Instructor – Medical Microbiology 1984 – 1989
Kansas University Medical Center, Department of Microbiology, Immunology and Molecular Genetics, Kansas City, KS Taught medical students basic medical microbiology including bacteriology, mycology and virology.

Graduate Teaching Instructor – Virology and Microbiology 1983 – 1984
University of Kansas, Department of Microbiology, Lawrence, KS
Taught undergraduate laboratory sections of introductory microbiology and introductory virology.

Research Technician 1981 – 1983
University of Kansas, Department of Pharmaceutical Chemistry, Lawrence, KS
Studied drug absorption mechanisms and augmentation by various formulations and adjuvants.

Quality Assurance - Virology Section Head 1980 – 1981
Abbott Laboratories (currently Sanofi Aventis Group), Vaccine Production Section, Lenexa, KS Led the virology QA section in assay and control of viral-based vaccines produced according to USDA regulations and corporate guidelines.

SERVICE AND CONSULTING – Professional Societies and Community

American Society for Microbiology TX Branch – President Elect 2021 – present

American Society for Microbiology TX Branch – Treasurer 2011 – 2021
Maintain accurate financial records, bank accounts and investment funds for the Texas Branch of the American Society for Microbiology.

American Society for Microbiology TX Branch – Executive Board 2008 – Present
Current Branch Treasurer. I have also served as Past Branch Archivist and Alternate Councilor to the national organization.

Biology – HOA Journal – Associate Editor 2013 – Present
Serve as an Associate Editor for the journal and review articles and reports which are submitted to the journal for consideration of publication.

Microbiology Discovery – Journal Editorial Board Member 2013 – Present
Serve as a member of the editorial board and review articles and reports which are submitted to the journal for consideration of publication.

J. of Microbiology and Biology Education – Editorial Board 2011 – Present
Serve as a member of the editorial board and review articles and reports which are submitted to the journal for consideration of publication.

Scott and White Hospital Institutional Biosafety Committee 2011 – 2014
Serve the hospital as an off-site member of their I.B.C. to ensure that they remain in compliance with all national, state and local biosafety guidelines and laws.

McGraw-Hill Publishers – Digital Resource Consultant 2011 – Present
Consultant and reviewer for McGraw-Hill Higher Education digital product group on development of a new LearnSmart product. Facilitate the development of a new digital resource to accompany the Nester 7th Edition of Microbiology. A group of eight professors were selected from around the USA to develop this resource.

SERVICE AND CONSULTING – Professional Societies and Community - Continued

Pearson Education **2011 – 2014**
Participated in Pearson Education sponsored and hosted workshops for the development of new and improved CourseSmart resources for online laboratory use. A panel of about 10 professors from across the USA were invited to consult on this project.

Hope Unbridled Inc. (HUI) – Chief Financial Officer **2010 – Present**
HUI is a not-for-profit organization that works with youth and families who are experiencing life difficulties. HUI uses equine assisted psychotherapy to train and facilitate individuals in new and productive coping strategies to instill appropriate and productive responses to life's challenges.

W.W. Norton Publisher – Textbook Reviewer & Advisor **2010 – Present**
Invited by W.W. Norton Publishing Group to provide pre-print editing, review and suggestions on accuracy and appropriateness of textbook content. "Microbiology: An Evolving Science" by Joan Slonczewski and John Foster

GBD Corp. – Technical Scientific Consultant **2009 – 2017**
Global BioDiagnostics Corporation, Temple, TX Consultant on *Mycobacterium tuberculosis* enzymology, diagnosis and product development.

Izzy Plus Inc. – Mandarin Translation Consulting **2007**
Provided translation assistance during negotiations with the owner of a Chinese component supply company. Helped resolve a multi-thousand dollar product dispute.

PUBLICATIONS

D. I. Hanauer, M. J. Graham, **G.D. Frederick***, D. J. Asai, G.F. Hatfull, V. Sivanathan. *Instructional Models for Course-Based Research Experience (CRE) Teaching,* **Cell Biology Education—A Journal of Life Science Education (CBE),** Submitted March 2021.

Deborah Jacobs-Sera, Lawrence A. Abad, Richard M. Alvey, Kirk R. Anders, Haley G. Aull, Suparna S. Bhalla, Lawrence S. Blumer, David W. Bollivar, J. Alfred Bonilla, Kristen A. Butela, Roy J. Coomans, Steven G. Cresawn, Tom D'Elia, Arturo Diaz, Ashley M. Divens, Nicholas P. Edgington, **Gregory D. Frederick**, Maria D. Gainey, Rebecca A. Garlena, Kenneth W. Grant, Susan M.R. Gurney, Heather L. Hendrickson, Lee E. Hughes, Margaret A. Kenna, Karen K. Klyczek, Hari Kotturi, Travis N. Mavrich, Angela L. McKinney, Evan C. Merkhofer, Jordan Moberg Parker, Sally D. Molloy, Denise L. Monti, Dana A. Pape-Zambito, Richard S. Pollenz, Welkin H. Pope, Nathan S. Reyna, Claire A. Rinehart, Daniel A. Russell, Christopher D. Shaffer, Viknesh Sivanathan, Ty H. Stoner, Joseph Stukey, C. Nicole Sunnen, Sara S. Tolsma, Philippos K. Tsourkas, Jamie R. Wallen, Vassie C. Ware, Marcie H. Warner, Jacqueline M. Washington, Kristi M. Westover, JoAnn Whitefleet-Smith, Helen I. Wiersma-Koch, Daniel C. Williams, Kira M. Zack, and Graham F. Hatfull. *Genomic diversity of bacteriophages infecting Microbacterium spp.,* **PLOS ONE,** June 18, 2020. doi.org/10.1371/journal.pone.0234636. PubMed PMID: 32555720.

PUBLICATIONS - Continued

Hanauer DI, Graham MJ; **Frederick GD*,** Betancur L, Bobrownicki A, Cresawn SG, Garlena RA, Jacobs-Sera D, Kaufmann N, Pope WH, Russell DA, Jacobs WR Jr, Sivanathan V, Asai DJ, Hatfull GF., *An inclusive Research Education Community (iREC): Impact of the SEA -PHAGES program on research outcomes and student learning.* **Proceedings of the National Academy of Science (PNAS) U S A.,** December 5, 2017. pii: 201718188. doi: 10.1073/pnas.1718188115. PubMed PMID: 29208718.

Anders K.R., Barekzi N., Best A.A., **Frederick G.D.,** Mavrodi D.V., Vazquez E., SEA-PHAGES, Amoh N.Y.A., Baliraine F.N., Buchser W.J., Cast T.P., Chamberlain C.E., ChungH.M., D'Angelo W.A., Farris C.T., Fernandez-Martinez M., Fischman H.D., Forsyth M.H., Fortier A.G., Gallo K.F., Held G.J., Lomas M.A., Maldonado-Vazquez N.Y., Moonsammy C.H., Namboote P., Paudel S., Polley S.M., Reyes G.M., Rubin M.R., Saha M.S., Stukey J, Tobias T.D., Garlena R.A., Stoner T.H., Cresawn S.G., Jacobs-Sera D., Pope W.H., Russell D.A., Hatfull G.F. *Genome Sequences of Mycobateriophages Amgine, Amohnition, Bella96, Cain, DarthP, Hammy, Krueger, LastHope, Peanam, PhelpsODU, Phrank, SirPhilip, Slimphazie, and Unicorn;* **Genome Announcements.** December 2017, vol. 5 no. 49 e01 202-17.

Frederick, K., Barnard-Brak, L. and **Frederick, G.** *Exploring the Relationship between Academic Entitlement and Epistemological Beliefs.* **International Journal of University Teaching and Faculty Development.** October 2012; 3(1):69-81.

Frederick, G. *From Medieval Microbiology to Modern Medicine: A Concise History of How We Got to Where We are Today.* **Journal of Microbiology and Biology Education.** May 2012; 13(1):99-100.

Frederick, G. *A Review of The Mirage Man: Bruce Ivins, the anthrax attacks, and America's rush to war.* **Journal of Microbiology and Biology Education.** December 2011; 12(2):211-212

Frederick G.D., Amirkhan R.H., Schultz R.A., Friedberg E.C. *Structural and mutational analysis of the xeroderma pigmentosum group D (XPD) gene.* **Human Molecular Genetics.** October 1994; 3(10):1783-8.

Perkins D.D., Kinsey J.A., Asch D.K., **Frederick G.D.,** *Chromosome rearrangements recovered following transformation of Neurospora crassa.* **Genetics.** July 1993; 1 34(3):729-36.

Frederick G.D., Rombouts P., Buxton F.P., *Cloning and characterisation of pepC, a gene encoding a serine protease from Aspergillus niger.* **Gene.** March 15, 1993; 125(1):57-64.

Asch D.K., **Frederick G.,** Kinsey J.A., Perkins D.D., *Analysis of junction sequences resulting from integration at nonhomologous loci in Neurospora crassa .* **Genetics.** April 1992; 130(4):737-48.

Frederick G.D., Kinsey J.A., *Distant upstream regulatory sequences control the level of expression of the am (GDH) locus of Neurospora crassa.* **Current Genetics.** July 1990; 18(1):53-8.

PUBLICATIONS - Continued

Frederick G.D., Kinsey J.A., *Nucleotide sequence and nuclear protein binding of the two regulatory sequences upstream of the am (GDH) gene in Neurospora.* **Molecular and General Genetics.** April 1990; 221(2):1 48-54.

Frederick G.D., Asch D.K., Kinsey J.A., *Use of transformation to make targeted sequence alterations at the am (GDH) locus of Neurospora.* **Molecular and General Genetics.** June 1989; 217(2-3):294-300.

Yoshitomi H., Nishihata T., **Frederick G.,** Dillsaver M., Higuchi T., *Effect of triglyceride on small intestinal absorption of cefoxitin in rats.* **Journal of Pharmacy and Pharmacology.** November 1987; 39(1 1):887-91.

Nishihata T., Kim S., Kamada A., **Frederick G.,** Dillsaver M., Higuchi T., *Lymphatic transport of sodium cefoxitin in the presence of sodium 5-methoxysalicylate after injection into rat rectal connective tissue, femoral muscle and femoral vein.* **Journal of Pharmacy and Pharmacology.** July 1985; 37(7):509-1 1.

Nishihata T., Tomida H., **Frederick G.,** Rytting J.H., Higuchi T., *Comparison of the effects of sodium salicylate, disodium ethylenediaminetetraacetic acid and polyoxyethylene-23-lauryl ether as adjuvants for the rectal absorption of sodium cefoxitin.* **Journal of Pharmacy and Pharmacology.** March 1985; 37(3):159-63.

GENBANK GENOME SEQUENCE SUBMISSIONS

Baliraine,F.N., **Frederick,G.D.**, Merrell,J.N., McFarland,R.L., Mack,B.N., Thompson,C.O., Garlena,R.A., Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium* phage Shida, *complete genome*. GenBank, Accession Number MT818418.1; July 30, 2020.

Baliraine,F.N., **Frederick,G.D.**, Mills,R.B., Woodruff,J.W., Richardson,W.J., Garlena,R.A., Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium* phage MrMiyagi, *complete genome*. GenBank, Accession Number MT776806.1; July 19, 2020.

Spencer,C.E., **Frederick,G.D.**, Baliraine,F.N., Dickey,C., Wernli,T., Garlena,R.A., Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium* phage Tyson, *complete genome*. GenBank, Accession Number MT771349.1; July 16, 2020.

Spencer,C.E., **Frederick,G.D.**, Baliraine,F.N., Perez,M.S., Trosen,M., Garlena,R.A., Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium* phage Bombshell, *complete genome*. GenBank, Accession Number MT723939.1; July 7, 2020.

Frederick,G.D., Spencer,C.E., Baliraine,F.N., Howe,R., Scott,L., Garlena,R.A., Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium phage* Schnauzer, *complete genome*. **GenBank,** Accession Number MT723932.1; July 5, 2020.

Frederick,G.D., Baliraine,F.N., Crook,L., Hudson,F.M., Poore,C., Garlena,R.A., Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium phage* SuperCallie99, *complete genome*. **GenBank,** Accession Number MT657338.1; June 17, 2020.

GENBANK GENOME SEQUENCE SUBMISSIONS - Continued

Spencer,C.E., **Frederick,G.D.**, Baliraine,F.N., Favela,G., Farmer,V., Galindo,A., Garlena,R.A., Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium phage* Reindeer, *complete genome*. **GenBank,** Accession Number MT658803.1; June 4, 2020.

Frederick,G.D., Baliraine,F.N., Wheatley,H.R., Benner,S.L., Parker,L.N., Garlena,R.A., Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium phage* PainterBoy, *complete genome*. **GenBank,** Accession Number MT639645.1; June 4, 2020.

Baliraine,F.N., **Frederick,G.D.**, Landreth,J.A., Lee,B.D., Ramirez,P.N., Hardeman,K.M., Garlena,R.A., Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium phage* MasterPo, *complete genome*. **GenBank,** Accession Number MT639652.1; June 3, 2020.

Baliraine,F.N., **Frederick,G.D.**, Handley,H.M., Nunez,C., Winikka,S.A., Garlena,R.A., Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium phage* Heath, *complete genome*. **GenBank,** Accession Number MT639648.1; June 2, 2020.

Frederick,G.D., Baliraine,F.N., Matthews,J.D., Barnhart,J.R., Berlingeri,D., Garlena,R.A., Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium phage* Chaph, *complete genome*. **GenBank,** Accession Number MT498056.1; May 20, 2020.

Frederick,G.D., Baliraine,F.N., Pierce,P.N., Mask,B.E., Pimentel,R.Ethon. Garlena,R.A., Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium phage* Pmask, *complete genome.* **GenBank** Accession Number MT024861.1; March 20, 2020.

Frederick,G.D., Baliraine,F.N., McCormick,C.R., Molidor,A.C., Parrish,A.W. Williams,K., Moonsammy,C., Garlena,R.A. Russell,D.A., Pope,W.H., Jacobs-Sera,D. and Hatfull,G.F. *Mycobacterium phage* Willsammy, *complete genome.* **GenBank** Accession Number MT024866.1; March 20, 2020.

Frederick, G.D., Baliraine, F.N., Hartzler, C.D., Martinez, R., Malik, J.A.G., Garlena, R.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D. and Hatfull, G.F. *Mycobacterium phage StressBall*, *complete genome.* **GenBank** Accession Number MN908683.1; March 2, 2020.

Frederick, G.D., Baliraine, F.N., Packer, K.B., Burkhart, A.R., Howe, R.N., Garlena, R.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D. and Hatfull, G.F. *Mycobacterium phage CactusJack*, *complete genome.* **GenBank** Accession Number MN892484.1; January 2, 2020.

Frederick, G.D., Baliraine, F.N., Taylor, K.J., Banks, K.M., Henry, S.M., Beene, G.S., Garlena, R.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D. and Hatfull, G.F. *Mycobacterium phage Kilkor*, *complete genome.* **GenBank** Accession Number MN892486.1; January 2, 2020.

Frederick, G.D., Baliraine, F.N., Parish, L.B., Spencer, C.E., Schultz, M.B., Abrams, A.J., Garlena, R.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D. and Hatfull, G.F. *Mycobacterium phage Phalm*, *complete genome.* **GenBank** Accession Number MN807248.1; December 9, 2019.

GENBANK GENOME SEQUENCE SUBMISSIONS - Continued

Frederick, G.D., Baliraine, F.N., Gutierrez, K.S., Hester, M.E., Zimmermann, T.R., Claterbaugh, H.B., Garlena, R.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D. and Hatfull, G.F. *Mycobacterium phage Megiddo*, *complete genome.* **GenBank** Accession Number MN807249.1; December 9, 2019.

Baliraine, F.N., **Frederick, G.D.**, Burdine, A.N., Baker, K.B., Davis, A.B., Williams, S.J., Garlena, R.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D. and Hatfull, G.F. *Mycobacterium phage Glaske*, *complete genome.* **GenBank** Accession Number MN807250.1; December 9, 2019.

Baliraine, F.N., **Frederick, G.D.,** Smith, J.M.A., DeJager, C.S., Foster, E.J., Leonard, N.R., Lofgren, D.R., Perez, M.S., Trosen, M.R., Washington, J.M., Garlena, R.A., Russell, D.A., Pope, W. H., Jacobs-Sera, D., Hendrix, R.W. and Hatfull, G. F., *Mycobacterium phage Andies, complete genome.* **GenBank** Accession Number MG099936.1; November 21, 2017.

Frederick, G.D., Baliraine, F.N., Wunder, K., Al, C.M., Ball, D., Boone, K., Funk, C., Guerrero, D., Hayden, K., Hill, A., Huebner, J., Mattson, S., Maxfeldt, B., McAllister, M., Moynahan, M., Nortch, Z., Raies, J., Rockwall, L., Weaver, M., Williams, B., Zach, H., Washington, J.M., Garlena, R.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D., Hendrix, R.W. and Hatfull, G.F. *Mycobacterium phage WunderPhul, complete genome.* **GenBank** Accession Number MG099952.1; November 21, 2017.

Baliraine, F.N., **Frederick, G.D.,** Mattson, S., Ball, D., Al, C.M., Boone, K., Funk, C., Guerrero, D., Hayden, K., Hill, A., Huebner, J., Maxfeldt, B., McAllister, M., Moynahan, M., Nortch, Z., Raies, J., Rockwall, L., Weaver, M., Williams, B., Wunder, K., Zach, H., Warner, M. H., Garlena, R.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D., Hendrix, R.W. and Hatfull, G.F. *Mycobacterium phage Gideon, complete genome.* **GenBank** Accession Number MF668272.1; September 16, 2017.

Frederick, G.D., Baliraine, F.N., Rockwell, L., Blok, R.A., Bradley, C.M., Dantzler, J.R., Dickey, C.H., Kritsch, M.C., Moreland, R.G., Thomas, M.J., Wernli, T.J., Young, S.L., Warner, M.H., Garlena, R.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D., Hendrix, R.W., and Hatfull, G.F. *Mycobacterium phage Aroostook, complete genome.* **GenBank** Accession Number MF668268.1; September 16, 2017.

Frederick, G.D., Baliraine, F.N., Namboote, P., Farris, C.T., Fortier, A.G., Lomas, M.A., Moonsammy, C. H., Stoner, T. H., Garlena, R.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D. and Hatfull, G.F. *Mycobacterium phage Peanam, complete genome.* **GenBank** Accession Number MF1 85722.1; August 21, 2017.

RECENT PRESENTATIONS (2010 - 2020)

Identification and Implications of Soil-Dwelling Bacterial DNA Methyltransferase Homologs in Mycobacterium Phage Phalm. Presented at the Eleventh Annual SEA Symposium. Howard Hughes Medical Institute, Janelia Research Campus. Ashburn, MD. June 8, 2019. Christina E. Spencer, Katelyn Gutierrez, Frederick N. Baliraine, and **Gregory D. Frederick**

Specialized Genes in Lysogenic Phages and Implications Involving Phage Therapy. Presented at the 3nd Annual South-Central SEA-PHAGES Symposium, Denton, TX. April 13, 2019. Sara M. Henry, **Gregory D. Frederick** and Frederick N. Baliraine

RECENT PRESENTATIONS (2010 - 2020) - Continued

Defense or Disguise: Implications of DNA Methylase Homologies in Phages and Soil-Dwelling Bacterial Species. Presented at the 3nd Annual South-Central SEA-PHAGES Symposium, Denton, TX. April 13, 2019. Christina E. Spencer, Frederick N. Baliraine and **Gregory D. Frederick**.

Comparative Analysis of Lytic and Lysogenic Phage Genomes in Search of Phages With Therapeutic Potential. Presented at the American Society for Microbiology TX Branch 2019 Spring Conference. March 29, 2019. Sara Henry, **Gregory D. Frederick**, and Frederick N. Baliraine

P1 Phages: So Many, So Similar, Yet So Unique. Presented at the American Society for Microbiology TX Branch 2019 Spring Conference. March 29, 2019. Garret Beene, Korrin Taylor, Frederick N. Baliraine and **Gregory D. Frederick**

Complex beauty isolated from the garden: Untangling phage OmorphoKaypo variants A & B. Presented at the American Society for Microbiology TX Branch 2019 Spring Conference. March 29, 2019. Annabelle E. Malinowski, Kathryn B. Baker, Frederick N. Baliraine and **Gregory D. Frederick**

Bacteriophage Distribution: Impact of Geographic Constraints on Diversity. Presented at the American Society for Microbiology TX Branch 2019 Spring Conference. March 29, 2019. Logan Parish, Riley Howe, Frederick N. Baliraine and **Gregory D. Frederick**

Implications of Phage-encoded DNA Methylase Gene Homology to Relevant Soil-Dwelling Bacterial Species. Presented at the American Society for Microbiology TX Branch 2019 Spring Conference. March 29, 2019. Christina E. Spencer*, Frederick N. Baliraine and **Gregory D. Frederick**

Extreme Codon Biases in Mycobacteriophage Relative to Phage Encoded tRNA Genes and Host Codon Biases. Presented at the Tenth Annual SEA Symposium. Howard Huges Medical Institute, Janelia Research Campus. Ashburn, MD. June 10, 2018. Annabelle E. Malinowski, Kathryn B. Baker, Bree E. Mask, Payton N. Pierce, Frederick N. Baliraine and **Gregory D. Frederick**

Analysis of Genome-encoded tRNA Genes in Mycobacterium Phage Pmask. Presented at the 2nd Annual South-Central SEA-PHAGES Symposium, Monroe, LA. April 13, 2018. Bree Mask, Payton Pierce, **Gregory D. Frederick** and Frederick N. Baliraine

Unmasking Potential Previous Environmental Hosts of Mycobacteriophage Pmask. Presented at the 2nd Annual South-Central SEA-PHAGES Symposium, Monroe, LA. April 13, 2018. Ethon Pimentel Ruiz, **Gregory D. Frederick** and Frederick N. Baliraine

Genetic Diversity Within Subcluster P1 Mycobacteriophages: A Retrospective Investigation of Possible Bacterial Hosts That Contributed to Cluster P Phage Evolution. Presented at the 2nd Annual South-Central SEA-PHAGES Symposium, Monroe, LA. April 13, 2018. Austin Parrish, Clarice McCormick, Cade Molidor, **Gregory D. Frederick** and Frederick N. Baliraine

Comparative Analysis of Genome Diversity Among Cluster P Mycobacteriophages Isolated From Different Geographical Environments. Presented at the 2nd Annual South-Central SEA-PHAGES Symposium, Monroe, LA. April 13, 2018. Austin C. Molidor, **Gregory D. Frederick** and Frederick N, Baliraine

RECENT PRESENTATIONS (2010 - 2020) - Continued

Gene Homology Between Cluster P1 Mycobacterium Phage Willsammy and Cluster N. Presented at the 2nd Annual South-Central SEA-PHAGES Symposium, Monroe, LA. April 13, 2018. Clarice McCormick, Austin Parrish, Cade Molidor, Frederick N. Baliraine and **Gregory D. Frederick**

Unearthing Phage Glaske. Presented at the LeTourneau University Student Scholar Symposium. Longview, TX. April 10, 2018. Ashley Burdine, **Gregory D. Frederick** and Frederick N. Baliraine

Micobacteriophage Glaske, a Unique Phage Within the P Cluster. Presented at the LeTourneau University Student Scholar Symposium. Longview, TX. April 10, 2018. Stanley Williams, **Gregory D. Frederick** and Frederick N. Baliraine

Comparative Analysis of Phage Glaske Against Other Cluster P1 Mycobacteriophages: Fishburne, Malithi, and Ksquared. Presented at the LeTourneau University Student Scholar Symposium. Longview, TX. April 10, 2018. Kathryn Baker, **Gregory D. Frederick** and Frederick N. Baliraine

Similarities Between Cluster P Mycobacterium Phage Glaske and Phages from Clusters N and K. Presented at the LeTourneau University Student Scholar Symposium. Longview, TX. April 10, 2018. Abigail B. Davis, **Gregory D. Frederick** and Frederick N. Baliraine

The Use of Bioinformatics in The Decoding of Phage Reindeer: Studying Phages to Understanding Their Function. Presented at the LeTourneau University Student Scholar Symposium. Longview, TX. April 10, 2018. Gracie Favela, Frederick N. Baliraine and **Gregory D. Frederick**

Identification and Annotation of Programmed Translational Frameshifts in Mycobacteriophage. Presented at the LeTourneau University Student Scholar Symposium. Longview, TX. April 10, 2018. Audrey Galindo, Fredrick N. Baliraine and **Gregory D. Frederick**

Deciphering the Surprising Abundance of Orphams in Mycobacterium Phage Reindeer. Presented at the LeTourneau University Student Scholar Symposium. Longview, TX. April 10, 2018. Victoria C. Farmer, Frederick N. Baliraine and **Gregory D. Frederick**

Comparative Analysis of Mycobateriophage Minor Tail Protein Carbohydrate Binding Module Polymorphism and Host Range. Presented at the Ninth Annual Howard Hughes Medical Institute SEA-PHAGES Symposium. Janelia Research Campus. Ashburn, VA. June 10, 2017. Connor S DeJager, Megan S Perez, Nicholas R Leonard, Frederick N. Baliraine and **Gregory D. Frederick**

Characterization of Evolutionary Adaptations in Tail Proteins of Cluster N and P Mycobacteriophages. Presented at the 1st Annual South-Central U.S.A. SEA-PHAGES Research Symposium. April 8, 2017. Connor DeJager, Nicholas Leonard, **Gregory D. Frederick** and Frederick N. Baliraine

Genomic Analysis of the Evolutionary Diversity in Subcluster A5 Mycobacteriophages. Presented at the 1st Annual South-Central U.S.A. SEA-PHAGES Research Symposium. April 8, 2017. Annabelle E. Malinowski, Junia M. French, **Gregory D. Frederick** and Frederick N. Baliraine

RECENT PRESENTATIONS (2010 - 2020) - Continued

Exploring the Validity of Unusual Putative tRNAs in Cluster N Phages. Presented at the 1st Annual South-Central U.S.A. SEA-PHAGES Research Symposium. April 8, 2017. Megan Perez, Marisa Trosen, **Gregory D. Frederick** and Frederick N. Baliraine

Identification of Mobile Elements in Three Mycobacteriophage Phams, and Analysis of the Relationship between Transposon Length and Functionality. Presented at the 1st Annual South-Central U.S.A. SEA-PHAGES Research Symposium. April 8, 2017. Elizabeth J. F. Foster, Danielle R. Lofgren, **Gregory D. Frederick** and Frederick N. Baliraine

Bioinformatic Analysis of Genomic Anomalies in Mycobacteriophage Dublin. Presented at the 1st Annual South-Central U.S.A. SEA-PHAGES Research Symposium. April 8, 2017. Junia French, Annabelle E. Malinowski, **Gregory D. Frederick** and Frederick N. Baliraine

Bioinformatics Forensic Investigation Into Potential Agents For *Mycobaterium tuberculosis* Phage Therapy. Presented at the 1st Annual South-Central U.S.A. SEA-PHAGES Research Symposium. April 8, 2017. Javaughn Dantzler, Cecelia Bradley, Robert Moreland, Frederick N. Baliraine and **Gregory D. Frederick**

The Investigation of the Similarities and Variations Among Mycobacteriophage Genomes. Presented at the 1st Annual South-Central U.S.A. SEA-PHAGES Research Symposium. April 8, 2017. Mikayla Thomas, Riley Blok, Frederick N. Baliraine and **Gregory D. Frederick**

Elucidation of Evolutionary Alterations in the Mycobateriophages. Presented at the American Society for Microbiology TX Branch 2017 Spring Conference. March 24, 2017. Nicholas Leonard, Conner DeJager, Frederick Baliraine and **Gregory D. Frederick**

Exploration of Genomic Anomalies in Mycobacteriophage Dublin. Presented at the American Society for Microbiology TX Branch 2017 Spring Conference. March 24, 2017. Annabelle E. Malinowski, Junia French, **Gregory D. Frederick** and Frederick N. Baliraine

Genomic and Evolutionary Analysis of Two Diverse Mycobacteriophages and Methodological Analysis of Chronological Variation in Genomic Annotation. Presented at the Eighth Annual Howard Hughes Medical Institute SEA-PHAGES Symposium. Janelia Research Campus. Ashburn, VA. June 11, 2016. Alisa N. Wilson, Seth Mattson, Frederick N. Baliraine and **Gregory D. Frederick**

Isolation, Purification and Characterization of a "Wunderphul" Phage and the Use of Bioinformatics in Genomic Analysis in Order to Annotate the Genome. Presented at the American Society for Microbiology TX Branch 2016 Spring Conference. April 1, 2016. Maria AlChammas, Rory Moffat, Elizabeth Foster, Madeline McAllister, Jon Nemati, Jessica Huebner Frederick N. Baliraine and **Gregory D. Frederick**

Comparing tRNA Genes Identified In Different Siphoviridae Phages Isolated from the Environment On The LeTourneau University Campus. Presented at the American Society for Microbiology TX Branch 2016 Spring Conference. April 1, 2016. Jamie Banker, Brianna Williams, Frederick N. Baliraine and **Gregory D. Frederick**

RECENT PRESENTATIONS (2010 - 2020) - Continued

Phage Gideon: The Real OG of Cluster. Presented at the American Society for Microbiology TX Branch 2016 Spring Conference. April 1, 2016. G Keely Hayden, Carrye Funk, **Gregory D. Frederick** and Frederick N. Baliraine

Faulty Immunity Repression Gene in Phage WunderPhul. Presented at the American Society for Microbiology TX Branch 2016 Spring Conference. April 1, 2016. Allen Hill, Daniella Guerrero, Frederick N. Baliraine and **Gregory D. Frederick**

A Study of Improved Phage Genome Annotation Over the Years 2006-2016. Presented at the American Society for Microbiology TX Branch 2016 Spring Conference. April 1, 2016. Seth Mattson, Darby Ball, **Gregory D. Frederick** and Frederick N.

Comparative Analysis of Mycobacteriophage Wunderphul and Other Cluster A6 Phages With Respect to Genome Size and the Absence of a Series of Phams at the 3' End of Phage Wunderphul. Presented at the American Society for Microbiology TX Branch 2016 Spring Conference. April 1, 2016. Alisa N. Wilson, Elizabeth J. F. Foster, Jessica R. Huebner, Frederick N. Baliraine and **Gregory D. Frederick**

WunderPhul Discoveries: Isolation, Characterization, and Comparative Genomic Analysis of Mycobacterium Phage WunderPhul. Presented at the American Society for Microbiology TX Branch 2016 Spring Conference. April 1, 2016. Holly Claire Zach, Kristen Wunder, Frederick N. Baliraine and **Gregory D. Frederick**

When STEM Education "Gets Social" and How to Show Them Once Your Overhead Projector Is No More! Presented at the American Society for Microbiology TX Branch 2015 Fall Conference. November 6, 2015.

Bacteriophage Isolation for Phage Therapy and Prevention of Dental Caries. Presented at the American Society for Microbiology TX Branch 2014 Spring Conference. April 4, 2014. Sarah Gregory, Clinton Matkins, and **Gregory Frederick**

Isolation and Characterization of the Imported Red Fire Ant Normal Gut Microbiota. Presented at the American Society for Microbiology TX Branch 2014 Spring Conference. April 4, 2014. Malintha C. Abeysiri and **Gregory Frederick**

Career ADHD: Finding the Right Career Path(s) for the 'Many-Mes" and You! Presented at the American Society for Microbiology TX Branch 2014 Spring Conference. April 4, 2014.

Chalk Dust Gets In Your Eyes… PPTs Put Students to Sleep… Solution: Portable Smart Boards in Every Classroom. Presented at the 2013 Joint Meeting of the South Central and Texas Branches of the American Society for Microbiology. November 2, 2013.

SUPERBUGS: When Microbes, the Immune System, and Medicine Collide. Invited speaker for medical faculty and students at William Carey University College of Osteopathic Medicine. April 15, 2013.

RECENT PRESENTATIONS (2010 - 2020) – Continued

A Lab Safety and Skills Practical for Program Assessment. Presented at the 2013 National Conference of the National Science Teachers Association. Kathleen Wood, Cathleen Early, **Gregory Frederick,** Arch Koontz, Andrew W. Woodward, Karen Grant. April 13, 2013.

A Lab Safety and Skills Practical for Program Assessment. Presented at the 116th Annual Meeting of the Texas Academy of Science. Kathleen N. Early, Karen Grant, **Gregory D. Frederick,** Arch Koontz, Andrew W. Woodward, and Kathleen Wood. March 1, 2013

Clinical Mycology Workshop. Hosted workshop for the Southwest Association of Clinical Microbiologists at the University of Mary Hardin-Baylor. Belton, TX, December 2012.

Retrograde DNA Repair: Recollections from Two Decades Past. Presented at the University of Texas Southwestern Medical Center at Dallas Department of Pathology DNA Repair Symposium. Dallas, TX, December 1, 2012.

Using Web 2.0 for Student Learning. Presented at the Center For Excellence in Learning and Teaching at the University of Mary Hardin-Baylor. Belton, TX, November 2, 2012.

GamEducation: Gamification in Higher Education – Does it work? Presented at the 44th Annual Fall Meeting of the Texas Branch of the American Society for Microbiology. Baylor University. Waco, TX, October 20, 2012.

Are Your Students Smarter Than a Fifth Grader? Getting Them All on the Same Playground. Presented at the Nineteenth Annual American Society for Microbiology Conference for Undergraduate Educators, (ASMCUE) San Mateo, CA, June 16, 2012.

Approaches to Biocontrol of *Solenopsis invictus* via Genetically Modified Organisms. Presented by *KA Cooke, JT Smith, JR Bowen, and GD Frederick* at the 44th Annual Spring Meeting of the Texas Branch of the American Society for Microbiology. New Braunfels, TX, March 30, 2012.

PCR based detection of B1/NAP-1/027 strain of *Clostridium difficile:* Decrease in Prevalence and Clinical Severity? Presented at the 100th Annual Meeting of the United States and Canada Academy of Pathologists (USCAP), San Antonio, TX, February 26, 2011.

The Bugs That Bug Us: Understanding Them Better to Bug Them Back!, Invited Guest Lecturer, Presented at Sam Houston State University, Huntsville, TX, September 15, 2010.

Molecular analysis of *Clostridium difficile, C. difficile* 027/B1/NAP1 and Vancomycin-Resistant Enterococci (VRE) in tissues with Pseudomembranous colitis or CDAD, Presented at the 99th Annual Meeting of the United States and Canada Academy of Pathologists **(USCAP),** Washington, D.C., March 20, 2010.

Molecular Analysis of the *Clostridium difficile* and Vancomycin Resistant Enterococci (VRE) Association in Pseudomembranous Colitis, Presented at the 113th Annual Meeting of the Texas Academy of Science, Stephenville, TX, March 4-6, 2010.