

## CURRICULUM VITAE

### David F. Gilmore, Emeritus Professor of Microbiology

Dept. of Biological Sciences  
Arkansas State University  
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### **Professional History**

Arkansas State University:

Fall 2021-present Professor Emeritus of Microbiology

Fall 2020-Spring 2021 Professor of Microbiology

Fall 2014-Spring 2019 Associate Professor of Microbiology

Fall 1992-Spring 2014 Assistant Professor of Environmental Biology

1989-1992 Post-doctoral Research Associate, Biochemistry Dept., Univ. of Mass.

1980-1982 Research Assistant, Microbiology Lab, Indiana Univ.

1977-1980 Research Assistant, Cellular Immunology Lab, Univ. of Iowa

### **Degrees**

Ph.D. in Microbiology, 1989. The University of Connecticut, Storrs, CT

M.A. in Microbiology, August 1984. Indiana University, Bloomington, IN

B.S. in Biochemistry, May 1976. University of Maine, Orono, ME

### **Classes Taught prior to retirement**

BIO 4104 Microbiology

BIO 3103 Genetics

BIO 4103 Virology

BIO 4611 Radiation in Our World

BIO 4623 Environmental Microbiology

Graduate versions of 4000 level classes and Honors sections

### **Institutional Committees**

#### **University**

Undergraduate Curriculum Council (University) Fall 1999 – Spring 2020

Institutional Biosafety Committee (University) Fall 2009 – Present

Radiation Safety Committee 1995 – 2021

Chair and RSO, 1995-1999

Faculty Senate 2003-2005

General Education Committee 1996-2006

Institutional Review Board 1992-1997

## Other Institutional Service

Biology Curriculum Committee 1993- Present  
Chair 1995-1998, 2008 – 2021

Arts and Sciences Curriculum Committee 1996-2003

Science and Mathematics Curriculum Committee 2003- 2021  
Chair 2003- 2019

Pre-Optometry Society, Co-Advisor 2008- Present

## **Publications (at Arkansas State University)**

Raj KC, H.; Gilmore, D.F.; Alam, M.A. Development of 4-[4-(Anilinomethyl)-3-phenyl-pyrazol-1-yl] Benzoic Acid Derivatives as Potent Anti-Staphylococci and Anti-Enterococci Agents. *Antibiotics* **2022**, *11*, 939. <https://doi.org/10.3390/antibiotics11070939>

Alkhaibari, I, Raj KC, H, Angappulige, DH, Gilmore, D, and Alam, MA  
Novel pyrazoles as potent growth inhibitors of staphylococci, enterococci and *Acinetobacter baumannii* bacteria *Future Medicinal Chemistry* 2022 14:4, 233-244

Alkhaibari, I.S.; KC, H.R.; Roy, S.; Abu-gazleh, M.K.; Gilmore, D.F.; Alam, M.A. Synthesis of 3,5-Bis(trifluoromethyl)phenyl-Substituted Pyrazole Derivatives as Potent Growth Inhibitors of Drug-Resistant Bacteria. *Molecules* **2021**, *26*, 5083. <https://doi.org/10.3390/molecules26165083>

Alnufaie R, Alsup N, Kc HR, Newman M, Whitt J, Chambers SA, Gilmore D, Alam MA. Design and synthesis of 4-[4-formyl-3-(2-naphthyl)pyrazol-1-yl]benzoic acid derivatives as potent growth inhibitors of drug-resistant *Staphylococcus aureus*. *J Antibiot (Tokyo)*. 2020 Dec;73(12):818-827. PMC7655718.

Alnufaie R, Raj Kc H, Alsup N, Whitt J, Chambers, AS, Gilmore D, Alam MA. Synthesis and Antimicrobial Studies of Coumarin-Substituted Pyrazole Derivatives as Potent Anti-*Staphylococcus aureus* Agents. *Molecules*. 2020 Jun 15;25(12). PMC7356691.

Whitt, J., Duke, C., Ali, M.A., Chambers, S., Khan, M.M.K., Gilmore, D., Alam, M.A.. (2019) Synthesis and antimicrobial studies of 4-[3-(3-fluorophenyl)-4-formyl-1H-pyrazol-1-yl]benzoic acid and 4-[3-(4-fluorophenyl)-4-formyl-1H-pyrazol-1-yl]benzoic acid as potent growth inhibitors of drug-resistant bacteria. *ACS Omega* 4: 14284-14293

Whitt, J., Duke, C., Sumlin, A., Chambers, S., Alnufaie, R., Gilmore, D., Fite, T., Basnakian, A., Alam, M.A.. (2019) Synthesis of Hydrazone Derivatives of 4-[4-formyl-3-(2-oxochromen-3-yl)pyrazol-1-yl]benzoic acid as potent growth inhibitors of antibiotic-resistant *Staphylococcus aureus* and *Acinetobacter baumannii*. *Molecules* 24(11):2051

Zakeyah, A.A., Whitt J., Duke C., Gilmore D.F., Meeker, D.G., Smeltzer, M.S., and Alam M.A. (2018) Synthesis and antimicrobial studies of hydrazone derivatives of 4-[3-(2,4-difluorophenyl)-4-formyl-1H-pyrazol-1-yl]benzoic acid and 4-[3-(3,4-difluorophenyl)-4-formyl-1H-pyrazol-1-yl]benzoic acid. *Bioorganic & Medicinal Chemistry Letters* 28(17): 2914-2919.

Aydin, M., Carter-Conger, J., Gao, N., Gilmore, D.F., Ricke, S.C., and Ahn, S. (2018) Molecular identification of common *Salmonella* serovars using multiplex DNA sensor-based suspension array. *Analytical and Bioanalytical Chemistry*, <https://doi.org/10.1007/s00216-018-0938-5>.

Allison, D., Delancey, E., Ramey, H. Williams, C., Alsharif, Z.A., Al-khattabi, H., Ontko, A., Gilmore, D. and Alam, M.A. (2017) Synthesis and antimicrobial studies of novel derivatives of 4-(4-formyl-3-phenyl-1H-pyrazol-1-yl)benzoic acid as potent anti-*Acinetobacter baumannii* agents. *Bioorganic and Medicinal Chemistry Letters*, 27(3): 387-392.

Bridger, J., Rowe, T., Gibler, D. J., Gottsponer, A., Delancey, E., Branscum, M. D., Ontko, A., Gilmore, D., and Alam, M. A. (2016). Synthesis and antimicrobial studies of azomethine and N-arylamine derivatives of 4-(4-formyl-3-phenyl-1H-pyrazol-1-yl)benzoic acid as potent anti-methicillin-resistant *Staphylococcus aureus* agents. *Medicinal Chemistry Research*, 25(11), 2691–2697. <http://doi.org/10.1007/s00044-016-1678-8>

Pannkuk, E.L., H.B. Blair, A.E. Fischer, C.L. Gerdes, D.F. Gilmore, B.J. Savary, T.S. Risch. 2014. Triacylglyceride composition and fatty acyl saturation profile of a psychrophilic and psychrotolerant fungal species grown at different temperatures. *Fungal Biology* 118: 792-799.

Pannkuk, E.L., L. P. McGuire, D. F. Gilmore, B. J. Savary, and T. S. Risch. 2014. Glycerophospholipid Analysis of Eastern Red Bat (*Lasiurus borealis*) Hair by Electrospray Ionization Tandem Mass Spectrometry. *J. Chem. Ecol.* 40(3): 227-235.

Park, S.H., M. Aydin, A. Khatiwara, M. C. Dolan, D. F. Gilmore, J. L. Bouldin, S. Ahn, and S. C. Ricke. 2014. Current and emerging technologies for rapid detection and characterization of *Salmonella* in poultry and poultry products. *Food Microbiology* 38: 250-262.

Park, S.H., M. Aydin, A. Khatiwara, M. C. Dolan, D. F. Gilmore, J. L. Bouldin, S. Ahn, and S. C. Ricke. 2014. Current and emerging technologies for rapid detection and characterization of *Salmonella* in poultry and poultry products. *Food Microbiology* 38: 250-262.

Pannkuk, E.L., D. F. Gilmore, N. W. Fuller, B. J. Savary, and T. S. Risch. 2013. Sebaceous lipid profiling of bat integumentary tissues: quantitative analysis of free Fatty acids, monoacylglycerides, squalene, and sterols. *Chemistry & Biodiversity*. 10(12):2122-32.

Pannkuk, E.L., D.F.Gilmore, B.J. Savary, and T.S. Risch. 2012. Triglyceride (TAG) profiles of integumentary lipids isolated from three bat species determined by matrix-associated laser desorption-ionization time-of-flight mass spectrometry (MALDI-TOF MS). *Can. J. Zool.* 90(9): 1117-1127.

Hanning, I., D. Gilmore, S. Pendleton, S. Fleck, A. Clement, S.H. Park, E. Scott, and S.C. Ricke. 2012. Characterization of *Staphylococcus aureus* Isolates from Retail Chicken Carcasses and Pet

Workers in Northwest Arkansas. *J. Food Prot.* 75(1): 174-178.

Lee, Kwang-Min, and D. F. Gilmore. 2006. Statistical Experimental Design for Process Modeling and optimization Analysis, *Appl. Biochem. Biotechnol.* 135:101-115

Lee, Kwang-Min, and D. F. Gilmore. 2006. Modeling and Optimization of Biopolymer (Polyhydroxyalkanoates) Production From Ice Cream Residue by Novel Statistical Experimental Design. *Appl. Biochem. Biotechnol.* 133(2):113-148.

Lee, Kwang-Min, D. F. Gilmore, and M.J. Huss. 2005. Fungal Degradation of the Bioplastic PHB (Poly-3-hydroxybutyric acid). *J. Polym. Environ.* 13(3):213-219.

Lee, Kwang-Min, and D. F. Gilmore. 2005. Formulation and process modeling of biopolymer (polyhydroxyalkanoates: PHAs) production from industrial wastes by novel crossed experimental design. *Proc. Biochem.* 40: 229-246.

Nordeen, R., T. Mon, and D. Gilmore. 2001. Plasmid Analysis of Bacteria that Metabolize the Detergent Igepon. *J. Ark. Acad. Sci.* 55: 185-187.

### **Prior Publications**

Timmins, M.R., D. F. Gilmore, N. Lotti, M. Scandola, R.C. Fuller, and R.W. Lenz. 1997. A Spectrophotometric method for detection of enzymatic degradation of thin polymer films. *J. Environ. Polym. Degrad.* 5(1):1-16.

Gilmore, D.F., N. Lotti, B. Schneider, M. Scandola, R.W. Lenz, and R.C. Fuller. 1994. Biodegradability of blends of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) with cellulose acetate esters in activated sludge. *J. Environ. Polym. Degrad.* 2:49-57

Gilmore, D.F., S. Antoun, R.W. Lenz, and R.C. Fuller. 1993. Degradation of poly(beta-hydroxyalkanoates) and polyolefin blends in a municipal wastewater treatment facility. *J. Environ. Polym. Degrad.* 1:269-274

Timmins, M., D.F. Gilmore, R.C. Fuller, and R.W. Lenz. 1993. Bacterial Polyesters and their Biodegradation, pp 119-131, in Fundamentals in Biodegradable Materials and Packaging, eds: D. Kaplan, E. Thomas, and C. Ching. Technomic Publishing Co. Inc, Lancaster, PA.

Gilmore, D.F., N. Lotti, R.W. Lenz, R.C. Fuller, and M. Scandola. 1992. Biodegradability of blends of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) with ester-substituted celluloses, pp 251-254, in Biodegradable Polymers and Plastics, eds: M. Vert et al. Royal Society of Chemistry, Cambridge.

Gilmore, D.F., S. Antoun, R.W. Lenz, S. Goodwin, R. Austin, and R.C. Fuller. 1992. The fate of 'biodegradable' plastics in municipal leaf compost. *J. Indust. Microbiol.* 10:199-206.

Gilmore, D.F., R.W. Lenz, and R.C. Fuller. 1990. Biodegradation of poly(beta-hydroxyalkanoates). in Degradable Materials: Perspectives, Issues, and Opportunities. eds: S.A. Barenberg, J.L. Brash, R. Narayan, and A.E. Redpath. CRC Press, Boca Raton, FL.

Gilmore, D.F., W. Godchaux, and E.R. Leadbetter. 1989. Regulation of sulfate assimilation in *Cytophaga johnsonae*. *Arch. Microbiol.* 152: 387-392.

Gilmore, D.F., W. Godchaux, and E.R. Leadbetter. 1989. Cysteine is not an obligatory intermediate in the biosynthesis of cysteate by *Cytophaga johnsonae*. *Biochem. Biophys. Res. Comm.* 160:535-539.

Womack, B.J., D.F. Gilmore, and D. White. 1989. Calcium requirement for gliding motility in myxobacteria. *J. Bacteriol.* 171: 6093-6096.

Gilmore, D. F. and D. White. 1985. Cell cohesion in myxobacteria. *J. Bacteriol.* 161:113-117.

#### **Addenda:**

Breckenridge RTE. Seasonal prevalence of Shiga-toxin producing *Escherichia coli* on beef cattle farms in eastern Arkansas [dissertation]. Ann Arbor: Arkansas State University; 2015.

Kaur H. Identification of shiga toxin-producing *Escherichia coli* in beef cattle of northeast - Arkansas using cultural methods [dissertation]. Ann Arbor: Arkansas State University; 2013.

#### **Presentations (2004-Present)**

Raj KC, H., Gilmore, DF., Roy, S., and Alam, M.A. (2022) Finding the mode of action of novel anti-microbial agents. Annual Meeting of the South Central Branch of the American Society for Microbiology, Shreveport, LA

Raj KC, H., Gilmore, DF., Alsup, N., Whitt, J., and Alam, M.A. (2019) Novel compounds with efficacy against *Acinetobacter baumannii*. Annual Meeting of the South Central Branch of the American Society for Microbiology, Oxford, MS.

Alnufai, R., Alsup, N., Newman, M., Gilmore, D., and Alam, M.A. (2019) Synthesis of naphthalene-derived pyrazoles as potent growth inhibitors of drug resistant bacteria. Annual Arkansas Biosciences Institute Symposium, Jonesboro, AR.

Duke, C., Whitt, J., Price, S., Gilmore, D.F., and Alam, M.A. (2018) Synthesis, antimicrobial, and safety studies of anti-*Acinetobacter* pyrazole-derived compounds. Annual Meeting of the South Central Branch of the American Society for Microbiology; Jackson, MS.

Laws, H.J., Whitt, J., Williams, C., Gilmore, D.F., and Alam, M.A. (2017) Synthesis and antibacterial studies of difluorophenyl pyrazole derivatives. Central Arkansas Undergraduate Summer Research Symposium; Little Rock, AR.

Gilmore, D.F. (2016) Biodegradable Plastics Research: A Retrospective. Annual Meeting of the South Central Branch of the American Society for Microbiology; Lafayette, LA.

Bright, J.T., S. Green, J. Bouldin, and D.F. Gilmore (2016). Metagenomic Analysis of Wetlands: Initial Findings. Annual Meeting of the South Central Branch of the American Society for Microbiology; Lafayette, LA.

Bright, T., J. Bouldin, S. Green, S. Choi, and D. Gilmore (2016). Soil analysis comparison of natural and restored wetlands. Arkansas Soil and Water Conference, Jonesboro, AR.

Rowe, T., D.J. Gibler, J. Bridger, A. Ontko, D. Gilmore, M.A. Alam, (2015). Synthesis and antimicrobial studies of pyrazole derivatives as potent antibacterial agents. Southeast Regional Meeting of the American Chemical Society, Memphis, TN.

Breckenridge, T., D. Kennedy, D. Gilmore, H. Kaur, S. Choi, M. Yarbrough, and S. Pulley. (2015). Prevalence of Shiga-toxin Producing *Escherichia coli* on Beef Cattle Farms in Eastern Arkansas. Annual Meeting of the Southern Section of the American Society of Animal Science, Atlanta, GA.

Ohgo, K., Arai, N., Collins, M., Elkin, K., Gilmore, D., Hershberger, J. (2015) Simple, Robust Modification of Biginelli Compounds. 2015 Council on undergraduate Research, Memphis, TN.

Ontko, A., D.F. Gilmore, K. Raath (2014). Antibacterial activity of Au(III) polypyridyl compounds. 2014 Southeastern Regional Meeting of the American Chemical Society, Nashville, TN.

Gilmore, D.F., H. Kaur, M. Yarbrough, and D. Kennedy (2014). Prevalence of Shigatoxin-producing *Escherichia coli* on Cattle Farms in Northeast Arkansas. Arkansas Academy of Sciences Annual Meeting, Searcy, AR.

Gilmore, D.F., H. Kaur, M. Yarbrough, and D. Kennedy (2013). Prevalence of Shigatoxin-producing *Escherichia coli* on Cattle Farms in Northeast Arkansas. 2013 Annual Meeting of the South Central Branch of the American Society for Microbiology; New Orleans, LA.

Pannkuk, E.L., Gilmore, D., Savary, B., & Risch, T. (2011). Application of MALDI-TOF mass spectrometry to the analysis of bat integumentary biomolecules and *Geomyces* enzymes. 4th Annual White-nose Symposium.

Pannkuk, E., Gilmore, D., Benjamin, E., Benjamin, E., & Risch, T. (2010). Differential Effects of Fatty Acids on Growth of the White-nose Fungus *Geomyces destructans*. Annual Meeting of the South Central Branch of the American Society for Microbiology.

Pannkuk, E., Gilmore, D., Benjamin, E., Benjamin, E., & Risch, T. (2010). Fatty Acid Metabolism and Lipid Transport by *Geomyces destructans*. North American Society for Bat Research Conference.

Pannkuk, E.L., Savary, B., Gilmore, D., Benjamin, E., Huss, M., & Risch, T. (2010). Fungal Digestion of Chiropteran Integument. Midwest Bat Working Group.

Pannkuk, E.L., Savary, B., Gilmore, D., Benjamin, E., Huss, M., & Risch, T. (2010). Fungal metabolism of chiropteran integument. Midwest Bat Working Group.

Pannkuk, E., Gilmore, D., Benjamin, E., Benjamin, E., & Risch, T. (2010). White-nose Syndrome: Fungal Metabolism of Fatty Acids and Lipid Transport. Sigma Xi Annual Meeting.

Gilmore, D., Smith, K., & Fu, X. (2009). Antibiotic Resistance of *Staphylococcus* isolates from Pet Industry Employees. Annual meeting of the South Central Branch of the American society for Microbiology.

Gilmore, D., Breaux, L., Corbin, A., Nathaniel, R., & Morris, C. (2009). Characterization of *Staphylococci* among Nursing Students in Louisiana and Arkansas. Annual Meeting of South Central Branch of American Society for Microbiology.

Gilmore, D., Smith, K., Fu, X., & Wilson, B. (2009). Characterization of *Staphylococcus* from Pet Industry Employees. 2009 Arkansas Undergraduate Research Conference.

Gilmore, D., Wilson, B., & Glenn, C. (2009). Prevalence of *Staphylococcus aureus* among Students in Nursing and Allied Health. 2009 Arkansas Undergraduate Research Conference.

Gilmore, D., Lincoln, C., Ford, L., & Little, J. (2007). Prevalence of *S. aureus* among Nursing and Allied Health Students. Annual Meeting.

South Central Branch of American Society for Microbiology Annual Meeting, March 4, 2006, Lafayette, LA Gilmore, D.F., S. Bradley, and A.D. Christian. "Exopolysaccharide-Producing Bacteria from Two Arkansas Streams."

Twelfth Annual Arkansas Space Grant Symposium, April 30, 2004, Lyon College, Batesville, AR. Gilmore, D.F., T. Holifield, and T. Abramova. "Bacterial Degradation of a Detergent."

Arkansas Academy of Sciences Annual Meeting, April 2-3, 2004, Jonesboro, AR. Abramova, T. and D.F. Gilmore, "Bacterial Degradation of Low Molecular Weight Sulfonates" poster presentation.

Arkansas Academy of Sciences Annual Meeting, April 2-3, 2004, Jonesboro, AR. Gilmore, D.F. and K. Halcom, "UV Radiation Resistance of Paint-contaminating Bacteria"

### **Mass Media contributions**

#### *Jonesboro Sun*

Gilmore, D. (2009). Knowledge of HIV, AIDS Growing as both continue to Cause Suffering.

Romero, A., & Gilmore, D. (2007). Scientists are urged to look for extraterrestrials life forms.

#### *KAIT-TV*

"The Germ Test" May 2002

"Dirty Hands", Feb. 2008

"Dirty Lemons", May 2008

"Kids' Germy Hands", Oct. 2008

"The Five Second Rule", Jan 2012

"What's in his Beard?", Nov. 2015