

Dr. John Griffith

Department Head

Microbiology Department

Southern California Coastal Water Research Project

Education

Ph.D., marine environmental biology, University of Southern California, 2006

B.S., biology, University of Southern California, 1995

B.S., environmental studies, University of Southern California, 1995

Professional Experience

Department Head, Southern California Coastal Water Research Project, Costa Mesa, CA. 2010-present

Microbiologist, Southern California Coastal Water Research Project. Westminster, CA. 2001-2010

Research Assistant, Marine Biology Research Section, University of Southern California. Los Angeles, CA. 2000-2001

Doctoral Fellow, NSF Integrative Graduate Education and Training, Environmental Studies, Policy and Engineering - Sustainable Cities Program, University of Southern California. Los Angeles, CA. 1999-2000

Teaching Assistant, University of Southern California. Los Angeles, CA. 1995-1999

Trainee, USC Sea Grant Program. Los Angeles, CA. 1995-2001

Laboratory Assistant, University of Southern California. Los Angeles CA. 1993-1995

Honors and Awards

US EPA Scientific and Technological Achievement Award 2014
National Science Foundation IGERT Doctoral Fellowship (1998-2000)
LAS Dean's Advisory Board, University of Southern California (1994-1997)
LAS Dean's List, University of Southern California (1994, 1995)
Phi Sigma National Biological Honor Society, Chapter President (1993-1994)
Dean's List, University of California, Irvine (1993)
President's Honor Roll, Fullerton College (1992)
Golden Key National Honor Society

Professional Societies and Certifications

American Society for Microbiology
Association for the Sciences of Limnology and Oceanography
The Oceanographic Society International Water Association

Journal Articles

Kim, S., L.C. Kennedy, M.K. Wolfe, C.S. Criddle, D.H. Duong, A. Topol, B.J. White, R.S. Kantor, K.L. Nelson, J.A. Steele, K. Langlois, J.F. Griffith, A.G. Zimmer-Faust, S.L. McLellan, M.K. Schussman, M. Ammerman, K.R. Wigginton, K.M. Bakker, A.B. Boehm. 2022. SARS-CoV-2 RNA is enriched by orders of magnitude in primary settled solids relative to liquid wastewater at publicly owned treatment works. *Environmental Science Water Research and Technology* 8:757-770.

Wade, T.J., B.F. Arnold, K.C. Schiff, J.M. Colford Jr, S.B. Weisberg, J.F. Griffith, A.P. Dufour. 2022. Health risks to children from exposure to fecally-contaminated recreational water. *PLOS One* DOI:10.1371/journal.pone.0266749.

Zimmer-Faust, A.G., J.F. Griffith, J.A. Steele, L. Asato, T. Chiem, S. Choi, A. Diaz, J. Guzman, M. Padilla, J. Quach-Cu, V. Ruiz, B. Santos, M. Woo, S.B. Weisberg. 2022. Assessing cross-laboratory performance for quantifying coliphage using EPA Method 1642. *Journal of Applied Microbiology* 00:1-9.

Ahmed, W., S.L. Simpson, P.M. Bertsch, K. Bibby, A. Bivins, L.L. Blackall, S. Bofill-Mas, A. Bosch, J. Brandão, P.M. Choi, M. Ciesielski, E. Donner, N. D'Souza, A.H. Farnleitner, D. Gerrity, R. Gonzalez, J.F. Griffith, P. Gyawali, C.N. Haas, K.A. Hamilton, H.C. Hapuarachchi, V.J. Harwood, R. Haque, G. Jackson, S.J. Khan, W. Khan, M. Kitajima, A. Korajkic, G. La Rosa, B.A. Layton, E. Lipp,

S.L. McLellan, B. McMinn, G. Medema, S. Metcalfe, W.G. Meijer, J.F. Mueller, H. Murphy, C.C. Naughton, R.T. Noble, S. Payyappat, S. Petterson, T. Pitkänen, V.B. Rajal, B. Reyneke, F.A. Roman Jr, J.B. Rose, M. Rusiñol, M.J. Sadowsky, L. Sala-Comorera, Y.X. Setoh, S.P. Sherchan, K. Sirikanachana, W. Smith, J.A. Steele, R. Sabburg, E.M. Symonds, P. Thai, K.V. Thomas, J. Tynan, S. Toze, J. Thompson, A.S. Whiteley, J.C. Wong, D. Sano, S. Wuertz, I. Xagorarakis, Q. Zhang, A.G. Zimmer-Faust, O.C. Shanks. 2022. Minimizing errors in RT-PCR detection and quantification of SARS-CoV-2 RNA for wastewater surveillance. *Science of the Total Environment* DOI:10.1016/j.scitotenv.2021.149877.

Rothman, J.A., T.B. Loveless, J. Kapcia III, E.D. Adams, J.A. Steele, A.G. Zimmer-Faust, D. Wanless, M.L. Griffith, L. Mao, J. Chokry, J.F. Griffith, K.L. Whiteson, K. Langlois. 2021. RNA Viromics of Southern California Wastewater and Detection of SARS-CoV-2 Single-Nucleotide Variants. *Applied and Environmental Microbiology* 87:e01448-21.

McClary-Gutierrez, J.S., M.C.M. Mattioli, P. Marcenac, A.I. Silverman, A.B. Boehm, K. Bibby, M. Balliet, F.L. de los Reyes III, D. Gerrity, J.F. Griffith, P.A. Holden, D. Katehis, G. Kester, N. LaCross, E.K. Lipp, J. Meiman, R.T. Noble, D. Brossard, S.L. McLellan. 2021. SARS-CoV-2 Wastewater Surveillance for Public Health Action. *Emerging Infectious Diseases* 27:e210753.

Zimmer-Faust, A.G., J.A. Steele, X. Xiong, C. Staley, M.L. Griffith, M.J. Sadowsky, M. Diaz, J.F. Griffith. 2021. A Combined Digital PCR and Next Generation DNA-Sequencing Based Approach for Tracking Nearshore Pollutant Dynamics Along the Southwest United States/Mexico Border. *Frontiers in Marine Science* DOI:10.3389/fmicb.2021.674214.

Diner, R.E., D. Kaul, A. Rabines, H. Zheng, J.A. Steele, J.F. Griffith, A.E. Allen. 2021. Pathogenic Vibrio Species Are Associated with Distinct Environmental Niches and Planktonic Taxa in Southern California (USA) Aquatic Microbiomes. *mSystems* DOI:10.1128/mSystems.00571-21.

Crain, C., K. Kezer, S. Steele, J. Owiti, S. Rao, M. Victorio, B. Austin, A. Volner, W. Draper, J.F. Griffith, J.A. Steele, M. Seifert. 2021. Application of ddPCR for detection of Enterococcus spp. in coastal water quality monitoring. *Journal of Microbiological Methods* DOI:10.1016/j.mimet.2021.106206.

Rothman, J.A., T.B. Loveless, M.L. Griffith, J.A. Steele, J.F. Griffith, K.L. Whiteson. 2020. Metagenomics of Wastewater Influent from Southern California Wastewater Treatment Facilities in the Era of COVID-19. *Microbiology Resource Announcements* 9:e00907-20.

Zimmer-Faust, A.G., J.A. Steele, J.F. Griffith, K.C. Schiff. 2020. The challenges of microbial source tracking at urban beaches for Quantitative Microbial Risk Assessment (QMRA). *Marine Pollution Bulletin* DOI:10.1016/j.marpolbul.2020.111546.

Gomez-Alvarez, V., N.J. Ashbolt, J.F. Griffith, J.S. Domingo, J. Lu. 2019. Whole-Genome Sequencing

of Four Campylobacter Strains Isolated from Gull Excreta Collected from Hobie Beach (Oxnard, CA, USA). *Microbiology Resource Announcements* 8:1-3.

Steele, J.A., A.D. Blackwood, J.F. Griffith, R.T. Noble, K.C. Schiff. 2018. Quantification of pathogens and markers of fecal contamination during storm events along popular surfing beaches in San Diego, California. *Water Research* 136:137-149.

Arnold, B.F., K.C. Schiff, A. Ercumen, J. Benjamin-Chung, J.A. Steele, J.F. Griffith, S.J. Steinberg, P.D. Smith, C.D. McGee, R. Wilson, C. Nelsen, S.B. Weisberg, J.M. Colford Jr. 2017. Acute Illness Among Surfers After Exposure to Seawater in Dry- and Wet-Weather Conditions. *American Journal of Epidemiology* 186:866-875.

Cao, Y., M.R. Raith, P.D. Smith, J.F. Griffith, S.B. Weisberg, A. Schriewer, A. Sheldon, C. Crompton, G.G. Amenu, J. Gregory, J. Guzman, K.D. Goodwin, L. Othman, M. Manasjan, S. Choi, S. Rapoport, S. Steele, T. Nguyen, X. Yu. 2017. Regional Assessment of Human Fecal Contamination in Southern California Coastal Drainages. *International Journal of Environmental Research and Public Health* 14:874.

Zimmer-Faust, A.G., V. Thulsiraj, C. Marambio-Jones, Y. Cao, J.F. Griffith, P.A. Holden, J.A. Jay. 2017. Effect of freshwater sediment characteristics on the persistence of fecal indicator bacteria and genetic markers within a Southern California watershed. *Water Research* 119:1-11.

Benjamin-Chung, J., B.F. Arnold, T.J. Wade, K.C. Schiff, J.F. Griffith, A.P. Dufour, S.B. Weisberg, J.M. Colford Jr. 2017. Coliphages and gastrointestinal illness in recreational waters: pooled analysis of six coastal beach cohorts. *Epidemiology* 28:644-652.

Soller, J.A., M. Schoen, J.A. Steele, J.F. Griffith, K.C. Schiff. 2017. Incidence of gastrointestinal illness following wet weather recreational exposures: Harmonization of quantitative microbial risk assessment with an epidemiologic investigation of surfers. *Water Research* 121:280-289.

Cao, Y., M. Sivaganesan, C.A. Kelty, D. Wang, A. Boehm, J.F. Griffith, S.B. Weisberg, O.C. Shanks. 2017. A human fecal contamination score for ranking recreational sites using the HF183/BacR287 quantitative real-time PCR method. *Water Research* 128:148-156.

Haugland, R.A., S. Siefring, M. Varma, K.H. Oshima, M. Sivaganesan, Y. Cao, M.R. Raith, J.F. Griffith, S.B. Weisberg, R.T. Noble, A.D. Blackwood, J. Kinzelman, T. Anan'eva, R.N. Bushon, E.A. Stelzer, V.J. Harwood, K.V. Gordon, C. Sinigalliano. 2016. Multi-laboratory survey of qPCR enterococci analysis method performance in U.S. coastal and inland surface waters. *Journal of Microbiological Methods* 123:114-125.

Maraccini, P.A., M.C.M. Mattioli, L.M. Sassoubre, Y. Cao, J.F. Griffith, J.S. Ervin, L.C. Van De Werfhorst, A.B. Boehm. 2016. Solar Inactivation of Enterococci and Escherichia coli in Natural

Waters: Effects of Water Absorbance and Depth. *Environmental Science and Technology* 50:5068-5076.

Cao, Y., M.R. Raith, J.F. Griffith. 2016. A Duplex Digital PCR Assay for Simultaneous Quantification of the Enterococcus spp. and the Human Fecal-associated HF183 Marker in Waters. *Journal of Visualized Experiments* 109:e53611.

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Griffith, J.F., S.B. Weisberg, B.F. Arnold, Y. Cao, K.C. Schiff, J.M. Colford Jr. 2016. Epidemiologic evaluation of multiple alternate microbial water quality monitoring indicators at three California beaches. *Water Research* 94:371-381.

Wu, J., Y. Cao, B. Young, Y. Yuen, S. Jiang, D. Melendez, J.F. Griffith, J.R. Stewart. 2016. Decay of Coliphages in Sewage-Contaminated Freshwater: Uncertainty and Seasonal Effects. *Environmental Science and Technology* 50:11593-11601.

Griffith, J.F. 2015. Looking Ahead: New Development in Beach Water Quality Monitoring and Bacterial Source Identification. *Urban Coast* 5:180-184.

Cao, Y., M.R. Raith, J.F. Griffith. 2015. Droplet digital PCR for simultaneous quantification of general and human-associated fecal indicators for water quality assessment. *Water Research* 70:337-349.

Yau, V.M., K.C. Schiff, B.F. Arnold, J.F. Griffith, J.S. Gruber, C.C. Wright, T.J. Wade, S. Burns, J.M. Hayes, C. McGee, M. Gold, Y. Cao, A.B. Boehm, S.B. Weisberg, J.M. Colford Jr. 2014. Effect of submarine groundwater discharge on bacterial indicators and swimmer health at Avalon Beach, CA, USA. *Water Research* 59:23-36.

Riedel, T.E., A.G. Zimmer-Faust, V. Thulsiraj, T. Madi, K.T. Hanley, D.L. Ebentier, M. Byappanahalli, B. Layton, M.R. Raith, A.B. Boehm, J.F. Griffith, P.A. Holden, O.C. Shanks, S.B. Weisberg, J.A. Jay. 2014. Detection limits and cost comparisons of human-and gull-associated conventional and quantitative PCR assays in artificial and environmental waters. *Journal of Environmental Management* 136:112-120.

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gull fecal sources. *Water Research* 47:6883-6896.

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Cao, Y., L.C. Van De Werfhorst, E.A. Dubinsky, B.D. Badgley, M.J. Sadowsky, G.L. Andersen, J.F. Griffith, P.A. Holden. 2013. Evaluation of molecular community analysis methods for discerning fecal sources and human waste. *Water Research* 47:6862-6872.

Harwood, V.J., A.B. Boehm, L.M. Sassoubre, K. Vijayavel, J.R. Stewart, T.-T. Fong, M.P. Caprais, R.R. Converse, D. Diston, J. Ebdon, J.A. Fuhrman, M. Gourmelon, J. Gentry-Shields, J.F. Griffith, D.R. Kashian, R.T. Noble, H. Taylor, M. Wicki. 2013. Performance of viruses and bacteriophages for fecal source determination in a multi-laboratory, comparative study. *Water Research* 47:6929-6943.

Ebentier, D.L., K.T. Hanley, Y. Cao, B.D. Badgley, A.B. Boehm, J.S. Ervin, K.D. Goodwin, M. Gourmelon, J.F. Griffith, P.A. Holden, C.A. Kelty, S. Lozach, C.M.c.G.e.e. , L.A. Peed, M.R. Raith, H. Ryu, M.J. Sadowsky, E.A. Scott, J.S. Domingo, A. Schriewer, C.D. Sinigalliano, O.C. Shanks, L.C. Van De Werfhorst, D. Wang, S. Wuertz, J.A. Jay. 2013. Evaluation of the repeatability and reproducibility of a suite of qPCR-based microbial source tracking methods. *Water Research* 47:6839-6848.

Layton, B.A., Y. Cao, D.L. Ebentier, K. Hanley, E. Balleste, J. Brandao, M. Byappanahalli, R. Converse, A. Farnleitner, J. Gentry-Shields, M.L. Gidley, M. Gourmelon, C. Soo Lee, J. Lee, S. Lozach, T. Madi, W.G. Meijer, R. Noble, L. Peed, G.H. Reischer, R. Rodrigues, J.B. Rose, A.

Schriewer, C. Sinigalliano, S. Srinivasan, J. Stewart, L.C. Van De Werfhorst, D. Wang, R. Whitman, S. Wuertz, J. Jay, P.A. Holden, A.B. Boehm, O. Shanks, J.F. Griffith. 2013. Performance of human fecal anaerobe-associated PCR-based assays in a multi-laboratory method evaluation study. *Water Research* 47:6897-6908.

Schriewer, A., K.D. Goodwin, C.D. Sinigalliano, A.M. Cox, D. Wanless, J. Bartkowiak, D.L. Ebentier, K.T. Hanley, J. Ervin, L.A. Deering, O.C. Shanks, L.A. Peed, W.G. Meijer, J.F. Griffith, J. SantoDomingo, J.A. Jay, P.A. Holden, S. Wuertz. 2013. Performance evaluation of canine-associated Bacteroidales assays in a multi-laboratory comparison study. *Water Research* 47:6909-6920.

Boehm, A.B., L.C. Van De Werfhorst, J.F. Griffith, P.A. Holden, J.A. Jay, O.C. Shanks, D. Wang, S.B. Weisberg. 2013. Performance of forty-one microbial source tracking methods: A twenty-seven lab evaluation study. *Water Research* 47:6812-6828.

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Cao, Y., C. Hagedorn, O.C. Shanks, D. Wang, J. Ervin, J.F. Griffith, B.A. Layton, C.D. McGee, T.E. Riedel, S.B. Weisberg. 2013. Towards establishing a human fecal contamination index in microbial source tracking. *International Journal of Chemical and Environmental Engineering Systems* 4:46-58.

Cao, Y., M. Sivaganesan, J. Kinzelman, A.D. Blackwood, R.T. Noble, R.A. Haugland, J.F. Griffith, S.B. Weisberg. 2013. Effect of platform, reference material, and quantification model on enumeration of Enterococcus by quantitative PCR methods. *Water Research* 47:233-241.

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bacteria. *Environmental Science and Technology* 46:945-953.

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Ryu, H., J.F. Griffith, I.U.H. Khan, S. Hill, T.A. Edge, C. Toledo-Hernandez, J. Gonzalez-Nieves, J. Santo Domingo. 2012. Comparison of gull feces-specific assays targeting the 16S rRNA genes of *Catelicoccus marimammalium* and *Streptococcus* spp. *Applied and Environmental Microbiology* 78:1909-1916.

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